उत्पादनोन्मुखी सर्वेक्षण: Production Oriented Survey

योग्य: राज्यकी कृषि विश्वविध्यालय एवं कृषि विभाग

In collaboration with
State Agricultural Universities and Department of Agriculture

अखिल भारतीय समन्वित अनुसंधान परियोजना: चावल

All India Coordinated Research Project on Rice (AICRPR)

भाकृअनुप
ICAR

2025

भाकृअनुप-भारतीय चावल अनुसंधान संस्थान

भारतीय कृषि अनुसंधान परिषद

ICAR-Indian Institute of Rice Research

Indian Council of Agricultural Research
Rajendranagar, Hyderabad - 500 030

Severe bacterial blight in Nizamabad district, Telangana in October 2025

Severe leaf blast in Nalgonda district in February' 2026

PRODUCTION ORIENTED SURVEY 2025

In collaboration with

AGRICULTURAL UNIVERSITIES

and

STATE DEPARTMENTS OF AGRICULTURE

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Production Oriented Survey-2025

Contents

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Summary-POS-2025-2026

Production oriented survey is conducted every year by a team of subject matter specialists (from different AICRPR centres) along with officials from state department of agriculture with an objective to collect information on different aspects of rice cultivation from different rice growing states of India. The survey is based on both eye-ball survey and questionnaire based survey. The different aspects that are covered in the survey are prevailing climatic conditions for rice cultivation, varietal profile in a particular region, cropping systems, rice consumption pattern, extent of use of organic manure and inorganic fertilizers, weed problem and their management, occurrence of different biotic and abiotic problems and their management and various needs of the farmers and problems faced by the farmers. During 2025, the survey was conducted in 15 states of India *viz*., Andhra Pradesh, Gujarat, Haryana, Jammu and Kashmir, Karnataka, Kerala, Maharashtra, Odisha, Puducherry, Punjab, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand and West Bengal by 19 AICRIP centres. A total of 123 Scientific staffs from the different cooperating centres and several officials from state department of agriculture surveyed 979 villages in 133 districts in 15 states. A total of 1400 farmers were contacted during the survey.

Rainfall over the country as a whole during the 2025 southwest monsoon season (June-September) was 108% of its long period average (LPA). Thus, the seasonal rainfall was above normal (>104% of LPA) as per the IMD forecast. All India Summer monsoon rainfall was 937.2 mm which is 5th highest since 2001 and 38th highest since 1901. Seasonal rainfall over Northwest India, Central India, South Peninsula, and Northeast India were 127%, 115%, 110% and 80% of the respective LPA. Rainfall over Northwest India was 747.9 mm which is highest since 2001 and 6th highest since 1901, However, Rainfall over East & Northeast India was 1089.9 mm which is 2nd lowest since 1901. The southwest monsoon seasonal (June to September) rainfall over the monsoon core zone, which consists of most of the rain-fed agriculture regions in the country, received 122% of LPA. Out of the 36 meteorological subdivisions, 2 subdivisions, covering 10% of the country's total area, experienced large excess rainfall. Twelve subdivisions, constituting 35% of the area, received excess rainfall, while 19 subdivisions, representing 46%, recorded normal rainfall. The remaining 3 subdivisions, Arunachal Pradesh, Assam & Meghalaya, and Bihar accounting for 9% of the total area, experienced deficient rainfall during the season. Monthly rainfall over the country as a whole was 109% of LPA in June,105% in both July and August and 115% of LPA in September. The southwest monsoon advanced over the South Andaman Sea and Nicobar Islands on 13 May 2025, nearly nine days ahead of the normal schedule. It arrived in Kerala on 24 May 2025, ahead of the usual onset date of 1 June, and covered the entire country by 29 June 2025, earlier than the normal date of 8 July. The monsoon withdrawal began from west Rajasthan on 14 September, advancing by 3 days (Source: IMD).

In addition to several monsoon depressions in Bay of Bengal and Arabian sea, there were 3 major cyclones during 2025 which significantly affected normal human life and extensive damage to agricultural crops. Severe cyclonic storm 'Shakhti' occurred between 1-7 October, 2025 over the Arabian sea and resulted in heavy rainfall and crop damage in parts of western India. Another severe cyclonic storm 'Montha' occurred between 25-30 October, 2025 and affecting large areas in Andhra Pradesh, Telangana, Odisha and parts of Tamil Nadu causing significant damage to the standing rice crop. Cyclonic storm 'Ditwah' occurred between 26 November to 3 December, 2025 and affected several states in South India. The cyclone affected about 57,000 ha crop area in coastal Tamil Nadu causing extensive damage to the standing crop. The cyclone also affected large areas in Andhra Pradesh and Telangana. Predominant rice

varieties cultivated by the farmers in different states are presented in Table 2. The prevalence of different diseases and insect pests in different rice growing regions of India is presented in Table 3 and Table 4. Among the diseases, blast, brown spot, sheath blight, false smut and bacterial blight was very widespread. Bacterial blight was recorded in high intensities in many states like northern Karnataka, Kerala, parts of Maharashtra, parts of Puducherry and parts of Telangana. False smut was very widespread in moderate to high intensity almost throughout Punjab. SRBSDV (Southern Rice Black Streaked Dwarf Virus) was again recorded in many places in Punjab and its intensity was high in some places in Punjab. Rice Tungro disease was recorded in high intensity in parts of West Bengal. Among the insect pests, stem borer, leaf folder and BPH were widespread. BPH incidence was high in parts of Northern Karnataka, Kerala and parts of West Bengal.

Andhra Pradesh: Production Oriented Survey was conducted in the East and West Godavari, Eluru, Konaseema and Kakinada districts of coastal Andhra Pradesh during Kharif, 2025. The mega variety Swarna occupied major area in Ambedkar Konaseema, Kakinada and East Godavari districts while MTU 1318 was cultivated in large extent in two districts i.e., West Godavari and Eluru districts. Seasonal conditions were found favourable for paddy cultivation at initial stages. Direct seeding was followed in Kakinada district during kharif season. Direct seeding area was increasing in Kakinada and Konaseema during Rabi season. Heavy rains caused problems during August month of 2025. During August month heavy rainfall at many places caused crop inundation and farmers forced to re-transplant the crop at few places. 'Montha Cyclone' caused problem during October ending to November first week. Rice-rice was the predominant cropping pattern in majority of the locations followed by rice-pulse-rice and rice-Maize. Direct seeding was practiced in Kakinada, East Godavari and Eluru districts. Farmers commonly applied DAP (1 bag of 50 kg/acre), 14-35-14 or 20-20-0 or 10-26-26 or 28-28-0 urea (1/2 bag of 50 kg/acre) for basal and direct fertilizers for top dressing. Potash at the time of basal @ 20 kg/acre was used by only few farmers and most of the farmers were not applying potash as basal, but many of them were using potash @ 20 kg/acre at the time of P.I stage effectively. Among the biotic constraints, bacterial leaf blight disease problem was observed in many areas. BPH, Stem borer, leaf folder was in low level during the season. Rodent problem is moderate in season in many locations surveyed. Farmers in the Godavari zone of Andhra Pradesh Resorted to 2-3 foliar sprays for protection against pests and diseases. Some of the common problems faced by the farmers were lodging of the crop due to cyclones and high cost of cultivation, heavy rains and cyclones during harvesting, wide spread bacterial blight infection, scarcity of agricultural labours, yield reduction due to untimely rains and cyclones, improvement in procurement facility after rains irrespective of moisture content, drainage problem, provision of input subsidy or other benefits to tenant farmers also and low cost machinery and availability of machinery.

Gujarat: Production oriented survey was conducted in the 12 major rice growing districts of Gujarat State. In general, weather conditions were normal and favourable for rice cultivation. During Kharif 2025, monsoon appeared on time in middle of June. Varieties like Gurjari, GAR 13, Mahisagar, GAR 14, GR 21, GAR 22, GNR 3, GNR 6, GR 4, GR 7, GR 11, GR 101, GR 17, GR 18, Sardar, Mahatma, Mahsuri, Jaya, Moti Gold, Surya Moti, Sonam, Sriram 301, Sri 101, Versha, Nath Poha, Krishna Kamod, Laxmi, Gangamani and Sriram 303 and hybrids like GRH 2, Arize 6444, Arize 6555 ST, Kaveri 468, Pioneer 121, US 312, Hyb 27P37, MC 13, 25P25, Ankur 7434, Hyb. 471, Kaberi 2333, Arize 6201, US 312, Hyb. 716, JK 208, Hyb.745, 786, Reshma, Gorakhnath and Suruchi 5629 were mainly cultivated in different districts of Gujarat. Among the varieties, Gurjari and GAR 13 were widely cultivated. Common crop rotations followed by the farmers in different districts were rice-wheat (commonly followed by

the farmers), rice-rice, rice-vegetables, rice-wheat-vegetables, rice-tobacco, rice-chickpea, rice-garlic, rice-sugarcane, rice-maize, rice-potato, rice-wheat-vegetables, rice-pulses and rice-niger. The average yield among different HYVs and hybrids in different surveyed districts ranged from 3000-5000 kg/ha. Average seed rate used by the farmers in different districts ranged from 20-30 kg/ha. Seed treatment before sowing was not common among the farmers. However, many farmers used certified seeds and seeds already treated with fungicide. Farmers from Dang did not apply any chemical fertilizers either in the nursery or in the main fields as it is a organic district. Planting was mainly done during 1st to 4th week of July. In the main fields, fertilizers were applied @ 36-89 kg N/ha, 12-37 kg P_2O_5/ha and 20 kg $ZnSO_4$/ha. Application of potassic fertilizers was not common among the farmers. All the farmers contacted applied organic manure like FYM (8-20 t/ha) in the main field. Fertilizers like urea, DAP, SSP and ammonium sulphate were used by the farmers. In general, the intensity of common weeds was low to medium except in Vadodara and Panchmahals where the intensity of weeds was medium to high. Hand weeding (1-2) was the most common practice for weed management and about 27% of the farmers contacted applied herbicides. In general, the intensity of different diseases and insect pests was low to moderate except bacterial blight which was recoded in high intensity in some fields in Surat and Bharuch. Zinc deficiency symptoms were commonly observed in surveyed field. Some of the common problems faced by the farmers were low market price for paddy, scarcity of labours, high cost of inputs resulting higher cost of cultivation and less profitability, uncertain rainfall, heavy rainfall during harvesting time, low return from rice culyivation, low market price for organic rice, crop lodging, increase in pest and disease problems and micro-nutrient deficiency.

Haryana: Production oriented survey was conducted in 8 rice growing districts of Haryana during Kharif season of 2025 when the crops were booting to maturity stage. The fields surveyed were under irrigated ecosystem and in general the weather conditions for rice cultivation were favourable. However, there were reports of excess rainfall and flash floods in about 10-50% of the places surveyed in Kurukshetra, Jind, Yamunanagar, Ambala, Panipat and Sonepat. Widely cultivated rice varieties were HYVs like PR 114, PR 126, PR 131, HKR 49, Sarbati, PR 128, HKR 17-422 and others; hybrids like Sava 7501, Sava 134, Sava 127, Sava 7301, Harvir Agro 777, VNR 2111, Hybrid 7299, VNR 2222, Hyb. 90m100, Arize 6444, KRH 7299, Hyb. 359, KRH 468, Hyb. 372 and others and basmati rice varieties like Pusa Basmati 1509, Pusa Basmati 1, Pusa Basmati 1121, Pusa Basmati 1692, CSR 30, Pusa Basmati 1718, Pusa Basmati 1885, Pusa Basmati 1401, Pusa Basmati 1847, Pusa Basmati 1979, Pusa Basmati 1985 and others. The main crop rotation followed by the farmers was rice-wheat. Some farmers also followed rice-mustard, rice-maize, rice-mustard-potato, rice-potato-tomato, rice-potato-maize, rice-tomato/ brinjal/ cabbage/ cauliflower, rice-potato-maize, rice-potato-sugarcane, rice-wheat-tomato, rice-wheat-mustard, rice-wheat-sugarcane, rice-wheat-vegetables and others. Average rice yield among HYVs and hybrids ranged from 6000-10000 kg/ha while in case of basmati varieties, average yield ranged from 2500-6500 kg/ha. Average seed rate was low (12.5-25 kg/ha). On an average about 50% of the farmers contacted told that they treated the seeds before sowing. Application of organic manure in the nursery was not common among the farmers. However, majority of the farmers contacted applied chemical fertilizers like urea and DAP in the nursery. Planting was done during second week of June to second week of July. Average nitrogen dose in case of HYVs was 115-252.5 kg N/ha while in case of basmati N dose was 80-230 kg N/ha. Other fertilizers were applied @ 10-57.5 kg P_2O_5/ha and 10-57.5 kg K_2O/ha. Many farmers applied zinc sulphate in the fields. In general, intensity of weeds in and around rice fields was low to moderate. Almost all the farmers contacted applied herbicides. Some of the common needs of the farmers were subsidy on farm implements, paddy straw management, Government incentives for paddy growers, supply of agricultural labours,

subsidy on input costs, increase in MSP and the price of selling of basmati rice varieties, proper supply of DAP and quality seeds during the season, varieties suitable for DSR, suitable herbicides for management of weeds, timely picking of paddy straw bundles and technical knowledge on insect pests and disease management. Among the diseases, blast and false smut were recorded in severe intensity in some fields in Panipat. Among the insect pests, stem borer, leaf folder and plant hoppers were wide spread in low to moderate intensity. Majority of the farmers adopted plant protection measures.

Jammu and Kashmir: Rice is the staple food of majority of the population inhabiting the Kashmir valley and the crop is grown in all the districts of the valley. By and large, farmers of the valley are highly skilled in rice cultivation but most of the farmers need to improve in proper nursery management and learn the technology of raising protected nurseries as the temperatures sometimes dip low in the valley when the seeds are sown. Production oriented survey was conducted in two districts viz., Anantnag and Kulgam when the crop was mainly at dough/maturity stage. The general climatic conditions were normal as far as rice is concerned. The main crop rotation practices followed by the farmers were rice-rapeseed and rice-oats. Most predominant rice varieties cultivated in this region were HYVs like SR -4 and SR -3 and some local varieties like Budjichina, K-39, K-332, China 1007 and China 1039. Some farmers are growing local landraces like Zag and Mushkbudji for special attributes. However, HYVs are spreading very fast and replacing the local varieties. Optimum time of sowing was 1st week of May and optimum time of transplanting was 1st week of June. Average seed rate was 80-100 kg/ha and majority of the farmers contacted (90-100%) adopted seed treatment with either carbendazim (2g/kg seed). Most of the farmers applied organic manure like FYM and vermicompost and chemical fertilizers like urea, DAP and MOP in the nursery. In the main fields, farmers applied 40-150 kg N/ha, 30-60 kg P_2O_5/ha, 20-45 kg k_2O/ha and and some applied zinc Sulphate 20 kg/ha. All the farmers contacted, applied FYM (5-10 q/ha) in the main field. Random method of transplanting was common among the farmers. The intensity of common weeds like *Echinochloa* spp., *Potamogeton* spp., *Rotalia indica*, *Cyprus* spp. and *Ammannia* spp. was moderate. All the farmers contacted adopted hand weeding and in addition applied herbicides like Butachlor (1.5 kg a.i./acre) and Eros (10 kg/acre). Some of the common needs of the farmers were availability of certified seeds of good HYVs, timely supply of inputs, irrigation facilities and advices from experts regarding rice production technology. Among the biotic constraints, blast, brown spot and grasshoppers were recorded in higher intensities. Other diseases like neck blast, sheath blight, sheath rot, grain discoloration and bakanae and insect pests like stem borer, leaf folder and green leaf hopper were recorded in low to moderate intensities. Pesticide application was not common among the farmers.

Karnataka-Gangavathi: Production oriented survey was conducted in five districts of norther Karnataka during *Kharif* 2025. The prevailing cropping pattern in the districts surveyed is rice-rice followed by rice-sorghum, rice-mustard, rice-sesamum, rice-maize, rice-pulses, green manure crops and rice-fallow. Rice is grown in the state under Canal irrigated and borewell irrigated conditions. The south west monsoon entered the Karnataka state during June and the onset of monsoon was timely and normal rainfall was recoded in all the districts surveyed. The rainfall received between May and June was less than normal. The farmer started paddy sowing and transplanting were completed timely in all the districts surveyed. Crop health was good at all the stages in some plots Bacterial leaf blight disease and sheath blight diseases were noticed. The climatic condition that prevailed during the cropping period was normal except for the continuous rainfall at the tillering stage in the Koppal, Raichur and Bellary districts. The inputs in all districts were adequate except for urea fertilizer and zinc micronutrient, because of which deficiency was seen in many fields. In recent years, Tungabhadra command area farmers are

adopting the drum seeder method of direct sowing and machine transplanting in Koppal, Raichur, and Yadgir districts due to technology spread, and it is helpful for tail-end farmers' paddy cultivation. During this year, zinc deficiency was observed in many districts as the farmers could not apply the zinc due to the non-availability and cost of complex fertilizer. Harvesting of rice crop and baling of straw by using combine harvesters is slowly picking up in all the districts. Rice transplanting machines are being promoted by the state department by providing subsidies in all the districts. Widely cultivated rice varieties in the state were RNR-15048, Gangavathi Sona (GGV-05-01), BPT-5204, Janani, BP-2, Sona Mashuri, KNM 1638, Kaveri Sona, SIRI-1253, Jyoti, IR64, Super BPT, Janani, Tellahamsa and others. In general, intensity of weeds in and around rice fields was low to moderate. Most common weeds recorded in paddy fields are *Echinochloa colona, Marsilea quadrifolia, Lindernia vernicaefolia, Fimbristylis miliaceae, Leptochloa chinensis, Cyperus defromis, Scirpus* spp. *Eclipta alba, Spilanthus acmella, Panicum tripheron* and *Glinus oppositifolia* insects and diseases was moderate. Majority of the farmers adopted hand weeding and herbicide application. The outbreak of bacterial leaf blight disease was high due to more rainfall at the tillering crop growth period, and the major diseases, viz., leaf blast, neck blast, sheath blight, brown spot, false smut and grain discolouration diseases appeared in patches in low to moderate levels. Bacterial leaf blight severity of 40 to 80% was recorded in Koppal and Raichur districts. The insect pests *viz.,* stem borer, case worm and leaf folder infestation was low to moderate. Majority of the farmers adopted plant protection measures. Farmers have expressed the need for fixed market price and high yielding, pest and disease resistant varieties. About 56% of the farmers contacted applied organic manure in the nursery and all of them applied chemical fertilizers in the nursery.

Karnataka-Mandya: Production oriented survey was conducted in eight districts of southern Karnataka during *Kharif* 2025 when the crops were in maturity stage. Rice is grown in the state under Canal irrigated, rainfed, borewell irrigated and tank fed conditions. The south west monsoon entered the Karnataka state during June and the onset of monsoon was early and almost near normal rainfall was recoded in all the districts surveyed. Crop health was good at all the stages in some plots. where ever nitrogenous fertilizers were used injudiciously such cases blast and sheath blight diseases and stem borer and brown plant hoppers were noticed. The climatic condition prevailed during the cropping period was normal except with dry spells during September at tillering stage in Mandya, Mysuru and Shivamogga district. Commonly cultivated rice varieties were HYVs like Super Aman, MTU-1001, Omkar, IR-64, Meenakshi, Amogh, San Madhu, Jyothi, RNR-15048, Penna BPT, Sumangali, S 913, MTU-1010, GK Chethana, Aroha, Shreya, Tulasi, Ankur, Kurnool Sona, Chamumdi, BR-2655, Amulya JAI, Siri sumo, Tunga, KHP-10, KHP-11, KHP-13, BR 2655, KPR 1, Intan, JAYA, X4, Athira, Rajamudi, Ashmitha, Adithya, Amogh, Sri Ram Sona, BPT 5204, Kempumukthi, Abhilash,Uma, Siri Theja and Krishna and hybrids like MC13, PAC 837, VNR 2233, Kaveri prize, KRH 7344, DRH 8336, VNR Bheem 115, , RRX 3200 (Raasi Seeds), Advanta- PAC837, Sahyadri and INDAM 200-017. The prevailing cropping pattern in the districts surveyed were rice-rice, rice-sugarcane, rice-finger millet, rice-maize, rice-cowpea, rice-vegetables, rice-chili, rice-brinjal, rice-pulses, rice-tomato, rice-black gram/green gram, rice-cabbage, rice-sesame, rice-finger millet-black gram, rice-groundnut-cowpea and others. Crop health was good at all the stages in some plots. Average rice yield in different high yielding rice varieties in different districts ranged from 4000-6250 kg/ha and 4250-8000 kg/ha in different hybrids. Yield in some of the fields were affected due to high incidence of pests and diseases, zinc deficiency, lack of mechanization, micronutrient deficiency, unavailability of quality seeds, high alkalinity of soil, high pH of soil, and continuous monocropping. In some of the places, yield was affected due to iron toxicity and acidic soil. Considerable variation in seed rate was observed ranging from

25-62.5 kg/ha depending on the varieties used. On an average, about 80% of the farmers contacted adopted seed treatment. Fertilizers were applied @ 37.5-126.25 kg N/ha, 20-107.5 kg P_2O_5/ha and 18.5-98.75 kg K_2O/ha. On an average about 72.5% of the farmers contacted applied zinc sulphate in the field. Overall, intensity of weeds was low. On an average, about 61% of the farmers contacted adopted only 1-2 hand weeding for management of weeds. Rest of the farmers applied herbicides along with hand weeding. Some of the common needs of the farmers were pest and disease resistant HYVs, mechanization in rice cultivation, availability of quality seeds in time, proper recommendation of fertilizers and pesticides, soil test for micronutrients and proper recommendation, subsidies on inputs, reduction of wages of agricultural labours and timely availability of fertilizers and micronutrients. In general, intensity of different biotic constraints was low to moderate.

Kerala-Pattambi: Rice is the principal staple crop of Kerala and plays a vital role in ensuring food security and sustaining the livelihood of farming communities. To assess the existing cultivation practices, varietal preferences, production constraints, and pest and disease scenarios, a production-oriented survey was conducted August 2025 to January 2026 in the major rice-growing districts of Palakkad, Thrissur, and Malappuram. The survey covered key crop growth stages from tillering to maturity and included farmers representing different agro-ecosystems and socio-economic backgrounds. Lowland rainfed and irrigated systems were the predominant rice production environments in these districts. Popular varieties cultivated by farmers included Uma, Jyothi, Ponmani, Aishwarya, Karuna, and other locally adapted varieties, with yields ranging from low to high depending on management practices and environmental conditions. Farmers followed a combination of transplanting and direct-seeding methods and relied on both organic and inorganic nutrient sources. Pest and disease incidence, particularly bacterial leaf blight, stem borer, and leaf folder, posed significant challenges to stable production. In addition to biotic stresses, farmers faced several socio-economic and environmental constraints, including wild boar damage, labour shortages, high labour costs, and limited availability of quality seeds. Despite these challenges, farmers actively adopted recommended agronomic practices and relied on technical guidance from agricultural departments and research institutions. The findings of this survey provide valuable insights into the status of rice cultivation and highlight the need for improved varieties, effective pest and disease management strategies, and strengthened support systems to enhance rice productivity and sustainability in Kerala.

Kerala-Moncompu: A production-oriented survey was undertaken in Kharif 2025 covering the districts of Thiruvananthapuram, Alappuzha, Pathanamthitta, Kottayam, Ernakulam, and Kollam in Kerala. The survey evaluated the cultivation practices, including irrigation, fertilization, pest and weed management and crop variety adoption, providing insights into methods that enhance or limit yield. Predominant rice varieites cultivated in the region were Uma (MO-16), Jyothi, Pournami (MO23), Prathyasha, Manuratna and others and pokkali rice varities like Pokkali, Choottu Pokkali, Chettivirippu, Cheruvirippu, Kuruka, Anakodan, Eravapandy, Bali, Orpandy and others in Ernakulum district. Common weeds recorded in the region were *Fimbristylis* sp., *Echinochloa* sp., *Eichhornia crassipes*, and *Salvinia molesta.* Wild rice has become a major problem in parts of Kuttanad region. *Among abiotic stresses, acidity was the major problem in some areas in Kuttanad region.* Diseases like blast, brown spot and grain discoloration were recorded in low to moderate intensities while sheath blight and bacterial blight were recorded in moderate to severe intensities. Among the insect pests, stem borer, leaf folder and BPH were recorded in moderate to high intensity while gall midge, case worm, thrips and leaf miner were recorded in low to moderate intensities. Pokkali rice cultivation was observed in parts of Ernakulum district.

Maharashtra: Production oriented survey was conducted in the Konkan region of Maharashtra which is predominantly rice growing belt with an average productivity of 2.58 (3.63 rough rice) t/ha. In *Kharif*-2025 season, a total of 307271 ha area was sown under rice cultivation in the Konkan region. The farmers of this region cannot grow any crop other than rice in *Kharif* because of high rainfall and geographically low land. Weather conditions were in general normal and favourable for rice cultivation in the region. The onset of monsoon took place in May end and rainfall continued till first week of November. Overall, weather conditions were good during growth stages. Total rainfall and its distribution were satisfactory in Konkan region. However, there was rainfall at the time of maturity and harvesting resulting in lodging of the crop and delay in harvesting. Wide varietal diversity was observed in the region. Commonly grown rice varieties and hybrids in the region were HYVs like Karjat-3, MTU 1010, Jaya, Rupali (Ankur), YSR, Spriha 911, Shubhangi, Daptari 1008, Daptari 100, Daptari 250, Om Sree Ram-125, Daptari 125, Devaki, Jordar, Shabri, Wada Kolam, RTN-8, Warai, Kajart-8, Gujrath-11, Shree-101 and others. Some farmers cultivated hybrids like Arize 6444, Gorakhnath, Loknath, Upaj, Arize-6129, NPH-30, Paturu 3434, VNR 2245, Raja, Rasi 113, NP-125, Kaveri 3434, Kaveri-9090, KPH 468, Ankur-6077, KPH-468, Champion, Sahyadri, Sahyadri 2, Ankur -13555, Ankur-788, TATA-748, Rasi-336 and Ankur-7576. The most common cropping pattern adopted by farmers in the region is rice-fallow, rice-pulses (chick pea, green gram, pigeon pea, black gram, horse gram, dolichos bean), rice-vegetables, rice-groundnut and Sometimes rice-chilli and rice-fodder. Some farmers also cultivated other crops like finger millet, niger and sweet potato in part of their land. Rice yield in some of the surveyed places in most of the districts was affected due to poor crop stand due to low/ sub-normal dose of fertilizers, high incidence of bacterial blight and cultivation of low yielding local rice varieties. About 50% of the farmers contacted applied organic manure in the nursery while about 82% of them applied chemical fertilizers in the nursery. Fertilizers were applied @ 30-129 kg N/ha, 15-54 kg P_2O_5/ha and 10-54 kg K_2O/ha. None of the farmers contacted applied zinc sulphate. While most of the farmers applied nitrogenous fertilizers, about 85% of the farmers applied P and K fertilizers. Overall, intensity of weeds was low to medium. For managing weeds in the nursery, some farmers followed a local method, called Rab. None of the farmers contacted applied any herbicides and all of them followed 1-2 hand weeding for managing the weed problem. Some of the common needs of the farmers were subsidy on inputs, good market price, improvement in irrigation facilities, financial support, low-cost mechanization suitable for Konkan region and timely availability of fertilizers and quality seeds. During 2025, intensity of most of the diseases and insect pests were recorded in low to moderate except bacterial blight was high in different fields in Thane, Palghar and Raigad. Intensity of different insect pests was low to moderate. Very few farmers adopted plant protection measures.

Odisha: Production oriented survey was conducted in 4 rice growing districts of Odisha during kharif season of 2025. A total of 24 villages were surveyed and during the survey a total of 99 farmers were contacted. Majority of the fields surveyed were either in irrigated ecosystem or in rainfed lowland ecosystem. Overall, weather conditions were favorable for rice cultivation. Common crop rotation practices followed by the farmers were rice-green gram, rice-black gram, rice-mustard, rice-rice and others. Commonly cultivated rice varieties were Puja, Swarna, Jamuna, Lakshmi Gold, Konark, MTU 1001, Rani Dhan and Lalat and others. Some farmers cultivated local rice variety Kalachampa. Most of the plantings were done in July to August. Average seed rate was 50-60 kg/ha. Seed treatment before sowing was not common among the farmers. Most of the farmers applied FYM or vermicompost both in nursery and main fields. In the main fields they applied about 80 kg N/ha, 40-50 kg P_2O_5/ha and 40 kg

K_2O/ha. Intensity of common weeds was low to medium and hand weeding along or in combination with herbicide application was common practice for weed management. Implements like tractor, cultivator, sprayers and combined harvesters were used by the farmers mostly on hire basis. Canal was the main source of irrigation and all of them told about the scarcity of irrigation water. Among the biotic constraints, sheath blight, brown spot, stem borer, green leaf hoppers and grasshoppers were recorded in higher intensities in some places. Details of plant protection measures by the farmers were not available.

Puducherry: Production oriented survey covered 15 villages across five communes of Karaikal district, involving 100 farmers representing different landholding categories. Direct-seeded rice was the predominant method of cultivation, largely driven by labour scarcity and reduced cost of establishment. Varieties like ADT 45, IR 20 and CO 51 were cultivated by the farmers during Kuruvai season using borewell, while ADT36, ADT 38, ADT 39, ADT 43, ADT 45, ADT 46, ADT 51, CO 51, BPT 5204, CR 1009 (Ponmani), Improved White Ponni, IR 20, KKL (R) 2, TKM 9 and TKM 13 and land races like Karuppu Kavuni, Poongar and Seeraga Samba were grown during Samba season under Cauvery-fed irrigation. CO 51, IR 20 and ADT 46 emerged as the most favoured variety due to strong market demand, and higher profitability. Fertilizer application practices varied across fields, with most farmers applying 100-162 kg N/ha along with recommended phosphorus and potassium doses. Use of organic manure was limited. Few farmers apply neem cake along with urea @ 40 kg/ha. Grassy weeds like *Leptochloa chinensis*, *Echinochloa colona*, *Echinochloa crus-galli* and *Panicum repens*; sedges like *Cyperus rotundus*, *Cyperus iria*, *Cyperus difformis* and *Fimbristylis miliacea* and broad-leaved weeds such as *Marsilea quadrifoliata*, *Eclipta alba*, *Ludwigia parviflora* and *Sphaeranthus indicus* were prevalent in most of the surveyed areas. Farmers employ both mechanical and chemical methods to manage weeds. Hand weeding is done twice on 25 -30 and 45 – 50 DAT by hiring 6-7 labourers per acre. The Florpyrauxifen- benzyl 2.13% + Cyhalofop-butyl 10.64% EC (Novlect), triafamone 20% + ethoxysulfuron 10% WG (Council active), 2,4-D amine salt (Green D), fenoxaprop-p-ethyl 6.7% EC (Ricestar) and bispyribac sodium 10% SC (Nominee Gold) were the weedicides used by the farmers depending on the weed intensity and composition. Yellow stem borer, leaf folder and brown planthopper were the major insect pests recorded, while natural enemies such as coccinellids and spiders were also present in the ecosystem. Varieties like CO 51 and BPT 5204 respectively recorded maximum yellow stem borer incidence during Kuruvai and Samba. Maximum leaf folder incidence was observed in ADT 45 and BPT 5204 during Kuruvai and Samba respectively. Blast, brown spot, grain discoloration, false smut, sheath rot and bacterial leaf blight were observed during the survey period, with high severity in ADT 46. Brown spot was the most prevalent disease across varieties, grain discoloration and bacterial leaf blight were also recorded in notable levels. Other diseases like sheath rot, blast and false smut were observed at relatively lower severity levels. Farmers largely depended on chemicals for pest and disease management, with limited adoption of integrated approaches. Mechanical harvesting by harvester cum thresher is adopted by the farmers due to acute shortage of labours. Key production constraints identified included irrigation water shortage during kharif, climate-induced flooding, labour scarcity, malfunctioning borewells, delayed machinery access and lack of government procurement facilities.

Punjab: Production oriented survey was conducted in 20 districts of Punjab during Kharif season of 2025. The fields surveyed were under irrigated ecosystem. The climatic conditions were not highly favourable for rice cultivations as there were incidences of excess rainfall in all the districts leading to temporary inundated condition. During *Kharif*-2025 in Punjab state, paddy was cultivated on an area of around 32.49 lakh hectares of which 80 percent area was

under non-basmati rice and 20 percent area was under Basmati rice. Among non-basmati rice, PR126 was most popular variety occupying 35 per cent area followed by PR 131. Other non-basmati varieties cultivated in the state were PR 128, PR 114, PR132, Supreme 110 and Pusa 44. The most popular basmati varieties grown were Pusa Basmati 1509, Pusa Basmati 1847, Pusa Basmati 1121and Pusa Basmati 1718. During 2025, rice-wheat was the major crop rotation practice followed by the farmers in all the districts. Few farmers also followed other cropping sequences like rice-potato-maize, rice-potato, rice-wheat-maize, rice-wheat-green gram and others. Average rice yield among the HYVs and hybrids ranged from 4839-9324 kg/ha while in case of basmati varieties, the yield ranged from 3588-6829 kg/ha. Most of the farmers used 12-15 kg/ha of seed rate for nursery sowing but for direct seeding they used 15-22 kg seed per ha. On an average about 35% of the farmers contacted adopted seed treatment. Mostly farmers transplanted 30-35 days old nursery. In most of the cases, planting density was inadequate i.e. it varied from 17-22 plants/m^2 as against recommended density of 33 plants/m2. Most of the surveyed farmers used overdose of nitrogen but many farmers skipped the application of phosphorus (P_2O_5) and potash (K_2 O) in paddy crop, due to higher status of these nutrients in their soils. Application of Zinc sulphate (either 21 or 33%) is practiced by about 25-30% farmers but they used under dose of Zinc. Fertilizers like urea, DAP, SSP, MOP and zinc sulphate (21% or 33%) were used by the farmers to supply the nutrients. Overall intensity of weeds was low throughout the state. Predominant weeds observed during the survey were *Leptochloa chinensis, Cyperus difformis* and *Echinochloa crusgalli* etc, in puddled transplanted rice. Weeds like *Eragrostis* spp. *Leptochloa chinensis*, *Echinichloa colona*, *Ammania* sp. were reported in case of direct seeded rice (DSR). All the farmers contacted applied different herbicides. Some of the common needs of the farmers were availability of broad-spectrum herbicides, short duration varieties and varieties suitable for DSR, higher MSP for HYVs, improved rice production and protection technologies and timely availability of seeds of HYVs. The overall incidence of rice diseases was low to moderate, but false smut was widespread in Punjab during the *Kharif*-2025. High incidence (30-60%) of false smut was recorded in many fields in several districts. SRBSDV was recorded in higher intensity in some fields in Malerkotla and Patiala. Overall intensity of different insect pests was low. Many farmers adopted plant protection measures.

Tamil Nadu-Aduthurai: Production oriented survey was conducted in seventeen districts of Cauvery delta zone in Tamil Nadu. Area under rice was marginally increased. Rice-pulses, rice-rice-pulses, rice-maize and rice-onions were the major cropping systems followed. Short duration rice varieties ADT 36, ADT 43, ADT (R) 45, TKM 13 and medium / long duration varieties CR 1009, CR 1009 Sub 1, ADT 38, ADT 39, ADT (R) 46, ADT (R) 49, ADT 51, Annapoorani, Jaiganesh, Amman, Mahindra-404, CO 43, CO 51, NLR 34449, CO 51, Improved White Ponni, CR 1009 and BPT 5204 were predominantly grown. Labour scarcity was the major constraint to the farmers. The average yield was about 4.0-4.5 t/ha. Farmers generally used higher seed rate of 90 kg/ha. Few farmers only applied the recommended level of fertilizer @ 150:60:60 kg NPK/ha for *rabi* season. Hand weeding was commonly followed. Some farmers applied herbicides like butachlor and others. Use of combine harvester and threshers was common among the farmers. Pest and disease incidences were noticed in all districts except Ariyalur. Among the insects, leaf folder, stem borer, BPH and gall midge were recorded. Mild incidence of bacterial leaf blight, false smut, blast, sheath blight, sheath rot, brown spot, grain discolouration diseases were recorded.

Tamil Nadu-Coimbatore: Production oriented survey was conducted in 10 districts of Tamil Nadu viz., Coimbatore, Dindigul, Tiruppur, Madurai, Kannyakumari, Tirunelveli, Thiruvannamalai, Kallakurichi, Erode and Tenkasi when the crops were in booting to maturity

stage. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice cultivation. Common crop rotations followed by the farmers were rice-rice, rice-black gram, rice-sugarcane, rice-banana, rice-maize, rice-tapioca and others were followed by the farmers. Commonly cultivated rice varieties were ASD 16, CO 55, CO 50, Savithri, ADT 53, ADT 56, CO 51, Amman, Sadana, ADT 45, NLR, ADT 55, ADT 57, ADT 58, TPS 5, TPS 3, ASD 16, Bharathi, RNR 15048, BPT 5204, Savithri, ADT 54, ADT 45, White Ponni, ADT 37, MPU 5, ASD 19 and others. Average yield among the HYVs were 6000-7000 kg/ha. Average seed rate was 60-75 kg/ha and treating the seeds before sowing was not very common among the farmers. Few treated the seeds with carbendazim and with bio-control agent, *Bacillus subtilis*. Some farmers applied FYM in the nursery and some applied chemical fertilizers like DAP in the nursery. In the main fields, fertilizers were applied @ 120-250 kg N/ha, 50-60 kg P2O5/ha, 50-60 kg K2O/ha and 10-20 kg ZnSO4/ha. Some applied FYM and green manure in the main fields. In general, intensity of weeds was low to medium. Hand weeding was common among the farmers. Some farmers also applied herbicides like Bentila (Bensulfuron Methyl 0.6% + Pretilachlor 6% GR), Council Activ (Triafamone 20% + Ethoxysulfuron 10% WG), Nominee Gold (bispyribac Sodium), Londax Power (Bensulfuron Methyl 0.6% + Pretilachlor 6% GR) and butachlor for management of weeds. Major needs of the farmers were better infrastructure in public procurement, better price of the produce, proper availability of agricultural labours and fertilizers, suitable varieties for DSR, HYVs with MS grain quality, biofortified and low GI and fertilizers and pest and disease resistant rice varieties. In general, the intensity of different pests and diseases was less. Major problem faced by the farmers were scarcity of labours and their high wages.

Telangana: The Rice Production-Oriented Survey (POS) for 2025–26 was conducted across 13 rice growing districts of Telangana twice during each crop season, first at the tillering to maximum tillering stage, and subsequently at the grain filling to maturity stage. Overall, 63 villages were surveyed during the *Vanakalam,* 2025 and *Yasangi,* 2025–26 seasons. Overall, the state received excess rainfall. In Telangana, rice is mostly cultivated under wells, tanks and canals in an area of around 67,30,408 acres against normal area of 62,47,868 acres during *kharif*, 2025, whereas 57,02,906 acres against normal area of 51,48,850 acres during *rabi*, 2024-25. Among various cropping systems, rice followed by rice was the most dominant practice across all surveyed districts. Other cropping systems observed included rice-fallow, green manure-rice-rice, rice-pulses, rice-zero tillage maize / sunflower, and rice-rice-vegetables, depending on water availability and other influencing factors. In Khammam district, rice – zero tillage maize was observed in the surveyed village during *rabi* season. The major varieties cultivated by farmers include BPT 5204, RNR 15048, KNM 1638, MTU 1010, KNM 118, Siddi, JGL 24423, MTU 1224, IR-64, RNR 28361, WGL 915, JGL 27356, DRR Dhan 75, KNM 12510, KNM 7715, MTU 1061 JGL 27356, Ankur 101, Pooja, Sriram Gold, Ankur Sona, Super Aman, Sowbhagya, Siri Sampada, Aman Gold, HMT Sona, RNR 21278, MTU 1271, and the local variety Ganga Kaveri. Several coarse rice varieties cultivated in the state include Kunaram Sannalu, MTU 1010, Jagtial Rice-1, WGL 1537, IR-64, Tellahamsa, Bathukamma, MTU 1061, MTU 1153, MTU 1156, 7029, and MTU 1001. Hybrids like Kaveri 272, Kaveri 175, Kaveri 468, VNR 22258, Rasi 113, Mahindra 303, 27P31, RX 100, and Bio 799 were cultivated in some districts mainly during Rabi season. The majority of the farmers in the surveyed districtsts are applying NPK in the form of complex fertilizers *viz.,* 12-32-16, 20-20-0-13, DAP, 10-26-26, 16-20-0-13, 17-17-17, 19-19-19, 28-28-0 ranging from 1 to 3 bags per acre as a basal dose. Majority of the farmers are applying the complex fertilizers (50-150 kg/acre) as basal followed by top dressing of Urea (150-200 kg/acre) in 2-3 split doses at tillering stage, booting and just before panicle initiation depending on duration of the varieties. In Telangana, direct-seeded rice methods such as drum seeding, dry DSR, and wet DSR under

puddled conditions are becoming increasingly popular during both *Kharif* and *Rabi* seasons. Among these, wet DSR under puddled conditions is the most widely practiced during the *Rabi* season. The predominant weed flora in rice fields includes *Echinochloa colona, Echinochloa crus-galli, Cynodon dactylon, Cyperus rotundus, Leersia hexandra, Panicum repens, Euphorbia* spp., and *Parthenium* spp. In Direct Seeded Rice (DSR), whether under drum seeding or wet direct seeding methods, weeds such as *Ischaemum rugosum* (locally known as Tonagi) and jungle rice are the major species commonly observed in farmers' fields. Majority of the farmers contacted applied herbicides for management of weeds. The survey findings revealed that major insect pests and diseases during *kharif,* 2025 included leaf folder, yellow stem borer (in the form of dead hearts and white ears), leaf and panicle mite, bacterial leaf blight (BLB), and grain discolouration. During *rabi*, 2025–26, the major problems identified were stem rot, leaf and neck blast, brown planthopper (BPH), and yellow stem borer (YSB). In addition to these biotic stresses, several abiotic stresses such as cold injury, sulphide toxicity, algal blooms, and salinity were also reported across different locations in the state. Analysis of district-wise POS data of Telgangana for *kharif,* 2025 revealed that, severe incidence of bacterial leaf blight in parts of Kamareddy and Nizamabad districts. Leaf mite incidence was particularly severe in Nalgonda district, especially in Jai Sree Ram-type varieties during September-October months. Most of the farmers adopted plant protection measures.

Uttar Pradesh: Production oriented survey of rice growing areas was conducted in five districts of eastern Uttar Pradesh when the crops were in booting to maturity stage in *Kharif* 2025. Though overall, climatic conditions were normal for rice cultivation, there were instances of excess rainfall in many places visited in Barabanki district. The most popular rice varieties were HYVs like BPT 5204, Swarna, Sarjoo 52, NDR 97, NDR 2064, NDR 2065, Sambha Mahsuri-Sub 1, Shahbhagi, NDR 359, MTU 7029, Swarna-Sub-1, IR 64-Sub 1, Damini, Malviya-153, Malviya-106, Dilkhush, Narendra Lalmati and others and hybrids Arize 6444 Gold, Kaveri Gold, 27P3727P63, 27P38, Gorakhnath-509 and Gorakhnath-510 among the farmers of Eastern U.P. The rice fields surveyed were under irrigated ecosystem. Main crop rotations followed by the farmers were rice-wheat (Main), rice-mustard, rice-pulses, rice-vegetables, rice-sugarcane, rice-pea, rice-wheat-black gram/green gram, rice-potato, rice-potato-pepper mint (mentha), rice-wheat-mentha, rice-mustard-green gram, rice-pea-green gram, rice-chick pea and rice-wheat-vegetables. Average rice yield among different HYVs ranged from 3500-4800 kg/ha while in case of hybrid varieties the yield ranged from 4800-6000 kg/ha. Average seed rate used by the farmers ranged from 28-35 kg/ha for HYVs while in case of hybrids it was 15 kg/ha. Seed treatment was not a common practice among the farmers. Majority of the farmers contacted applied FYM and chemical fertilizers in the nursery. In the main fields, fertilizers were applied @ 100-120 kg N/ha, 50-60 kg P_2O_5/ha and 40-50 kg K_2O/ha. Nitrogen and phosphorus fertilizers were applied by most of the farmers. However, comparatively less number of farmers contacted applied potassic fertilizers. All the farmers contacted told that they applied zinc sulphate (10-25 kg/ha) in the main field. Majority of the farmers contacted applied FYM (8-10 t/ha). Some farmers also added other green manures like dhaincha, urd bean and moong bean in the fields to improve the soil health and yield potential of the crop. Plant growth promoters *viz.,* Zyme (8-10 kg/acre), Biozyme and Microzyme are being used by some progressive farmers. Overall intensity of weeds was low to medium. Almost all the farmers contacted adopted herbicide application. In addition to herbicide application, all of them also adopted hand weeding for the management of weeds. Some of the common needs of the farmers were timely availability of quality seeds HYVs, improvement in farm mechanization including availability of solar pumps, timely availability of fertilizers and plant protection chemicals, availability of agricultural labours, Medium duration high yielding varieties with medium slender grain, improvement in marketing facilities and disease and pest

tolerant rice varieties. Overall, intensity of different biotic constraints was low to moderate. Zinc deficiency symptoms were observed in almost all the places visited. Some of the common problems were shortage of labours and their high wages, damage by stray animals, lack of mechanization, unavailability of quality seeds in time and micronutrient deficiency.

Uttarakhand: Production oriented survey was conducted in Udham Singh Nagar and Nainital districts of Uttarakhand which is a predominant rice growing area. The district Udham Singh Nagar falls under *Tarai* belt of the state. Weather conditions for rice cultivation in general were normal. Most of the farmers in the district were marginal or sub-marginal. Since, rice is the major crop in the kharif season; most of the fields (50-55%) were occupied with rice. Due to favourable weather conditions, there was nice crop stand, in almost all the areas surveyed. PR 113, PR 121, PR 126, PR 131, HKR 47, Pusa Basmati 1121, Pusa Basmati 1509, Pusa Basmati 1121, Pusa Basmati 1692 and Pant Sugandh Dhan 27 were the major varieties predominantly grown in this district. The farming system of Nainital district is comprised of 4 farming situations namely; Bhabar plain including foot hills, lower hills (rainfed and irrigated), mid hills (rainfed and irrigated) and high hills (rainfed). The general weather conditions for rice cultivation were normal. Most of the farmers were sub-marginal. Good crop stand was noticed in Bhabar compared to hilly areas. Pant Dhan 4, PR 113, US 312, NDR 359, Gulabo and HKR 47 were some of the varieties grown by the farmers in Bhabar region, whereas, US 312, PR 113, PR 126 and HKR 47 mainly grown in foot and lower hills in Kotabagh and Ramnagar blocks of Nainital district. Rice-wheat was the predominant cropping sequence. Other crops rotations followed by the farmers were rice-wheat-mustard, rice-mustard-potato, rice-pea-potato, rice-mustard-pea, rice-mustard and others. Average rice yield among the high yielding varieties in plain area ranged from 4000-5700 kg/ha. However, yield of basmati and aromatic short grain rice varieties was expected to be 20-25 q/ha. Entire area Udham Singh Nagar district is irrigated and most of the farmers followed recommended agronomic package of practices. However, in Nainital district, only Bhabar area is irrigated and farmers follow recommended agronomic package of practices. Planting was done between 1st week to 4th week of July. Average seed rate was 20-25 kg/ha and farmers adopted random planting where plant population per unit area was not maintained. About 40% farmers from both the districts told that they adopted seed treatment with carbendazim (2 g/kg of seeds) before sowing and another 30-40% farmers told that they purchased already treated seeds for sowing. In the main fields, farmers applied fertilizers @ 120 kg N/ha, 60 kg P_2O_5/ha and 40 kg K_2O/ha. Almost all the farmers contacted told that they applied zinc sulphate @ 25 kg/ha. Zn deficiency is a common problem in the district. Farmers in the district unanimously applied zinc sulphate @ 25 Kg/ha or sprayed the crop with 5 Kg zinc sulphate + 20 Kg urea/ha to manage Zinc deficiency/Khaira disease. Few farmers also applied bio-fertilizer named biozyme. Overall, intensity of weeds was low. Hand weeding was common practice for management of weeds. Among the biotic constraints, sheath blight, bacterial blight, stem borer, leaf folder and BPH were wide-spread. Bacterial blight was recorded in severe intensity in some places in US Nagar district. Most of the farmers adopted plant protection measures.

West Bengal-Bankura: Production oriented survey was conducted in Jhargram district of West Bengal involving 16 farmers from 5 villages. There were incidences of drought in some parts of the district. Popular rice varieties cultivated by the farmers in this region are Gaurav, MTU-1010, MTU-7029, BB-11, MTU 1153, Lalat, Indrani, Shankar and others. Common crop rotations followed by the farmers were rice-potato, rice-potato-sesame, rice-mustard-vegetables, rice-mustard, rice-vegetables-vegetables and rice-wheat. Most of the farmers told that they applied organic manure like FYM and chemical fertilizers both in nursery and in main fields. The intensity of common weeds was low to medium. Farmers followed either hand

weeding or both hand weeding and herbicide application. Some common needs of the farmers were availability of agricultural equipment on hire and availability of inputs in time. Most of the farmers expressed the scarcity of irrigation water. The biotic constraints like blast, neck blast, sheath blight, brown spot, stem borer, leaf folder and BPH were recorded in low to moderate intensities. Among the abiotic constraints, drought is the major problem in this area. Common problems faced by the farmers were shortage of labours, non-availability of agricultural equipment in time, crop damage by wild elephants and lack of irrigation facilities.

West Bengal-Chinsurah: Production oriented survey was conducted in six districts of this part of West Bengal when the most of the crops were in maturity stage. A total of 59 farmers from 19 villages in 6 districts were contacted during survey. The fields surveyed were either under irrigated ecosystem. In general, weather conditions were normal for rice cultivation. However, in Nadia, there were reports of prolonged dryness or drought like situation in about 50% places surveyed. On the other hand, there were reports of excess rainfall or flood like situation in many places in Murshidabad. Commonly cultivated rice varieties were HYVs or improved varieties like IET 4786 (Shatabdi), Pratikshya, Swarna (MTU 7029), Lalat, SS-1. BB-11, MTU 1075, Rajendra Mahsuri, IET 4094, Khitish, MTU 1156, Bidhan Suruchi, CR 1017, Gobindabhog, MTU 1153, Notia, MTU-1010, MTU 1156, CR 800, Ranjit, Ratna, Nilanja, Badshbhog, IR 36, IR 64, GB 1, GB 3, BB-11, Vijay, CSR 36, CSR 43, Santoshi, Jirakathi, Jai Shri Ram, Dhiren, Ranjit Sub-1, Ajit, Banskathi, Gitanjali, MTU 1001, Yamuna, Maharaj, Phalguni, Sagar, Meghna and Nona Swarna and hybrids like Mali 4, PAN 802, GMS 2264, Arize 6129, Arize 6444 Gold and othes. Some farmers also cultivated local varieties like Dudheswar, Kalma, Dadsal, Kanakchur, Harinkhuri, Kalonunia,, Karpur Kanti and others. Common crop rotations followed by the farmers were rice-rice, rice-rice-rice, rice-wheat-rice, rice-rice-jute, rice-rice-wheat-Jute, rice-fallow-jute, rice-potato/onion-rice, rice-mustard-rice, rice-mustard-Jute, rice-mustard-vegetables, rice-sesame-rice, rice-vegetables, rice-potato-sesame, rice-potato, rice-mustard, and others. Average rice yield among different HYVs and hybrids ranged from 4000-6000 kg/ha while in case of aromatic short grains the yield was 2250-3600 kg/ha. Average seed rate used by the farmers ranged from 30-75 kg/ha. On an average about 73% of the farmers contacted told that they adopted seed treatment. Majority of the farmers contacted applied both organic manure and chemical fertilizers in the nursery. In the main fields, fertilizers were applied @ 50-150 kg N/ha, 25-65 kg P_2O_5/ha and 12-80 kg K_2O/ha. Some farmers applied zinc sulphate in the main fields or sprayed 0.5 g $ZnSO_4$ + 10 g urea/l of water. Majority of the farmers contacted in different districts applied FYM (7-11 q/ha), mustard cake and vermicompost. Overall intensity of weeds was medium. Hand weeding was still common among the farmers. Some farmers applied herbicides in addition to hand weeding. Some of the common needs of the farmers were availability of combine harvesters on hire basis, availability of drones for pesticide application on hire basis, paddy weeder, timely availability of quality seeds of HYVs, improvement in irrigation facilities, availability of implements on hire basis, subsidy on price of pesticides and fertilizers, diseases and pest resistant rice varieties, improvement in marketing facility, availability of agricultural labours and availability of organic manure. Among the diseases, sheath blight was recorded in severe intensity in some areas in South 24-Pargana district. Rice tungro disease which was not recorded in past few years was observed in severe intensities (>50%) in many fields in Purba Bardhaman district on varieties like Swarna. ery high population of green leaf hoppers were recorded in those fields. BPH was severe in many areas in Hooghly and Purba Bardhaman districts. Moderate to severe incidence of Stem borer and BPH were recorded in some fields in South 24 Parganas district. Majority of the farmers contacted told that they applied different pesticides to manage the biotic stresses

Table 1: Production oriented survey, 2025-2026: Name of the state, districts surveyed, survey period and survey personnel

State/Region	District surveyed	Survey period	Survey Personnel
Andhra Pradesh	*West Godavari, Konaseema, Kakinada, East Godavari* and *Eluru*	Oct-Nov, 2025	**R.A.R.S (ANGRAU), Maruteru-534 122, Andhra Pradesh** Dr. V. Bhuvaneswari, Principal Scientist (Plant Path) Dr. M. Girija Rani, Principal Scientist (Rice), Dr. P. V. Ramesh Babu, Senior Scientist (Agronomy) Dr. Y. Suneetha, Senior Scientist (Plant Breeding) Dr. Ch. Sreenivas, Principal Scientist (Soil Science) Dr. V. Roja, Scientist (Biotech & Mol. Breeding) Dr. P. V. Ramana Rao, Principal Scientist (Pl Breed) Dr. A.D.V.L.P. Anand Kumar, Senior Scientist (Ento) Dr. N. Mallikharjuna Rao, PC, KVK, Undi Dr. Vinaya Lakshmi, KVK, Undi Dr. ASR Sharma, Coordinator, DAATTC, Peddapuram Dr. M. Nanda Kishore, Coordinator, DAATTC, Kakinada Dr. Ch. V. Narasimha Rao, Coordinator, DAATTC, Kakinada Dr. K. Phani Kumar, Coordinator, DAATTC, Eluru Dr. N. Nagendra Babu, Sci. (ToT), DAATTC, Eluru The staff of four DAATTCs, KVK, Undi ADAs, A.Os and Department Staff of five districts
Gujarat	*Ahmedabad, Kheda, Mahisagar, Anand, Vadodara, Panchmahals, Surat, Bharuch, Tapi, Dang, Navsari* and *Valsad*	Sept 18-20, 22, 30; Oct 6, 8-10; Nov 4; 2025	**Main Rice Research Station, AAU, Nawagam-387 540** Dr. Rakesh K Gangwar, Asso. Res Scientist (Pl Patho) Dr. D. G. Kachha, Asst Res Scientist (Agronomy) Dr. N. A. Patel, Asst Res Scientist (Plant Breeding) Dr. K. D. Shah, Asst Res Scientist (Entomology) Dr. S. G. Patel, Asst Res Scientist (Plant Breeding)
Haryana	*Kaithal, Kurukshetra, Karnal, Jind, Yamunanagar, Ambala, Panipat* and *Sonepat*	Kharif, 2025	**CCS HAU, Rice Research Station, Kaul 136 021** Dr Mahaveer Singh Bochalya, Plant Pathologist Dr. Sumit Saini, Entomologist Dr. Vishal Gandhi, Plant Pathologist Dr. Parvesh Kumar, Plant Pathologist Dr. Rakesh Kumar, Plant Breeder Dr. Amit Kumar, Agronomist Dr. Charan Singh, Soil Scientist Dr. Sukham Maddan, Plant Physiologist Dr. Lalitha Panwar, Entomologist
J & K	*Anantnag* and *Kulgam*	Sept 18, 23 Oct 3, 8	**Mountain Research Centre for Field Crops, Khudwani, SKUAST-K, Kulgam (J&K)-192102** Dr. Tasneem Mubarak, Professor, Agronomy Dr. F. A. Mohiddin, Professor, Pl. Pathology Dr. Bashir Ahmad Rather, Professor, Entomology
Karnataka-GGV	*Koppal, Raichur, Ballari, Yadgir* and *Vijayanagar*	Oct 5, 7-10, 14-15; Nov 8, 11, 18; 2025	**AICRP-Rice, Agricultural Research Station, Gangavathi- 583227 (UAS, Raichur)** Dr. Rathnamma, Scientist (Plant Pathology) Dr. Sujay hurali, Senior Scientist (Entomology) Dr. Shweta B. N, Senior Scientist (Agronomy
Karnataka-MND	*Mandya, Mysuru, Chamarajanagara, Hassan, Chikkamangalur, Kodagu, Davangere* and *Shivamogga*	Oct 14; Nov 12-13, 25-26; Dec 10, 15; 2025	**ZARS, VC Farm, Madya-571405, Karnataka** Dr. V. B. Sanath Kumar, Prof. Plant Pathology Dr. G. R. Denesh, Prof & Scheme Head, AICRPR, Rice Dr. M. S. Kitturmatt, Entomologist Dr. C. A. Deepak, Rice Breeder Dr. H. R. Savitha, Soil Scientist
Kerala-PTB	*Palakkad, Thrissur* and *Malappuram*	August 2025-	**Regional Agricultural Research Station, Pattambi-679306, Kerala** Dr. P.Raji, Professor (Plant Pathology)

State/Region	District surveyed	Survey period	Survey Personnel
		January 2026	Dr. Sumiya K V Associate Professor (Plant Pathology) Dr. Karthikeyan.K, Professor (Entomology), Dr. Moossa P.P, Professor (SSAC) Dr. Malini Nilamudeen, Asst. Professor (Entomology) Dr. Neetha Rose C D, Asst. Professor (Ag. Economics) Ms. Ramjitha P Asst. Prof (Pl. Biotech & Mol biology). Dr. Biji KR Asst. Professor. Plant Breeding &Genetics Ms. Faseela K V, Asst Professor, Pl Breeding & Genet Dr. Shahiba A M, Asst. Profesor. Pl Breeding & Genet Dr. Sumbula V, Asst. prof (Pl. Path) ARS Anakkayam Ms. Jyothy (Ph.D scholar, Plant Pathology) **Department of Agriculture** Mrs. Smitha Samuel, ADA Kollengode Mr. Basheer, AO, Peruvemu Ms. Dhanya, AO, Puthunagaram Ms. Srelekshmi, AO, Pattithara KB Mr. Ajish P G, BTM, Kuzhalmannam Mrs. Preetha Prabhakaran, Tech Manager, LEADS Mrs. Maanisha T B, Technology Manager, LEADS Mrs. Mariyath Kibithiyya, ADA, Thrithala Block Mrs. Bindu Technology Manager Leads, Thrithala Mrs.Jereena Banu K, Agriculture Assistant Mrs. Geetha Bai D, Agriculture Assistant, Melarcode Mrs. Greeshma K Agriculture Assistant, Melarcode Mrs. Sunitha K ATM Nenmara block Mrs. Sruthy P R, Agriculture Assist, Peringottukurishi Smt. Nisha Agriculture Assistant, Elamkulam KB Smt. Swega, Agriculture Officer, Arthat KB Mr. Vinayan, ADA Perumpadappu Ms. Lesitha, AA, Malappuram
Kerala-MNC	*Thiruvananthapuram, Alappuzha, Kottayam, Pathanamthitta, Ernakulam,* and *Kollam*	Kharif, 2025	**M. S. Swaminathan Rice Research Station (MSSRRS), Moncompu– 688 503, Alappuzha, Kerala** Dr. M Surendran, Prof (Plant Pathology) and Head Dr. Nimmy Jose, Prof (Agronomy) Dr. Biju Joseph, Prof (Soil Science & Agrl. Chemistry) Dr. Bini K., Assistant Prof (Plant Breeding & Genet) Dr. Jyothi Sara Jacob, Assistant Prof (Agrl. Ento) Dr. Sreeja, Assistant Prof (Plant Path), RRS, Vyttilla JDA, ADAs of Kerala Centre for Pest Management, Kalarcode, Alappuzha DDAs, ADAs and AOs of Thiruvananthapuram, Ernakulam, Alappuzha, Pattanamthitta and Kottayam districts
Maharashtra	*Thane, Palghar, Raigad, Ratnagiri* and *Sindhudurg*	Oct 6-10, 16-17; Nov 4; 2025	**RARS, KARJAT, Raigad, Maharashtra 410201** Dr. H. D. Pawar, Plant Pathologist Dr. V. V Sagvekar, Agronomist Dr. (Smt.) V. P. Sawant, Entomologist Dr. (Smt.) M. H. Keluskar, Jr. Physiologist Dr. M. P. Gawai, Jr. Rice Breeder
Odisha	*Bhadrak, Kalahandi, Kandhamal* and *Sambalpur*	Kharif, 2025	**ICAR-Central Rice Research Institute, Cuttack-753006** Dr. Arup K. Mukherjee, Principal Scientist, Plant Pathology
Puducherry	*Karaikal*	August 2025 to February 2026	**PJNCOA & RI, Karaikal – 609 603, UT of Puducherry** Dr. C. Jeyalakshmi, Professor & Head, Plant Pathology Dr. D. Shanmuga Priya, Asst. Prof, Plant Pathology Dr. V. Amsagowri, Asst. Prof, Agril. Entomology

State/Region	District surveyed	Survey period	Survey Personnel
			Dr. V. Sridevi, Asst. Prof, Agronomy Dr. V. Krishnan, Professor, Plant Breeding & Genetics
Punjab	*Ludhiana, Malerkotla, Jallandhar, Kapurthala, Patiala, Sangrur, Moga, Barnala, Ferozepur, Faridkot, Fatehgarh Sahib, Rupnagar, Muktsar, Bathinda, Mansa, SBS Nagar, Hoshiarpur, Gurdaspur, Tarn Taran* and *Amritsar*	Kharif, 2025	**Punjab Agricultural University, Ludhiana-141004** Dr. R. S. Gill, Principal Rice Breeder Dr. Jagjeet Singh Lore, Principal Plant Pathologist Dr. P. S. Sarao, Principal Entomologist Dr. Buta Singh Dhillon, Senior Agronomist Dr. Harpreet Singh, Plant Pathologist Dr. Rupinder Kaur, Principal Rice Breeder Dr. Renu Khanna, Senior Rice Breeder Dr. Navjot Sidhu, Senior Rice Breeder Dr. Gurpreet Kaur, Senior Agronomist Dr. Kamalpreet Singh, Plant Breeder
Tamil Nadu-ADU	*Ariyalur, Thanjavur, Nagappattinam, Mayiladuthurai, Thiruvarur, Tiruchirappalli, Perambalur, Pudukkottai, Villupuram, Thiruvannamalai, Chengalpattu, Thiruvallur, Cuddalore, Vellore, Ranipet, Thiruppathur and Kallakurichi*	Oct 13, 16; Nov 13, 14; Dec 16; 2025 Jan 21; 2026	**Tamil Nadu Rice Research Institute, Aduthurai - 612 101, Tamil Nadu** Dr. K. Rajappan, Professor (Plant Pathology) Dr. S. Elamathi, Associate Professor (Agronomy) Dr. P. Anandhi, Associate Professor (Entomology) Dr. M. Dhandapani, Associate Professor (PB&G) Dr. R. Pushpa, Assistant Professor (PB&G)
Tamil Nadu-CBE	*Coimbatore, Dindigul, Tiruppur, Madurai, Kannyakumari, Tirunelveli, Thiruvannamalai, Kallakurichi, Erode* and *Tenkasi*	Sep 9; Oct 17, 29-30; Nov 11; 2025 Jan 13; Feb 10-13; 2026	**TNAU, Coimbatore - 641 003. Tamil Nadu** Dr. C. Gopalakrishnan, Professor (Plant Pathology) Dr. S. Manonmani, Professor and Head Dr. K. Amudha, Professor (PB&G) Dr. M. Umadaevi, Associate Professor (PB&G) Dr. G. Senthil Kumar, Associate Professor (Agronomy) Dr. N. Sridharan, Associate Prof (Crop Physiology) Dr. S. Jeyarani, Professor (Entomology) Mr. Thirunavukkarasu, Assistant Agricultural Officer
Telangana	*Nalgonda, Rangareddy, Vikarabad, Yadadri Bhuvanagiri, Karimnagar, Kamareddy, Nizamabad, Peddapally, Rajanna Siricilla, Jagtial, Warangal, Medak* and *Khammam*		**Rice Research Unit, ARI, Rajendranagar, Hyderabad-30, Telangana** Dr. T. Kiran Babu, Scientist (Plant Pathology) Dr. I. Aruna Sri, Scientist (Ento.) Dr. Sridhar Siddi, Senior Scientist (G&PB) Dr. B. Laxmi Prasanna, Scientist (G&PB) Dr. M. Paraimala Kumar, Scientist (Agro.) Dr. I. Swarnalatha Devi, Prin Scientist (Rice) & Head Dr. Y. Chandramohan, Director, ARI, Rajendranagar Sri. Laxman, ARS, Nathanaipally Dr. Madan Mohan Reddy, TRVK, Karimnagar Sri. K. Vijay, KVK, Rudur Sri. M. Sai Charan, RS& RRS, Rudrur Dr. Ramya Rathod, RS& RRS, Rudrur Dr. E. Rajanikanth Dr B. Sathis hchandra Sri. Ramu, AEO, Chintakani Dr. T. Rajeswara Reddy Smt. Rushyendra Mani, MAO, Damaracharla Sri. A. Saidulu, AEO, Kondraprole cluster Sri. Naresh, AEO, Veerlapalem cluster, AD Pally

State/Region	District surveyed	Survey period	Survey Personnel
			Sri. Laxman, Scientist (Agro) & Head, ARS, Nathanaipally Dr. Ravi Kumar, SMS, KVK, Tuniki Mrs. Swapna, MAO, Koudipally Mrs. Madhuri, MAO, Papannapet Mr. Narendhar, AEO Mr. Suresh Reddy, MAO, Ellandakunta Sri. Ravinath, MAO, Yacharam Sri. Santhosh, AEO, Gungal Sri. Ramesh, AEO, Yacharam Dr. E. Rajanikanth**,** ARS, Karimnagar Sri. M. Suresh, MAO, Ellandakunta Smt. B. Lalitha, AEO, Potthur cluster Dr. T.Rajeswara Reddy, TRVK, Vikarabad
Uttar Pradesh	*Ayodhya, Ambedkar Nagar, Amethi, Sultanpur and Barabanki*	Sep 19-20, 26-27; Oct 3-4, 8, 17-18; Nov 7; 2025	**Crop Research Station, Masodha-224 133 (ANDUAT), Ayodhya, Uttar Pradesh** Prof. V. Prasad, Pathologist & Team Leader Prof. Saurabh Dixit, Rice Breeder Dr. Baudh Bharti, Assistant Breeder Dr. Manish Kumar Maurya, Assistant Plant Pathologist Dr. Sanjay Kumar, Assistant Agronomist Dr. Deepak Kumar Rawat, Assistant Physiologist Dept. of Agriculture, Govt. of U.P.
Uttarakhand	*Udham Singh Nagar* and *Nainital*	Sep 13, 20, 27; Oct 4, 18; Nov 8; 2025	**GBPUA&T, Pantnagar-263145, Uttarakhand** Dr. Bijendra Kumar, Professor, Plant Pathology Dr. A. K. Pandey, Professor, Entomology
West Bengal-BNK	*Jhargram*	Dec 4; 2025	**Rice Research Station, Bankura-722101, WB** Dr. Chandan K Bhunia, Plant Patholgist & JDA Dr. Rajib Das, Asst. Agronomist Mr. Manoranjan Jana, EB-V
West Bengal-CHN	*Nadia, Hooghly, Purba Bardhaman, Murshidabad, South 24 Parganas* and *North 24 Parganas*	Sep 9; Oct 10; Nov 11, 16, 28, 30-31; Dec 3; 2025	**Rice Research Station, Government of WB, Chinsurah712102** Dr. Dilip Patra, Plant Pathologist Dr Keya Banerjee, Asst Agronomist Dr. S. Hembram, Agronomist, RRS, Chinsurah Dr Suparna Gupta, Rice Physiologist Dr. Kaushik Majumdar, Jr. Soil Scientist Shri Sumit Murmu, Asst. Botanist Dr. Subodh Kundu, ADA, Plant Prot, Purba Bardhaman Dr. Praloy Ghosh, ADA (Admin), Katwa Sub-Division Sri Manik Bhattacharyya, ADA, Memari-I Block Sri Biresh Biswas (DDA-WM) MSD Sri Raja Saha (ADA-SM0, Berhampore Dr. Jayanta Roy (ADA-SM), Lalbagh Dr. Mithun Saha (ADA), Berhampre block Moumita Majumdar, ADA-MJ Block Mission Das, ADA (B. Gola-1) Block Amitava Chatterjee, AEO-O/O-DDA (Admin), MSD Mr. Suranjit Sarkar, ADA, Amdanga Block, North 24 Parganas Debabrata Pal, Additional DA (Information), North 24 Parganas Mr. Prasenjit Chakrabarty, KPS

Table 2: Widely prevalent rice varieties cultivated in surveyed districts of India during 2025-2026

State	Varieties
Andhra Pradesh	**HYVs:** MTU 7029 (Swarna), MTU Rice 1318, Sampadha Swarna, PLA 1100, Sadhana, PR 126, MTU 1224, MTU 1064, MTU 1262, MTU 1061, BPT 5204, RP Bio 226, RGL 2537, NP 9558, MTU 1310, MTU 1121, MTU 1282 and MTU 1156
Gujarat	**HYVs:** Gurjari, GAR 13, Mahisagar, GAR 14, GR 21, GAR 22, GNR 3, GNR 6, GR 4, GR 7, GR 11, GR 101, GR 17, GR 18, Sardar, Mahatma, Mahsuri, Jaya, Moti Gold, Surya Moti, Sonam, Sriram 301, Sri 101, Versha, Nath Poha, Krishna Kamod, Laxmi, Gangamani and Sriram 303; **Hybrids**: GRH 2, Arize 6444, Arize 6555 ST, Kaveri 468, Pioneer 121, US 312, Hyb 27P37, MC 13, 25P25, Ankur 7434, Hyb. 471, Kaberi 2333, Arize 6201, US 312, Hyb. 716, JK 208, Hyb.745, 786, Reshma, Gorakhnath and Suruchi 5629
Haryana	**HYVs**: PR 114, PR 126, PR 131, HKR 49, Sarbati, PR 128, HKR 17-422 and others; **Hybrids:** Sava 7501, Sava 134, Sava 127, Sava 7301, Harvir Agro 777, VNR 2111, Hybrid 7299, VNR 2222, Hyb. 90m100, Arize 6444, KRH 7299, Hyb. 359, KRH 468, Hyb. 372 and others; **Basmati**: Pusa Basmati 1509, Pusa Basmati 1, Pusa Basmati 1121, Pusa Basmati 1692, CSR 30, Pusa Basmati 1718, Pusa Basmati 1885, Pusa Basmati 1401, Pusa Basmati 1847, Pusa Basmati 1979, Pusa Basmati 1985, and others
J & K	**HYVs:** SR-I, SR-2, SR-3, SR-4, SR-5; **Local:** K-39, K-332, China-1039, China-1007 and Mushkbudji
Karnataka-Gangavathi	**HYVs:** RNR-15048, Gangavathi Sona (GGV-05-01), BPT-5204, Janani, BP-2, Sona Mashuri, KNM 1638, Kaveri Sona, SIRI-1253, Jyoti, IR64, Super BPT, Janani, Tellahamsa and others
Karnataka-Mandya	**HYVs:** Super Aman, MTU-1001, Omkar, IR-64, Meenakshi, Amogh, San Madhu, Jyothi, RNR-15048, Penna BPT, Sumangali, S 913, MTU-1010, GK Chethana, Aroha, Shreya, Tulasi, Ankur, Kurnool Sona, Chamumdi, BR-2655, Amulya JAI, Siri sumo, Tunga, KHP-10, KHP-11, KHP-13, BR 2655, KPR 1, Intan, JAYA, X4, Athira, Rajamudi, Ashmitha, Adithya, Amogh, Sri Ram Sona, BPT 5204, Kempumukthi, Abhilash,Uma, Siri Theja and Krishna; **Hybrids:** MC13, PAC 837, VNR 2233, Kaveri prize, KRH 7344, DRH 8336, VNR Bheem 115, , RRX 3200 (Raasi Seeds), Advanta- PAC837, Sahyadri and INDAM 200-017
Kerala-Pattambi	**HYVs**: Uma, Jyothi, and Ponmani, Kanchana, ASD, Sreyas, Aishwarya, Karuna, Harsha, Varsha, Akshaya and Supriya
Kerala-Moncmopu	**HYVs**: Uma (MO-16), Jyothi, Pournami (MO23), Prathyasha, Manuratna and others; **Pokkali verities**: like Pokkali, Choottu Pokkali, Chettivirippu, Cheruvirippu, Kuruka, Anakodan, Eravapandy, Bali, Orpandy and others in Ernakulum district
Maharashtra	**HYVs:** Karjat-3, MTU 1010, Jaya, Rupali (Ankur), YSR, Spriha 911, Shubhangi, Daptari 1008, Daptari 100, Daptari 250, Om Sree Ram-125, Daptari 125, Devaki, Jordar, Shabri, Wada Kolam, RTN-8, Warai, Kajart-8, Gujrath-11, Shree-101, Asmita, Jyotika, Avni, Poonam, Sundar, Karjat-6, Suma, Silk 277, Saguna, Sindhu, Komal 101, MTU-7029, Sampada, Prassanna, Punam Gold, Akshad, Mahuli, Mahalakshmi, Samrudhi, Ratnagiri 5, Karjat-184, Suraj, Pooja, MPR-404, Durga, Sonal, Safari-Jaya, Karjat-6, Mahuli, Suvarna, VIP, Shree-1008, Sarthi, Leader Power, Gangotri, Gajani, Amogh, VIP 125, MD 2001, MD 3001, Ratnagiri 1, Ratnagiri 6, Karjat-9, Vedh Jaya, Nathpoha, Elito, Chintu, Janaki and Suprim Sona; **Hybrids:** Arize 6444, Gorakhnath, Loknath, Upaj, Arize-6129, NPH-30, Paturu 3434, VNR 2245, Raja, Rasi 113, NP-125, Kaveri 3434, Kaveri-9090, KPH 468, Ankur-6077, KPH-468, Champion, Sahyadri, Sahyadri 2, Ankur -13555, Ankur-788, TATA-748, Rasi-336 and Ankur-7576
Odisha	**HYVs:** Puja, Swarna, Jamuna, Lakshmi Gold, Konark, MTU 1001, Rani Dhan and Lalat and others; **Local**: Kalachampa

State	Varieties
Puducherry	**HYVs:** ADT36, ADT 38, ADT 39, ADT 43, ADT 45, ADT 46, ADT 51, CO-51, BPT 5204, CR 1009 (Ponmani), Improved White Ponni, IR 20, KKL (R) 2, Poongar, Karupu Kavuni, KKLR 2, Seeraga Samba, ADT 54, TKM 9 and TKM 13
Punjab	**HYVs:** PR 110, PR 131, Pusa 44, PR 126, PR 132, PR 130, PR 131, PR 128, PR 114, CR 212, CR 321, Supreme 110, Peeli Pusa and others; **Basmati:** Pusa Basmati 1718, Pusa Basmati 1509, Pusa Basmati 1847, Pusa Basmati 1121, Pusa Basmati 1401, Pusa Basmati 1885, Pusa Basmati 1718, Pusa Basmati 1692, and others; **Hybrids:** Sava 7501 and pvt hybrids
Tamil Nadu-Aduthurai	**HYVs:** ADT 36, ADT 43, ADT (R) 45, TKM 13, CR 1009, CR 1009 Sub 1, ADT 38, ADT 39, ADT (R) 46, ADT (R) 49, ADT 51, Annapoorani, Jaiganesh, Amman, Mahindra-404, CO 43, CO 51, NLR 34449, CO 51, Improved White Ponni, CR 1009 and BPT 5204
Tamil Nadu-Coimbatore	**HYVs:** ASD 16, CO 55, CO 50, Savithri, ADT 53, ADT 56, CO 51, Amman, Sadana, ADT 45, NLR, ADT 55, ADT 57, ADT 58, TPS 5, TPS 3, ASD 16, Bharathi, RNR 15048, BPT 5204, Savithri, ADT 54, ADT 45, White Ponni, ADT 37, MPU 5, ASD 19 and others
Telangana	**HYVs:** BPT 5204, RNR 15048, KNM 1638, MTU 1010, KNM 118, Siddi, JGL 24423, MTU 1224, IR-64, RNR 28361, WGL 915, JGL 27356, DRR Dhan 75, KNM 12510, KNM 7715, and MTU 1061 JGL 27356, Ankur 101, Pooja, Sriram Gold, Ankur Sona, Super Aman, Sowbhagya, Siri Sampada, and Aman Gold, HMT Sona, RNR 21278, MTU 1271, Ganga Kaveri, Mahindra Sowbhagya, Kunaram Sannalu, MTU 1010, Jagtial Rice-1, WGL 1537, IR-64, Tellahamsa, Bathukamma, MTU 1061, MTU 1153, MTU 1156, 7029 and MTU 1001; **Hybrids:** Kaveri 272, Kaveri 175, Kaveri 468, VNR 22258, Rasi 113, Mahindra 303, 27P31, RX 100, and Bio 799
Uttar Pradesh	**HYVs:** BPT 5204, Swarna, Sarjoo 52, NDR 97, NDR 2064, NDR 2065, Sambha Mahsuri-Sub 1, Shahbhagi, NDR 359, MTU 7029, Swarna-Sub-1, IR 64-Sub 1, Damini, Malviya-153, Malviya-106, Dilkhush, Narendra Lalmati and others; **Hybrids:** Arize 6444 Gold, Kaveri Gold, 27P3727P63, 27P38, Gorakhnath-509 and Gorakhnath-510
Uttarakhand	**HYVs:** PR 113, PR 121, PR 126, PR 131, HKR 47, Pusa Basmati 1121, Pusa Basmati 1509, Pusa Basmati 1121, Pusa Basmati 1692 and Pant Sugandh Dhan 27
West Bengal-Bankura	**HYVs**: Gaurav, MTU-1010, MTU-7029, BB-11, MTU 1153, Lalat, Indrani, Shankar and others
West Bengal-Chinsurah	**HYVs:** IET 4786 (Shatabdi), Pratikshya, Swarna (MTU 7029), Lalat, SS-1. BB-11, MTU 1075, Rajendra Mahsuri, IET 4094, Khitish, MTU 1156, Bidhan Suruchi, CR 1017, Gobindabhog, MTU 1153, Notia, MTU-1010, MTU 1156, CR 800, Ranjit, Ratna, Nilanja, Badshbhog, IR 36, IR 64, GB 1, GB 3, BB-11, Vijay, CSR 36, CSR 43, Santoshi, Jirakathi, Jai Shri Ram, Dhiren, Ranjit Sub-1, Ajit, Banskathi, Gitanjali, MTU 1001, Yamuna, Maharaj, Phalguni, Sagar, Meghna and Nona Swarna; **Hybrids:** Mali 4, PAN 802, GMS 2264, Arize 6129, Arize 6444 Gold and others; **Locals**: Dudheswar, Kalma, Dadsal, Kanakchur, Harinkhuri, Kalonunia,, Karpur Kanti and others.

Table 3: Biotic constraints (diseases) in different states of India during 2025

Sates	Bl	NBl	BS	ShBl	ShR	FS	GD	BAK	LS	NBLS	BLB	SRBSDV	RTD
Andhra Pradesh		L		L	L	L-M	L-M				L-M		
Gujarat	L-M	L-M		L-M	L-M	L-M	L-M				M		
Haryana	L-M	L		L-M	L-M	L-M	L	L-M			L-M		
J & K	L-S	M	M-S	M	L-M		M	M					
Karnataka-GGV	L	L	L	M	L	L-M	L				M-S		
Karnataka-MND	L	L-M	L	L-M	L-M	L-M				L			
Kerala-PTB	L-M		L-M	L-M		L-M					S		
Kerala-MNC	L		M	M-S			M				S		
Maharashtra	L-M		L-M	L-M	L-M	L-M	M				M		
Odisha	L-M	L	M	M	L	L			L		M		L
Puducherry	M		M-S		M	L	M				M-S		
Punjab		L	L-M	M	T	L-S		L			T-L	L-M	
Tamil Nadu-ADU	L		L	L		L	L				L		
Tamil Nadu-CBE	L	L	L	L	L	L					L		
Telangana		M	M	L-M		L	L-M				L-S		
Uttar Pradesh			M	L-M	L-M	L					L-M		
Uttarakhand	L-M		L-M	L-M	L	L-M	L	L			M		
West Bengal-BNK	L-M	L-M	L-M	L-M									
West Bengal-CHN	L-M	L-M	L-M	M	L-M	L					L-M		L-M

Low intensity of khaira disease (zinc deficiency symptoms) in parts of Uttarakhand

Bl: Blast, **NBl**: Neck Blast, **BS**: Brown spot, **ShBl**: Sheath blight, **ShR**: Sheath rot, **FS**: False smut, **GD**: Glume discoloration, **LS**: Leaf scald, **StR**: Stem rot, **NBLS**: Narrow brown leaf spot, **BAK**: Bakanae, **KSm**: Kernel Smut, **LSm**: Leaf Smut, **CR**: Crown Rot, **BLB**: Bacterial leaf blight, **BLS**: Bacterial leaf streak, **RTD**: Rice tungro disease; L: Low; M: Moderate; S: Severe.

Table 4: Biotic constraints (insect pests) in different states of India during 2025

Sates	SB	LF	BPH	WBPH	GLH	GM	RH	WM	GH	CW	GB/RB	LM/ PM	RT	AW	Rats
Andhra Pradesh	L-M	L	L			L						L			L-M
Gujarat	L-M	L-M	L-M	L-M		L					L-M				
Haryana	T-M	L	L	L					T						
J & K	M	L-M			M				M						
Karnataka-GGV	M	L-M	M	L	L	M	L	L		L					
Karnataka-MND	L-M	L-M	L-M		L						L-M				
Kerala-PTB	S	S	L-M							L	M				
Kerala-MNC	M-S	M-S	M-S		L-M	L						L	L-M		
Maharashtra	L-M	L								L-M	L			L	L
Odisha	M	L	M	L	M-S	L-M			L-M		L				
Puducherry	M	L	L						L			L			L
Punjab	L	T-L	L	T-L		T									
Tamil Nadu-ADU	L	L	L			L							L		
Tamil Nadu-CBE	L	L	L		L		L	L		L					
Telangana	L-M	L-M	L-M			M	L	L				L			
Uttar Pradesh	T-M	L-M			L						L				
Uttarakhand	M	L-M	L-M	L-M			L				L				
West Bengal-BNK	L-M	L-M	L-M												
West Bengal-CHN	M	L-M	M-S		M	L-M					L				

- **Low incidence of crabs in Maharshatra; Low incidence of earhead bugs in parts of Tamil Nadu:**
- **SB**: Stem Borer, **LF**: Leaf Folder, **BPH**: Brown Plant Hopper, **WBPH**: White Backed Plant Hopper, **GLH**: Green Leaf Hopper, **GM**: Gall Midge, **RH:** Rice Hispa, **WM:** Whorl Maggot, **GH**: Grass Hopper, **CW**: Case Worm, **GB/RB**: Gundhi Bug/Rice Bug, **PM**: Panicle Mite, **MT**: Mite, **RT:** Rice Thrips, **RB**: Rice Bug, **AW**: Army Worm, **SC**: Swarming caterpillar, **Term**: Termites; **EHB**: Ear head bugs; **MB**: Mealy Bug, **WTN**: White Tip Nematode, **LM**: Leaf Miner; **BB**: Blue beetles: **T**: Traces, **L**: Low, **M**: Moderate, **S**: Severe.

INTRODUCTION

The primary aim of Production oriented survey (POS) is to collect information on various aspects of rice cultivation *viz*., general weather and crop conditions, varieties cultivated in a particular region and yield range, extent of use of organic manure and inorganic fertilizer, different inputs and their availability, different biotic and abiotic problems and their management in different states. The survey assesses the needs and problems of the farmers and determines their degree of knowledge and perceptions of crop management problems. POS gives information about the various constraints faced by the farmers in dealing with the problems. The survey also provides information on various indigenous technical knowledge of the farmers regarding rice cultivation. These surveys can help to identify the gaps in knowledge that need to be addressed by research and extension. The main objectives of the survey are:

- To undertake extensive periodical survey in rice growing areas of the country, and to study the practices and constraints in rice cultivation.
- To suggest suitable remedial measures on the spot to solve the farmers' problems, if any.
- To minimize input costs and suggest methods to avoid any wasteful practices.

Survey team included scientists from co-operating centres of All India Co-ordinated Research Project on Rice of the ICAR-Indian Institute of Rice Research and the agricultural and extension officials of respective State Departments of Agriculture. The report contains the names of districts and subunits covered during survey and also the period of survey. Further, it describes the particulars of rice areas, popular varieties under cultivation, and crop production and management technologies adopted in respective regions. In addition, information on different biotic and abiotic production constraints prevalent in different rice growing states during the crop season and usage of plant protection chemicals are also described.

Andhra Pradesh-2025-2026 (Maruteru)

Districts surveyed: *West Godavari, Konaseema, Kakinada, East Godavari* and *Eluru*

Particulars of survey

Districts	Mandal Name
West Godavari	Penumantra, Pentapadu, Undi, Bhimavaram and Akiveedu
Kakinada	Kakinada Rural, Peddapuram, Pithapuram, Samalkota, Gollaprolu, Prattipadu and Jaggampeta
Konaseema	Alamuru, Mandapeta, Atreyapuram, Rayavaram, Kothapeta and Ravulapalem

Varieties grown in Godavari zone of Andhra Pradesh (*Kharif,* 2025)

Varieties
HYVs: MTU 7029 (Swarna), MTU Rice 1318, Sampadha Swarna, PLA 1100, Sadhana, PR 126, MTU 1224, MTU 1064, MTU 1262, MTU 1061, BPT 5204, RP Bio 226, RGL 2537, NP 9558, MTU 1310, MTU 1121, MTU 1282 and MTU 1156

Production Oriented Survey (POS) -2025 was conducted in the West Godavari district on 18.10.2025 and in the Konaseema and Kakinada districts of Godavari Zone of Andhra Pradesh on 21.11.2025 during *Kharif*, 2025. The team of Scientists from RARS, Maruteru, DAATTC Scientists and KVK, Undi and Department Officials had participated in the survey. The mega variety Swarna occupied major area in Ambedkar Konaseema, Kakinada and East Godavari districts. MTU 1318 was cultivated in large extent in two districts i.e., West Godavari and Eluru districts. Seasonal conditions were found favourable for paddy cultivation at initial stages. Direct seeding was followed in Kakinada district during *kharif* season. Direct seeding area was increasing in Kakinada and Konaseema during Rabi season. Heavy rains caused problems during August month of 2025. Among the biotic constraints, bacterial leaf blight disease problem was observed in many areas. BPH, Stem borer, leaf folder was in low level during the season. Rodent problem is moderate in season in many locations surveyed.

A. GENERAL INFORMATION

A1: Seasonal conditions

Timely onset of monsoon has been recorded. Sufficient good rainfall was recorded in the entire five districts. The crop growth was good at initial stages up to 25-30 DAT. Initial kresek phase of BLB was observed at some places in 1318, Sampada Swarna, PLA 1100 and BPT 5204 varieties. During August month heavy rainfall at many places caused crop inundation and farmers forced to re-transplant the crop at few places. '**Montha Cyclone**' caused problem during October ending to November first week. The MTU 1318 variety was harvested during November to December 1st F.N to 2nd F.N in West Godavari district.

Table 1: Rainfall pattern in the Godavari Zone of Andhra Pradesh (2025-26)

Month	Kakinada District			Konaseema District			West Godavari District		
	Normal (mm)	Actual (mm)	% Deviation	Normal (mm)	Actual (mm)	% Deviation	Normal (mm)	Actual (mm)	% Deviation
June, 2025	112.8	114.2	1.2	111.4	108.3	-2.8	125.5	110.4	-12.03
July, 2025	198.0	127.4	-35.7	241.0	150.0	-37.75	245.6	106.7	-56.6
Aug, 2025	179.9	200.9	11.7	229.7	200.9	-12.53	250.23	198	-21
Sept, 2025	179.5	91.4	-49.1	196.8	112.4	-42.91	169	186	9.2
Oct, 2025	201.3	292.6	45.4	248.15	391.42	57.75	201.4	291.4	30.88
Nov, 2025	90.2	3.3	-96.4	108.97	5.91	-94.58	29.5	92.5	68.1
Dec, 2025	7.1	16.6	57.22	18.97	36.7	93.46	15.9	16.6	4.21
Jan, 2026				7.78	0.0	-100	9.8	0	-100
Totql	968.7	846.4	-12.6	1162.8	1005.6	-13.51	1046.93	1001.6	-77.24

Table 1a: Rainfall pattern in the Godavari Zone of Andhra Pradesh (2025-26)

Month	East Godavari District			Eluru District		
	Normal (mm)	Actual (mm)	% deviation	Normal (mm)	Actual (mm)	% Deviation
June, 2025	117.0	140.3	19.9	111.9	182.1	+62.7
July, 2025	247.1	144.0	-41.7	242.1	187.9	-22.4
August, 2025	238.6	208.3	-12.7	239.4	237.0	-1.0
September, 2025	173.2	107.5	-38.0	172.5	197.9	+14.7
October, 2025	169.1	172.7	2.1	129.8	263.9	+103.3
November, 2025	56.8	7.5	-86.8	36.1	4.7	-87.0
December, 2025	6.7	9.4	40.3	7.64	6.43	-15.8
January, 2026	9.6	0.2	-98.0	9.64	0.0	-100.0
Total	1018.1	789.9	-22.4	949.0	1079.9	+13.8

A2: Crop coverage

The Konaseema, East Godavari and Kakinada in Godavari Zone of Andhra Pradesh have taken up good crop coverage. Proportionate decrease in paddy area was highest in Eluru district (86.4%) followed by West Godavari district (92.23%) and Kakinada (92.7%). Decrease in these districts could be attributed to conversion to real estate and aqua culture, etc. In other districts, viz., Konaseema and East Godavari paddy was cultivated to the tune of 100.30% and 99.5% of the normal area.

Table 2a: Total cultivated area, area under rice particulars in Godavari Zone (*Kharif* 2025)

District	Total Cultivated Area (ha)			Area under Rice (ha)		
	Normal	Actual (2025)	% Area Covered	Normal	Actual (2025)	% Area Covered
Kakinada	94,491	86,080	91.1	89,984	83,449	92.7
Konaseema	66,798	66,958	100.30	66,754	66,958	100.30
West Godavari	92,287	85,410	92.55	92,169	85,010	92.23
Eluru	99,498	84,477	84.9	89,983	77,736	86.4
East Godavari	80,917	78,559	97.08	76,941	76,573	99.5

Table 2b: Total cultivated area, area under rice particulars in Godavari Zone (*Rabi,* 2025)

District	Total Cultivated Area (ha)			Area under Rice (ha)		
	Normal	Actual (2025)	% Area Covered	Normal	Actual (2025)	% Area Covered
Konaseema	74,542	68,170	91.45	73,499	66,800	90.88
Eluru	96,562	72,011	74.6	39,080	26,582	68.02
East Godavari	78,498	66, 776	85.0	61,326	53,646	87.0

Table 2c: Crop Coverage in different district of Godavari Zone (*Kharif* 2025)

***West Godavari District* (*Kharif* 2025)**

S. No	Crop	Normal Area (ha)	Actual Area (ha)
1	Paddy	92,169	85,010 (92.33%)
1a	Wet DSR		66
1b	Machine Planting		250
2	Green gram	1	0
3	Black gram	20	400
4	Sugarcane	96	0
5	Groundnut	1	0
Total		**92,287**	**85,410**

***Ambedkar Konaseema District* (*Kharif* 2025)**

S. No	Crop	Normal Area (ha)	Actual Area (ha)	% coverage
1	Paddy (Transplanted)	66,754	66,958	100.30
2	Maize	3	0	0
3	Redgram	41	0	0
4	Sugarcane	1	0	0
Total		**66,798**	**66,958**	**100.30**

***Kakinada District* (*Kharif* 2025)**

S. No.	Crop	Normal Area (ha)	Actual Area (ha)	% coverage
1	Paddy	89,984	83,449	92.7
2	Maize	232	260	112
3	Cotton	2322	1515.2	65.3
4	Sugarcane	836	302.9	36.2
5	Greengram	9	0	0
6	Blackgram	1022	430	42.1
7	Redgram	33	14	42.4
8	Sesamum	83	0	0
9	Groundnut	6	0	0
10	Ragi	62	109	175.8
Total		**94,491**	**86,080**	**91.1**

***East Godavari District* (*Kharif* 2025)**

S. No.	Crop	Normal Area (ha)	Actual Area (ha)	% coverage
1	Paddy	76,941	76,573	99.5
2	Maize	85	11.31	12.94
3	Redgram	12	4	33.30
4	Greengram	9	10	111.11
5	Blackgram	2,555	1,439	56.32
6	Groundnut	247	213	86.23
7	Cotton	180	11	6.11
8	Sugarcane	883	298	33.75
Total		**80,917**	**78,559**	**97.08**

***Eluru District* (*Kharif* 2025)**

S. No	Crop	Normal Area (ha)	Actual Area (ha)	% coverage
1	Rice	89,983	77,736	86.4
2	Jowar	11	0	0.0
3	Maize	637	152	23.9
4	Green gram	56	93.1	166.3
5	Blackgram	2,516	2,471	98.2
6	RedGram	20	8.2	41.0
7	Horsegram	16	13	81.3
8	Groundnut	1,140	1,101	96.6
9	Sugarcane	1,342	154	11.5
10	Cotton	3,769	2,719	72.1
11	Sesamum	3	4	133.3
12	Others	19	14	73.7
Total		**99,498.0**	**84.477.0**	**84.9**

Table 2d: Crop Coverage in different district of Godavari Zone (*Rabi* 2025)

***Ambedkar Konaseema District* (*Rabi* 2025)**

Crop	Normal Area (ha)	Actual Area (ha)	% Coverage
Paddy	73,499	66,800	90.88
Transplanted	-	22,444	33.25
Wet Direct Sown	-	44,356	60.35
Maize (Lanka lands)	1,043	1,370	131.35
Total Area	**74,542**	**68,170**	**91.45**

***Kakinada District* (*Rabi* 2025)**

S. No	Crop	Normal Area (ha)	Actual Area (ha)
1	Paddy	71,113	21,295

***East Godavari District* (*Rabi* 2025)**

S. No.	Crop	Normal Area (ha)	Actual Area (ha) Rabi, 2026	% Coverage
1	Paddy	61,326	53,646	87.0
2	Jowar	305	35	11.0
3	Maize	8,646	7,038	81.0
4	Blackgram	771	100	13.0
5	Bengalgram	806	264	33.0
6	Groundnut	241	49	20.0
7	Gingelly	224	46	20.0
8	Sunflower	187	33	18.0
9	Sugarcane	402	40	9.95
10	Tobacco	5,544	5544	100.0
Total		**78,498**	**66,776**	**85.0**

***Eluru District* (*Rabi* 2025)**

S. No.	Crop	Normal Area (ha)	Actual Area (ha)	% coverage
1	Paddy	39,080	26,582	68.02
2	Jowar	49	0	0.0
4	Maize	30,723	20,895	68.0
5	Redgram	8	0	0.0
6	Greengram	6,048	6,139	101.5
7	Blackgram	9,730	9,343	96.0
8	Horsegram	34	8	23.5
9	Cowgram	3	0	0.0
10	Groundnut	1,174	630	53.66
11	Sesamum	27	0	0.0
12	Sunflower	93	0	0.0
13	Niger seed	1	0	0.0
14	Rape & Mustard	9	0	0.0
15	Tobacco	9,583	8,413	87.8
	Total	**96,562**	**72,011**	**74.6**

A3: Varietal Spread

Swarna (MTU 7029) is a widely grown variety followed by MTU 1318, PLA 1100, Sampadha Swarna and other varieties in 3 districts and MTU 1318 was the leading variety in West Godavari district. MTU 1121 is the major variety during rabi season. In West Godavari district, during Kharif season, the widely cultivated varieties were MTU 1318 followed by Sampada Swarna, Swarna (MTU 7029), PLA 1100 and PR -126 were the preferred varieties in West Godavari district. PR-126 is grown in Tadepalligudem area, the area reduced comparatively than previous year. In Konaseema district, Swarna (MTU 7029) is a widely preferred variety followed by MTU 1318, NP 9558 and MTU 1064 were the preferred varieties in Konaseema district during the *Kharif* 2025 season. MTU 3626, MTU 1121 were the leading varieties during *rabi* season. In Kakinada district, Swarna (MTU 7029) is the leading variety in Kakinada district followed by Sadhana, MTU Rice 1318, Sampada, RGL 2537, MTU 1064, BPT 5204 were the preferred varieties in Kakinada district. In East Godavari district, Swarna (MTU 7029)

is a widely grown variety followed by PLA 1100, MTU 1318, Sampada swarna, BPT-5204, MTU 1064, RP Bio-226, PR 126 were the most preferred varieties in East Godavari district during *Kharif* season. In Eluru district, MTU 1318 occupied the major area (31.7%) followed by Sampada Swarna (18.9%), PLA 1100 (16.5%), Swarna (16.2%), MTU 1224, MTU 1064, MTU 1262, MTU 1061, PR 126 were the most preferred varieties in Eluru district during *Kharif* season.

Table 3: Variety wise area coverage (ha) in different surveyed districts of Andhra Pradesh in *Kharif* and *Rabi* seasons of 2025

Variety	Districts					
	W. Godavari (*Kharif*)	Konaseema (*Kharif*)	Kakinada (*Kharif*)	E. Godavari (*Kharif*)	Eluru (*Kharif*)	Konaseema (*Rabi*)
MTU 1318	38,386	19,418	10,677	12,475	24,621	
MTU 7029	16,954	43,522	33,694	26,161	12,043	
PR 126	2,018			1,111	2,176	3,348
PLA 1100	5,874			16,446	12,797	
Sampada Swarna	20,788		9,379	9,424	14,690	
NP 9558		3348				
MTU 1064		201	3,022	1,923	3,295	
MTU 1262			139		2,788	
BPT 5204			2,373	3,975	699	
RGL 2537			7,713			
Sadhana			19,013			
RP Bio 226				1,618		
MTU 1224				119	4,288	
MTU 1282				247		
MTU 1061					2,356	
MTU 1001					591	
MTU 1140					133	
MTU 1310					46	
MTU 1121					23	28,743
MTU 3626						30,881
MC 13						4,222
Others		471	1294	465	2104	471
Total	84,020		87304	73,951	77736	

A4: Crop condition

Timely South West monsoon and release of canal water during season resulted in timely transplanting during second fortnight of June to 2nd Fortnight of July. Untimely heavy rain fall during August 2025 resulted in crop inundation in West Godavari, Konaseema and Eluru districts at early day's leads to second time transplanting in these districts. Weather was favourable for crop growth up to October 25Th. But '**Montha Cyclone**' occurred at October ending resulted in crop damage in many places. Kresek phase of BLB was observed during initial stages of crop growth in West Godavari, East Godavari and Konaseema districts of Andhra Pradesh. Low incidence of BLB was observed at initial stages. Low incidence of sheath blight was occurred. After 'Montha Cyclone' the Low to moderate incidence of BLB, false smut, grain discoloration, chaffy grains was recorded in MTU 1318 and PLA 1100 varieties. Sheath rot incidence was low in many districts. The 50% area harvestings were completed by October first fortnight. The early harvested crop resulted in normal yields. The left over crop was harvested during November to December months, reduction in yield was observed due to

Montha Cyclone. Yield in the range of 28-32 bags/acre (75 kg bags) were recorded during this period in the season.

A5: Cropping pattern

In the West Godavari district of Andhra Pradesh, rice-rice is the predominant cropping pattern in majority of the locations. Rice-pulse-Rice in Tadepalligudem and upland mandals of Eluru, Rice-Maize cropping system was also prevalent in Kakinada and East Godavari districts. As like previous years the workers from Bihar for transplanting operations and scarcity of bengal planters was also observed at few places. Preference for mechanization (combined harvester) is a common practice in rice in many locations.

A6: Rice Consumption Pattern

The income status of the farmers was observed as medium to poor in most of the areas. Swarna, PLA 1100, Sona mahsuri, BPT 5204 varieties were used for consumption purpose in the surveyed area. Polished rice, coarse grain was also used for consumption purpose as the PDS system is providing fine grain varieties also. Low to medium sections of farmers preferred rice, chapathi pattern also, wheat consumption also increased due to diabetic factor. Brown rice was also preferred by few members. Rice + wheat also preferred in Kakinada and East Godavari areas. A range of 12-15 kg rice is consumed per month for a family size of 4-6 members.

A7: Crop establishment methods

Transplantation was found to be the preferred method of crop establishment in rice. Direct seeding was also practiced in Kakinada, East Godavari and Eluru districts. Migrant workers from Bengal, Chhattisgarh contributed to transplantation during *kharif* season. Bengal planting was the most preferred method in Godavari Zone, commonly called as Bengal transplantation was still as one of the option for transplanting. Wide planting with a spacing of 30 cm or above contributing to more tillers/hill.

B. CROP MANAGEMENT

B1: Seed rate and Seed treatment

Most of the farmers purchased seed from local dealers/farmers only. Average seed rate adopted by farmers is in the range of 8-11 kg/acre from the locations surveyed. Few farmers used 15-20 kg/acre also. However, for Bengal mode of planting, seed rate of 8-10 kg/acre was used. For Direct seeding conditions 8-12/14 kg seed rate is used for wet direct seeding conditions. Many of the farmers preferred to soaking, incubation and broadcasting seed in nursery only. Seed treatment was not followed generally kharif season. Only few farmers under survey have adopted seed treatment with carbendazim @ 1.0 g/kg seed during rabi season. Few farmers incorporated FYM to field. Farmers invariably would undertake nitric acid seed treatment during *rab*i season, for seed procured from previous season crop.

B2: Transplanting

Seedlings with an age of 15-20 days were transplanted in most of the locations in Godavari Zone. Bengal Planters preferred 15-18 days old seedlings for transplanting. Random transplantation with spacing of 30 cm or above was the most common practice in the Zone. However, migrant labour maintained alley ways during transplanting by using ropes.

B3: Plant Population

In the system of planting done by Bengal Planters, population per square meter ranged from 11 to 17 in Bengal transplanting in comparison to 21-28 seedlings in random transplanting done by local labour. Alley ways were maintained by majority of the farmers of the Zone. Special instructions were given for maintenance of plant population/sq.mt for gaining good yields during rabi season.

B4: Weed management

Availability of good herbicides, with benefits of herbicides in transplanting and direct seeding conditions and shortage of labour lead to wide scale adoptability of herbicides viz., LondaxPower (Bensulfuron methyl 0.8% + pretilachlor 6%) @ 4 kg/acre, Rifit (pretilachlor), Sofit (pretilachlor with safener), Triafamone 20% + Ethoxysulfuron 10% WG (Council Active) (Sathi (pyrazosulfuran ethyl), Nominee gold (bispyribac sodium), Almix (Metsulfuran methyl+ Chlorimuran ethyl) commonly used in most of the locations surveyed. Under direct seeding conditions at Kakinada district the private hybrids are under cultivation and weedicides were used timely for good crop growth. Pre emergence and post emergence weedicides were used and mostly in conjunction with fertilizer for saving labour cost. Weedicide spraying using drone was widely operated at research station.

B5: Fertilizer application

The use of chemical fertilizer was reduced for *kharif* paddy. Only few farmers surveyed resorted to application of organic manures i.e FYM/Green Manure crops. Farmers commonly applied DAP (1 bag), 14-35-14 or 20-20-0 or 10-26-26 or 28-28-0 urea (1/2 bag) for basal and direct fertilizers for top dressing. Potash at the time of basal @ 20 kg/acre was used by only few farmers and most of the farmers were not applying potash as basal, but many of them were using potash @ 20 kg/acre at the time of P.I stage effectively. Fertilizer and weedicides with the use of drones was widely adopted at RARS, Maruteru.

B6: Plant Protection

Farmers in the Godavari zone of Andhra Pradesh Resorted to 2-3 foliar sprays for protection against pests and diseases. Farmers adopted pesticide sprays immediately after observation of first symptoms or few times prophylactic sprayings were taken up. Farmers resorted to mixing of 2-3 chemicals for management of biotic constraints. Pesticides viz., Pexalon, Token, Chess, Fipronil granules, Carbofuran granules, Ferterra granules, Chlorantraniliprole, Acephate, Monocrotophos, Azoxystrobin, Amistar top, Hexaconazole (contaf, contaf plus), validamycin, pulsar, copper hydroxide, Plantomycin, Custodia, etc. were used against biotic constraints.

Drone spraying

Drone spraying was gaining popularity among farming community also. Two drones were available to farmers from station. Drone facility was extended to the farmers on hiring basis or demonstrations were conducted to promote drone spraying in farmers' fields. Farmers have usually using the drones also on hiring basis. The cost is about Rs. 300-400/-per spraying. The plant protection measures were also carried by drones in 75 acres of area at RARS, Maruteru.

C. PRODUCTION CONSTRAINTS

C1: Abiotic constraints

During August month untimely heavy rains occurred and caused inundation but after receding of the water, no crop damage was observed in the Godavari Zone.

Heavy Rains Impact

Table 4: Average Rainfall (mm) particulars in different districts in Godavari delta of Andhra Pradesh from 13.08.2025-27.08.2025

Date	Districts				
	E. Godavari	Konaseema	Kakinada	Eluru	W. Godavari
13.08.2025	2.4	70.9	31.4	63.3	7.7
14.08.2025	49.5	90.8	53.6	5.4	90.0
15.08.2025	8.7	28.4	1.6	6.4	0.4
16.08.2025	22.6	1.8	11.3	2.0	0
17.08.2025	6.1	1.3	1.3	8.2	0.8
18.08.2025	21.9	26.7	37.8	17.5	15.4
19.08.2025	11.3	14	7.2	3.8	6.2
20.08.2025	0.3	0.3	0.4	0.4	0.5
21.08.2025	0.3	0	0.1	0.0	0.1
22.08.2025	0.3	0.1	0.0	0.0	0.0
23.08.2025	0.1	0.0	0.0	0.0	0.0
24.08.2025	0.0	0.0	0.0	0.0	0.0
25.08.2025	0.0	0.0	0.0	0.5	2.2
26.08.2025	3.5	2.76	4.9	9.4	4.4
27.08.2025	7.2	8.52	7.0	48.7	40.5
Mandals received >100mm per day (25.08.2025 to 27.08.2025)	-	-	-	Musunuru (135.4mm) & Kamavarapukota (100.2mm) (due to RF received during 27-8-2025).	-
Date on which > 100 mm rainfall received	-	-	-	27-08-2025	-

Table 5: Crop inundation Details as on 28.08.25

Name of the District	Normal Area (ha.)	Transplanted Area (ha)	Inundated area particulars (ha)	Duration of inundation (Days)	Damage area reported so far
East Godavari	76,941	73,951	0	0	NIL
Konaseema	66,126	58,689	920.0	7-10	NIL
Kakinada	89,984	78,785	2140	4-6	NIL
Eluru	89,983	68,909	665	5-8	NIL
W. Godavari	92,169	82,265	306	4-10	NIL
Total	**4, 15, 203**	**3, 62, 599**	**4,031**	**-**	**-**

(*2,460 ha. area is under Wet DSR)

In the Godavari zone, 4,031 ha (1.1%) has been inundated as on 28.08.2025. Crop is reviving as water receded from crop fields, except few fields located adjacent to clogged drains. After

'Montha Cyclone" in MTU 1318 the flowering coincided with the rain and resulted in chaffy grains at some places. Deficiency of 'Zinc' was reported during *rabi* season. Farmers necessarily resort to 1-3 sprays with zinc sulphate during rabi season. At few places sulphide injury was also reported during rabi season.

C.2 Biotic constraints

Major biotic constraints – among diseases bacterial leaf blight- kresek phase was reported at initial stages on MTU 1318, Sampada swarna, PLA 1100, BPT 5204 and other varieties. Bacterial leaf blight was low in most of the locations up to Panicle emergence stage. Sheath blight disease was low level in many places and farmers generally opt for 1 to 2 sprayings. BPH, Stem borer and leaf folder were low as the pest constraints as opined by the farmers. Kresek phase of bacterial leaf blight was observed on 15-35 DAT crop in most of the districts i.e., West Godavari, Eluru, Konaseema and East Godavari districts. Many farmers confused the kresek phase of BLB with stem rot and used to spray the fungicides for kresek phase and the cost of cultivation was increased due these sprayings. But timely awareness was created in farmers for identification of Kresek phase of BLB compared to stem rot. University staff (RARS, Maruteru, DAATTC and KVK) through State Agricultural Department has taken up steps for timely identification and management of the problem with suitable bactericides/copper based fungicides. At later stages, the BLB disease was observed at low in most of the varieties and at moderate level in few varieties. After 'Montha Cyclone', BLB problem was recorded in MTU 1318 and PLA 1100 varieties. The false smut incidence, grain discolouration was recorded in MTU 1318 variety. With regard to pest problem, BPH, stem borer, leaf folder was effectively managed through use of latest available pesticides. Low stem borer infestation was observed in all the districts. Low to Moderate Rodent damage was reported in all the districts.

Table 6: Incidence of diseases and insect pests in surveyed districts of Andhra Pradesh in 2025

District	Diseases					
	NBl	ShBl	ShR	FS	GD	BLB
Kakinada	L	L	L	L	L	L-M
Konaseema	L	L-M	L	L	L	L-M
West Godavari	L	L	L	L-M*	L-M*	M*
East Godavari	L	L	L	L-M*	L*	L-M*
Eluru	L	L	L	L-M*	L-M*	M*

*After Montha Cyclone BLB, False smut and grain discoluration were more in MTU 1318, PLA 1100 and MTU 1443 varieties

District	Pests					
	SB	LF	BPH	GM	Mite	Rats
Kakinada	L-M	L	L	L	L	L-M
Konaseema	L	L	L	L	L	M
West Godavari	L-M	L	L	L	L	M
East Godavari	L	L	L	L	L	M
Eluru	L-M	L	L	L	L	L-M

C.3 Other Constraints

- Lodging of the crop due to cyclones and cost of cultivation is high due to lodging
- Climate problem, heavy rains, cyclones during harvesting
- Suitable high yielding varieties to climate vagaries
- Alternate varieties for Swarna during *kharif* and MTU 1121 during *rabi* season
- BLB problem during *kharif* season
- Need of high yielding disease resistant/tolerant and climate resilient varieties
- Scarcity of labour
- Yield reduction due to untimely rains and cyclones
- Needs immediate procurement after rains irrespective of moisture content
- Drainage problem
- Provision of input subsidy or other benefits to tenant farmers also
- Low cost machinery and availability of machinery

D. MECHANIZATION

Majority of the farmers hired different implements *viz*., power tillers, mini tractors, big tractors, battery sprayers, combined harvesters in Godavari Zone of Andhra Pradesh. Awareness campaigns were also conducted during 'Polam Pilustondi' programs and wide field level demonstrations were taken up on 'Drone spraying'. Farmers were using drones for spraying purpose also. Few private drone services were also available to farmers at Rs. 300-400/- per drone spraying.

E. PLANT PROTECTION

During *kharif* 2025, the rainfall and weather parameters were quite congenial for crop growth. As a general practice, farmers in general adopted 2-4 sprays during *kharif* and 5-6 sprayings during *rabi* season. Many farmers adopted prophylactic sprays for pest and diseases also and have taken up at least one spray for BPH even though the load of BPH was <ETL during *kharif* season. During rabi season 2 sprays for BPH, one spray each for sheath blight, blast and as a prophylactic spray for false smut with propiconazole were taken up even the load was <ETL. For stem borer, either spraying with coragen, caldan powder or Ferterra, Fipronil and Carbofuron granules application was followed. The pest load was low in both seasons. At initial stages, low severity of BLB was observed on MTU 1318, PLA 1100, Sampada swarna and BPT 5204 varieties. Low incidence of sheath blight, false smut and sheath rot were noticed. After 'Montha Cyclone' the BLB incidence, false smut and grain discolouration were observed in MTU 1318 and PLA 1100 varieties.

F. MARKETING

Rice farmers in the Godavari Zone faced problems in marketing of produce at some places during *Kharif*, 2025. Farmers sold the produce to Rythu Seva Kendra's. Many farmers requested for immediate/early payment of money after selling of their produce.

G. YIELDS

The swarna growing farmers reported 35-38 bags due to favourable weather and early harvesting in the season. Farmers reported 25-28 bags/acre due to 'Montha Cyclone' as flowering coincided with rain resulted mostly due to chaffy grains and low to moderate BLB, false smut and grain discolouration problems also.

H. COST OF CULTIVATION

A number of factors viz., hike in fertilizer costs, hike in labour wages, increased machine hiring costs, use of pesticides etc influenced the cost of cultivation. Farmers reported incurring an amount of Rs. 35,000-42000/- for *kharif* season and 45,000-55,000/- for rabi season.

I. NEEDS OF THE FARMERS

- High yielding, climate resilient, disease resistant/tolerant varieties
- Assistance/input costs to 'Tenant farmers' also like the 'Owner farmers' during cyclones time
- BLB resistant/tolerant varieties
- Krishi tractors, low cost machinery
- Dryers for seed drying
- Non-lodging varieties, development of submergence resistant varieties
- Development of 130-135 days suitable varieties for *kharif* season and development of 110-120 days varieties for *rabi* season
- Improper drainage existed so proper drainage cleaning, broad weeds removal in drainage channels in delta region were needed
- Zinc supply on subsidy to farmers
- Drones for spraying
- Machinery for hiring, timely availability of machinery
- High yielding flood tolerant varieties

J. RESEARCH ISSUES

- 130-140 duration for kharif and 115-120 days duration for rabi season
- Focused research for export, miller preferred, consumer preferred fine grain varieties
- Lodging resistant, submergence tolerant, disease resistant high yielding varieties i.e., BLB resistant/tolerant varieties

Gujarat-2025-26 (Nawagam)

Districts surveyed: *Ahmedabad, Kheda, Mahisagar, Anand, Vadodara, Panchmahals, Surat, Bharuch, Tapi, Dang, Navsari* and *Valsad*

Table 1: Details of survey

District	Taluka	Villages (latitude/longitude)
Ahmedabad	Daskroi and Dholka	Badodara Patiya (22.921003/72.68847; 22.921155/72.68960), Bareja (22.85242/72.581332; 22.852517/72.581326; 22.85238/72.581343; 22.852672/72.582096), Bibipura (22.966076/72.68427; 22.966076/72.68427), Devdi (22.91014/72.649525; 22.909815/72.649547), Gamdi (22.912218/72.63243; 22.912343/72.632245), Jetalpur (22.894708/72.605453; 22.895826/72.608767), Mahijada, Rampura Patiya, Vanch (22.939604/72.69006; 22.939626/72.689841), Ambaliyara and Keliya Vasna
Kheda	Kheda, Nadiad, Mahudha and Kathlal	Vasna Bujarg (22.729907/72.628299; 22.729902/72.628286; 22.729882/72.628272; 22.729912/72.628274), Samadra (22.794479/72.644931; 22.794868/72.64497), Dharoda (22.798519/72.549198; 22.795384/72.544263), Kathwada (22.7299120/72.628774), Davapur, Veena, Mangalpur (22.799132/72.926282; 22.799155/72.926276; 22.799288/72.926265), Aral, Gadvel Ratanpur (22.964652/72.900359; 22.964654/72900359; 22.964677/72.900382), Gogajipura, Gangadasna Muvada and Ratanpur (22.964434/72.900828)
Mahisagar	Balasinor, Kadana and Lunavada	Dekhariya (23.001471/73.371872; 23.001565/73.371622), Jorapura (23.019060/73.375533; 23.0190670/73.375504; 23.019067/73.375504), Junamal, Math Dodiya, Navamod, Chavdiya, Kukaradi and Ram Patelna Muvada
Anand	Anand, Petlad, Sojitra, Tarapur and Umareth	Lambhvel (22.584783/72.943988; 22.589689/72.943798), Bandhani, Ravipura (22.548094/72.836909; 22.548108/72.83684), Dali, Ishnav (22.527449/72.753728; 22.527449/72.753735), Palol (22.518698/72.693457; 22.518626/72.693535), Changda, Chitarvada (22.5368/72.473029; 22.536671/72.473283; 22.536794/72.473162; 22.534748/72.479317), Tarapur, Alindra (22.69939/72.972473; 22.699107/72.972768) and Parvata (22.693883/73.093968; 22.693989/73.09394)
Vadodara	Dabhoi	Chipapura, Dabhoi (22.135515/73.439353; 22.135524/73.439353; 22.135829/73.439183), Bharwadvas (22.135557/73.43938; 22.135554/73.439379), Karnet, Vasai (22.174083/73.400343; 22.174049/73.400339) and Vasaipura (22.177174/73.414351; 22.178141/73.415561)
Panchmahals	Godhra	Kakanpur (22.836266/73.500038; 22.83627/73.500048) and Timbani Mubadha (22.836636/73.499201; 22.836322/73.499963)

Surat	Olpad	Andhi (21.351967/72.764394; 21.352081/72.764576), Kadarana (21.402576/72.804908; 21.40229/72.804354; 21.402401/72.804497) and Rajnagar (21.378163/72.781303; 21.375759/72.779647; 21.378156/72.781332; 21.378145/72.781226)
Bharuch	Hansot	Junaobha (21.475383/72.874231; 21.475952/72.873876, Navaobha (21.175065/72.874432; 21.475001/72.874424 and Parvat
Tapi	Dolvan and Vyara	Ambapani (21.1020/73.392864; 21.094539/73.400926), Chakdhara (20.973853/73.483672; 20.973805/73.483781), Dolara, Jetvadi and Tichakiya
Dang	Ahava and Waghai	Gurya, Nadagkhadi, Borigavtha (20.812204/73.495541; 20.812193/73.495818; 20.812212/73.495924), Dungarda (20.789451/73.486612; 20.789372/73.486873), Kalibel (20.930018/73.577263; 20.930211/73.577403 and Vati (20.789499/73.487446
Navasari	Chikhali, Gandevi and Vasanda	Manekpur (20.802370/73.128493; 20.802401/73.128289), Ramkuam, Shurkhav (20.814616/73.169268; 20.814916/73.169145), Ambheta (20.790966/73.039243; 20.791003/73.039163), Sindhoi (20.862226/73.31245; 20.862238/73.312383), Vaghbari and Zari
Valsad	Dharampur	Asuri, Bilpudi and Karanjveri
Districts: 12	**Talukas: 26**	**Villages: 77**

Production oriented survey was conducted in the 12 major rice growing districts of Gujarat State *viz.*, Ahmedabad, Kheda, Mahisagar, Anand, Vadodara, Panchmahals, Surat, Bharuch, Tapi, Dang, Navsari and Valsad. A total of 26 talukas and 77 villages were covered during this survey. The details of the places visited during the survey are presented in Table 1. A total of 170 farmers were contacted during the period of survey (Table 7). The survey was conducted when most of the crops were in heading to dough stage. he particulars of rice area in different rice growing districts of Gujarat are presented in Table 3. In general, weather conditions were normal and favourable for rice cultivation. During Kharif 2025, monsoon appeared on time in middle of June. The rain was sufficient and well distributed during the season at Nawagam, where as in some of the areas it was scattered. Our AICRPR station at Nawagam, total rainfall was 999.90 mm with 54 rainy days during the season. The details of different weather parameters in different districts are presented in Table 4. Varieties like Gurjari, GAR 13, Mahisagar, GAR 14, GR 21, GAR 22, GNR 3, GNR 6, GR 4, GR 7, GR 11, GR 101, GR 17, GR 18, Sardar, Mahatma, Mahsuri, Jaya, Moti Gold, Surya Moti, Sonam, Sriram 301, Sri 101, Versha, Nath Poha, Krishna Kamod, Laxmi, Gangamani and Sriram 303 and hybrids like GRH 2, Arize 6444, Arize 6555 ST, Kaveri 468, Pioneer 121, US 312, Hyb 27P37, MC 13, 25P25, Ankur 7434, Hyb. 471, Kaberi 2333, Arize 6201, US 312, Hyb. 716, JK 208, Hyb.745, 786, Reshma, Gorakhnath and Suruchi 5629 were mainly cultivated in different districts of Gujarat. The details of different varieties cultivated in different surveyed districts are presented in Table 2. Variety wise are coverage in different surveyed districts are presented in table 6.

Table 2: Widely prevalent rice varieties

District	Varieties
Ahmedabad	**HYVs:** Gurjari, GAR 13, GR 21, GAR 201, GAR 14, Mahisagar, GNR 3, Jaya, GR 101, GR 11, GR 17, Mahsuri, Sri 301, Punjab S, Krishna Kamod, Nath Poha, Moti Gold, Sonam, Surya Moti, Laxmi and others; **Hybrids:** Arize 6444, Kaveri 468 and Dhadak Gold
Kheda	**HYVs**: Gurjari, GAR 13, GR 21, GAR 14, Mahisagar, GR 11, Govind Bhog, Pusa 1638, Mahsuri, Kiran 3, Krishna Kamod, Punjab S, Surya Moti, Sampurna, Nath Poha, Moti Gold, Sonam, GR 101, Shri 101, Gangamani and others; **Hybrids**: Arize 6444, Arize 6555 ST, Arize 6444, JK Suraksha and others
Mahisagar	**HYVs**: Gurjari, GAR 13, Mahisagar, GR 11, Vashanti, Nath Poha, Versha, Laxmi, Moti Gold and others: **Hybrids**: Arize 6444, Arize 6555 ST, Pioneer 27P37, US 362 and others
Anand	**HYVs:** GAR 13, GR 11, Gurjari, Mahisagar, GR 21, GAR 14, GAR 22, Sri 101, Sriram 101, Sriram 125, Moti, Krishna Kamod, Laxmi, Kasturi, Jaya, Masuri, Moti Gold, Surya Moti, Sonam and others**; Hybrids:** Arize 6444, Buland 5050 and others
Vadodara	**HYVs:** GAR 13, Gurjari, GR 21, GR 17, GR 11, Mahisagar, Jaya, Sriram 101, Sriram 303, Nath Poha, Surya Moti and others; **Hybrids:** US 312, US 25 P 25, Kaveri 468, Bayer 6444 and others
Panchmahals	**HYVs:** Gurjari, GAR 13, GR 11, GRH 2, GR 4, GAR 14, Jaya, Masuri, Mahisagar, Laxmi, Versha, Sonam, Moti Gold and others; **Hybrids:** Arize 6444, US 312 and others
Surat	**HYVs:** Gurjari, GNR 3, Sardar, Mahatma, GRH 2, GAR 13, Vada Kolum, Jaya, GR 11, Nath Poha, Shakti Poha and others; **Hybrids:** GNRH 1, US 312, Kabir 508 and others
Bharuch	**HYVs:** Gurjari, GNR 3, Sardar, Mahatma, Jaya, GR 11, Nath Poha, Shakti Poha and others; **Hybrids:** GRH 2, US 312 and others
Tapi	**HYVs:** GAR 13, Sardar, Mahatma, GRH 2, GNR 3, Gurjari, Masuri, NAUR1, Jaya, Gold 807, S 251, Annapurna, Nath Poha and others; **Hybrids:** MC 13, PAC 807, Syngenta S 9001, Navtaj, Advanta 801, Arize 6444, Arize 6201, Arize 6129, Hyb 27P37, US 312, US 25P25, VNR 2111 and others
Dang	**HYVs:** GR 7, GNR 3, GNR 6, GAR 13, Jaya, Doodhmalai, Desi Colum, Ambemore, Masuri, Dhanya Gold, Annapurna and others; **Hybrids:** GRH 2, Kaveri 468, Navtej, US 312, US 2111, 6129 Gold, 5123, US 807, Syngenta S 9001, Suruchi, Arize 6444, MC 13, VNR 2111, NPR 6532, 25p25 and others
Navsari	**HYVs:** Gurjari, GNR 3, GNR 6, Sardar, Mahatma, GRH 2, GAR 13, GR 11, Jaya, Masuri, Nath Poha, GNR 7, Sweta Gangamani and others; **Hybrids:** Advanta 807, Kaveri 468, Siri 2277, Kaveri 468, MC 13, US 312, KPH 471, Arize 6444, and others
Valsad	**HYVs:** GNR 3, GNR 4, GNR 6, Mahisagar, Sardar, Mahatma, GAR 13, GR 11, Gurjari, Masuri, Jaya, Indrani, Doodhmalai, Sriram 101 and others; **Hybrids:** Ankur 7434, PAN 2430, Kaveri 468, VNR 2233, US 316, Arize 6201, Hyb. 5151, US 312, Arize 6444, Hyb 27P37, JK-208, Hyb.786, Reshma, Gorakhnath, Suruchi 5629 and others

Table 3: Particulars of rice area in 2025

Name of District	Total geographical area (ha)	Total cultivable area (ha)	Total cultivated area (ha)	Total Irrigated area (ha)	Area under rice (ha)
Ahmedabad	6,79,414	4,97,532	3,34,327	1,51,028	1,62,010
Kheda	3,94,388	2,49,433	2,32,390	1,72,116	1,16,000
Mahisagar	1,98,973	1,50,550	1,15,697	75,742	40,800
Anand	2,94,760	2,16,870	1,65,033	2,08,320	1,23,533
Vadodara	4,06,700	2,93,687	2,48,000	2,08,250	28,700
Panchmahals	3,21,656	1,81,800	1,73,771	29,321	49,100
Surat	4,32,697	2,36,528	1,19,137	1,62,534	49,300
Bharuch	5,24,700	3,15,500	2,58,748	1,19,000	9,800
Tapi	3,43,474	1,60,401	1,13,144	80,596	69,616
Dang	1,76,600	61,852	58,208	16,390	30,900
Navsari	1,95,474	1,17,947	51,782	73,525	44,200
Valsad	2,94,412	1,64,547	99,928	1,02,933	73,766

Table 4: Weather data for different districts of Gujarat during *Kharif'* 2025

Weather Parameters/Districts	Months						
	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Ahmedabad							
RD	10	12	06	05	04	0	0
TR (mm)	370.6	232.9	69.3	123.5	39.8	0	0
T.Max (ºC)	35.5	32.4	32.8	33.0	31.9	30.6	29.7
T.Min (ºC)	26.6	26.0	24.8	25.1	22.7	17.5	15.1
Sunshine hrs							
Anand							
RD	15	12	12	10	05	02	-
TR (mm)	446.0	276.2	204.6	167.9	137.3	22.6	-
T.Max (ºC)	34.5	32.1	32.0	32.0	32.8	30.8	-
T.Min (ºC)	26.6	26.4	26.1	25.6	22.7	17.2	-
Sunshine hrs	5.5	2.6	4.1	5.4	7.8	8.4	-
Kheda							
RD	11	12	09	09	04	03	-
TR (mm)	270	276.3	105.6	142.6	37.4	26.6	0
T.Max (ºC)	33.96	31.44	31.11	31.19	32.00	29.94	30.19
T.Min (ºC)	25.57	26.02	25.52	24.83	20.51	16.47	11.49
Sunshine hrs	4.69	8.72	3.54	5.33	6.35	6.87	8.71
Surat							
RD	11	22	14	10	04	01	0
TR (mm)	485.0	436.0	292.0	396.0	199.0	18.0	0
T.Max (ºC)	31.4	28.9	28.5	28.8	31.6	31.3	30.8
T.Min (ºC)	27.2	25.8	25.2	25.1	24.4	21.5	19.8
Sunshine hrs	4.2	-	4.5	5.1	7.2	8.5	8.5
Bharuch							
RD	04	18	13	11	04	0	0
TR (mm)	50.4	509.6	435.1	411.5	86.4	0	0
T.Max (ºC)	38.2	30.6	31.0	31.7	34.3	33.0	30.0

Weather Parameters/Districts	**Months**						
	Jun	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
T.Min (ºC)	28.8	24.7	25.4	25.6	24.7	21.5	17.1
Sunshine hrs	7.1	0.6	0.2	4.6	7.0	6.8	7.8
Tapi							
RD	17	25	20	18	07	01	0
TR (mm)	618.0	942.1	655.5	576.5	147.6	8.3	0
T.Max (ºC)	27.8	26.6	26.0	25.7	25.4	20.8	18.3
T.Min (ºC)	19.5	20.1	27.4	15.6	15.6	16.9	16.4
Sunshine hrs	1.9	0.3	0	0.8	3.1	5.8	6.7
Dang							
RD	17	23	20	16	07	03	0
TR (mm)	680.5	590.5	455.0	360.5	144.0	11.5	0
T.Max (ºC)	32.7	29.4	29.0	26.5	28.9	31.0	-
T.Min (ºC)	26.2	25.6	25.1	22.0	19.4	16.5	-
Panchmahals							
RD	14	19	15	08	05	0	0
TR (mm)	435.0	367.0	296.6	242.0	94	0	0
T.Max (ºC)	34.9	30.9	31.0	31.9	33.1	34.8	28.8
T.Min (ºC)	26.0	25.0	23.4	23.5	21.3	14.3	12.2
Sunshine hrs	3.7	2.0	0.4	5.0	4.6	6.6	7.8
Vadodara							
RD	15	21	17	11	06	04	0
TR (mm)	374.3	181.2	213	313.4	110.5	52.6	0
T.Max (ºC)	39.6	33.3	32.5	32.2	31.6	30.3	31.0
T.Min (ºC)	28.4	27.5	27.4	26.8	26.3	24.3	19.4
Sunshine hrs	2.4	0.4	1.1	2.5	4.5	5.7	7.4
Valsad							
RD	17	27	24	16	04	06	0
TR (mm)	712.6	701.6	601.0	496.2	84.9	28.1	0
T.Max (ºC)	32.3	31.4	32.0	31.2	32.7	33.3	32.7
T.Min (ºC)	19.8	13.7	12.6	12.2	16.9	17.8	13.9
Sunshine hrs	4.9	2.0	2.2	2.5	6.7	7.9	9.4
Navsari							
RD	16	21	18	14	06	01	-
TR (mm)	305.0	546.0	402.0	293.0	220.0	11.0	-
T.Max (ºC)	32.0	30.3	30.6	31.1	33.3	32.0	-
T.Min (ºC)	24.3	24.0	23.6	23.2	23.4	18.8	-
Sunshine hrs	4.3	1.6	1.7	2.4	6.3	7.9	-

Table 5: General question on rice cultivation in district (to be filled by the cooperator in consultation with the officials from state department of agriculture).

Parameters	Ahmedabad	Kheda	Mahisagar	Anand
Total area under HYVs (ha)	1,62,010 ha	1,10,000 ha (Approx)	30,800 ha (Approx)	81,738 ha
Most prevalent HYVs in the district	Gurjari, GAR13, Nath Poha, GR-101	Gurjari, GAR13, GR-11, Mahisagar	Gurjari, GAR13, Nath Poha	Gurjari, GAR13, GR-11
Total area under rice hybrids in the district	200-300 ha	6,000 ha (Approx)	10,000 ha (Approx)	41,795 ha
Most prevalent rice hybrids in the district	Arize 6444, Arize 6555 ST, Kaveri 468	Arize 6444, Arize 6555 ST, JK Suraksha etc	Arize 6444, Versha, 27p37	Arize 6444, Advanta 801 etc
Total area under basmati in the district	-	-	-	-
Most prevalent basmati varieties in the district	-	-	-	-
Seed replacement rate	40-75%	40-75%	50-100%	50-80%
Whether farmers are using any heavy equipments	Yes	Yes	Yes	Yes
Mention water saving technologies being used by the farmers	Laser levelling	Laser levelling	Laser levelling	Laser levelling
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	Yes: regarding IPM, HYVs	Yes: regarding IPM, INM etc	Yes: regarding IPM, IDM	Yes: regarding use of inputs
General problems in rice cultivation in the district?	Labour shortage in some area	Nil	-	Nil
Please provide any farmers association in the district	Total 11 FPOs working in the district	-	Bharatiya Kisan Sangh	-
Whether availability of agricultural labours is sufficient?	Problem in some area like Dholka and Vavla taluk	Yes	Yes	Yes
Whether there is any marketing problem of the produce?	No	No	No	No
Any major irrigation/ power generation project in the district	Sardar Sarovar Narmada Canal Project	Badakbari thermal power plant	Kadana dam on Mahisagar river	-
Any soil testing program undertaken?	Yes	Yes	Yes	Yes
Any farmers' training program was organized by the state department of Ag/ University	Yes; about DSR, IDM, HYV use	Yes	Yes	Yes

Table 5 Contd..

Parameters	Vadodara	Panchmahals	Surat	Bharuch
Total area under HYVs (ha)	21,700 ha (Approx)	30,000 ha (Approx)	42,300 ha (Approx)	9,800 ha
Most prevalent HYVs in the district	Gurjari, GNR 3, GAR 13, GR 11	Gurjari, GAR 13, Sonam	Gurjari, GNR 3, GNR-6, Jaya	Gurjari, GNR-3, Mahatma, Jaya
Total area under rice hybrids in the district	7000 ha	19,100 ha (Approx)	7000 ha (Approx)	50-100 ha (Approx)
Most prevalent rice hybrids in the district	Arize 6444, Kaveri 468, MC-13 etc	US 312, Arize 6444, DRRH 2 etc	US 312, Arize 6444, GRH 2, Kabir 508, etc	GRH-1, Arize 6444
Total area under basmati in the district	-	-	-	-
Most prevalent basmati varieties in the district	-	-	-	-
Seed replacement rate	40-100%	70-100%	60-100%	50-100%
Whether farmers are using any heavy equipments	Yes	Yes	Yes	Yes
Mention water saving technologies being used by the farmers	Laser levelling	Laser levelling	Laser levelling	Laser levelling
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	Yes: regarding IPM and INM	Yes: regarding IPM and INM	Yes: regarding integrated management of BB and stem borer	Yes; regarding IPM especially management of bacterial blight
General problems in rice cultivation in the district?	Nil	Nil	Bacterial blight of rice	-
Please provide any farmers association in the district	-	Yes (Kisan Sangh)	-	Bharatiya Kisan Sangh
Whether availability of agricultural labours is sufficient?	Yes	Yes	Yes	Yes
Whether there is any marketing problem of the produce?	No	No	No	No
Any major irrigation/ power generation project in the district	Narmada irrigation project	Panam irrigation project	-	-
Any soil testing program undertaken?	Yes	Yes	Yes	Yes
Any farmers' training program was organized by the state department of Ag/ University	Yes	Yes	Yes	Yes

Table 5 Contd..

Parameters	Tapi	Dang	Navsari	Valsad
Total area under HYVs (ha)	29,412 ha	11,000 ha (Approximate)	20,000 ha (Approx)	6037 ha
Most prevalent HYVs in the district	Gurjari, GAR 13, Jaya, IR 28	GNR-3, GR 11, GR 7, GNR-6	Gurjari, GNR 3, GNR-6, GR-4	Gurjari, Jaya, GR-11
Total area under rice hybrids in the district	40,204 ha (Approx)	19,000-20,000 ha	24,200 ha (Approx)	67,729 ha
Most prevalent rice hybrids in the district	US 312, PAC 807, Kaveri 468, MC-13 etc	US 312, Arize 6444, GRH 1, 25p25	US 312, Arize 6444, Kaveri 468, MC-13 etc	VNR 2233, Goraknath, US-312
Total area under basmati in the district	-	-	-	-
Most prevalent basmati varieties in the district	-	-	-	-
Seed replacement rate	70-100%	75-100%	50-100%	60-100%
Whether farmers are using any heavy equipments	Yes	-	Yes	Yes
Mention water saving technologies being used by the farmers	Laser levelling	Nil	Laser levelling	-
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	Yes: regarding IDM of bacterial blight of rice	Yes; Management of diseases under natural and organic farming	Yes: regarding IPM	Yes: regarding IPM, INM and use of HYVs
General problems in rice cultivation in the district?	Nil	-	Nil	Nil
Please provide any farmers association in the district	-	-	-	-
Whether availability of agricultural labours is sufficient?	Yes	Yes	Yes	Yes
Whether there is any marketing problem of the produce?	No	No	No	No
Any major irrigation/ power generation project in the district	Yes; Narmada and Tapi irrigation project	-	Ukai canal, Jhuj irrigation scheme	-
Any soil testing program undertaken?	Yes	Yes	Yes	Yes
Any farmers' training program was organized by the state department of Ag/ University	Yes	Yes	Yes	Yes

Table 6: Variety/hybrid wise area coverage (ha) in different districts of Gujarat during 2025

Variety/hybrids	Districts/area (ha)			
	Ahmedabad	**Anand**	**Tapi**	**Valsad**
Gurjari	90,000	9,970	5123	1,195
GAR 13	27,500	44,895	5222	
Nath Poha	7,000			
GR-11		17,985		
Mahsuri		4,998		
Krishna Kamod		3,890		
IR 20			5,136	
Jaya			4,329	1,024
PAC 807			9,012	
MC-13			8,686	
US 312			7,812	3,759
JK 401				5,874
VNR 2233				6,342
Suruchi 5629				4,481
Hyb 22				4,169
Others	37,510	41,795	24,296	46,922

Table 7: General information

Parameters	**Ahmedabad**	**Kheda**	**Mahisagar**	**Anand**
# of talukas/blocks covered	2	4	3	5
# of villages surveyed	14	14	8	11
# of farmers interviewed	22	27	19	27
Field ecosystem	Irrigated (100%)	Irrigated (100%)	Irrigated (100%)	Irrigated (100%)
Weather conditions during cropping season	In general, weather conditions were normal and favourable for rice cultivation. During Kharif 2025, monsoon appeared on time in middle of June. The rain was sufficient and well distributed during the season at Nawagam, where as in some of the areas it was scattered. Our AICRPR station at Nawagam, total rainfall was 999.90 mm with 54 rainy days during the season			
Crop stage when survey was made	Heading	Heading	Heading to milk	Heading to milk
Crop rotations	Common crop rotations followed by the farmers in different districts were rice-wheat (commonly followed by the farmers), rice-rice, rice-vegetables, rice-wheat-vegetables, rice-tobacco, rice-chickpea, rice-garlic, rice-maize and rice-potato			

A. Cropping system and rice yield: The fields surveyed were mostly under irrigated ecosystem. Common crop rotations followed by the farmers in different districts were rice-wheat (commonly followed by the farmers), rice-rice, rice-vegetables, rice-wheat-vegetables, rice-tobacco, rice-chickpea, rice-garlic, rice-sugarcane, rice-maize, rice-potato, rice-wheat-vegetables, rice-pulses and rice-niger (Table 7). Among the varieties, Gurjari and GAR 13 were widely cultivated. The average yield among different HYVs and hybrids in different surveyed districts ranged from 3000-5000 kg/ha (Table 8).

Table 7 Contdd..: General information

Parameters	Vadodara + Panchmahals	Surat + Bharuch	Tapi + Dang	Navsari + Valsad
# of talukas/blocks covered	1 + 1	1 + 1	2 + 2	3 + 1
# of villages surveyed	6 + 2	3 + 3	5 + 6	7 + 3
# of farmers interviewed	12 + 4	9 + 8	10 + 12	14 + 6
Field ecosystem	Irrigated (100%)	Irrigated (100%)	Irrigated (100%)	Irrigated (100%)
Weather conditions during cropping season	In general, weather conditions were normal and favourable for rice cultivation. During Kharif 2025, monsoon appeared on time in middle of June. The rain was sufficient and well distributed during the season.			
Crop stage when survey was made	Heading to dough	Heading to dough	Heading to milk	Milk to dough
Crop rotations	Common crop rotations followed by the farmers in different districts were rice-wheat (main), rice-rice, rice-vegetables, rice-chickpea, rice-sugarcane, rice-wheat-vegetables, rice-pulses and rice-niger			

Table 8: Average yields of different rice varieties as reported by the cooperators/farmers

Varieties/Hybrids	Yield (kg/ha) in different districts			
	Ahmedabad	Kheda	Mahisagar	Anand
GAR 13	4020-5050	4040-5100	4300-4680	4220-4900
Gurjari	3980-5040	3930-4820	3920-4380	4110-4750
Moti Gold	4200-5040	4420-4520		4525-4820
Sriram Bioseed 301	4800-4900			
GAR 201	4600			
GR 101	4650			
Nath Poha	3750		4820	
Pinjab S	4700-4800			
Surya Moti	4280	4220-4250		4320-4650
GR-11		4000-4810		3700
GR-21		4710		4050
Mahsuri		4080		
GAR-14		3080		
Sampurna		4080		
Versha			4680	
Vasanthi			4010	
Laxmi			3860	
Silki 449			4080-4220	
Sriram 101				4020-4820
Jaya				4620
Mahisagar				4520-4820
Kasturi				4520
Krishna Kamod				4020
Hybrids				
Arize 6444	5000		4080-4540	4520-4880

Table 8 contd..: Average yields of different rice varieties as reported by the cooperators/farmers

Varieties/Hybrids	Yield (kg/ha) in different districts			
	Vadodara + Panchmahals	**Surat + Bharuch**	**Tapi + Dang**	**Navsari + Valsad**
GAR 13	4020-4810		4250-4820	4280
Gurjari	4050-4250	3840-4510	4100	4180-4480
Moti Gold	3750			
Sriram 303	4110-4810			
GAR 17	4210			
Nath Poha		4180-4880		
GR-11				4020
GR-21	4010			
Mahsuri			3940	
Sriram 101	3920			
Jaya		4200-4210		3940-4020
Sonam	3910-4100			
GNR-3		4270-4900	4810	3980-4380
Sardar		3260		
Mahatma		4520-4750		
Annapurna			3810-4270	
Gangamani				3920
Ankur				3020-4340
Hybrids				
Arize 6444			4510-4820	3280-4200
US-312			3810-4920	4020-4350
Navtej			4100-4280	
Suruchi			4580	
Kaveri 468			4210-4250	
MC-13			4250-4820	

B. Rice consumption pattern: Survey was conducted on consumption pattern of rice among the farmers in different districts of Gujarat. On an average about 89% of the farmers contacted belonged to medium income group, 4% were from higher income group and rest were from low-income group. Average per capita consumption of rice per month ranged from 2-9 kg rice in different districts. The primary meal of majority of the farmers from most of the districts consisted of both rice and wheat (Table 9) except districts like Tapi, Dang, Navsari and Valsad where more than 75% of the farmers contacted told that they consumed mainly rice. On an average about 97% of the farmers contacted in different districts told that they preferred polished rice. On an average about 72% of the farmers contacted told that they used fine grain rice varieties. Rest used coarse grain rice varieties. However, some farmers used both fine grain rice varieties for consumption. In general, there was no change in the food habit.

Table 9: Details of rice consumption pattern in different districts of Gujarat

Parameters	Districts			
	Ahmedabad	**Kheda**	**Mahisagar**	**Anand**
Status of farmers	Rich (4.5%); medium income (86.4%); poor (9.1%)	Medium income (88.9%); poor (11.1%)	Medium income (94.7%); poor (5.3%)	Rich (7.4%); medium income (92.6%)
Per capita monthly rice consumption (kg)	3-5 kg	2-5 kg	3-8 kg	3-6 kg
Composition of main meal	Rice + Wheat (100%)	Rice + Wheat (100%)	Rice + Wheat (94.7%); Only rice (5.3%)	Rice + Wheat (96.3%); Only rice (3.7%)
Preferred rice types	Polished rice (95%); Parboiled rice (5%)	Polished rice (96.3%); Parboiled rice (3.7%)	Polished rice (100%)	Polished rice (92.6%); Parboiled rice (7.4%)
Rice grain type preference	Fine grain (63.6%); coarse grain (13.6%); basmati (22.7%)	Fine grain (74.1%); coarse grain (25.9%)	Fine grain (83.3%); coarse grain (16.7%)	Fine grain (96.3%); coarse grain (3.7%)
Any changes in food habit in last 10 years	No (100%)	No (100%)	No (100%)	No (100%)

Table 9 contdd..: Details of rice consumption pattern in different districts of Gujarat

Parameters	Districts			
	Vadodara + Panchmahals	**Surat + Bharuch**	**Tapi + Dang**	**Navsari + Valsad**
Status of farmers	Rich (12.5%); medium income (87.5%)	Medium income (82.3%); Poor (17.7%)	Rich (9.1%); medium income (86.4%); Poor (4.5%)	Medium income (95%); Poor (5%)
Per capita monthly rice consumption (kg)	3-5 kg	3-6 kg	3-9 kg	4-8 kg
Composition of main meal	Rice + Wheat (100%)	Rice + Wheat (82.3%); Only rice (17.7%)	Rice + Wheat (22.2%); Only rice (77.8%)	Rice + Wheat (25%); Only rice (75%)
Preferred rice types	Polished rice (100%)	Polished rice (100%)	Polished rice (100%)	Polished rice (100%)
Rice grain type preference	Fine grain (56.3%); coarse grain (56.3%)	Fine grain (76.5%); coarse grain (23.5%)	Fine grain (50%); coarse grain (50%)	Fine grain (80%); coarse grain (20%)
Any changes in food habit in last 10 years	No (100%)	No (100%)	No (100%)	No (100%)

Table 10: Details of nursery management

Details	Districts			
	Ahmedabad	**Kheda**	**Mahisagar**	**Anand**
Planting time	2nd to 3rd week of July	2nd to 4th week of July	2nd to 3rd week of July	2nd to 4th week of July
Seed rate	24-30 kg/ha	24-30 kg/ha	24-30 kg/ha	24-30 kg/ha
Seed treatment (% farmers adopted)	Yes (9.1%)	No (100%)	Yes (5.3%)	No (100%)
Chemicals used for seed treatment	carbendazim (2 g/kg of seeds)	NA	carbendazim (2 g/kg of seeds)	NA
Organic manure in nursery (% farmers adopted)	Yes (100%) FYM	Yes (100%) FYM	Yes (100%) FYM	Yes (100%) FYM
Inorganic manure in nursery (% farmers adopted)	Yes (95.5%); Urea (80-150 kg/ha) + DAP (40-60 kg/ha)	Yes (100%); Urea (100-150 kg/ha) + DAP (40-100 kg/ha)	Yes (94.7%); Urea (60-150 kg/ha) + DAP (50-100 kg/ha)	Yes (96.3%); Urea (100-150 kg/ha) + DAP (40-100 kg/ha)

Table 10 contdd..: Details of nursery management

Details	Districts			
	Vadodara + Panchmahals	**Surat + Bharuch**	**Tapi + Dang***	**Navsari + Valsad**
Planting time	1st to 3rd week of July	2nd to 3rd week of July	2nd to 3rd week of July	1st to 3rd week of July
Seed rate	20-30 kg/ha	24-30 kg/ha	24-26 kg/ha	24-30 kg/ha
Seed treatment (% farmers adopted)	No (100%)	No (100%)	Yes (4.5%)	No (100%)
Chemicals used for seed treatment	NA	NA	carbendazim (2 g/kg of seeds)	NA
Organic manure in nursery (% farmers adopted)	Yes (100%) FYM	Yes (100%) FYM	Yes (86.4%) FYM	Yes (100%) FYM
Inorganic manure in nursery (% farmers adopted)	Yes (100%); Urea (100-150 kg/ha) + DAP (50-100 kg/ha)	Yes (100%); Urea (50-150 kg/ha) + DAP (40-60 kg/ha)	Yes (45.5%); Urea (100-150 kg/ha) + DAP (40-100 kg/ha)	Yes (90%); Urea (50-150 kg/ha) + DAP (30-100 kg/ha)

* Dang district is an organic district and no chemical fertilizers were applied in the nursery

C. Nursery and main field Management: Average seed rate used by the farmers in different districts ranged from 20-30 kg/ha. Seed treatment before sowing was not common among the farmers. About 4-9% of the farmers contacted from Ahmedabad, Mahisagar and Tapi treated the seeds with carbendazim (2 g/kg of seeds). However, many farmers used certified seeds and seeds already treated with fungicide. Farmers from Dang did not adopt any chemical seed treatment as this is a organic district (Table 10). Majority (about 98%) of the farmers contacted applied FYM in the nursery (Table 10). Majority of the farmers (90-100%) in different districts except Dang told that they applied chemical fertilizers like urea and DAP in the nursery (Table 10). Farmers from Dang did not apply any chemical fertilizers either in the nursery or in the main fields as it is a organic district. Planting was mainly done during 1st to 4th week of July. Majority of the farmers contacted followed random method of transplanting where plant

population per unit area was not maintained. Few farmers from Ahmedabad and Anand followed direct sowing while few from Kheda, Mahisagar, Vadodara, Surat and Tapi followed line transplanting method. In the main fields, fertilizers were applied @ 36-89 kg N/ha, 12-37 kg P_2O_5/ha and 20 kg $ZnSO_4$/ha (Table 11). Application of potassic fertilizers was not common among the farmers. All the farmers contacted applied organic manure like FYM (8-20 t/ha) in the main field. Fertilizers like urea, DAP, SSP and ammonium sulphate were used by the farmers.

Table 11: Details of main field management

Details	**Districts**			
	Ahmedabad	**Kheda**	**Mahisagar**	**Anand**
Planting method	Majority (>95%) of the farmers contacted followed random method of transplanting where plant population per unit area was not maintained. Few farmers from Ahmedabad and Anand followed direct sowing while few from Kheda and Mahisagar followed line transplanting method			
Total N applied	36-80 kg/ha (100% applied)	48-77 kg/ha (100% applied)	55-66 kg/ha (100% applied)	44-89 kg/ha (100% applied)
Total P_2O_5 applied	12-37 kg/ha (100% applied)	18-37 kg/ha (100% applied)	23-28 kg/ha (100% applied)	18-28 kg/ha (100% applied)
Total K_2O applied	Nil	Nil	Nil	Nil
$ZnSO_4$ applied (21% or 33%)	20 kg/ha (100% applied)	20 kg/ha (100% applied)	20 kg/ha (100% applied)	20 kg/ha (100% applied)
Organic fertilizers applied	Yes (100%); FYM (10-15 t/ha)	Yes (100%); FYM (10-15 t/ha)	Yes (100%); FYM (8-16 t/ha)	Yes (100%); FYM (9-15 t/ha)
Remarks	Nutrients were applied in the form of urea, DAP, SSP, Ammonium sulphate and zinc sulphate			

Table 11 contdd..: Details of main field management

Details	**Districts**			
	Vadodara + Panchmahals	**Surat + Bharuch**	**Tapi + Dang***	**Navsari + Valsad**
Planting method	Majority (>95%) of the farmers contacted followed random method of transplanting where plant population per unit area was not maintained. Few farmers from Vadodara, Surat and Tapi followed line transplanting method			
Total N applied	55-85 kg/ha (100% applied)	55-75 kg/ha (100% applied)	55-66 kg/ha (45.5% applied)	51-75 kg/ha (100% applied)
Total P_2O_5 applied	23-30 kg/ha (100% applied)	23-28 kg/ha (100% applied)	18-28 kg/ha (45.5% applied)	14-28 kg/ha (100% applied)
Total K_2O applied	Nil	Nil	Nil	Nil
$ZnSO_4$ applied (21% or 33%)	20 kg/ha (100% applied)	20 kg/ha (100% applied)	20 kg/ha (45.5% applied)	20 kg/ha (100% applied)
Organic fertilizers applied	Yes (100%); FYM (10-15 t/ha)	Yes (100%); FYM (10-15 t/ha)	Yes (100%); FYM (9-20 t/ha)	Yes (100%); FYM (10-18 t/ha)
Remarks	Nutrients were applied in the form of urea, DAP, SSP, Ammonium sulphate and zinc sulphate			

* Dang district is an organic district and no chemical fertilizers were applied in the field

Table 12: Weeds and weed management

Details	**Districts**			
	Ahmedabad	**Kheda**	**Mahisagar**	**Anand**
Weed intensity	Low to medium	medium	medium to high	Low to medium
Names of the weeds	Commonly recorded weeds were *Echinochloa colona, E. crusgalli, Cynodon dactylon, Cyperus rotundus, Eclipta alba* and others			
Weedicides used	Pyrazosulfuron Ethyl 70% WDG (30 gm/ha), bispyribac Sodium 10 SC (200 ml/ha), pendimethalin (1.5-2.5 l/ha) and others			
%age of farmers applied herbicides	Only hand weeding (68.2%); Hand weeding + herbicide (27.31%); only herbicide (4.5%)	Only hand weeding (85.2%); Hand weeding + herbicide (7.4%); only herbicide (7.4%)	Only hand weeding (79%); Hand weeding + herbicide (10.5%); only herbicide(10.5%)	Only hand weeding (51.8%); Hand weeding + herbicide (37.1%); only herbicide (11.1%)
Wild/weedy rice incidence	Nil	Nil	Nil	Nil
Remarks	One to two hand weeding was a general practice for the management of weeds. On an average about 29% farmers contacted applied herbicides alone or in combination with hand weeding. Rest of the farmers followed only hand weeding			

Table 12 contdd..: Weeds and weed management

Details	**Districts**			
	Vadodara + Panchmahals	**Surat + Bharuch**	**Tapi + Dang***	**Navsari + Valsad**
Weed intensity	Medium to high	Low to medium	Low to medium	Low to medium
Names of the weeds	Commonly recorded weeds were *Echinochloa colona, E. crusgalli, Cynodon dactylon, Cyperus rotundus, Sorghum halepense, Eclipta alba* and others			
Weedicides used	Pyrazosulfuron Ethyl 70% WDG (30 gm/ha), bispyribac Sodium 10 SC (200 ml/ha), pendimethalin (1.5-2.5 l/ha)			
%age of farmers applied herbicides	Only hand weeding (50%); Hand weeding + herbicide (37.5%); only herbicide (12.5%)	Only hand weeding (64.7%); Hand weeding + herbicide (29.4%); only herbicide (5.9%)	Only hand weeding (95.5%); only herbicide (4.5%)	Only hand weeding (90%); Hand weeding + herbicide (5%); only herbicide (5%)
Wild/weedy rice incidence	Nil	Nil	Nil	Nil
Remarks	One to two hand weeding was a general practice for the management of weeds. On an average about 25% farmers contacted applied herbicides alone or in combination with hand weeding. Rest of the farmers followed only hand weeding. Dang district is an organic district and no herbicides were applied in the field for the management of weeds			

D. Weeds and their Management: In general, the intensity of common weeds like *Echinochloa colona, E. crusgalli, Cynodon dactylon, Cyperus rotundus, Sorghum halepense, Eclipta alba* and others was low to medium except in Vadodara and Panchmahals where the intensity of weeds was medium to high. Hand weeding (1-2) was the most common practice

for weed management. On an average about 27% farmers applied weedicides like pendimethalin (1.5-2.5 l/ha), bispyribac Sodium 10 SC (200 ml/ha) and pyrazosulfuron Ethyl 70% WDG (30 gm/ha) in addition to hand weeding. Remaining farmers followed only hand weeding (Table 12). None of the farmers from Dang applied any weedcides (Table 12).

E. Needs of the farmers: Some of the common needs of the farmers were varieties suitable for direct seeded rice, short duration HYVs with medium slender grains, fine grain high quality and high yielding rice varieties, salt tolerant rice varieties, bold seeded high yielding rice varieties suitable for poha making, long grain aromatic rice varieties with false smut resistance, special incentives and support to the organic rice farmers, disease and pest resistant rice varieties, premium price for organic rice, improvement in irrigation facilities, improvement in mechanization to tackle the labour scarcity problems, bio-fortified varieties, varieties suitable for organic rice cultivation and technical support to farmers.

Table 13: Details of inputs used

Details	**Districts**			
	Ahmedabad	**Kheda**	**Mahisagar**	**Anand**
Implements used	Implements like tractor, puddler, combine harvester, rotavator, thresher, laser leveller, cultivator, sprayers (knapsack and power) were used by the farmers in different districts. Progressive farmers had some of their own equipment and other farmers hired the implements. Most of the farmers used combine harvester on hire basis			
Seed replacement (as reported by Cooperator)	40-75%	40-75%	50-100%	50-80%
Source of seeds	Almost all the farmers in different districts told that they purchased 20-100% of their seed requirement			
Source of irrigation	Canal (18.1%); shallow tube well (100%)	Canal (14.8%); deep tubewell (14.8%), shallow tubewell (85.2%)	Canal (21.1%); shallow tube well (84.2%)	Canal (3.7%); shallow tube well (100%)
Scarcity of irrigation water	No (100%)	No (96.3%)	No (84.2%)	No (100%)
Availability of fertilizers/pesticides	Yes (95%)	Yes (100%)	Yes (84.2%)	Yes (85.2%)
Quality of fertilizers/pesticides	Satisfied (86.4%)	Satisfied (96.3%)	Satisfied (89.5%)	Satisfied (81.2%)
Advisors to the farmers	Own decisions (50%); State Dept (18.2%); Dealers (40.1%); Univ (72.7%)	Own decisions (18.5%); State Dept (3.7%); Dealers (48.1%); Univ (62.9%)	Own decisions (5.3%); State Dept (5.3%); Dealers (57.9%); Univ (52.6%)	Own decisions (29.6%); State Dept (7.4%); Dealers (44.4%); Univ (77.8%)

F. Input Use: Implements like tractor, puddler, combine harvester, rotavator, thresher, laser leveller, cultivator, sprayers (knapsack and power) were used by the farmers in different districts. Progressive farmers had some of their own equipment and other farmers hired the implements. Most of the farmers used combine harvester on hire basis (Table 13). About 90-100% of the farmers contacted in different districts told that they purchased 20-100% of their seed requirement. Major source of irrigation was shallow tube wells followed by canal. Few farmers from Mahisagar, Vadodara, Panchmahals, Surat and Bharuch expressed scarcity of

irrigation water. Majority (80-100%) of the farmers from most of the districts except Tapi told that inputs like fertilizers and pesticides were available in time and they were happy with their quality. In addition to their own decisions, farmers took advices from private dealers and officials from university and state department of agriculture (Table 13).

Table 13 contdd..: Details of inputs used

Details	**Districts**			
	Vadodara + Panchmahals	**Surat + Bharuch**	**Tapi + Dang**	**Navsari + Valsad**
Implements used	Implements like tractor, puddler, combine harvester, rotavator, thresher, cultivator, sprayers (knapsack and power) were used by the farmers in different districts. Progressive farmers had some of their own equipment and other farmers hired the implements. Most of the farmers used combine harvester on hire basis			
Seed replacement (as reported by Cooperator)	40-100%	50-100%	70-100%	50-100%
Source of seeds	More than 90% farmers contacgted in different districts told that they purchased 20-100% of their seed requirement			
Source of irrigation	Canal (87.5%); Deep tube well (12.5%); shallow tube well (75%)	Canal (47.1%); shallow tubewell (88.2%)	Canal (9.1%); shallow tube well (90.9%)	Canal (35%); shallow tube well (100%)
Scarcity of irrigation water	No (93.7%)	No (76.5%)	No (100%)	No (100%)
Availability of fertilizers/pesticides	Yes (100%)	Yes (76.5%)	Yes (27.2%)	Yes (70%)
Quality of fertilizers/pesticides	Satisfied (100%)	Satisfied (82.4%)	Satisfied (45.5%)	Satisfied (75%)
Advisors to the farmers	Own decisions (43.75%); State Dept (6.25%); Dealers (68.75%); Univ (43.75%)	Own decisions (23.5%); State Dept (5.9%); Dealers (29.4%); Univ (70.6%)	Own decisions (68.2%); State Dept (13.6%); Dealers (4.5%); Univ (86.4%)	Own decisions (10%); State Dept (5%); Dealers (30%); Univ (70%)

G. Biotic stresses and their management: In general, the intensity of different diseases and insect pests was low to moderate (Table 14). Diseases like leaf and neck blast, sheath blight, sheath rot, false smut, grain discoloration and bacterial blight were wide spread but in low to moderate intensity (Table 14). However bacterial blight was recoded in high intensity (35-60%) on varieties like Sardar, Nathpoha, GNR 3, Sakti Poha, Mahatma in Andhi village in Surat and Junaobha village in Bharuch (Table 14). Insect pests like stem borer, leaf folder and WBPH were widespread but in low to moderate intensity (Table 14). High intensity (up to 25%) of gundhi bug was noticed on varieties like Suruchi and Kaveri 468 in Dangurda and Gurya village of Dang district (Table 14). Farmers used different pesticides for managing different pests and diseases (Table 15). Majority of the farmers contacted (80-100%) in different districts except Dang adopted chemical plant protection measures (Table 15). Few farmers from Tapi, Surat and Bharuch mixed 2 different pesticides before application (Table 15). Zinc deficiency symptoms were commonly observed in surveyed field. Some of the common problems faced by the farmers were low market price for paddy, scarcity of labours, high cost of inputs resulting higher cost of cultivation and less profitability, uncertain rainfall, heavy rainfall during

harvesting time, low return from rice culyivation, low market price for organic rice, crop lodging, increase in pest and disease problems and micro-nutrient deficiency. A general view shared by most of rice growing farmers during our survey that day by day the profitability of rice cultivation is decreasing because of increase in input cost. Some farmers are growing rice under organic and natural farming and they want some additional price for their produce.

Table 14: Prevalence of diseases and Insects in Gujarat during *Kharif* 2025

Districts	**Diseases**						
	Bl	**NBl**	**ShBl**	**ShR**	**GD**	**FS**	**BLB**
Ahmedabad	L-M (2-13%)	L-M (3-8%)	L (2-4%)	L-M (5-20%)	L-M (5-13%)	L-M (7-20%)	L-M (2-15%)
Kheda	L-M (3-8%)	L-M (3-14%)	-	L-M (2-15%)	L-M (5-16%)	L-M (2-16%)	L-M (2-12%)
Mahisagar	L-M (3-8%)	L-M (5-18%)	L-M (5-16%)	L-M (3-14%)	M (10-12%)	L-M (4-15%)	L-M (4-12%)
Anand	L-M (5-11%)	L-M (2-15%)	L-M (2-11%)	L-M (6-18%)	L-M (5-10%)	L-M (3-18%)	L-M (3-15%)
Vadodara + Panchmahals	L-M (2-10%)	L-M (5-14%)	L-M (6-10%)	L-M (5-12%)	L-M (2-10%)	L-M (4-18%)	L-M (2-15%)
Surat + Bharuch	L-M (2-9%)	L-M (4-8%)	-	L-M (4-12%)	L-M (5-10%)	L-M (2-15%)	M-S (10-60%)
Tapi + Dang	L-M (2-13%)	L-M (2-18%)	-	L-M (2-16%)	L-M (2-20%)	L-M (5-19%)	L-M (3-20%)
Navsari + Valsad	L-M (2-10%)	L-M (4-12%)	L-M (5-15%)	L-M (4-16%)	L-M (2-14%)	L-M (5-16%)	L-M (2-12%)

Districts	**Insect pests**					
	SB	**LF**	**BPH**	**WBPH**	**GB**	**GM**
Ahmedabad	L-M (2-18%)	L-M (3-20%)		L-M (4-21%)		
Kheda	L-M (4-12%)	L-M (4-10%)		L-M (4-15%)		
Mahisagar	M (8-16%)	L-M (4-8%)		L-M (4-8%)		
Anand	L-M (2-10%)	L-M (4-20%)		L-M (2-10%)		L-M (5-10%)
Vadodara + Panchmahals	L-M (4-15%)	L-M (4-10%)	M (10-12%)	L-M (3-15%)	L-M (4-9%)	
Surat + Bharuch	L-M (3-12%)	L-M (2-10%)		L-M (3-10%)		
Tapi + Dang	L-M (3-18%)	L-M (4-16%)		L-M (5-10%)	L-M (2-25%)	
Navsari + Valsad	L-M (3-14%)	L-M (4-10%)	L-M (5-9%)	L-M (5-10%)	L-M (2-8%)	

Table 15: Details of pest management

Details	Districts			
	Ahmedabad	**Kheda**	**Mahisagar**	**Anand**
% age farmers adopting plant protection	95.1%	100%	89.5%	81.5%
Names of pesticides	**Insecticides**: cartap hybdrochloride 4G (20 kg/ha), chlorantraniliprole (0.4%) @ 10 kg/ha, indoxacarb and cypermethrin 10% EC (1-2 ml/l) for stem borer and leaf folder and imidacloprid 17.8 SL (150 ml/ha) and thiomethoxam 25 WG (200 g/ha) for plant hoppers **Fungicides**: propiconazole 25 EC (1 ml/l), carbendazim (12%) + mancozeb (63%) @ 1-1.25 kg/ha, hexaconazole (500 ml/ha) and Nativo (0.4 g/l) for sheath blight, false smut, sheath rot and grain discoloration; tricyclazole 75 WP (300 g/ha), propiconazole (1 ml/l) and carbendazim (12%) + mancozeb (63%) @ 1-1.25 kg/ha for blast and neck blast and tricyclazole + kasugamycin for false smut and bacterial blight			
# of pesticide sprays	1-2	1-2	1-2	1-3
Mixing of pesticides	Nil	Nil	Nil	Nil
Zinc deficiency	Yes (90.1%)	Yes (92.6%)	Yes (100%)	Yes (100%)

Table 15 contdd..: Details of pest management

Details	Districts			
	Vadodara + Panchmahals	**Surat + Bharuch**	**Tapi + Dang**	**Navsari + Valsad**
% age farmers adopting plant protection	93.7%	88.2%	45.5%; No pesticide application in Dang	80%
Names of pesticides	**Insecticides**: cartap hybdrochloride 4G (20 kg/ha), chlorantraniliprole (0.4%) @ 10 kg/ha, indoxacarb and cypermethrin 10% EC (1-2 ml/l) for stem borer and leaf folder and imidacloprid 17.8 SL (150 ml/ha) and thiomethoxam 25 WG (200 g/ha) for plant hoppers **Fungicides**: propiconazole 25 EC (1 ml/l), carbendazim (12%) + mancozeb (63%) @ 1-1.25 kg/ha, hexaconazole (500 ml/ha), validamycin (5%) + tebuconazole (15%) and Nativo (0.4 g/l), azoxystrobin+ difenoconazole, for sheath blight, false smut, sheath rot and grain discoloration; tricyclazole 75 WP (300 g/ha), propiconazole (1 ml/l) and carbendazim (12%) + mancozeb (63%) @ 1-1.25 kg/ha for blast and neck blast and streptocycline, validamycin + COC, carbendazim (12%) + mancozeb (63%) + streptocycline/kasugamycin, copper oxychloride 50% and copper oxychloride + streptocycline for false smut and bacterial blight			
# of pesticide sprays	1-2	1-3	1-3	1-2
Mixing of pesticides	Nil	Yes (29.4%)	Yes (9.1%)	Nil
Zinc deficiency	Yes (100%)	Yes (94.1%)	Yes (100%)	Yes (100%)

Table 16: Researchable issues

Parameters/Issues	**Districts**			
	Ahmedabad	**Kheda**	**Mahisagar**	**Anand**
Rice ecology in your area	Irrigated	Irrigated	Irrigated	Irrigated
Rice cultivation only in Kharif or both Kharif and Rabi	Kharif	Kharif	Kharif	Kharif
Number of years of experience in rice farming	10-20 Years	10-20 Years	10-20 Years	5-20 Years
Main biotic constraints (diseases) in your area according to you	Leaf and neck blat, false smut, bacterial blight, sheath blight and sheath rot			
Extent of disease damage	10-25%	10-25%	10-25%	10-25%
Main biotic constraints (Insect pests) in your area according to you	Stem borer, leaf folder, WBPH			
Extent of insect pest damage	<10%	<10%	<10%	10-25%
Main abiotic constrains in your area according to you	NA	NA	NA	NA
Production constraints in your area according to you	Main production constraints in the area are lack of irrigation facilities			
Irrigation facilities in your area	Canal, bore wells	Bore wells	Bore wells	Bore wells
Normally how many years it takes to change the rice variety	10-20 Years	10-20 Years	10-20 Years	10-20 Years
Any other rice production issues in your area which the rice scientists need to address	NA	NA	NA	NA
What is urgently required in your area as far as rice varieties are concerned				
Duration	Varieties suitable for DSR			
Biotic stress resistance	Varieties tolerant to blast, BLB, false smut, WBPH/BPH, and stem borer			
Abiotic stress resistance	Varieties with tolerance to drought			
Preferred grain quality	High yielding rice varieties with medium slender grain, aromatic short grain varieties and long grain basmati varieties			
Nutritional quality	Varieties with high zinc, high protein and low GI			

H. Researchable issues: Among the biotic stresses, major problems in the region are leaf and neck blast, sheath rot, false smut and bacterial blight among the diseases and stem borer, leaf folder and WBPH among the insect pests. Among the abiotic problems, drought and salinity were the main problem. Major problems faced by the farmers were lack of irrigation facilities, and scarcity of agricultural labours. Farmers want high yielding rice varieties suitable for DSR, short duration rice varieties, varieties having tolerance leaf and neck blast, BLB, false smut, sheath rot, WBPH, leaf folder and stem borer. Farmers also expressed the need for varieties having tolerance to salinity and drought, varieties with medium slender grains and with high high protein and low GI.

Table 16 contdd.: Researchable issues

Parameters/Issues	**Districts**			
	Vadodara + Panchmahals	**Surat + Bharuch**	**Tapi + Dang**	**Navsari + Valsad**
Rice ecology in your area	Irrigated	Irrigated	Irrigated ; Hill ecosystem	Irrigated
Rice cultivation only in Kharif or both Kharif and Rabi	Kharif	Kharif	Kharif	Kharif
Number of years of experience in rice farming	10-20 Years	5-20 Years	10-20 Years	5-20 Years
Main biotic constraints (diseases) in your area according to you	Leaf and neck blat, false smut, bacterial blight, sheath blight and sheath rot			
Extent of disease damage	10-25%	10-25%	10-25%	10-25%
Main biotic constraints (Insect pests) in your area according to you	Stem borer, leaf folder, WBPH			
Extent of insect pest damage	10-25%	<10%	10-25%	<10%
Main abiotic constrains in your area according to you	NA	NA	NA	NA
Production constraints in your area according to you	Main production constraints in the area are lack of irrigation facilities			
Irrigation facilities in your area	Canal, bore wells	Bore wells, canal	Bore wells	Bore wells, canal
Normally how many years it takes to change the rice variety	10-20 Years	10-20 Years	10-20 Years	10-20 Years
Any other rice production issues in your area which the rice scientists need to address	NA	NA	NA	NA
What is urgently required in your area as far as rice varieties are concerned				
Duration	Varieties suitable for DSR			
Biotic stress resistance	Varieties tolerant to false smut, BLB, WBPH/BPH, and stem borer			
Abiotic stress resistance	Varieties with tolerance to drought			
Preferred grain quality	High yielding rice varieties with medium slender grain and long grain basmati varieties			
Nutritional quality	Varieties with high protein and low GI			

Haryana-2025-26 (Kaul)

Districts surveyed: *Kaithal, Kurukshetra, Karnal, Jind, Yamunanagar, Ambala, Panipat* and *Sonepat*

Table 1: Particulars of survey

Districts	Blocks	Villages (latitude/longitude)
Kaithal	Kaithal, Guhla, Siwan and Pundri	Sirta (29.748765/76.350042), Peedal (30.012712/76.341435), Harigarh Kingon (30.061097/76.382028), Bhagal (20.064302/76.429447), Plad (29.92755/76.357253), Jajanpur (29.909528/76.606127), Chaoudhary Patti (29.773753/76.38914), Solu Majra (29.863685/76.569925), Pabnawa(29.900664/76.646129) and Sakra (29.805188/76.701578)
Kuruk-shetra	Pehowa, Sahabad, Ismailabad, Thanesar, Ladwa and Babain	Asmanpur (29.970122/76.605167), Rawa, Murtazpur (29.973102/76.645361), Jalbheda (30.089617/76.666848), Lotni (30.065313/76.659533), Ajrawar (30.154302/76.68338), Chaduni Jatan (30.097947/76.864354), Dudhla (30.044048/76.896846), Bhalolpur (30.021156/76.023035) and Kandoli (30.063002/77.00706)
Karnal	Gharaunda, Asandh, Nilokheri, Karnal and Indri	Harisinghpura (29.484218/77.010035), Gangatehri (29.475382/76.48618), Mundh (29.514102/76.549362), Khedi Sarif Ali (29.543263/76.554556), Anjanthali, Barthal (29.85/76.88), Samana Bahu (29.907333/76.92178), Sagga (29.756022/76.859549), Sangoya (29.778794/76.996472) and Khanpur (29.928305/77.047839)
Jind	Julana, Jind, Alewa and Safidon	Garwali (29.16803/76.34257), Kandela (29.373281/76.356197), Habatpur (29.340987/76.341515), Morkhi (29.26344/76.60395), Nagura, Alewa (29.458476/76.437317), Hasanpura (29.444692/76.394327), Titokheri (29.389497/76.699918), Safidon (29.404404/76.69453) and Roar (29.460328/76.639194)
Yamuna-nagar	Radaur, Sadura, Saraswatinagar, Jagadhari and Bilaspur	Kanjnu (30.037149/77.186221), Nadipar Sadoura (30.40118/77.203284), Sran (30.202555/77.096539), Kattarkhana (30.296202/77.215995), Ramgarh Majra (30.329987/77.23837), Bheel Chappar (30.307656/77.2847), Kail (30.190786/77.236025), Taranwala (30.252559/77.28335), Aurangabad (30.10018/77.223091) and Jubbal (30.056992/77.179458)
Ambala	Sahjadpur, Barara, Ambala and Naraingarh	Bilaspur (30.455347/77.050225), Mulana (30.257488/77.053473), Hememajra (30.258763/77.014845), Nidani (30.27259/76.712503), Chajumajra (30.430828/76.943411), Okhal (30.416153/77.136918), Barouli (30.480576/77.2552), Hasanpur, Ballana (30.335734/76.725937) and Lohagarh (30.23196/76.704848)
Panipat	Bapoli, Samalkha, Panupat and Madlauda	Balor (29.304237/77.10482), Jorasi, Barana (29.46341/77.069267), Babail (29.438626/77.055998), Urlana Khurd (29.378621/76.691172), Chulkana (29.8272/76.993426), Matnoli (29.265398/77.099561), Kurar

		(29.383754/77.070051), Jalmana (29.339201/72.106604) and Faridpur (29.472898/77.04353)
Sonepat	Sonipat, Gohana, Mudlana and Kharkhoda	Kurar (29.041665/77.050429), Ahir Majra (29.14007/76.977632), Siwanka (29.207483/76.708124), Jhagsi (29.247602/76.675088), Karewari (29.042411/76.911221), Khanda (28.928971/76.887618), Barotha (29.11812/76.738161), Kakroi (28.964861/76.961781), Bali Brahman and Silona (28.941566/76.842949)

Table 2: Widely prevalent rice varieties

Districts	Varieties
Kaithal	**HYVs**: PR 114, PR 126 and others; **Hybrids**: Sava 7501, Sava 134, Sava 127 and others; **Basmati**: Pusa Basmati 1509, Pusa Basmati 1, Pusa Basmati 1121, CSR 30, Pusa Basmati 1718, Pusa Basmati 1885, Pusa Basmati 1847 and others
Kurukshetra	**HYVs**: PR 114, PR 126 and others; **Hybrids**: Sava 7301, Harvir Agro 777, Sava 7501, VNR 2111, Sava 127, Hybrid 7299 and others; **Basmati**: CSR 30, Pusa Basmati 1509, Pusa Basmati 1692 and others
Karnal	**HYVs**: PR 126, PR 114, PR 131 and others; **Hybrids**: VNR 2222, Sava 7501, Hyb. 90m100, Sava 7301 and others; **Basmati**: Pusa Basmati 1121, Pusa Basmati 1509, Pusa Basmati 1401, Pusa Basmati 1885 and others
Jind	**HYVs**: HKR 49 and others; **Hybrids**: Hyb. 90m100, Sava 7501, VNR 2222 and others; **Basmati**: Pusa Basmati 1509, Pusa Basmati 1121, Pusa Basmati 1718, Pusa Basmati 1401, CSR 30, Pusa Basmati 1979, Pusa Basmati1985, Pusa Basmati 1885, Pusa Basmati 1847 and others
Yamunanagar	**HYVs**: PR 126, PR 131, PR 114 and others; **Hybrids**: Sava 7301, Sava 7501, VNR 222, Arize 6444, KRH 7299, VNR 2111, Sava 127, Hyb. 359 and others; **Basmati**: Pusa Basmati 1509, Pusa Basmati 1121 and others
Ambala	**HYVs**: PR 126, Sarbati, PR 128 and others; **Hybrids**: KRH 468, Sava 7301, VNR 2222, Sava 7501, KRH 7299, Hyb. 372, Sava 127, Sava 134 and others; **Basmati**: Pusa Basmati1885, Pusa Basmati 1121, Pusa Basmati 1509, CSR 30, Pusa Basmati 1718 and others
Panipat	**HYVs**: PR 114, HKR 49, HKR 17-422, PR 126, PR 131 and others; **Hybrids**: Sava 7501 and other hybrids; **Basmati**: Pusa Basmati 1121, Pusa Basmati 1509, Pusa Basmati 1718, Pusa Basmati 1692, Pusa Basmati 1885, Pusa Basmati 1401 and others
Sonepat	**HYVs**:PR 126 and others; **Hybrids**: Sava 134 and others; **Basmati**: Pusa Basmati1885, Pusa Basmati 1509, Pusa Basmati 1121, Pusa Basmati 1718, Pusa Basmati 1401, Pusa Basmati 1692, Pusa Basmati 1847 and others

Production oriented survey was conducted in 8 rice growing districts of Haryana viz., Kaithal, Kurukshetra, Karnal, Jind, Yamunanagar, Ambala, Panipat and Sonepat during Kharif season of 2025 when the crops were booting to maturity stage. A total of 80 villages in 8 districts were surveyed. The details of survey particulars are presented in Table 1 and Table 3. The fields surveyed were under irrigated ecosystem and in general the weather conditions for rice cultivation were favourable. However, there were reports of excess rainfall and flash floods in about 10-50% of the places surveyed in Kurukshetra, Jind, Yamunanagar, Ambala, Panipat and Sonepat. Widely cultivated rice varieties were HYVs like PR 114, PR 126, PR 131, HKR 49, Sarbati, PR 128, HKR 17-422 and others; hybrids like Sava 7501, Sava 134, Sava 127, Sava

7301, Harvir Agro 777, VNR 2111, Hybrid 7299, VNR 2222, Hyb. 90m100, Arize 6444, KRH 7299, Hyb. 359, KRH 468, Hyb. 372 and others and basmati rice varieties like Pusa Basmati 1509, Pusa Basmati 1, Pusa Basmati 1121, Pusa Basmati 1692, CSR 30, Pusa Basmati 1718, Pusa Basmati 1885, Pusa Basmati 1401, Pusa Basmati 1847, Pusa Basmati 1979, Pusa Basmati 1985, and others. The details of different rice varieties cultivated in different districts of Haryana are presented in Table 2.

Table 3: General information

Parameters	Kaithal	Kurukshetra	Karnal	Jind
# of talukas/blocks covered	4	5	6	4
# of villages surveyed	10	10	10	10
# of farmers interviewed	10	10	10	10
Field ecosystem	Irrigated	Irrigated	Irrigated	Irrigated
Weather conditions during cropping season	Favorable (100%)	Favorable (90%); Excess rainfall (10%)	Favorable (100%)	Favorable (70%); Excess rainfall (30%)
Crop stage when survey was made	Heading to maturity	Heading to milk	Booting to maturity	Heading to maturity
Crop rotations	Rice-wheat was the main crop rotation followed by the farmers. Some farmers also followed rice-mustard, rice-mustard-potato, rice-potato-tomato, rice-potato-maize, rice-potato-sugarcane, rice-wheat-tomato, rice-wheat-vegetables and others			

Table 3 Contd..: General information

Parameters	Yamunanagar	Ambala	Panipat	Sonepat
# of talukas/blocks covered	5	4	4	4
# of villages surveyed	10	10	10	10
# of farmers interviewed	10	10	10	10
Field ecosystem	Irrigated	Irrigated	Irrigated	Irrigated
Weather conditions during cropping season	Favorable (70%); Excess rainfall (30%)	Favorable (50%); Excess rainfall (50%)	Favorable (70%); Excess rainfall (30%)	Favorable (70%); Excess rainfall (30%)
Crop stage when survey was made	Booting to mature	Tillering to milk	Booting to maturity	Booting to maturity
Crop rotations	The main crop rotation followed by the farmers was rice-wheat. Some farmers also followed rice-mustard, rice-maize, rice-tomato/brinjal/cabbage/cauliflower, rice-potato-maize, rice-wheat-mustard, rice-wheat-sugarcane, rice-wheat-vegetables and others			

A. Cropping system and rice yield: The main crop rotation followed by the farmers was rice-wheat. Some farmers also followed rice-mustard, rice-maize, rice-mustard-potato, rice-potato-tomato, rice-potato-maize, rice-tomato/brinjal/cabbage/cauliflower, rice-potato-maize, rice-potato-sugarcane, rice-wheat-tomato, rice-wheat-mustard, rice-wheat-sugarcane, rice-wheat-vegetables and others (Table 3). The details of variety wise yield (as reported by the farmers during survey) are presented in Table 4. Average rice yield among HYVs and hybrids ranged

from 6000-10000 kg/ha while in case of basmati varieties, average yield ranged from 2500-6500 kg/ha.

Table 4: Average yields of different rice varieties as reported by the cooperators/farmers

Variety/hybrids	Yield (kg/ha)			
	Kaithal	Kurukshetra	Karnal	Jind
HYVs				
PR 126	6500-8000	7000-7500	6500-7500	
PR 114		7000-8750	6000-8500	
Basmati				
CSR 30	2500-2750			3000
Pusa Basmati 1121				4500-5500
Pusa Basmati 1509		5750-6000	5000-6000	
Pusa Basmati 1718	4000			5000-6000
Pusa Basmati 1885	5750		5500-6000	6000
Pusa Basmati 1401			6000	5000
Pusa Basmati 1847				5500
Hybrids				
Sava 7501	8750-9500	9000-9500	7250-7500	8000
Sava 7301		6250-8750	7500	
VNR 2222			9250	
KRH 7299			8500	

Yield in some fields was reduced due to lodging because of higher fertilizer use, high incidence of SRBSDV in Kurukshetra (some fields ploughed back) and Kaithal

Table 4: Contdd..

Variety/hybrids	Yield (kg/ha)			
	Yamunanagar	Ambala	Panipat	Sonepat
HYVs				
PR 126	6500	7500-7750		
PR 114			10000	
PR 128		7500		
Basmati				
CSR 30				
Pusa Basmati 1121	6500	5000	4500-5200	6000-6250
Pusa Basmati 1509	5500		4600-5000	5750
Pusa Basmati 1718			4500-5000	5000-5750
Pusa Basmati 1692			5000-7000	6000
Pusa Basmati 1885			2700-5000	5000-5750
Pusa Basmati 1401			7000	5000
Hybrids				
Sava 7501	7500-9000	8750		
Sava 7301	6000-8500	7500-9250	8750-10000	
Sava 134		7500		
Sava 127	7500-8000	8000		
VNR 2222	6000	7000		
KRH 7299	7500	7000-8000		
HYb. 372		6250		

Table 5: Details of rice consumption pattern in different districts of Haryana

Parameters	Districts			
	Kaithal	**Kurukshetra**	**Karnal**	**Jind**
Status of farmers	Medium Income (100%)	Medium Income (100%)	Medium Income (70%); poor (20%); rich (10%)	Medium Income (90%); rich (10%)
Per capita monthly rice consumption (kg)	2-5 kg	2-5 kg	2-5 kg	2-5 kg
Composition of main meal	Rice + Wheat (100%)	Rice + Wheat (100%)	Rice + Wheat (100%)	Rice + Wheat (100%)
Preferred rice types	Polished rice (100%)	Polished rice (100%)	Polished rice (100%)	Polished rice (100%)
Rice grain type preference	Basmati (100%);	Basmati (100%)	Basmati (100%)	Basmati (100%)
Any changes in food habit in last 10 years	No	No	No	No

Table 5: Contd..

Parameters	Districts			
	Yamunanagar	**Ambala**	**Panipat**	**Sonepat**
Status of farmers	Medium Income (100%)	Medium Income (100%)	Medium Income (100%)	Medium Income (100%)
Per capita monthly rice consumption (kg)	2-5 kg	3-6 kg	4-5 kg	2-5 kg
Composition of main meal	Rice + Wheat (100%)	Rice + Wheat (100%)	Rice + Wheat (100%)	Rice + Wheat (100%)
Preferred rice types	Polished rice (100%)	Polished rice (100%)	Polished rice (100%)	Polished rice (100%)
Rice grain type preference	Basmati (100%);	Basmati (100%)	Basmati (80%); coarse grain (20%)	Basmati (100%)
Any changes in food habit in last 10 years	No	No	No	No

B. Rice consumption pattern: Survey was conducted on consumption pattern of rice among the farmers in different districts of Haryana. Majority (average 95%) of the farmers contacted were in the medium income group and rest were lower income group (2.5%) and higher income group (2.5%). Average per capita consumption of rice per month was 2-6 kg rice (Table 5). All the farmers contacted told that their main meal consisted of both rice and wheat and all of them they told that they preferred polished rice. Almost 95% of the farmers contacted told that they preferred basmati rice varieties and only few farmers from Panipat district told that they used rice varieties other than basmati. In general, there was no change in the food habit except that some farmers told that they included of rice in their diet.

Table 6: Details of nursery management

Parameters	Districts			
	Kaithal	**Kurukshetra**	**Karnal**	**Jind**
Planting time	2nd week of June to 1st week of July	2nd to 4th week of June	2nd week of June to 1st week of July	3rd week of June to 1st week of July
Seed rate	12.5-20 kg/ha	20-25 kg/ha; ~10% purchased nursery	15-25 kg/ha	12.5-20 kg/ha
Seed treatment (% farmers adopted)	Yes (60%); Used treated seeds (40%)	Yes (40%); Used treated seeds (60%)	Yes (70%); Used treated seeds (20%)	Yes (60%); Used treated seeds (40%)
Chemicals used for seed treatment	Soaking 10 kg seeds in carbendazim (1-2 g/kg) or mixture of carbendazim (10g) + streptocycline (1g) or mixture of carbendazim (12%) + mancozeb (63%) @ 2 g/kg in 10 litre of water for 24 h			
Organic manure in nursery (% farmers adopted)	Yes (10%) FYM (5 q/kanal)	Nil (100%)	Yes (10%); FYM	Nil (100%)
Inorganic manure in nursery (% farmers adopted)	Yes (80%); Urea (5-15 kg/kanal) and/or DAP @ 5-15 kg/kanal*	Yes (100%); Urea (5-10 kg/kanal) and/or DAP @ 5-10 kg/kanal*	Yes (90%); Urea (5-15 kg/kanal) and/or DAP @ 5-15 kg/kanal*	Yes (80%); Urea (5-15 kg/kanal) and/or DAP @ 5-15 kg/kanal*

* 1 Kanal = 500 m^2

Table 6: Contdd..

Parameters	Districts			
	Yamunanagar	**Ambala**	**Panipat**	**Sonepat**
Planting time	2nd week of June to 1st week of July	2nd week of June to 1st week of July	3rd week of June to 2nd week of July	2nd week of June to 1st week of July
Seed rate	12.5-20 kg/ha	12.5-20 kg/ha	20-25 kg/ha	20 kg/ha
Seed treatment (% farmers adopted)	Yes (20%); Used treated seeds (80%)	Yes (40%); Used treated seeds (30%)	Yes (40%); Used treated seeds (60%)	Yes (70%); Used treated seeds (30%)
Chemicals used for seed treatment	Soaking 10 kg seeds in carbendazim (1-2 g/kg) or mixture of carbendazim (10g) + streptocycline (1g) or mixture of carbendazim (12%) + mancozeb (63%) @ 2 g/kg in 10 litre of water for 24 h			
Organic manure in nursery (% farmers adopted)	Nil (100%)	Yes (10%); FYM	Nil (100%)	Nil (100%)
Inorganic manure in nursery (% farmers adopted)	Yes (100%); Urea (5-15 kg/kanal) and/or DAP @ 5-15 kg/kanal*	Yes (90%); Urea (5-15 kg/kanal) and/or DAP @ 5-15 kg/kanal*	Yes (40%); Urea (5-10 kg/kanal) and/or DAP @ 5-10 kg/kanal*	Yes (90%); Urea (5-10 kg/kanal) and/or DAP @ 5-20 kg/kanal*

C. Nursery and main field Management: Average seed rate was low (12.5-25 kg/ha). On an average about 50% of the farmers contacted told that they treated the seeds by soaking them in carbendazim (1-2 g/kg) or a mixture of Bavistin (10g) + streptocycline (1g) or mixture of carbendazim (12%) + mancozeb (63%) @ 2 g/kg in 10 litre of water for 24 h (Table 6). Other farmers told that they used already treated seeds from market for sowing (Table 6). Application of organic manure in the nursery was not common among the farmers. However, majority of the farmers contacted (on an average 83%) in different districts applied chemical fertilizers like urea and DAP in the nursery (Table 6). Planting was done during second week of June to second week of July. All the farmers contacted adopted random planting where plant population per unit area was not maintained. The details of fertilizers applied in the main field are given in Table 7. Average nitrogen dose in case of HYVs was 115-252.5 kg N/ha while in case of basmati N dose was 80-230 kg N/ha. Other fertilizers were applied @ 10-57.5 kg P_2O_5/ha and 10-57.5 kg K_2O/ha. On an average, about 65.5% farmers contacted applied phosphorus and

about 41% farmers contacted applied potash in the main field. On an average about 66% farmers applied zinc sulphate (containing either 21% or 33% zinc) @ 6.87-37.5 kg/ha. Some farmers applied chelated zinc. About 56% farmers applied farm yard manure or vermicompost or green manure in the main field. Most of the farmers contacted told that they applied FYM in the main field once in 2-4 years depending on its availability. Few (10-20%) farmers from Jind, Yamunanagar and Sonipat applied plant growth regulator like Paclobutrazol, Humigo and Mycorrhiza for better growth. Some farmers in Ambala applied $FeSO_4$ as foliar spray.

Table 7: Details of main field management

Details	Districts			
	Kaithal	**Kurukshetra**	**Karnal**	**Jind**
Planting method	All the farmers contacted adopted random planting where plant population per unit area was not maintained			
Total N applied	HYVs: 144.63-252.5 kg/ha; Basmati: 80-172.5 kg/ha	HYVs: 172.5-252.5 kg/ha; Basmati: 137.5 kg/ha	HYVs: 195-252.5 kg/ha; Basmati: 115-185 kg/ha	HYVs: 172.5-252.5 kg/ha; Basmati: 115-230 kg/ha
Total P_2O_5 applied	Yes (60%) @ 20-57.5 kg/ha	Yes (50%) @ 20-57.5 kg/ha	Yes (70%) @ 20-57.5 kg/ha	Yes (50%) @ 10-57.5 kg/ha
Total K_2O applied	Yes (30%) @ 11.5 – 28.75 kg/ha	Yes (60%) @ 28.75 – – 57.5 kg/ha	Yes (20%) @ 28.75 – 57.5 kg/ha	Yes (40%) @ 10 – 57.5 kg/ha
$ZnSO_4$ app-lied (21% or 33%)	Yes (60%) @ 12.5-25 kg/ha	Yes (70%) @ 12.5-37.5 kg/ha	Yes (50%) @ 12.5-25 kg/ha	Yes (50%) @ 12.5-25 kg/ha
Organic fertilizers applied	Yes (60%); FYM (2-3 trolly/acre) or green manure once in 2-4 years depending on availability	Yes (40%); FYM (2-3 trolly/acre), vermicompost or GM once in 2-3 years depending on availability;	Yes (50%); FYM (2-3 trolly/acre) or green manure once in 3-4 years depending on availability	Yes (50%); FYM (15-20 t/acre) or vermicompost or green manure once in 3-4 years depending on availability
Remarks	Nutrients were applied in the form of urea, DAP, SSP, MOP and zinc sulphate (21% or 33%). Few (10%) farmers from Jind applied growth regulator (Paclobutrazol) for better growth			

Table 7: Contdd..

Details	Districts			
	Yamunanagar	**Ambala**	**Panipat**	**Sonepat**
Planting method	All the farmers contacted adopted random planting where plant population per unit area was not maintained			
Total N applied	HYVs: 115-223.75 kg/ha; Basmati: 115-137.5 kg/ha	HYVs: 115-223.75 kg/ha; Basmati: 126.25-155 kg/ha	HYVs: 195-230 kg/ha; Basmati: 80-230 kg/ha	Basmati: 115-195 kg/ha
Total P_2O_5 applied	Yes (70%) @ 20-57.5 kg/ha	Yes (70%) @ 10-57.5 kg/ha	Yes (70%) @ 20-57.5 kg/ha	Yes (60%) @ 20-57.5 kg/ha
Total K_2O applied	Yes (60%) @ 28.75-57.5 kg/ha	Yes (50%) @ 28.75 – 57.5 kg/ha	Yes (40%) @ 57.5 kg/ha	Yes (30%) @ 28.75 – 57.5 kg/ha
$ZnSO_4$ app-lied (21% or 33%)	Yes (70%) @ 12.5-25 kg/ha	Yes (80%) @ 6.87-25 kg/ha	Yes (80%) @ 12.5-37.5 kg/ha	Yes (70%) @ 12.5-25 kg/ha
Organic fertilizers applied	Yes (40%); FYM (2-3 trolly/acre) or green manure once in 3-4 years depending on availability	Yes (80%); FYM (8 t/acre), vermicompost or GM once in 2-4 years depending on availability	Yes (70%); FYM (2-3 trolly/acre) or green manure once in 3-4 years depending on availability	Yes (60%); FYM (10-15 t/acre) or vermicompost or green manure once in 3-4 years depending on availability
Remarks	Nutrients were applied in the form of urea, DAP, SSP, MOP and zinc sulphate (21% or 33%). Some farmers in Ambala applied $FeSO_4$ as foliar spray. Few (20%) farmers from Yamunanagar and Sonipat applied growth regulator (Humigo), mycorrhiza, Paclobutrazol 40% SC, for better growth			

Table 8: Weeds and weed management

Details	Districts			
	Kaithal	**Kurukshetra**	**Karnal**	**Jind**
Weed intensity	Low-medium			
Names of the weeds	Commonly recorded weeds were Sawank (*Echinochloa colona*), doob (*Cynodon dactylon*), *Leptochloa chinensis*, Deela (*Cyperus rotundus*), Chinese grass (local name), Makra weed (*Dactyloctenium aegyptium*), Ghoda grass (local name), Chaatri grass (local name), Jalkumbi (*Pontederia crassipes/ Eichhornia crassipes*), Cobra weed (local name), mirchi butti (local name) and some unidentified weeds			
Weedicides used	Different herbicides like butachlor (1-1.2 litre/acre), Rifit Plus (pretilachlor 37% EW) (500 ml/acre), Racer (pretilachlor) (800 ml/acre), Nominee Gold (bispyribac Sodium), Nominee Gold + Almix (metsulfuron-methyl 10% + chlorimuron-ethyl 10% WP) and others were used by the farmers			
Percentage of farmers applied herbicides	Only weedicides (80%); Hand weeding + Weedicides (20%)	Only weedicides (70%); Hand weeding + Weedicides (30%)	Only weedicides (50%); Hand weeding + Weedicides (50%)	Only weedicides (50%); Hand weeding + Weedicides (50%)
Wild/weedy rice incidence	NA	NA	NA	NA

Table 8: Contdd..

Details	Districts			
	Yamunanagar	**Ambala**	**Panipat**	**Sonepat**
Weed intensity	Low-medium			
Names of the weeds	Commonly recorded weeds were Sawank (*Echinochloa colona*), doob (*Cynodon dactylon*), *Leptochloa chinensis*, Deela (*Cyperus rotundus*), Chinese grass (local name), Makra weed (*Dactyloctenium aegyptium*), Ghoda grass (local name), Congress grass (Parthenium hysterophorus), mirchi butti (local name) and some unidentified weeds			
Weedicides used	Different herbicides like butachlor (1-1.2 litre/acre), Rifit Plus (pretilachlor 37% EW) (500 ml/acre), Racer (pretilachlor) (800 ml/acre), topramezone (33.6% SC), Nominee Gold (bispyribac Sodium), Nominee Gold + Almix (metsulfuron-methyl 10% + chlorimuron-ethyl 10% WP), pendimetalin and others were used by the farmers			
Percentage of farmers applied herbicides	Only weedicides (60%); Hand weeding + Weedicides (40%)	Only weedicides (40%); Hand weeding + Weedicides (50%); only hand weeding (10%)	Only weedicides (90%); only Hand weeding (10%)	Only weedicides (40%); Hand weeding + Weedicides (60%)
Wild/weedy rice incidence	NA	NA	NA	NA

D. Weeds and their Management: In general, intensity of weeds in and around rice fields was low to moderate. Commonly recorded weeds were Sawank (*Echinochloa colona*), doob (*Cynodon dactylon*), *Leptochloa chinensis*, Deela (*Cyperus rotundus*), Chinese grass (local name), Makra weed (*Dactyloctenium aegyptium*), Ghoda grass (local name), Chaatri grass (local name), Jalkumbi (*Pontederia crassipes/ Eichhornia crassipes*), Cobra weed (local name), mirchi butti (local name) and some unidentified weeds (Table 8). Almost all the farmers contacted applied herbicides. About 37% of the farmers contacted followed hand weeding along with herbicide application (Table 8). The details of weedicides are presented in Table 8.

Table 9: Details of inputs used

Details	Districts			
	Kaithal	**Kurukshetra**	**Karnal**	**Jind**
Implements used	Implements like harrow, rotavator, tractor, trolley, power tiller, combined harvester were used by the farmers. Progressive farmers had some of their own equipments and other farmers hired the implements. Combine harvester was mostly used on hire basis			
Source of seeds	Majority of the farmers contacted (70% in Kaithal, 90% in Kurukshetra, 40% in Karnal and 60% in Jind) told that they purchased 100% of their seed requirement. Another 10-50 farmers in different districts told that they purchased 50% of their seeds requirement and used another 50% of their seed requirement from previous year's seed.			
Source of irrigation	Deep tube well (100%); canal (30%)	Deep tube well (100%)	Deep tube well (100%)	Deep tube well (90%); canal (10%)
Scarcity of irrigation water	No (100%)	No (100%)	No (100%)	No (100%)
Availability of fertilizers/pesticides*	Yes (100%);	Yes (90%)	Yes (100%)	Yes (80%)
Quality of fertilizers/pesticides	Satisfied (100%)	Satisfied (100%)	Satisfied (100%)	Satisfied (80%)
Advisors to the farmers	Own decisions (30%); Dealers (80%); State dept (30%); Univ (20%)	Own decisions (30%); Dealers (80%); State dept (70%); Univ (10%)	Own decisions (10%); Dealers (90%); State dept (20%)	Own decisions (30%); Dealers (60%); State dept (30%); Univ (30%)

Table 9: Contdd..

Details	Districts			
	Yamunanagar	**Ambala**	**Panipat**	**Sonepat**
Implements used	Implements like harrow, rotavator, tractor, trolley, power tiller, combined harvester were used by the farmers. Progressive farmers had some of their own equipments and other farmers hired the implements. Combine harvester was mostly used on hire basis			
Source of seeds	Majority of the farmers contacted (100% in Yamunanagar, 70% in Ambala, 80% in Panipat and 40% in Sonipat) told that they purchased 100% of their seed requirement. Another 10-60% farmers in Ambala, Panipat and Sonipat told that they purchased 50% of their seeds requirement and used another 50% of their seed requirement from previous year's seed. Only few farmers from Panipat told that they used only last year's seeds			
Source of irrigation	Deep tube well (100%); canal (10%)	Deep tube well (100%); canal (10%)	Deep tube well (100%); canal (40%)	Deep tube well (100%)
Scarcity of irrigation water	No (100%)	No (100%)	No (100%)	No (100%)
Availability of fertilizers/pesticides*	Yes (100%)	Yes (100%)	Yes (100%)	Yes (100%)
Quality of fertilizers/pesticides	Satisfied (100%)	Satisfied (100%)	Satisfied (90%)	Satisfied (90%)
Advisors to the farmers	Dealers (80%); State dept (60%); Univ (20%)	Own decisions (20%); Dealers (100%); State dept (300%); Univ (10%)	Own decisions (20%); Dealers (90%); State dept (20%); Univ. (20%)	Own decisions (10%); Dealers (80%); State dept (40%); Univ (20%)

E. Common needs of the farmers: Some of the common needs of the farmers were subsidy on farm implements, paddy straw management, Government incentives for paddy growers, supply of agricultural labours, subsidy on input costs, increase in MSP and the price of selling of basmati rice varieties, proper supply of DAP and quality seeds during the season, varieties suitable for DSR, suitable herbicides for management of weeds, timely picking of paddy straw bundles and technical knowledge on insect pests and disease management

F. Input Use: The details of inputs used by the farmers are presented in Table 9. Implements like harrow, rotavator, tractor, trolley, power tiller, combined harvester were used by the farmers. Progressive farmers had some of their own equipments and other farmers hired the implements. Combine harvester was mostly used on hire basis. On an average 68% of the farmers in different districts told that they purchased 100% of their seed requirement. Remaining farmers told that they used part (50%) of last years harvested seeds. The main source of irrigation was deep tube well. Majority of the farmers told that there was no scarcity of irrigation water. Majority (>80%) of the farmers contacted also told that inputs like fertilizers and pesticides were available and they were satisfied with their quality. The main advisors to the farmers were private dealers followed by officials from state department of Agriculture and University.

G. Biotic stresses and their management: The details of different diseases and insect pests in different surveyed districts are presented in Table 10a and 10b. Among the disease, sheath blight, leaf and neck blast, bakanae, false smut, grain discoloration, bacterial blight and sheath rot were wide spread in low to moderate form. Blast was recorded in severe intensity in some fields in Panipat on varieties like Pusa Basmati # 1692, 1718, 1401 and 1121. False smut was also recorded in high intensity in some fields in Panipat on varieties like Sava 7501 and PR 114. Among the insect pests, stem borer, leaf folder and plant hoppers (BPH and WBPH) were wide spread in low to moderate intensity. All the farmers contacted applied different pesticides for the management of different diseases and insect pests (Table 11). The number of pesticide application in different districts ranged from 3-8. On an average, 77% farmers contacted told that they mixed 2-3 different pesticides while application. On an average in about 20% fields surveyed, there were symptoms of zinc deficiency (Table 11).

Table 10a: Prevalence and severity of rice diseases recorded in different districts of Haryana during *kharif* 2025

District	ShBl	Bl	NBl	Bakanae	FS	GD	BLB	ShR
Kaithal (10 %) [C]	50 % L-M[b]; PR # 114, 126, Sava 7501, PB 1, CSR 30, PB 1121	60 % L-M[b]; CSR 30, PB # 1885, 1718, 1121, 1, 1509	40 % Tr.-L[a] CSR 30, PB # 1121, 1, 1718	30 % L-M[a] CSR 30, PB 1885, PB 1, PB 1121	80 % L-M[a]; Sava 7501, PB 1718, PR 114, PR 126, PB 1509	30 % Tr.-L[a] Sava 7501, PR 114	40 % L-M[b] PR 114, Sava 7501	40 % L-M[a] PR 126, PR 114, Sava 7501
Kuruks-hetra (10 %)	80 % L-M[b]; Sava 7501, KPH 7299, Hyb 2111, PR 126, PB 1509, PR 114, Hyb 777	40 % Tr.-L[b] PB 1509, CSR 30, PB 1692	10 % Tr.-L[a] CSR 30	10 % Tr.-L[a] PB 1509	40 % L-M[a] Sava 7501, PR 126, PR 114	40 % Tr.-L[a] PR 114, Sava 7501, PR 126	60 % Tr.-M[b] Sava 7501, PR 114, PR 126	30 % Tr.-L[a] Sava 7501, PR 114, PR 126, Hyb 777
Karnal (20 %)	70 % Tr.-M[b]; PB 1509, PR 114, PR 126, PB 1401, PB 1885, PB 1121, Sava 7501	50 % Tr.-L[b] PB 1509, PB 1121, PB 1401, PB 1885	20 % Tr.[a] PB 1401, PB 1885, PB 1121	70 % Tr.-M[a] PB 1885, PB 1509, PB 1121	20 % Tr.-M[a] PR 126, PB 1509	10 % Tr.[a] PR 126	40 % Tr.-L[b] PB 1509, PR 126, PR 114,	20 % Tr.-L[a] PR 126, PB 1401
Jind (20 %)	70 % L-M[b]; PB 1121, PB 1401, PB 1885, PB 1718, Hyb 2222, PB 7501, HKR 49, CSR 30, Sava 134	70 % Tr.-M[b] PB 1718, PB 1121, PB 1401, PB 1885, PB 1985, CSR 30	30 % Tr.-M[a] PB 1121, CSR 30, PB 1718	50 % Tr.-L[a] PB 1121, PB 1401 PB 1885, CSR 30, PB 1718	10 % L[a] PB 1121	40 % Tr.-L[a] PB 1121, CSR 30, PB 1718, Sava 134	40 % L-M[b] Sava 134, Sava 7501, Hyb 2222, PB 1885, PB 1718	20 % Tr.-L[a] PB 1718, PB 1121
Yamuna Nagar (10 %)	80 % Tr.-L[b] Hyb 359, Sava 127, PR 131, Sava 7301, Sava 7501	20 % Tr.-L[b] PB 1509, PB 1121	-	30 % Tr.-L[a] PB 1509, PB 1121, Sava 7501	30 % Tr.-M[a] Sava 7301, Sava 7501	30 % Tr.-L[a] Hyb 7299, Sava 7301	60 % Tr.-L[b] VNR 2111, Sava 7301, Sava 7501, Sava 127, Hyb 6444	40 % L-M[a] Sava 7501, Sava 7301
Ambala (30 %)	50 % Tr.-L[b]; PB 1121, PB 128, Sava 7301, PR 126, PB 1718, Sava 7501, PB 1509, Hyb 2222	50 % Tr.-L[b] PB 1121, PB 1718, CSR 30, PB 1509, PB 1885	10 % Tr.[a] PB 1885	30 % Tr.-L[a] PB 1509, PB 1885, PB 1121	30 % L-M[a]; Hyb 372, Hyb 2222, PR 126, Sava 7501, Sava 7301	10 % L[a] Hyb 372	70 % Tr.-L[b] PR 126, Hyb 7299, Sava 7301, Sava 7501, Hyb 7299, PB 1885, Hyb 2222	10 % L[a] Hyb 372
Panipat (30 %)	50 % Tr.-L[b]; Sava 7501, PB 1718, PB 1692, PB 1121, PB 1509, PB 1401	30 % L-S[b]; PB 1692, PB # 1718, 1401, 1121	20 % Tr.[a] PB 1509, PB 1121	30 % Tr.-L[a] PB 1121, PB 1401, PB 1718, PB 1692	20 % Tr.-S[a] Sava 7501, PR 114	20 % Tr.-L[a] PR 114, Sava 7501	50 % Tr.-L[b] PB 1121, PB 1509, Sava 7501, PB 1692, PB 1401	10 % Tr.[a] Sava 7501
Sonepat (10 %)	70 % Tr.-L[b] PB 1718, PB 1509, PB 1847, PB 1692, PB 1121, PB 1885	80 % Tr.-L[b] PB 1718, PB 1692, PB 1509, PB 1121, PB 1885, PB 1401	40 % Tr.-L[a] PB 1509, PB 1121, PB 1401	90 % Tr.-L[a]; PB 1718, PB 1692, PB 1121, PB 1509, PB 1847, PB 1885, PB 1401	30 % L-M[a] PB 1509, PB 1121, PB 1401	30 % Tr.-L[a] PB 1509, PB 1121	40 % Tr.-L[b] PB 1718, PB 1509, PB 1121	20 % Tr.-L[a] PB 1509, PB 1121

[a]: Disease incidence [b]: % disease severity Severity: Tr.: traces; L: low; M: moderate; S: severe Disease incidence: 5% or less, 6-25% and > 25% were designated as L, M and S in case of **neck blast, stem rot, bakanae and false smut**. Likewise, for **sheath blight, leaf blast and bacterial leaf blight**, disease score of 3, 5 and >5 were treated as L, M and S, respectively:

Table 10b: Occurrence and severity of rice insect- pests recorded in different districts of Haryana during *kharif*, 2025

District	Stem borer	Planthoppers (BPH /WBPH)	Leaf folder	Grass hopper
Kaithal	100 % Tr[b] (0.5% dead heart/WE) [a] PR114, 126, Sava 7501, 134, PB 1, PB 1718, 1509, 1121, 1885, 1847	90 % Tr- L[a]; 70 % Tr (1-2 nymphs/hill) [a] PR114, 126, Sava 7501, 134, PB-1, PB 1718, 1509, 1121, 1885, 1847	70 % Tr[b] (0.5 % damaged leaves) [a] PR114, 126, Sava 7501, 134, PB 1, PB 1718, 1509, 1121, 1885, 1847	-
Kurukshetra	90 % Tr[b] (0.5 % dead heart/WE)[a] PR 126 & 114, Sava 7501, 7301, Hyb 7299, Bayer 2111, Harvir 777, PB 1509	60% Tr-M[a]; 40% Tr-L[a] (1-10 nymphs/hill) [a] PR 126 & 114, Sava 7501, 7301, Hyb 7299, Harvir 777	90% Tr[b] (0.5% damaged leaves)[a] PR 126 & 114, Sava 7501, 7301, Hyb 7299, Bayer 2111, Harvir 777, PB 1509	-
Karnal	100 % Tr[b] (0.5 - < 1 % dead heart/WE) [a] PR 114, PR 126, PR 131, 90M100, Hyb 2222, CSR 30, PB 1121, PB 1401, PB 1509, Sava 7501, 7301	70 % Tr-L[a] (1-5 nymphs/hill) [a] PR 114, PR 126, PR 131 90M100, Hyb 2222, CSR30, PB 1121, PB 1401, PB 1509, Sava 7501, 7301	100 % L-M[b] (0.5-5.0 % damaged leaves)[a] PR 114, PR 126, PR 131 90M100, Hyb 2222, CSR30, PB 1121, PB 1401, PB 1509, Sava 7501, 7301	20 % Tr[b] Hyb 2222, PR114, PR 126
Jind	90 % Tr[b] (0.5- <1 % dead heart/WE) [a] Sava 7501, Hyb 2222, 90M100, HKR 49, CSR 30, PB 1885, PB 1121, PB 1886, PB 1718, PB1401 & 1509	80 % Tr; 60 % Tr (1-5 nymphs/hill) [a] Sava 7501, Hyb 2222, 90M100, CSR30, PB 1885, PB 1121, PB 1886, PB 1718, PB1401 & 1509	100 % Tr-M[b] (5 - 10 % damaged leaves)[a] Sava 7501, Hyb 2222, 90M100, HKR 49, CSR 30, PB 1885, PB 1121, PB 1886, PB 1718, PB 1401 & 1509	20 % Tr[b] PB 1718
Yamuna Nagar	100% Tr-M[b] (1-10 % dead heart/WE) [a] Sava 127, 7301, 7501, Hyb 359, 6444, 7299, 2222 VNR 111, PR 131, PB 1509	100 % Tr (1-5 nymphs/hill) [a] Sava 127, 7301, 7501, Hyb 359, 6444, 7299, 2222 VNR 111, PR 131, PB 1509	90 % Tr (0.5-5.0 % damaged leaves)[a] Sava 127, 7301, 7501, Hyb 359, 6444, 7299, VNR 111, PR 131, PB 1509	-
Ambala	70 % Tr[b] (0.5-1.0 % dead heart/WE)[a] Sava 7301, 7501, PB 1718, CSR 30, PB 1121, Hyb 2222, 468, PR126	90 % Tr (1-5 nymphs/hill) [a] Sava 7301, 7501 PB1718, CSR 30, PB 1121 Hyb 2222, Hyb 7299, 468, PR126, 128	100 % Tr (0.5 % damaged leaves)[a] Sava 7301, 7501 PB 1718, CSR 30, 1121 Hyb 2222, Hyb 7299, 468, PR 126, 128	-
Panipat	90 % Tr-M[b] (0.5-10 % dead heart/WE) [a] Sava 7501, PR131, PB 1885, PB 1121, PB1509,1692 1401, HKR 49	90 % Tr-M[a] (1-5 nymphs/hill) [a] Sava 7501, PR131, PB 1885, PB 1121, PB1509,1692 1401, HKR 49	70% Tr[b] (1.0-5.0 % damaged leaves)[a] Sava 7501, PR131, PB 1885, PB 1121, PB1509,1692 1401, HKR 49	-
Sonepat	90% Tr[b] (0.5 % dead heart/WE)[a] Hyb 521, PB 1121, PB 1718, PB 1692, PB 1509, PB 1885, PB 1847	90 % Tr[a] (1.0- 5 nymphs/hill)[a] Hyb 521, PB 1121, PB 1718, PB 1692, PB 1509, PB 1885, PB 1847	100 % Tr[b] (1-5.0 % damaged leaves)[a] Hyb 521, PB 1121, PB 1718, PB 1692, PB 1509, PB 1885, PB 1847	-

[a]: Insect-pests population/damage [b]: Severity of insect-pests; **Severity: Tr: Traces, L: Low, M: Moderate, S: severe**

Stem borers: Traces: <1.0% dead heart/white ear, Low: 1.0-10.0% DH/WE, Moderate: 10.1-20.0% DH/WE, Severe: > 20.0 % DH/WE. **WBPH/ BPH**: Traces: <1.0 nymphs or adults/hill, Low: 1.0-5.0 nymphs or adults/hill, Moderate: 5.1- 15.0 nymphs or adults/hill; Severe: >15.0 nymphs or adults/hill. **Leaf folder & whorl maggot**: Traces: < 1.0% damaged leaves, Low: 1.1-10.0% damaged leaves, Moderate: 10.1-20.0% damaged leaves; Severe: > 20.0% damaged leaves. **Termites**: Traces: <1.0 % infested plants; Low: 1.0 -5.0 infested plants; Moderate: 5.1-10.0% infested plants; Severe: >10% infested plants

Table 11: Details of pest management

Details	Districts			
	Kaithal	**Kurukshetra**	**Karnal**	**Jind**
% age farmers adopting plant protection	100% farmers adopted chemical plant protection measures			
Names of pesticides	**Insecticides**: Ferterra (4-4.5 kg/acre), Cartap hydrochloride (Caldan/Padan/Mortar) (7.5 kg/acre), Tuventa (Chlorantraniliprole 47.85% SC) (0.3-0.5 ml/l), flubendiamide 20% WG (Takumi @ 40-100 g/acre), Coragen (60-100 ml/acre), Lamda cyhalothrin (300-400 ml/acre), emamectin benzoate (200 ml/acre), IFFCO Egao (Emamectin Benzoate 5% SG (Water-soluble granules) (60-88 g/acre), Empala/Fimagale (1.5% Emamectin Benzoate + 3.5% Fipronil SC) (1.5-2 ml/l), Regent (fifronil) (7.5 kg/acre), Novacarb (Novaluron 5.25% + Indoxacarb 4.5% SC) (350 ml/acre), Tetraniliprole (Vayego), cypermethrin (2 ml/l), for leaf folder and stem borer; Chess (pymetrozine) (120 g/acre), Ektara (thiamethoxam) (100 g/acre), imidacloprid (0.5 ml/l), Bace 50 (buprofezin 15% + acephate 35% WP) (2.5 g/l), Pexalon (Triflumezopyrim 10% SC) (94 ml/acre), Glamore (Ethiprole 40% + Imidacloprid 40% WG), POMAIS/IR Farm (Thiamethoxam 25% + Dinotefuran 25% WP/WG), Fipronil + Imidacloprid (0.5 g/l), Checkmate (dinotefuran + pymetrozine), and Osheen (Dinitofuran) (80 gm/acre) for BPH/WBPH; chlorpyriphos (400 ml/acre), chlorpyriphos + cypermethrin for termite and carbofuran (5 kg/acre) for nematodes **Fungicides**: propiconazole (1 ml/l), Pulsor (thifluzamide 24% SC) (150 ml/acre), Azoxystrobin + tebuconazole (200 ml/acre), Nativo (80-100 g/acre), Amister top (200 ml/acre), Galileo Way (picoxystrobin 7.05% + propiconazole 11.71% SC) (400 ml/acre), Reflect Top (isopyrazam 11.5% + difenoconazole 11.5% SC) (160 ml/acre), Iglare (thifluzamide 24 Sc) (150 ml/acre), Konika (300 ml/acre), Tebuconazole (200 ml/acre), hexaconazole (400 ml/acre), Epic (hexaconazole 75% WG, tebuconazole + Captan (250 ml/acre), picoxystrobin (160 ml/acre), UPL Glowed/Adama Shamir, tebuconazole 6.7% + Captan 26.9% SC (250 ml/acre) for sheath blight and false smut; Blue copper (copper oxychloride) (2-2.5 g/l) for false smut and bacterial blight; Amister top (200 ml/acre), isoprothiolane (Fuji One) (300-400 ml/acre), diathane Z 78 (500 g/acre), azoxystrobin + difenconazole (200 ml/acre), Beam (tricyclazole) @ 120 gm/acre, and Kasu-B (1.5-2 ml/l) for blast; Epic (hexaconazole) (2 g/l), carbendazim + mancozeb (2-2.5 g/l) and propiconazole (200 ml/acre) for sheath rot and grain discoloration; azoxystrobin + difenconazole (150 ml/acre), Nativo (trifloxystrobin + tebuconazole) (0.4 g/l), metiram (2.5-3 g/l), tebuconazole (1 g/l), Amister top (150-200 ml/acre) for blast and sheath blight; plantomycin (1 g/3 l) for bacterial blight; cartap hydrochloride + hexaconazole for stem borer and sheath rot; azoxystrobin + thiaphenate methyl for sheath blight and bakanae and *Pseudomonas fluorescens* for different diseases			
# of pesticide sprays	4-7	3-7	3-8	4-8
Mixing of pesticides before application	Yes (70%) 2-3 pesticides	Yes (80%) 2-3 pesticides	Yes (80%) 2 pesticides	Yes (80%) 2-3 pesticides
Zinc deficiency	Yes (20%)	Yes (30%)	Yes (20%)	Yes (20%)

Table 11: Contd..

Details	Districts			
	Yamunanagar	**Ambala**	**Panipat**	**Sonepat**
% age farmers adopting plant protection	100% farmers adopted chemical plant protection measures			
Names of pesticides	**Insecticides**: Ferterra (4-4.5 kg/acre), Cartap hydrochloride (Caldan/Padan/Mortar) (7.5 kg/acre), Tuventa (Chlorantraniliprole 47.85% SC) (0.3-0.5 ml/l), flubendiamide 20% WG (Takumi @ 40-100 g/acre), Coragen (60-100 ml/acre), Lamda cyhalothrin (300-400 ml/acre), emamectin benzoate (200 ml/acre), Adama Barroz (Cartap Hydrochloride 7.5% + Emamectin Benzoate 0.25% GR), Regent (fifronil) (7.5 kg/acre), Virtaka (Chlorantraniliprole 0.5% + Thiamethoxam 1% GR) and cypermethrin (2 ml/l) for leaf folder and stem borer; Chess (pymetrozine) (120 g/acre), Ektara (thiamethoxam) (100 g/acre), imidacloprid (0.5 ml/l), Pexalon (Triflumezopyrim 10% SC) (94 ml/acre), Glamore (Ethiprole 40% + Imidacloprid 40% WG), Checkmate (dinotefuran + pymetrozine) and Osheen (Dinitofuran) (80 gm/acre), Ulala (flonicamid 50% WG) (80 g/acre) for BPH/WBPH; chlorpyriphos (400 ml/acre), chlorpyriphos + cypermethrin for termite and carbofuran (5 kg/acre) for nematodes **Fungicides**: propiconazole (1 ml/l), Pulsor (thifluzamide 24% SC) (150 ml/acre), Azoxystrobin + tebuconazole (200 ml/acre), Nativo (80-100 g/acre), Amister top (200 ml/acre), Galileo Way (picoxystrobin 7.05% + propiconazole 11.71% SC) (400 ml/acre), Iglare (thifluzamide 24 Sc) (150 ml/acre), Tebuconazole (200 ml/acre), hexaconazole (400 ml/acre), Epic (hexaconazole 75% WG, tebuconazole + Captan (250 ml/acre), for sheath blight and false smut; Blue copper (copper oxychloride) (2-2.5 g/l), Kavach (chlorothalonil) (2 ml/l) for false smut and sheath rot; Amister top (200 ml/acre), isoprothiolane (Fuji One) (300-400 ml/acre), Beam (tricyclazole) @ 120 gm/acre, and Kasu-B (1.5-2 ml/l) for blast; Epic (hexaconazole) (2 g/l), carbendazim + mancozeb (2-2.5 g/l) and propiconazole (200 ml/acre) for sheath rot and grain discoloration; Spunk (azoxystrobin + difenconazole) (150 ml/acre), Nativo (trifloxystrobin + tebuconazole) (0.4 g/l), Amister top (150-200 ml/acre) for blast and sheath blight; Copper oxychloride (2-2.5 g/l), plantomycin (1 g/3 l) for bacterial blight; thiaphenate methyl for sheath blight and bakanae and Eugloria (Chlorantraniliprole 0.64% + Tebuconazole 3% + Clothianidin 1.92% GR) for stem borer, leaf folder and sheath blight (integrated protection)			
# of pesticide sprays	3-7	3-7	3-8	4-7
Mixing of pesticides before application	Yes (90%) 2 pesticides	Yes (70%) 2-3 pesticides	Yes (80%) 2 pesticides	Yes (70%) 2 pesticides
Zinc deficiency	Yes (20%)	Yes (10%)	Yes (20%)	Yes (20%)

Table 12: Researchable issues

Parameters/Issues	**Districts**			
	Kaithal	**Kurukshetra**	**Karnal**	**Jind**
Rice ecology in your area	Irrigated			
Rice cultivation only in Kharif or both Kharif and Rabi	Only Kharif season			
Number of years of experience in rice farming	5-20 years			
Main biotic constraints (diseases) in your area according to you	Sheath blight, leaf and neck blast and false smut			
Extent of disease damage	Below 10%			
Main biotic constraints (Insect pests) in your area according to you	BPH/WBPH and stem borer			
Extent of insect pest damage	Below 10%			
Main abiotic constrains in your area according to you	Flash flood and low light intensity			
Production constraints in your area according to you	Scarcity of agricultural labours, lack of mechanization and unavailability of quality seeds and micronutrient deficiency			
Irrigation facilities in your area	Yes, Available; Bore wells			
Normally how many years it takes to change the rice variety	Majority 5-10 years followed by 10-20 years			
Any other rice production issues in your area which the rice scientists need to address	NA	NA	NA	NA
What is urgently required in your area as far as rice varieties are concerned				
Duration	Varieties suitable for DSR and medium duration varieties with lodging tolerance			
Biotic stress resistance	Varieties having resistance/tolerance to sheath blight, false smut, leaf and neck blast, BPH/WBPH and stem borer			
Abiotic stress resistance	Varieties with submergence tolerance and tolerant to low light intensity			
Preferred grain quality	HYVs with medium slender grain quality			
Nutritional quality	NA			

H. Researchable issues: Among the biotic stresses, major problems in the region are sheath blight followed by leaf and neck blast and false smut among the diseases and leaf folder, BPH/WBPH and stem borer among insect pests. Farmers want varieties suitable for DSR and varieties resistant/tolerant to above mentioned biotic constraints.

Table 12: Contdd..

Parameters/Issues	**Districts**			
	Yamunanagar	**Ambala**	**Panipat**	**Sonepat**
Rice ecology in your area	Irrigated			
Rice cultivation only in Kharif or both Kharif and Rabi	Only Kharif season			
Number of years of experience in rice farming	5-20 years			
Main biotic constraints (diseases) in your area according to you	Sheath blight, leaf and neck blast and false smut			
Extent of disease damage	Below 10%			
Main biotic constraints (Insect pests) in your area according to you	BPH/WBPH, leaf folder and stem borer			
Extent of insect pest damage	Below 10%			
Main abiotic constrains in your area according to you	Flash flood, submergence, salinity and low light intensity			
Production constraints in your area according to you	Scarcity of agricultural labours, lack of mechanization and micronutrient deficiency			
Irrigation facilities in your area	Yes, Available; Bore wells			
Normally how many years it takes to change the rice variety	5-10 years			
Any other rice production issues in your area which the rice scientists need to address	Paddy straw management problem and problem of SRBSDV virus infection			
What is urgently required in your area as far as rice varieties are concerned				
Duration	Varieties suitable for DSR and medium duration varieties with lodging tolerance			
Biotic stress resistance	Varieties having resistance/tolerance to sheath blight, false smut, leaf and neck blast, BPH/WBPH, leaf folder and stem borer			
Abiotic stress resistance	Varieties with submergence tolerance			
Preferred grain quality	HYVs with medium slender grain quality			
Nutritional quality	NA			

Jammu and Kashmir-2025-26 (Khudwani)

Districts surveyed: *Anantnag* and *Kulgam*

Particulars of survey

Districts	Blocks	Villages
Anantnag	Anantnag, Vessu and Qaimoh	Shamsipora, Wanpoh, Sursona,Vessu and Thachloo
Kulgam	Qaimoh	Rahpora, Khudwani, Turk Tachloo and Bogund (Danow Bogund)

Widely prevalent varieties

Districts	Varieties
Anantnag	**HYVs:** SR-I, SR-2, SR-3, SR-4 and SR-5; **Local:** K-39, K-332, China-1039, China-1007 and Mushkbudji
Kulgam	**HYVs:** SR-I, SS1, SR-3 and SR-4; **Local:** China 1039, K-332 and others

Particulars of rice area in the district (in hectares)

District	Total geographical area (ha)	Total Cultivable area (ha)	Total Cultivated area (ha)	Total irrigated area (ha)	Area under rice (ha)	Area under DSR (ha)
Anantnag	72,149	48,123	47,861	31,127	24,000	Nil
Kulgam	47,642	35,605	27,397	20,046	16,748	Nil

Variety wise area coverage (ha) in surveyed districts during Kharif- 2025

Varieties	Anantnag	Kulgam
SR-1	1200	1000
SR-2	500	-
SR-3	700	900
SR-4	2700	2500
SR-5	110	-
SS-1	-	100
Jhleum	10000	7000
K-39	1200	500
K-332	350	-
China 1039/1007	4200	3200
Mushk Budji	1000	400
Others	2040	1148

Weather conditions in the surveyed districts during Kharif season of 2025

Months	June	July	Aug	Sep	Oct	Nov
Rainy Days (No.)	6	13	8	6	3	1
Total Rain Fall (mm)	38	82.8	118.4	75.2	35	7.4
Maximum Temperature (^{o}C)	35.5	37.4	34.5	32.6	32.2	23
Minimum Temperature (^{o}C)	9	16.2	13.5	9.4	0.5	-4.8
Monthly mean temp.	23.68	24.96	23.50	20.96	14.26	7.16
Sunshine hours	250.3	204.9	171.6	195	202.3	137
RH (%) Morning	82.67	84.13	89.93	91.23	93.26	91.47
RH (%) Evening	47.63	51.71	58.58	58.00	54.13	58.37

General question on rice cultivation in district (to be filled by the cooperator in consultation with the officials from state department of agriculture)

Parameters	Districts	
	Anantnag	**Kulgam**
Total area under HYVs in the district (ha)	15210	11500
Most prevalent HYVs in the district	SR4	SR4
Total area under rice hybrids in the district (ha)	Nil	Nil
Most prevalent rice hybrids in the district	Nil	Nil
Total area under basmati in the district	Nil	Nil
Most prevalent basmati varieties in the district	Nil	Nil
Seed Replacement rate	65%	70%
Whether farmers are using any heavy equipments like transplanted/combine harvester	No	No
Mention water saving technologies like SRI/laser levelling/DSR being used by the farmers	Nil	Nil
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	Use of HYV, RFD, proper nursery mgt.	Use of HYV, Proper drainage, Use of efficient irrigation facilities
What are the general problems in rice cultivation in the district	Untimely availability of inputs	Untimely availability of inputs
Please provide any farmers association in the district	Mushk Budji Growers' Association Sagam	Nil
Whether availability of labours is sufficient?	Yes	Yes
Whether there is any marketing problem of the produce?	No	No
Any major irrigation/power generation project in the district	Nil	Irrigation canals: Maw, Sonman
Any soil testing program undertaken?	Yes	Yes
Any farmers training programme was organized by the state department of Agriculture/University	Yes	Yes

Rice is the staple food of majority of the population inhabiting the Kashmir valley and the crop is grown in all the districts of the valley. By and large, farmers of the valley are highly skilled in rice cultivation but most of the farmers need to improve in proper nursery management and learn the technology of raising protected nurseries as the temperatures sometimes dip low in the valley when the seeds are sown. Production oriented survey was conducted in two districts viz., Anantnag and Kulgam when the crop was mainly at dough/maturity stage. The general climatic conditions were normal as far as rice is concerned. The main crop rotation practices followed by the farmers were rice-rapeseed and rice-oats. Most predominant rice varieties cultivated in this region were HYVs like SR -4 and SR -3 and some local varieties like Budjichina, K-39, K-332, China 1007 and China 1039. Some farmers are growing local landraces like Zag and Mushkbudji for special attributes. However, HYVs are spreading very

fast and replacing the local varieties. Optimum time of sowing was 1st week of May and optimum time of transplanting was 1st week of June. Average seed rate was 80-100 kg/ha and majority of the farmers contacted (90-100%) adopted seed treatment with either carbendazim (2g/kg seed). Most of the farmers applied organic manure like FYM and vermicompost and chemical fertilizers like urea, DAP and MOP in the nursery. In the main fields, farmers applied 40-150 kg N/ha, 30-60 kg P_2O_5/ha, 20-45 kg k_2O/ha and some applied zinc Sulphate 20 kg/ha. All the farmers contacted, applied FYM (5-10 q/ha) in the main field. Random method of transplanting was common among the farmers. The intensity of common weeds like *Echinochloa* spp., *Potamogeton* spp., *Rotalia indica*, *Cyprus* spp. and *Ammannia* spp. was moderate. All the farmers contacted adopted hand weeding and in addition applied herbicides like Butachlor (1.5 kg a.i./acre) and Eros (10 kg/acre). Some of the common needs of the farmers were availability of certified seeds of good HYVs, timely supply of inputs, irrigation facilities and advices from experts regarding rice production technology. Among the biotic constraints, blast, brown spot and grasshoppers were recorded in higher intensities. Other diseases like neck blast, sheath blight, sheath rot, grain discoloration and bakanae and insect pests like stem borer, leaf folder and green leaf hopper were recorded in low to moderate intensities. Pesticide application was not common among the farmers.

District wise observations

Anantnag: Production oriented survey was conducted in five villages in this district in three blocks involving 10 farmers. The rice fields surveyed were under irrigated conditions and the general weather conditions were normal for rice production. Most of the fields surveyed were at maturity stage and some were in milk to dough stage at the time of survey. About 40% farmers said that they used part of their land (10-25%) for raising other crops like pulses and vegetables mainly for domestic consumption. The main crop rotation practice followed by the farmers was rice-rapeseed/oats. Predominant rice varieties cultivated by the farmers were HYVs like SR4 and SR -3 and local varieties like K-39, K-332, China -1039, Mushkbudji and Budjichina. Average rice yields in the district were 3500-4000 kg/ha in local varieties like China 1039, China 1039, Budjichina and 8000-8500 kg/ha in HYVs like SR-4. Optimum time of sowing was 1st week of May and optimum time of planting was 1st week of June. About 60% of the farmers contacted belonged to medium income category and 30% were from low-income group. Average per capita consumption of rice per month was 3-5 kg. About 80% farmers contacted told they preferred only rice. All the farmers contacted told that they preferred polished rice and coarse rice grains. In general, there was no major change in the food habit.

Average seed rate was 80-100 kg/ha and the co-operator reported that majority of the farmers contacted (90%) adopted seed treatment with carbendazim (2g/kg). Majority (80%) of the farmers contacted told that they apply FYM in the nursery bed. Some applied vermicompost in the nursery. All of them applied urea (500-1000 g/25 m^2), DAP (550 g/25 m^2) and MOP (200 g/25 m^2). In the main fields, farmers apply 45-150 kg N/ha, 30-60 kg P_2O_5/ha, 20-45 kg k_2O/ha. Few applied Zinc Sulphate (20 kg/ha). All the farmers contacted, applied FYM (5-7 t/ha) in the main field. Random method of transplanting was common among the farmers. The intensity of common weeds like *Echinochloa* colona, Echinochloa crusgalli, Digitaria spp., Setaria spp., *Potamogeton* spp., *Rotalia indica*, *Cyprus* rotundus and *Ammannia* spp. was medium. All the farmers contacted had applied herbicides like Eros (pyrazosulfuron ethyl) (10 kg/acre), Butachlor (1.5 kg a.i./acre), pretilachlor, ethoxy sulfuron and others followed by one hand weeding. Some of the common needs of the farmers were availability of certified seeds of good HYVs, timely supply of inputs, irrigation facilities and advices from experts regarding rice

production and protection technology. The Tractor was the only agriculture implement used by the farmers. Seed replacement rate was 25-35%. Canal was the main source of irrigation and about 70% of the farmers contacted expressed about scarcity of irrigation water. About 60% of the farmers contacted told that fertilizers and pesticides were not available in time and about 40% told that they were not happy with their quality. farmers received advices from officials of State Department of Agriculture and University. Diseases like blast, neck blast, brown spot, sheath blight, sheath rot, grain discoloration and bakanae were observed in varying intensities in different farmers fields. High intensity of leaf blast (30-40%), grain discoloration (Upto 30%) and bakanae (up to 30%) was observed on varieties like China 1038, 1039, Budjichina in villages like Shamsipore and Sursona villages. High intensity of brown spot (30-50%) was recorded in most of the villages surveyed. Among insect pests, stem borer (upto 40%) and green leaf hopper (upto 30%) was recorded in some fields in Sursona village. High grass hopper damage was recorded in some fields from most of the places surveyed. Pesticide application was negligible. There were no reports of micronutrient deficiency. Some of the common problems faced by the farmers were improper drainage, brown spot and grasshopper damage, flash floods and submergence. Among the biotic stresses, major problems in the region are blast, brown spot, stem borer and grasshoppers. Among the abiotic problems, Submergence and flash floods were the main issues. Lack of irrigation facilities, scarcity of labours, unavailability of quality seeds and lack of mechanization were reported by some farmers. Farmers expressed the needs of medium to long duration rice varieties with lodging resistance with blast and brown spot resistance and tolerance to submergence and drought. Farmers also expressed the need of good aromatic short grain rice varieties with low GI bio-fortified rice varieties.

Kulgam: Four villages involving 10 farmers were covered for production-oriented survey in this district when the crop was at maturity/dough stage. All the fields surveyed were under irrigated ecosystem and the general climatic conditions were normal for rice cultivation. Most of the farmers contacted told that they are using 10-25% of their land for cultivation of other crops like vegetables, pulses and maize for domestic consumption. The main crop rotation practice followed by the farmers was rice-rapeseed/oats. The region was mainly dominated by high yielding rice variety SR-4 and the average yield was 6850-8000 kg/ha. Primary reasons for higher yields were use of recommended package of practices, proper spacing, timely irrigation, and use of balanced dose of fertilizers. Optimum time of sowing was 1st week of May and optimum time of transplanting was 1st week of June. About 90% of the farmers contacted belonged to medium income category. Average per capita consumption of rice per month was 2-5 kg. Almost all the farmers contacted told they preferred only rice. Majority (90%) of the farmers contacted told that they preferred polished rice and coarse rice grains. In general, there was no major change in the food habit.

Average seed rate was 80-100 kg/ha and majority of the farmers adopted seed treatment with carbendazim (2 g/kg seed). All the farmers contacted applied FYM in the nursery beds and all of them applied urea (800-1000 g/25 m^2), DAP (550 g/25 m^2) and MOP (200 g/25 m^2). In the main fields, farmers apply 40-120 kg N/ha, 32-60 kg P_2O_5/ha, 18-40 kg k_2O/ha. About 30% farmers contacted applied zinc Sulphate (5-20 kg/ha). All the farmers contacted, apply FYM (5-10 t/ha) in the main field. Some applied vermicompost. Random method of transplanting was common among the farmers**.** Overall intensity of weeds in and around rice fields surveyed was in moderate level. Common weeds observed were Echinochloa colona, Echinochloa crusgalli, Cyperus rotundus, *Potamogeton* spp., *Rotalia indica*, *Ammannia* spp. and others. All the farmers applied herbicides like Eros (pyrazosulfuron ethyl) (10 kg/acre), pretilachlor and Butachlor (1.5 kg a.i./ha) followed by one hand weeding. Some of the common needs of the

farmers were unavailability of inputs, quality seeds, proper drainage facilities and assured irrigation. Lodging was the main problem in some places in this district. Commonly used equipments in this district was tractor. Some farmers used weeder, harrow, puddler and other implements. Seed replacement rate was low (~ 20%). Canal was the main source of irrigation and about 50% farmers contacted expressed scarcity of irrigation water. Majority (80-90%) of the farmers contacted expressed that inputs like fertilizers and pesticides were not available in time and they were not happy with their quality. Farmers received advices from officials of State Department of Agriculture and University. Among the diseases, brown spot was recorded in high intensity (30%) in some fields in Bogund village on SR-4. Other diseases like sheath blight, sheath rot, grain discoloration and bakanae were observed in low to moderate intensities. Insect pests like stem borer, leaf folder and grasshoppers were recorded in low to moderate intensities. Pesticide application was negligible. There were no reports of micronutrient deficiency. Some of the common problems faced by the farmers were improper drainage and drainage problems. Among the biotic stresses, major problems in the region are brown spot and grasshoppers. Among the abiotic problems, Submergence/drought and flash floods were the main issues. Lack of irrigation facilities, scarcity of labours, unavailability of quality seeds and lack of mechanization were reported by some farmers. Farmers expressed the needs of medium to long duration rice varieties with lodging resistance with blast and brown spot resistance and tolerance to submergence and drought. Farmers also expressed the need of good aromatic short grain rice varieties with low GI bio-fortified rice varieties.

Prevalence of diseases and insect pests in Jammu and Kashmir during *Kharif*' 2025

Districts	Diseases						
	Bl	**NBl**	**BS**	**ShBl**	**ShR**	**GD**	**Bak**
Anantanag	L-S (5-40%)	M (15-20%)	M-S (15-50%)	M-S (10-35%)	M (10-20%)	L-S (5-30%)	M-S (20-30%)
Kulgam	-	-	M-S (15-30%)	L-M (5-10%)	L-M (5-10%)	L-M (5-20%)	L-M (5-10%)

Districts	Insect pests			
	SB	**LF**	**GLH**	**GH**
Anantanag	L-S (5-40%)	L-M (2-25%)	M-S (10-30%)	M-S (10-40%)
Kulgam	L-M (5-10%)	L-M (5-10%)	-	L-M (5-20%)

Karnataka-Gangavathi (2025-26)

Districts surveyed: *Koppal, Raichur, Ballari, Yadgir* and *Vijayanagar*

Particulars of survey:

Districts	Taluks	Villages (latitude/longitude)
Koppal	Gangavathi, Karatagi**,** Kanakagiri and Koppal	Hosahalli (15.9-16.330/75.4730-76.4810), Herur (15.54/76.47), Dosanal (15.35/76.40), Jamapur (15.5-15.6/76.6), Gundur (15.36/76.39), Juratgi (15.5/76.5), Kalkera (15.57/76.42), Bankapura (14.92007/75.26249) and Koppal (15.50/76.61)
Raichur	Sindhanur, Manvi, and Raichur	Sindhanur (15.78-16.19/76.42-76.95), Sasalmari Camp (15.71/76.76), Virupapur (15.76/76.75), Manvi (15.99/77.05), Nirmanvi (15.54/76.48), Ballatgi (16.64119/76.565518), Kadaluru (16.20/77.35), Raichur (16.25/76.60) and Devasuguru (16.14/77.34)
Ballari	Kampli, Kurugodu, Siruguppa and Ballari	Devasamudra (15.26/76.39), Kampli (15.4/76.62), Devalapura (15.30-15.50/76.45), Badanahatti (15.15/76.92), Kolur (15.15/76.92), Siruguppa (15.38/76.54), Deshnur (15.63/76.89), Rampur (15.4/76.8), Andralu (15.1062/76.9440), B. Gonahal (15.234/76.842) and Ibrahimpur (15.838/76.5930)
Yadgir	Shorapur, Shahapur, Yadgir, Hunasagi and Wadagera	Hunasagi (16.45/76.52), Bannatti (16.45/76.51), Dewapur (16.29/76.43), Wagingera (16.31/76.41), Devaragonal (16.52/76.76), Suguru (16.52/76.76), Bheemarayanagudi (16.73/76.80), Shahapur (16.7/76.83), Musturu (16.46/77.13), M. Hosalli (16.75/77.13), Abbetumakuru (16.74/77.10) and Arjungi (16.71/76.73)
Vijayanagar	Hospete, Harappanahalli, Kudligi, Hadagali and Hagaribommanahalli	Hospete (15.1618/76.2332), Bukkasagara (15.11/75.96), Harapanalli (14.8/75.98), Hirekumbalagunta (14.54/76.23), Hosahalli (14.9/76.38), Anguru (14.95/75.75) and Hampasagar (15.1178/76.0276)

Widely prevalent rice varieties

Districts	Varieties
Koppal	**HYVs:** RNR-15048**,** Gangavathi Sona (GGV-05-01)**,** BPT-5204, Janani, BP-2 and others
Raichur	**HYVs:** Sona Masuri**,** RNR 15048, KNM 1638, Kaveri Sona, SIRI-1253
Ballari	**HYVs:** RNR15048, Janani, BP-2, Jyoti, IR64, Super BPT, Sona Masoori and others
Yadgir	**HYVs:** RNR 15048, BPT -5204 and TH (Tellahamsa)
Vijayanagar	**HYVs:** RNR 15048, BPT-5204, IR-64

Particulars of rice area in 2025

Districts	Total geographical area (ha)	Total cultivable area (ha)	Total cultivated area (ha)	Total irrigated area (ha)	Area under rice (ha)	Area DSR (ha)
Koppal	552,495	433447	423445	168100	62,100	80
Raichur	8,35,843	6,02,000	5,43,320	1,85,000	1,70,383	50
Ballari	8,46,100	5,34,718	4,59,250	176,005	89000	35
Yadgir	5,16,088	4,10,000	3,87,649	1,93,428	109046	115
Vijayanagar	5,56,177	3,47,733	3,33,594	100,433	12035	65

Rainfall in different districts of Karnataka in Kharif' 2025

Months	Rainfall (mm) in Districts Surveyed				
	Koppal	Raichur	Ballari	Yadgir	Vijayanagar
June 2025					
Normal (mm)	78.6	85.2	71.7	99.3	81.3
Actual (mm)	45.8	68.9	36.9	61.3	98.8
Percentage Departure	-42	-19	-49	-38	22
July 2025					
Normal (mm)	66	93	67	121	88
Actual (mm)	92	79	58	134	72
Percentage Departure	39	-15	-13	11	-19
August 2025					
Normal (mm)	93	112	92	137	95
Actual (mm)	141	172	113	233	121
Percentage Departure	51	54	23	71	27
September 2025					
Normal (mm)	145	150	135	161	125
Actual (mm)	124	212	116	234	55
Percentage Departure	-14	42	-15	46	-56
October 2025					
Normal (mm)	110	117	120	108	111
Actual (mm)	82	70	76	71	70
Percentage Departure	-22	-41	-37	-35	-37
November 2025					
Normal (mm)	30	23	31	21	36
Actual (mm)	4	9	8	24	10
Percentage Departure	-88	-60	-76	17	-74
December -2025					
Normal (mm)	9	6	8	5	8
Actual (mm)	0	0	1	0	1
Percentage Departure	-96	-98	-92	-98	-90

Area (ha) under major rice varieties in different districts of Karnataka during 2025

Varieties	Districts/ Area in ha				
	Koppal	**Raichur**	**Ballari**	**Yadgir**	**Vijaynagar**
BPT 5204	7500	8083	8000	48756	3080
RNR 15048	27100	86000	40000	59975	4200
Gangavathi Sona	2000	1500			
Nellur Sona	6000	1000			
KNM 1638	1200	35000	11400		
GNV 1109	5000				
MTU 1010	1000	800	10000		6440
Kaveri Sona	5000	2000	11000		
Sriram Sona	1500	1000			
DRR Dhan 53	500				
DRR Dhan 60	800				
GNV 1801	600				
GNV 1906	2000				
NDLR 7(Nandyal Sona)	1400				
BP-2		15000	5000		
Janani		10000			
IR 64			3000		280
Tellahamsa				315	
Others	500	10000	600		

General question on rice cultivation in district (to be filled by the cooperator in consultation with the officials from state department of agriculture)

Parameters/ Details	Districts				
	Koppal	**Raichur**	**Ballari**	**Yadgir**	**Vijayanagar**
Total area (ha) under rice HYV in the district	62100	NA	87597	109046	12035
Most prevalent HYVs in the district	RNR 15048, Sona Masuri, BP-2, Janani, KNM, MTU 1001	RNR 15048, Sona Masuri, Super BPT, Kaveri	RNR15048, MTU-1010, Jyoti, IR64, Super BPT and Kaveri glory	RNR- 15048, Sona Masuri, Kaveri,	RNR 15048, BPT 5204, MTU 1010, IR 64,
Most prevalent rice hybrids in the district	-	-	-	-	-
Total area (ha) under hybrids in the district	-	-	-	-	-
Whether farmers are using any heavy equipment like transplanter/combine harvester	Transplanter, Combine harvester, Baler	Combine harvester and Baler	Combine harvester and Baler	Combine harvester and Baler	Transplanter, harvester and Baler
Mention water saving technologies like SRI/ laser leveling/DSR being used by farmers	DSR	DSR and alternate wetting and drying	DSR	Alternate drying and wetting method	Alternate drying and wetting method and DSR

Parameters/ Details	**Districts**				
	Koppal	**Raichur**	**Ballari**	**Yadgir**	**Vijayanagar**
Whether survey team gave any advice to the farmers during survey?	Water-saving technologies and plant protection measures, measures for correcting soil salinity, Application of recommended dose of NPK and zinc and Weed management				
What are general problems in rice cultivation?	High wages of labor, high cost of fertilizers and pesticide, marketing, less MSP				
Please provide any farmers' association in the district	Raichur, Koppal & Ballari Districts Regional Cooperative Organic Farmers' Association Federation			Yadgiri Banjara FPO Limited	FPOs
Whether availability of labor is sufficient?	No	No	No	No	No
Whether there is any marketing problem of the produce?	Yes	Yes	Yes	Yes	Yes
Any major irrigation/ power generation project in the district	Tungabhadra Project	Tungabhadra Project	Tungabhadra Project	Upper Krishna Project, Basava Sagara (Narayanpur) Dam	Tungabhadra Project
Any soil testing program undertaken?	Soil health card scheme	Soil health card scheme	Soil health card scheme	Soil health card scheme	Soil health card scheme
Any farmers training program was organized by the state department of Agriculture/ Univ.	Training programs organized by KVK and KSDA under ATMA				

Production oriented survey was conducted in five districts of Karnataka *Viz*., Koppal, Raichur, Ballari, Yadgir and Vijayanagar districts of Northern Karnataka during *Kharif* 2025. The prevailing cropping pattern in the districts surveyed is rice-rice followed by rice-sorghum, rice-mustard, rice-sesamum, rice-maize, rice-pulses, green manure crops and Rice-Fallow. Rice is grown in the state under Canal irrigated and borewell irrigated conditions. The south west monsoon entered the Karnataka state during June and the onset of monsoon was timely and normal rainfall was recoded in all the districts surveyed. The rainfall received between May and June was less than normal thus all reservoirs Tungabhadra, Basava Sagara (Narayanpur) got partially filled and later rains allow all reservoirs to fill up to maximum level. The farmer started paddy sowing and transplanting were completed timely in all the districts surveyed. Crop health was good at all the stages in some plots Bacterial leaf blight disease and sheath blight diseases were noticed. The climatic condition that prevailed during the cropping period was normal except for the continuous rainfall at the tillering stage in the Koppal, Raichur and Bellary districts. The inputs in all districts were adequate except for urea fertilizer and zinc micronutrient, because of which deficiency was seen in many fields. The State Department of Agriculture, universities, and NGOs distributed the seeds to the farmers timely during the season. In recent years, Tungabhadra command area farmers are adopting the drum seeder method of direct sowing and machine transplanting in Koppal, Raichur, and Yadgir districts due to technology spread, and it is helpful for tail-end farmers' paddy cultivation. The farmers have adopted DSR and machine transplanting mainly due to the labor cost, to save the water and yield advantage. During this year, zinc deficiency was observed in many districts as the farmers could not apply the zinc due to the non-availability and cost of complex fertilizer. Harvesting of rice crop and baling of straw by using combine harvesters is slowly picking up in all the districts. Rice transplanting machines are being promoted by the state department by

providing subsidies in all the districts. Drum seeding technology (wet direct) is also picking up at Koppal and Raichur district due to pre-emergent selective weedicides available in the market for weed management. Widely cultivated rice varieties in the state were RNR-15048, Gangavathi Sona (GGV-05-01), BPT-5204, Janani, BP-2, Sona Mashuri, KNM 1638, Kaveri Sona, SIRI-1253, Jyoti, IR64, Super BPT, Janani, Tellahamsa and others. In general, intensity of weeds in and around rice fields was low to moderate. Most common weeds recorded in paddy fields are *Echinochloa colona, Marsilea quadrifolia, Lindernia vernicaefolia, Fimbristylis miliaceae, Leptochloa chinensis, Cyperus defromis, Scirpus* spp. *Eclipta alba, Spilanthus acmella, Panicum tripheron* and *Glinus oppositifolia*. Insects and diseases were moderate. Majority of the farmers adopted hand weeding and herbicide application.

The outbreak of bacterial leaf blight disease was high due to more rainfall at the tillering crop growth period, and the major diseases, viz., leaf blast, neck blast, sheath blight, brown spot, false smut and grain discolouration diseases appeared in patches in low to moderate levels. Leaf blast incidence of 3 to 8% was recorded in MTU 1001, RNR15048 and other private varieties. Sheath blight was noticed in patches with severity ranged from 9-20% on varieties like Janani, RNR15048 and BPT-5204. Bacterial leaf blight severity of 40 to 80% was recorded in BP-2, RNR 15048 and Janani varieties in Koppal and Raichur districts. BLB intensity on other varieties ranged from 10 to 18%. False smut and grain discoloration incidence of 3-5% and 2-8% respectively was observed in BPT-5204 varieties. The insect pests *viz.,* stem borer, case worm and leaf folder infestation was low to moderate in *Kharif* 2025. In the districts surveyed the brown plant hopper, gall midge and stem borer infestation of 8-12%, 6 to 10% and 13-18% was recorded during tillering, dough and grain filling stage in irrespective of the varieties. Brown plant hopper, yellow stem borer has been consistently recorded from past years in all the districts. Majority of the farmers adopted plant protection measures. Farmers have expressed the need for fixed market price and high yielding, pest and disease resistant varieties.

District-wise observations:

Koppal: This district comes under the Northern Dry Zone (Zone-3) of the Agro-climatic Zones of Karnataka, comprising of seven taluks. Paddy is grown mainly in two taluks, viz., Gangavathi and Karatagi. Rice occupies comparatively less area in Kukanurutaluku and still less in Koppal, Kanakagiri, Kustagi and Yelburga Talukas. The Survey was conducted in four major rice growing taluks *viz* Gangavathi, Karatagi**,** Kanakagiri and Koppal when the crops were in tillering to heading stage and 9 farmers in the district were contacted during survey. Most of the fields surveyed were under irrigated ecosystems while some surveyed fields were under rainfed low land ecosystems. Though overall weather conditions were favourable for rice cultivation, there were incidences of excess rainfall in about 33% of the places visited. Some farmers cultivated other crops like maize, sorghum, cotton and sunflower in part of their land. Major crop rotations followed by the farmers were rice-rice, rice-mustard, rice-pulses rice-vegetables and rice-fallow. Major rice varieties cultivated in the district were RNR 15048, Gangavathi Sona, GNV1109, Kaveri Sona, BP-2, Janani, BPT-5204 and others. Average yield among the HYVs ranged from 5500-6500 kg/ha. About 55% of the farmers contacted were from medium income group and rest were from lower income group. Per capita rice consumption per month was 5-7 kg and majority of them told that they consumed rice and sorghum. All the farmers contacted told that they used polished and fine grain rice varieties for consumption and as such there was no change in their food habit. Planting was done mainly 2nd to 4th week of August. Average seed rate was 65-70 kg/ha and none of the farmers contacted treated their seeds before

sowing. Seeds were distributed timely by state department- Govt of Karnataka, Karnataka state seed corporation and private company. About 33% farmers contacted applied organic manure like FYM and vermicompost in the nursery while all of them applied chemical fertilizers like urea (10-15 kg/750 m^2) and complex fertilizers like 15:15:15 or 17:17:17 (10-15 kg/750 m^2). Some also applied DAP (10-15 kg/750 m^2). In the main fields, fertilizers were applied @ 128-164 kg N/ha, 36-49 kg P_2O_5/ha, 36-49 kg K_2O/ha and 8 kg $ZnSO_4$/ha. Different fertilizers like urea, DAP, 15:15:15, 17:17:17 and zinc sulphate were used by the farmers. About 77% of the farmers contacted applied FYM (2-4 t/ha) in the fields. Intensity of common weeds like *Cyperous procerus, C. defromis, C. irria, Fimbristylis miliaceae, Scirpus sp. Glinus oppositifolius, Eclipta alba, Panicum tripheron, Echinochloa colona, Leptochlora chinensis* and *Spilanthus acmella* was low. Almost all the farmers followed hand weeding. About 22% of the farmers contacted also applied herbicides like Council Activ.

Different equipment like tractor, land leveler, baler, rotavator, drum seeder, power tiller, puddler, rice transplanter and combined harvester were used by the farmers. Heavy equipments were used on hire basis. Most of the farmers said that they purchased most of their seed requirement. Canal was the main source of irrigation. Availability of urea was an issue in some of the areas. In addition to their own decision, farmers received advices from private dealers and university staffs. The diseases like blast, neck blast, sheath blight, brown spot, false smut and grain discoloration were recorded in low to moderate intensities. However, bacterial blight was very wide spread and was recorded in high intensity (60-80%) in many fields on varieties like RNR 15048, Janani and BP-2. In other varieties, BB intensity was 10-15%. Insect pests like stem borer, leaf folder and BPH were recorded in low to moderate intensity while other insect pests were in low or sporadic. During dough and grain filling stage brown plant hopper and earhead bug (Gundibug) infestation of 5-6% and 6-10% was observed in patches in Kaveri Sona and other private varieties. Different pesticides like propiconazole, thiafluzamide, Nativo (trofloxystrobin + tebuconazole), tricyclazole, hexaconazole and copper oxychloride + streptocycline for different diseases and cartap hydrochloride, chlorpyriphos, fipronil and dichlorovos 76% for different insect pests were used by the farmers. Among the biotic stresses, sheath blight, leaf blast, bacterial blight, stem borer, leaf folder and BPH were the main problems while among abiotic stresses, salinity was the main problems. The major problems faced by the farmers were scarcity of labours and unavailability of quality seeds and fertilizers. Farmers want rice varieties with tolerance to lodging and above mentioned biotic and abiotic stresses and biofortified varieties.

Raichur: Raichur located in the northeastern part of Karnataka, primarily belongs to the North-Eastern Dry Zone (Zone 2) comprising of seven taluks. The Survey was conducted in three major rice growing taluks *viz.,* Raichur, Sindhanur and Manvi when the crops were in tillering to maturity stage. A total of 9 farmers were contacted during the survey. The fields surveyed were under irrigated rice ecosystem and in general, weather conditions were favourable for rice cultivation. Few farmers also cultivated other crops like cotton, sorghum, pigeon pea and Bengal gram in parts of their land mainly due to water scarcity. The major crop rotation in the district is rice-rice. However, in some areas farmers adopted other crop rotations like rice-mustard, rice-pulses, rice-green manuring crops and rice-fallow. The important varieties grown in the district were RNR 15048, BPT 5204, KNM 1638, BP-2, Janani, Gangavathi Sona, Nellur Sona, Nellur Sona, MTU 1010, Kaveri Sona and Sriram Sona. Farmers are mainly growing fine grain quality HYVs. Many other private varieties /hybrids grown in the districts are Sanna Madhu, Samruddi, Sirisuma and Kaveri prize. Average yield among the HYVs ranged from 5200-6280 kg/ha. About 89% of the farmers contacted were from medium income group and rest were from lower income group. Per capita rice consumption per month was 5-8 kg and majority of them told that

they consumed wheat or sorghum along with rice. All the farmers contacted told that they used polished and fine grain rice varieties for consumption and as such there was no change in their food habit. State department had distributed the seeds timely due to expected filling of reservoirs and timely release of water from Tungabhadra dam. Normal sowing in III and IV week of July and planting in III and IV week August was followed in the canal and open well areas. Average seed rate was 60-70 kg/ha and none of the farmers contacted treated their seeds before sowing. Very few farmers contacted applied organic manure like FYM in the nursery while all of them applied chemical fertilizers like urea (10-15 kg/750 m^2) and complex fertilizers like 15:15:15 or 17:17:17 (10-15 kg/750 m^2). Some also applied DAP (10-15 kg/750 m^2). In the main fields, fertilizers were applied @ 127-162 kg N/ha, 35-47 kg P_2O_5/ha and 35-47 kg K_2O/ha. Few farmers also applied $ZnSO_4$/ha (24 kg/ha). Different fertilizers like urea, DAP, 15:15:15, 17:17:17 and zinc sulphate were used by the farmers. About 22% of the farmers contacted applied FYM (2-6 t/ha) in the fields. Farmers followed random method of planting though few adopted line planting. Intensity of weeds was low. Common weeds observed were *Echinochloa colona*, *Cyperous procerus, C. defromis, C. iria, Fimbristylis miliaceae, Scirpus sp. Spilanthus almella* and *Glinus oppositifolius*. About 89% of the farmers contacted adopted both hand weeding and herbicide application and rest followed only hand weeding. Herbicides like penoxsulam + cyhalofop-butyl, pretilachlor + pyrazosulfuron ethyl, pyrazosulfuron ethyl, pretilachlor and triafamone 20% + ethoxysulfuron (Council Activ) were used by the farmers.

Different equipment like tractor, rotavator, power tiller, puddler and combined harvester were used by the farmers. Heavy equipments were used on hire basis. Most of the farmers said that they purchased most of their seed requirement. Main sources of irrigation were canal water from the Tungabhadra River and open wells. Majority of the farmers contacted told that fertilizers and pesticides were available in time and they were happy with their quality. In addition to their own decision, farmers received advices from private dealers and university staffs. Leaf blast disease incidence was ranged from 3-5% was recorded in are RNR 15048, BPT 5204, KNM 1638, BP-2, Janani, Gangavathi Sona. Sheath blight was noticed in patches with incidence ranged from 5-18% on variety Kaveri Sona, RNR 15048. Other diseases like neck blast, brown spot, false smut, grain discoloration were observed in low intensity. However, bacterial blight was very wide spread and in some fields its intensity was very high (40-62%) on varieties like BP-2, Janani and RNR 15048. BLB incidence was high because of heavy rainfall and favourable weather conditions throughout the crop season. Stunted growth and yellowing were observed due to nitrogen deficiency in some farmers' fields. Most of the insect pests were observed in low to moderate intensity. Infestation of brown plant hopper was recorded in Raichur and Sindhanur block of the district at dough and grain filling stage in the range of 22-35%. Different pesticides like fipronil (7.5 kg/ha), chlorantraniliprole, chlorpyriphos, dimethoate, cartap hydrochloride and thiamethoxam for different insect pests and copper oxychloride + streptocycline, propiconazole, hexaconazole, Nativo (trifloxystrobin +tebuconazole), tricyclazole and others for different diseases were used by the farmers. Among the biotic stresses, sheath blight, leaf blast, bacterial blight, stem borer, leaf folder and BPH were the main problems while among abiotic stresses, salinity was the main problems. The major problems faced by the farmers were scarcity of labours, micronutrient deficiency and unavailability of quality seeds. Farmers want short duration varieties suitable for direct seeded rice and rice varieties with tolerance to lodging and above mentioned biotic and abiotic stresses and biofortified varieties.

Ballari: This district is located in the northeastern part of Karnataka and belongs to the Northern Dry Zone (Zone-3) comprising of five taluks viz, Ballari, Kurugodu, Siruguppa, Sandur and Kampli. The Survey was conducted in four major rice growing areas viz., Ballari,

Siruguppa, Kurugod and Kampli when the crops were in tillering to maturity stage. A total of 11 farmers were contacted during the survey. The fields surveyed were under irrigated ecosystem. Overall, weather conditions were favourable for rice cultivation. However, in about 27% of the surveyed places, there were reports of excess rainfall. Few farmers also cultivated other crops like cotton, sorghum, chili and maize in parts of their land mainly due to water scarcity. The common crop rotation systems in the district are rice-rice. In some area in the district, farmers practiced other crop rotations like rice-mustard, rice-pulses, rice-green manuring crops and rice-fallow. The important varieties grown in the district were BPT-5204, KNM 1638, IR-64, RNR-15048, MTU-1010, Kaveri Sona, Sona Mahsuri, BP-2 and other verities. Farmers are growing RNR 15048 variety due to fine grain quality and yield. Average yield among the HYVs ranged from 5700-6900 kg/ha. About 80% of the farmers contacted were from medium income group and rest were from lower income group. Per capita rice consumption per month was 5-7 kg and majority of them told that they consumed wheat or sorghum along with rice. All the farmers contacted told that they used polished and fine grain rice varieties for consumption and as such there was no change in their food habit. State department had distributed the seeds timely due to expected filling of reservoirs and timely release of water from Tungbhadra dam. Most of the sowings were done in III and IV week of July and planting in II and III week August in the canal irrigation areas. Average seed rate was 60-70 kg/ha and none of the farmers contacted treated their seeds before sowing. About 81% of farmers contacted applied organic manure like FYM in the nursery while all of them applied chemical fertilizers like urea (10-15 kg/750 m^2) and complex fertilizers like 15:15:15 or 17:17:17 (10-15 kg/750 m^2). Some also applied DAP (10-15 kg/750 m^2). In the main fields, fertilizers were applied @ 100-207 kg N/ha, 40-57 kg P_2O_5/ha and 43-57 kg K_2O/ha. Few farmers also applied $ZnSO_4$/ha (15 kg/ha). Different fertilizers like urea, DAP, 15:15:15, 17:17:17 and zinc sulphate were used by the farmers. Majority of the farmers applied FYM in the fields (7-12 t/ha). Farmers followed random method of planting where plant population per unit area was not maintained. Intensity of common weeds was low. Commonly encountered weeds were Echinochloa coloan, *Cyperous procerus, C. defromis, C. iria, Fimbristylis miliaceae, Scirpus* spp., *Glinus oppositifolius* and others. About 63% farmers contacted applied herbicides along with hand weeding and rest followed only hand weeding. Herbicides like penoxsulam + cyhalofop-butyl, pyrazosulfuron ethyl, pretilachlor and triafamone 20% + ethoxysulfuron (Council Activ) were used by the farmers.

Different equipment like tractor, sprayer, land leveler, rotavator, power tiller, puddler and combined harvester were used by the farmers. Heavy equipments were used on hire basis. Most of the farmers said that they purchased most of their seed requirement. Main sources of irrigation were canal water from the Tungabhadra River. About 45% of the farmers contacted told that fertilizers and pesticides were not available in time. However, all of them were happy with their quality. In addition to their own decision, farmers received advices from private dealers, officials from state department of agriculture and university staffs. Most of the diseases were observed in low to moderate intensities. False smut disease incidence was low and in patches with incidence ranged from 2-3% on variety RNR-15048, BPT-5204. Bacterial leaf blight disease incidence recorded from 8-15%. Different insect pests were observed in low to moderate intensities. Almost all the farmers contacted applied different pesticides. Different pesticides like carbendazim, hexaconazole, Nativo (trifloxystrobin + tebuconazole), thiafluzamid, copper oxychloride + streptocycline and tebuconazole for different diseases and fipronil, cartap hydrochloride, chlorpyriphos and others for different insect pests were applied by the farmers. Among the biotic stresses, sheath blight, leaf blast, bacterial blight, stem borer, leaf folder and BPH were the main problems while among abiotic stresses, salinity was the main problems. Major problems faced by the farmers were scarcity of labours, micronutrient deficiency and

unavailability of quality seeds and fertilizers. Farmers want short duration varieties suitable for direct seeded rice and rice varieties with tolerance to lodging and above mentioned biotic and abiotic stresses and biofortified varieties.

Yadgir: The district comes under Zone 2 comprising of six taluks namely Shorapur, Hunasagi, Shahpur, Wadagera, yadgir and Gurmitkal. The survey was conducted in shorapur, shahapur, Yadgir Wadagera and Hunsagi taluks when the crops were in tillering to maturity stage. A total of 12 farmers were contacted during the survey. The fields surveyed were under irrigated ecosystem. In general, the weather conditions were favourable for rice cultivation except few places where there were reports of excess rainfall. Few farmers also cultivated other crops like cotton, sunflower, red gram, groundnut and maize in parts of their land. Rice-rice and rice-pulses were the prevailing crop rotations. Commonly cultivated rice varieties in the region were RNR-15048, BPT -5204, TH (Tellahamsa). Farmers grow cow pea and Diancha as a green manure crop. Average yield among the HYVs ranged from 5000-6580 kg/ha. About 58% of the farmers contacted were from medium income group and rest were from lower income group. Per capita rice consumption per month was 6-7 kg and majority of them told that they consumed wheat or sorghum along with rice. All the farmers contacted told that they used polished and fine grain rice varieties for consumption and as such there was no change in their food habit. Most of the plantings were done in the month of August. Average seed rate was 60-65 kg/ha and none of the farmers contacted treated their seeds before sowing. About 50% of farmers contacted applied organic manure like FYM in the nursery while 83% applied chemical fertilizers like urea (10-15 kg/750 m^2) and complex fertilizers like 15:15:15 or 17:17:17 (10-15 kg/750 m^2). Some also applied DAP (5-10 kg/750 m^2). In the main fields, fertilizers were applied @ 147-177 kg N/ha, 27-82 kg P_2O_5/ha and 62-101 kg K_2O/ha. Few farmers also applied $ZnSO_4$/ha (8-10 kg/ha). Different fertilizers like urea, DAP, 15:15:15, 17:17:17 and zinc sulphate were used by the farmers. About 50% of the farmers contacted applied FYM in the fields (8-10 t/ha). Random planting was common among the farmers. Some farmers followed line planting and direct sowing. Intensity of weeds in and around rice fields was low. Common weeds encountered were Echinochloa colona, *Cyperous procerus, C. defromis, C. iria, Panicum tripheron, Leptochloa chinensis, Eclipta alba, Fimbristylis miliaceae, Scirpus* spp. *and Spilanthus acmella*. About 75% of the farmers contacted followed both hand weeding and herbicide application and rest followed only hand weeding. Herbicides like penoxsulam + cyhalofop-butyl, pretilachlor + pyrazosulfuron ethyl, pyrazosulfuron ethyl, pretilachlor and triafamone 20% + ethoxysulfuron (Council Activ) were used by the farmers.

Different equipment like tractor, sprayer, land leveler, rotavator, power tiller, puddler and combined harvester were used by the farmers. Heavy equipments were used on hire basis. Most of the farmers said that they purchased most of their seed requirement. Main sources of irrigation were canal, deep tube well and river. About 83% of the farmers contacted told that fertilizers and pesticides were available in time and 91% of the farmers contacted were happy with their quality. In addition to their own decision, farmers received advices from private dealers, officials from state department of agriculture and university staffs. Leaf blast and neck blast disease incidence was observed from 2-4% in RNR 15048, BPT -5204. Sheath blight disease incidence was observed from 10-18 % in RNR 15048, BPT -5204 varieties. Bacterial leaf blight disease incidence ranged from 6-16%. Other diseases and insect pests were recorded in low to moderate intensities. All the farmers contacted adopted plant protection measures. Different pesticides like thifluzamide, copper oxychloride + streptocycline, carbendazim, propiconazole, tricyclazole, hexaconazole and Nativo (trifloxystrobin + tebuconazole) for different diseases and fipronil, chlorpyriphos, cartap hydrochloride and others for different insect pests were used by the farmers. Among the biotic stresses, sheath blight, leaf blast, bacterial blight, stem borer,

BPH and WBPH were the main problems while among abiotic stresses, salinity was the main problems. Major problems faced by the farmers were scarcity of labours, micronutrient deficiency and lack of mechanization. Farmers want short duration varieties suitable for direct seeded rice and rice varieties with tolerance to lodging and above mentioned biotic and abiotic stresses and biofortified varieties.

Vijayanagar: This district comes under Northern Dry Zone (zone 3) comprising of six taluks viz. Harapanahalli, Hospet, Kudligi, Hoovina Hadagali, Hagaribommanahalli and Kotturu. The survey was conducted in rice growing taluks when the crops were in milk to maturity stage. A total of 7 farmers were contacted at the time of survey. The rice fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice cultivation. Few farmers also cultivated other crops like cotton, sunflower, sorghum, sugarcane and maize in parts of their land mainly due to water scarcity. The prevailing crop rotation practices were rice-rice and rice-pulses and the farmers had grown Diancha as a green manure crop. Department of Agriculture is supporting for green manure crops in paddy fallows. Commonly grown rice varieties in the district were BPT-5204, MTU-1010, IR-64, RNR-15048 and others. Average yield among the HYVs ranged from 5920-6920 kg/ha. About 28% of the farmers contacted were from medium income group and rest were from lower income group. Per capita rice consumption per month was 6-7 kg and majority of them told that they consumed wheat or sorghum along with rice. All the farmers contacted told that they used polished and fine grain rice varieties for consumption and as such there was no change in their food habit. Most of the plantings were done in 3rd week to 4th week of August. Average seed rate was 60-70 kg/ha and none of the farmers contacted treated their seeds before sowing. About 57% of farmers contacted applied organic manure like FYM in the nursery while all the farmers contacted applied chemical fertilizers like urea (10 kg/750 m^2) and complex fertilizers like 15:15:15 or 17:17:17 (10-15 kg/750 m^2). Some also applied DAP (10 kg/750 m^2). In the main fields, fertilizers were applied @ 155-183 kg N/ha, 40-54 kg P_2O_5/ha and 40-54 kg K_2O/ha. Few farmers also applied $ZnSO_4$/ha (24 kg/ha). Different fertilizers like urea, DAP, 15:15:15, 17:17:17 and zinc sulphate were used by the farmers. About 57% of the farmers contacted applied FYM in the fields (8-10 t/ha). Farmers followed both random and line transplanting methods. Weed infestation was medium to low and predominant weeds are *Cyperous defromis, Echinochloa colona, Leptochlora chinensis, Eclipta alba, Marsilea quadrifolia, Scirpus spp.* and *Glinus oppositifolius*. About 85% of the farmers contacted followed both hand weeding and herbicide application and rest followed only hand weeding. Herbicides like penoxsulam + cyhalofop-butyl, pyrazosulfuron ethyl, pretilachlor and triafamone 20% + ethoxysulfuron (Council Activ) were used by the farmers.

Different equipment like tractor, sprayer, rotavator, puddler and combined harvester were used by the farmers. Heavy equipments were used on hire basis. Most of the farmers said that they purchased most of their seed requirement. Main sources of irrigation were canal. All the farmers contacted told that fertilizers and pesticides were available in time and they were happy with their quality. In addition to their own decision, farmers received advices from private dealers, officials from state department of agriculture and university staffs. Most of the diseases and insect pests were observed in low to moderate intensities. Bacterial blight was wide spread in moderate form (16-18 %). All the farmers contacted adopted plant protection measures. Different pesticides like fipronil (2.5 kg/acre), chlorpyriphos 20EC (2 ml/l), cartap hydrochloride (450 g/acre) and others for different insect pests and tricyclazole (0.6 g/l), hexaconazole (1 ml/l), copper oxychloride + streptocycline (2 g + 0.3 g/l), propiconazole (1 ml/l), tebuconazole, kresoxim methyl, carbendazim and Nativo (trifloxystrobin + tebuconazole) for different diseases were applied by the farmers. Farmers use two chemicals and give four

sprays per cropping season. Among the biotic stresses, sheath blight, leaf and neck blast, bacterial blight, stem borer, BPH and WBPH were the main problems while among abiotic stresses. Major problems faced by the farmers were scarcity of labours, micronutrient deficiency and lack of mechanization. Farmers want rice varieties with tolerance to lodging and above mentioned biotic and abiotic stresses and biofortified varieties.

Prevalence of disease and pests in Northern Karnataka during *Kharif* 2025

Districts	Disease							
	Bl	**NBl**	**BS**	**ShBl**	**ShR**	**FS**	**GD**	**BLB**
Koppal	L (1-5%)	L (2-3%)	L (2%)	M (6-18%)		L (3-5%)	L (2%)	M-S (10-80%)
Raichur	L (3-5%)	L (2-3%)	L (5%)	L-M (5-18%)		L-M (2-8%)	L (2-6%)	M-S (13-62%)
Ballari	L (1-4%)	L (1-4%)	L (1-3%)	M (12-18%)		L (2-5%)	L (3%)	M (8-15%)
Yadgir	L (2-4%)	L (1-2%)	L (2%)	M (10-18%)	L-M (5-8%)	L (2-5%)	L (1-6%)	L-M (5-16%)
Vijayanagar	L (2-4%)	L (2%)	L (1-3%)	M (10-13%)		L-M (2-8%)	T (<2%)	M (10-18%)

Districts	Insects								
	SB	**LF**	**BPH**	**WBPH**	**GM**	**WM**	**CW**	**RH**	**GLH**
Koppal	M (8-12%)	L-M (4-10%)	L-M (6-12%)	L (2-4%)	M (9-13%)	L (1-3%)	L (1-3%)	-	L (2-4%)
Raichur	L-M (6-12%)	L-M (2-8%)	M-S (9-35%)	L (3-4%)	L-M (2-11%)	L (2-4%)	T (<2%)	L-M (4-10%)	L (2%)
Ballari	M (8-11%)	L-M (4-7%)	M (8-12%)	L (2-4%)	M (9-12%)	T (<2%)	T (<2%)		L (1-3%)
Yadgir	M (8-13%)	L-M (4-10%)	M (9-13%)	L (3%)	M (9-12%)	L (1-3%)	L (1-2%)		L (2%)
Vijayanagar	M (10-12%)	L-M (4-9%)	M (8-12%)	L (3-4%)	M (10-23%)	L (2-3%)	L (1-4%)		L (1-3%)

There were minor (1-3%) incidences of army worm in most of the districts surveyed

Karnataka-2025-26 (Mandya)

Districts surveyed: *Mandya, Mysuru, Chamarajanagara, Hassan, Chikkamangalur, Kodagu, Davangere* and *Shivamogga*

Table 1: Particulars of survey

Districts	Taluks/Blocks	Villages (latitude/longitude)
Mandya	Mandya, Pandavapura, Srirangapatna, Malavalli, K. R Pete and Maddur	Vaidyanathpura (12.3438/77.330), Sundahalli (12.301/76.504), Konanahalli (12.3130/76.5141), Sampalli (12.3436/76.5255), Mandya (12.4271/77.0518), K. Shettihalli (12.4821/76.9926), Nelamakanahalli (12.4080/77.0512), Seetapura (12.2627/76.3718), Chikka Hosagavi (12.448/76.5541) and Kothalli (12.282/76.525)
Mysuru	KR Nagara, HD Kote, T. Narsipura and Hunusur	Muguru (12.1717/76.817), Dhanyakanahalli (12.1745/76.943), Kudluru (12.175/76.748), Sosale, Bannuru (12.33/76.86; 12.1943/76.5234), Ranga Samudra (12.1926/76.5052), Dhanyakanahalli (12.175/76.748)
Chamaraja-nagara	Yelenduru, Kollegala, Kasaba and Hanuru	Agara (12.725/76.5829; 12.724/77.132), Yelanduru (12.434/77.510; 12.434/77.448), Bannigaruge (12.612/77.54), Devarahalli (12.444/77.458), Uttanahalli (1.822/77.429), Kollegala (12.110/77.558), Hosa Kukkuru (12.1136/77.610) and Kaveripura (12.1218/77.420)
Hassan	Hassan and Hole Narasipura	Holenarasipura (12.4916/76.1423), Kaduvinkote (12.5033/76.1046), Kunkumada Hosuru (12.4914/76.1431), Gunjevu (12.465/76.1939), Kadavina Hosahalli (12.4916/76.1423), Huvinahalli (12.4916/76.1424), Bagivalu (12.4914/76.1422), Shravanur (12.4530/76.1930), Mandagere (12.4554/76.1939) and Suranahalli (12.4635; 76.1514)
Chikkaman-galur	Mudigere and Chikmangaluru	Daradahalli (12.0866/75.6358; 13.0967/75.6459), Banakal (13.1401/75.5495; 13.0775/75.5479), Mudigere (13.1365/75.6403; 12.5277/76.4930), Gonibeedu (13.045/75.7001; 13.0138/75.7203) and Alduru (13.3321/76.1243; 13.3326/76.0041)
Kodagu	Ponnampet, Madikeri, Shanivarasanthe, Kushalnagara and Harangi	Titimati (12.131/75.5926), Madikeri (12.2249/75.4518; 12.181/75.4519), Murnodi (12.2023/75.4530), Bhetri (12.172/75.459), Viraj Pete (12.1036/75.4917), Goni Kappa (12.113/75.5553), Kondageri Madikeri (12.1733/75.4812) and Makki (12.958/75.5022)
Davangere	Channagiri, Honnalli, Harihara and Davangere	Detturu (14.9354/75.6605), Harihara (14.4075/75.7766), Didaguru (14.1993/75.6605), Kote Malluru (14.2693/75.6578; 14.2237/75.2265), Neenalahalli (14.4629/75.8493), Beli Malluru (14.2237/75.6571), Mittakatte (14.3918/75.7647), Halebatti (14.4665/75.8417), Belludi (14.4644/75.7956)

Districts	Taluks/Blocks	Villages (latitude/longitude)
Shivamogga	Shivamogga and Bhadravati	Shivamoga (13.9788/75.6273), Yarahalli (13.8291/75.7191), Ballapura (13.9907/75.6449), Hole Hasanavadi (13.9723/75.6214), Belanahalli (13.7440/75.7739), Jedikatte (13.8723/75.6628), Bhadravathi (13.8606/75.6798), Lakshmipura (13.8648/75.6758), Shamboonahalli (12.6386/76.7857), Neelanahalli (14.4630/75.8492)

Table 2: Widely Prevalent rice varieties

Districts	Varieties
Mandya	**HYVs:** SuperAman, MTU-1001, Omkar, IR-64, Meenakshi, Amogh, Sun Madhu, Jyothi, RNR-15048, Penna BPT, Sumangali, S 913, MTU-1010, GK Chethana, Aroha, Shreya, Tulasi, Ankur, Kurnool Sona, Chamumdi, BR-2655, Amulya JAI, Siri sumo, X4, Siri theja and Krishna; **Hybrids:** MC13, PAC 837, VNR 2233, Kaveri prize, KRH 7344, DRH 8336, VNR Bheem 115, , RRX 3200 (Raasi Seeds) and INDAM 200-017
Mysuru	**HYVs:** Jyoti, RNR 15048, MTU 1001, MTU 1010, IR 64, Meenakshi, Super Aman, Kurnool Sona and others varieties; **Hybrids:** Kaveri Prize, VNR2233, VNR BHEEM115, KRH7344 and MC-13
Chamarajanagara	**HYVs**: Jyoti, IR-64, RNR 15048, MTU 1001 and Sanmadhu and other private hybrids
Chikkamagaluru	**HYVs:** Tunga, KHP-10, KHP-11, KHP-13, BR 2655, KPR 1, Intan, JAYA, Jyothi, Sahyadri and Kempumukthi
Kodagu	**HYVs:** Athira, Intan, RNR 15048, IR-64, Thanu, Tunga, Rajamudi, Sanmadhu, Other Local Varieties and Other Private Hybrids.
Hassan	**HYVs**: Jaya, MTU 1001, IR-64, Tunga, Rajamudi, BR-2065, Jyothi, Superaman, Ashmitha, RNR-15048, Sannmadhu, Tulasi, Adithya, Amogh, Asmita, Meenakshi and others; **Hybrids:** Kaveri Prize, Advanta- PAC837, VNR Bheem 115 and others
Davanagere	**HYVs:** Jyothi, RNR 15048, MTU 1001, MTU 1010, IR-64, Superaman, Karnool Sona, Sri Ram Sona, BPT 5204 and Local varieties; **Hybrids:** VNR 2233 and others
Shivamogga	**HYVs:** Abhilash MTU 1001, Jyothi, RNR 15048, MTU 1010, Kempumukthi IET, Sona, UMA & others and hybrids like Sahyadri

Production oriented survey was conducted in eight districts of Karnataka *viz*., Mandya, Mysuru, Chamarajanagara, Hassan, Chikkamangalur, Kodagu, Davangere and Shivamogga districts of Southern Karnataka during *Kharif* 2025 when the crops were in maturity stage. The particulars of survey are presented in Table 1. Rice is grown in the state under Canal irrigated, rainfed, borewell irrigated and tank fed conditions. The south west monsoon entered the Karnataka state during June and the onset of monsoon was early and almost near normal rainfall was recoded in all the districts surveyed. The rainfall received between May and June was higher to normal thus all reservoirs Krishna Raja Sagar, Hemavathi, Tungabhadra and Bhadra project got filled and later rains allow all reservoirs to fill up to maximum level. The farmer started paddy sowing and transplanting were completed (July to August) timely in all the districts surveyed. Crop health was good at all the stages in some plots. where ever nitrogenous

fertilizers were used injudiciously such cases blast and sheath blight diseases and stem borer and brown plant hoppers were noticed. The climatic condition prevailed during the cropping period was normal except with dry spells during September at tillering stage in Mandya, Mysuru and Shivamogga district. The particulars of weather conditions are presented in Table 4. The particulars of rice area in surveyed districts of Karnataka are presented in Table 3. The details of rice varieties cultivated in different surveyed districts are presented in Table 2. Commonly cultivated rice varieties were HYVs like Super Aman, MTU-1001, Omkar, IR-64, Meenakshi, Amogh, San Madhu, Jyothi, RNR-15048, Penna BPT, Sumangali, S 913, MTU-1010, GK Chethana, Aroha, Shreya, Tulasi, Ankur, Kurnool Sona, Chamumdi, BR-2655, Amulya JAI, Siri sumo, Tunga, KHP-10, KHP-11, KHP-13, BR 2655, KPR 1, Intan, JAYA, X4, Athira, Rajamudi, Ashmitha, Adithya, Amogh, Sri Ram Sona, BPT 5204, Kempumukthi, Abhilash,Uma, Siri Theja and Krishna and hybrids like MC13, PAC 837, VNR 2233, Kaveri prize, KRH 7344, DRH 8336, VNR Bheem 115, , RRX 3200 (Raasi Seeds), Advanta- PAC837, Sahyadri and INDAM 200-017. The area of different rice varieties in different districts are presented in Table 6.

Table 3: Particulars of Rice area in 2025

Districts	Total geographical area (ha)	Total cultivable area (ha)	Total cultivated area (ha)	Total irrigated area (ha)	Area DSR (ha)	Area under rice (ha)
Mandya	498244	309307	253118	140309	1250	57148
Mysuru	676382	368393	269754	175585	4850	83430
Chamarajanagara	569901	219355	151255	56258	120	10481
Hassan	662602	449313	359583	64631	100	21625
Chikkamagaluru	569901	448087	338166	101239	-	14400
Kodagu	410775	227262	200868	1967	1830	20854
Davanagere	454573	329492	273782	110579	3500	120150
Shivamogga	847784	262267	248710	156666	5260	73100

Table 4: Weather data for different districts of Karnataka during *Kharif*' 2025

Weather parameters	June	July	August	Sept	Oct	Nov	Dec	Jan
Mandya								
# of rainy days	6	6	6	0	0	0	0	0
Total Rainfall (mm)	89.0	41.0	66.0	2.0	0	0	0	0
Max. Temperature	30.0	28.5	28.7	29.2	29.3	28.8	28.0	28.1
Min. Temperature	21.0	20.8	21.1	19.6	20.9	18.4	14.3	16.2
Mysuru								
# of rainy days	5	2	10	7	5	1	1	0
Total Rainfall (mm)	36.0	20.1	150.0	68.0	155.0	6.0	6.0	0
Max. Temperature	29.8	28.6	28.8	2.4	30.3	29.5	28.5	28.7
Min. Temperature	20.2	20.0	19.9	19.6	19.9	8.3	15.3	15.7
Chamarajanagara								
Total Rainfall (mm)	32.0	52.0	70.0	57.0	145.0	12.0	5.0	4.5
Max. Temperature	32.44	30.99	32.17	31.56	31.55	31.19	31.86	31.55
Min. Temperature	18.22	18.79	18.06	18.73	17.49	14.85	12.07	12.21
Hassan								
# of rainy days								
Total Rainfall (mm)	239	229	220	102	306	11	2	5
Max. Temperature	30.33	29.1	29.48	29.71	29.93	30.47	30.91	29.72
Min. Temperature	18.41	18.32	17.33	17.86	17.74	12.81	11.42	11.53
Chikmagalur								
# of rainy days	19	18	16	8	12	2	2	0
Total Rainfall (mm)	720.0	614.0	511.1	233.9	421.5	26.4	30.8	0
Max. Temperature	23.0	23.1	22.9	23.7	23.6	23.8	22.3	27.4
Min. Temperature	19.4	19.0	20.0	21.0	20.0	20.0	20.0	12.8
Kodagu								
Total Rainfall (mm)	665	764	494	253	223	12	7	5.2
Max. Temperature	28.88	26.72	27.04	28.54	29.45	28.75	29.99	30.12
Min. Temperature	20.3	20.78	18.83	19.48	19.93	14.75	13.16	13.2
Davanagere								
# of rainy days	15	13	15	3	6	0	0	0
Total Rainfall (mm)	149.0	143.2	160.4	16.2	143.8	0	0	0
Max. Temperature	29.2	27.0	27.3	28.3	29.1	29.7	28.5	29.9
Min. Temperature	20.4	20.1	19.9	20.0	19.8	15.7	12.6	13.0
Shivamogga								
# of rainy days	7	13	14	8	7	0	0	0
Total Rainfall (mm)	83.2	125.4	171.8	79.0	96.2	0	0	0
Max. Temperature	29.3	27.1	27.7	28.7	30.0	30.1	29.5	30.3
Min. Temperature	-	19.3	19.3	19.9	20.4	17.8	14.2	15.8

Table 5: General question on rice cultivation in district (to be filled by the cooperator in consultation with the officials from state department of agriculture).

Parameters	Districts			
	Mandya	**Mysuru**	**Chamaraja Nagara**	**Hassan**
Total area under rice HYV in the district	57148	83430	10481	21625
Most prevalent HYVs in the district	Super Aman, MTU-1001, VNR 2233, Sun Madhu, Kaveri Prize, Jyothi, RNR-15048, VNR 115 Bheem, S 913, MTU-1010, GK Chethana,	Jyoti, RNR 15048, MTU 1001, MTU 1010, Kaveri Prize, VNR 2233, BHEEM115	Jyoti, IR-64, RNR 15048, MTU 1001, Sanmadhu	RNR-15048, Gangavati Sona, MTU 1001, MTU 1010, Tunga, BR-2065, Jyothi, Sannmadhu, Bhim-115, PAC 837 Rajamudi,
Most prevalent rice hybrids in the district	Superaman	Jyoti	Jypti & IR-64	Jaya
Total area under rice hybrids in the district (ha.)	2400	4223	1325	2100
Whether farmers are using any heavy equipments like transplanter/combine harvester	Transplanter, Combine harvester	Combine harvester and baler	Combine harvester and baler	Combine harvester and baler
Mention water saving technologies like SRI/laser leveling/DSR being used by the farmers	DSR and AWD	DSR and AWD	DSR and AWD	DSR and AWD
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	Machine transplanting, Application of Zinc, Micronutrients application, and plant protection measures, Water saving technologies and plant protection measures, Pré- and Post emergent weedicides			
What are the general problems in rice cultivation in the district?	High Labour and fertilizer cost, marketing issurs, less minimum support price, High cost of cultivation and Insect and diseases			
Please provide any farmers' association in the district	-	Karnataka Farmers association	-	Karnataka Farmers association
Whether availability of agricultural labours is sufficient?	No	No	No	No
Whether there is any marketing problem of the produce?	Yes	Yes	Yes	Yes
Any major irrigation/power generation project in the district	Krishna Raja Sagara	Krishna Raja sagara	KABINI	Hemavathi irrigation project
Any soil testing program undertaken?	Soil health card scheme	Soil health card scheme government	Soil health card scheme	Soil health card scheme
Any farmers training program was organized by the state department of Agriculture/University	KSDA under ATMA	KSDA under ATMA	KSDA under ATMA	KSDA under ATMA

Table 5 contdd..: General question on rice cultivation in district (to be filled by the cooperator in consultation with the officials from state department of agriculture).

Parameters	Districts			
	Chikkamagaluru	**Kodagu**	**Davanagere**	**Shivamogga**
Total area under rice HYV in the district	14400	20854	64200	73100
Most prevalent HYVs in the district	Tunga, KHP -10, KHP-11, KHP-13, BR 2655, KPR 1, Intan, JAYA, Jyothi, Sahyadri and Kempumukthi,	Athira, Intan, RNR 15048, IR064, Tanu, Tunga, Rajamudi, Sanmadhu,	Jyothi, RNR 15048, MTU1001, MTU 1010, VNR 2233. Superaman,	Abhilash MTU1001, Jyothi, RNR15048, MTU-1010,
Most prevalent rice hybrids in the district	Tunga	Athira	Sona	Abhilash
Total area under rice hybrids in the district (ha.)	2300	-	2564	6110
Whether farmers are using any heavy equipments like transplanter/combine harvester	-	Combine harvester	Combine harvester and Baler	Combine harvester and Baler
Mention water saving technologies like SRI/ laser leveling/DSR being used by farmers	AWD and DSR	-	AWD	AWD and DSR
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	Acidic soil measures, Water saving technologies and plant protection measures, crop insurance	Water saving technologies and plant protection measures Use of HYV, crop insurance	Water saving technologies and plant protection measures, Crop rotation with Pulses	Mechanized transplanting, Water saving technologies and Plant protection measures
What are the general problems in rice cultivation in the district?	Wild animal menase, Iron toxicity Labour issues Marketing price	Labour problem and Wild animal menase	Labour, marketing problems and less minimum support price, mechanization essential	Labour, marketing problems and less minimum support price, mechanization required
Please provide any farmers' association in the district	Karnataka Farmers association	-	Karnataka Farmers association	Karnataka Farmers association
Whether availability of agricultural labours is the sufficient?	No	No	No	No
Whether there is any marketing problem of the produce?	Yes	Yes	Yes	Yes
Any major irrigation/power generation project in the district	Hemavathi	Kaveri	Bhadra reservoir	Tunga Bhadra reservoir
Any soil testing program undertaken?	Soil health card scheme	Soil health card scheme	Soil health card scheme	Soil health card scheme
Any farmers training program was organized by the state department of Agriculture/University	KSDA under ATMA	KSDA under ATMA	KSDA under ATMA	KSDA under ATMA

Table 6: Variety/hybrid wise area coverage (ha) in different districts of Gujarat during 2025

Varieties/ Hybrids	Districts							
	Mandya	**Mysuru**	**Chamara-janagara**	**Hassan**	**Chikka-magaluru**	**Kodagu**	**Davana-gere**	**Shiva-mogga**
SuperAman	8725	4250		6300			500	
MTU-1001	8524	8245	2865	350			2800	5682
Omkar	5770							
IR-64	4258	7642	1025	1250		980	100	
Meenakshi	3610	6255						
Amogh	2780							
VNR 2233	2666	6123					300	
San Madhu	2620		600			610		
Kaveri prize	2458	6540		900				
Jyothi	2157	8675	2756				12000	7456
RNR-15048	2120	8256	2565			1200	94200	5800
Penna BPT	987							
Sumangali	861							
VNR Bheem 115	648	5253						
S 913	646							
MTU-1010	594	8125		200			500	8402
GK chethana	383							
PAC 837	348							
Aroha	324							
Shreya	330							
KRH 7344	320							
KRH-7344		5100						
MC-13		4521						
TATA 837		3522						
Jaya				1000				
Gangavati Sona				600				
Thanu				400		4300		
Intan				3800		3900		
SKB- 5050				350				
Rajamudi				2475		1020		
Tunga					3626	4274		
IET5600					3323			
KHP10					2215			
KHP11					2564			
Kempumukti					1230			
Athira						2500		
Kurnool Sona							300	
Sriram Sona							1000	
BPT 5204							5300	
Abhilash								11150
Sahyadri Kempumukthi								5210
Others	5606	923	670		1482	2070	3000	29400

A. General Information, cropping system and rice yield: The details of the number of villages surveyed and number of farmers contacted are presented in Table 7. Majority of the fields surveyed were under irrigated ecosystem (Table 7). Some surveyed fields were under upland ecosystem in Hassan and Davanagere. Most of the surveyed fields were under rainfed lowland ecosystem in Kodagu district (Table 7). The prevailing cropping pattern in the districts surveyed were rice-rice, rice-sugarcane, rice-finger millet, rice-maize, rice-cowpea, rice-

vegetables, rice-chili, rice-brinjal, rice-pulses, rice-tomato, rice-black gram/green gram, rice-cabbage, rice-sesame, rice-finger millet-black gram, rice-groundnut-cowpea and others (Table 7). Crop health was good at all the stages in some plots. Average rice yield in different high yielding rice varieties in different districts ranged from 4000-6250 kg/ha and 4250-8000 kg/ha in different hybrids. Yield in some of the fields were affected due to high incidence of pests and diseases, zinc deficiency, lack of mechanization, micronutrient deficiency, unavailability of quality seeds, high alkalinity of soil, high pH of soil, and continuous monocropping. In some of the places, yield was affected due to iron toxicity and acidic soil.

Table 7: General information

Parameters	**Districts**			
	Mandya	**Mysuru**	**Chamaraja Nagara**	**Hassan**
# of talukas/blocks covered	6	4	4	2
# of villages surveyed	10	8	8	10
# of farmers interviewed	10	10	10	10
Field ecosystem	IR (100%)	IR (100%)	IR (100%)	IR (50%); Upland (50%)
Weather conditions during cropping season	Normal (100%)	Normal (100%)	Normal (100%)	Normal (100%)
Crop stage when survey was made	Maturity	Maturity	Maturity	Maturity
Crop rotations	Farmers followed diverse crop rotation practices like rice-rice, rice-sugarcane, rice-finger millet, rice-maize, rice-cowpea, rice-vegetables, rice-chili, rice-pulses, rice-tomato, rice-black gram/green gram, rice-cabbage, rice-finger millet-black gram, rice-groundnut-cowpea and others			

Table 7 contdd..:

Parameters	**Districts**			
	Chikka-magaluru	**Kodagu**	**Davanagere**	**Shivamogga**
# of talukas/blocks covered	2	5	4	2
# of villages surveyed	5	8	9	10
# of farmers interviewed	10	10	10	10
Field ecosystem	IR (20%); RL (70%); Hill (10%)	RL (100%); Hill (20%)	IR (80%); Upland (20%)	IR (90%); RL (10%)
Weather conditions during cropping season	Normal (100%)	Normal (100%)	Normal (100%)	Normal (100%)
Crop stage when survey was made	Maturity	Maturity	Maturity	Maturity
Crop rotations	Farmers followed diverse crop rotation practices like rice-rice, rice-sugarcane, rice-finger millet, rice-maize, rice-cowpea, rice-vegetables, rice-chili, rice-brinjal, rice-pulses, rice-tomato, rice-black gram/green gram, rice-cabbage, rice-sesame, rice-finger millet-black gram, rice-groundnut-cowpea and others			

Table 8: Average yields of different rice varieties as reported by the cooperators/ farmers

Variety/hybrids	Yield (kg/ha)			
	Mandya	**Mysuru**	**Chamaraja Nagara**	**Hassan**
HYVs				
Jyothi	4500-6250		5500-6500	
RNR 15048		6000	6000	5250-5750
Super Amman	4500	6500	6000	
Rajamudi				4000-4250
BR 2566				4500-5000
MTU 1001	4750	5500	5750	
Sannmadhu				5500
Meenkashi	5250	7000		
BPT Sona	5500			
IR 64		6000	5500	4500
Ashmitha				
Swarnarekha	4500	3000		
Amogha	4500			
Dabang Plus		6250		
Dhanrekha		2500		
Thanu				5000
Hybrids				
Kaveri Prize	5250	6500		5500
Tata 837		8000		

Table 8: Contdd..

Variety/hybrids	Yield (kg/ha)			
	Chikka-magaluru	**Kodagu**	**Davanagere**	**Shivamogga**
HYVs				
Jyothi			5750	5500
RNR 15048		5500	4500-6500	5250-5500
Super Amman			5750	
BR 2566	3400			
MTU 1001				5000
MTU-1010				5250
Sannmadhu		6000		
Meenkashi				5000
Intan	3200	5500-5750		
Sona				5500
Tunga	3200-3400	5500-6000		
Thanu		5750		
KPR-1	3300-3400			
KPH-10	3400			
Athira	5500-6500			
Shakti			6500	
Annapurna			5000-5750	
Kempumukhi				4500-4750
Uma				4500
Hybrids				
Sahyadri				4250

Table 9: Details of rice consumption pattern in different districts of Karnataka in 2025

Parameters	Districts			
	Mandya	**Mysuru**	**Chamaraja Nagara**	**Hassan**
Status of farmers	Medium Income (100%)	Medium Income (100%)	Medium Income (100%)	Medium Income (90%); Rich (10%)
Per capita monthly rice consumption (kg)	7-10 kg	7-12 kg	10-14 kg	8-12 kg
Composition of main meal	Only rice (80%); Rice + Wheat (20%)	Only rice (90%); Rice + Wheat (10%)	Only rice (80%); Rice + Wheat (20%)	Only rice (70%); Rice + Wheat (30%)
Preferred rice types	Polished rice (100%)	Polished rice (100%)	Polished rice (100%)	Polished rice (100%)
Rice grain type preference	Fine grain (100%)	Fine grain (100%)	Fine grain (100%)	Fine grain (100%)
Any changes in food habit in last 10 years	No (100%)	No (100%)	No (100%)	Yes (10%); finger millet

Table 19: Contdd..

Parameters	Districts			
	Chikkamagaluru	**Kodagu**	**Davanagere**	**Shivamogga**
Status of farmers	Medium Income (100%)	Medium Income (100%)	Medium Income (100%)	Medium Income (100%)
Per capita monthly rice consumption (kg)	10-12 kg	7-10 kg	8-15 kg	6-10 kg
Composition of main meal	Only rice (80%); rice + wheat (20%)	Only rice (100%)	Only rice (90%); rice + wheat (10%)	Only rice (80%); rice + wheat (20%)
Preferred rice types	Polished rice (100%)	Polished rice (100%)	Polished rice (100%)	Polished rice (100%)
Rice grain type preference	Fine grain (100%)	Fine grain (100%)	Fine grain (100%)	Fine grain (100%)
Any changes in food habit in last 10 years	No (100%)	No (100%)	No (100%)	No (100%)

B. Rice consumption pattern: Survey was conducted on consumption pattern of rice among the farmers in different surveyed districts of Karnataka (Table 9). On an average about 98% of the farmers contacted were in medium income group and rest were from high income group. Average per capita monthly consumption of rice per month was 6-15 kg rice. On an average about 83% of the farmers contacted told that they consumed only rice. In general, they preferred polished and fine grain quality rice. In general, there was no change in the food habit. Only few farmers in Hassan district told that they included finger millet in their diet.

Table 10: Details of nursery management

Parameters	Districts			
	Mandya	**Mysuru**	**Chamaraja Nagara**	**Hassan**
Planting time	2nd to 3rd week of August	2nd to 3rd week of August	2nd to 4th week of August	2nd to 3rd week of August
Seed rate	25-62.5 kg/ha	20-50 kg/ha	25-62.5 kg/ha	25-62.5 kg/ha
Seed treatment (% farmers adopted)	Yes (80%)	Yes (60%); some (~10%) used treated seeds	Yes (60%)	Yes (90%)
Chemicals used for seed treatment	carbendazim + mancozeb (2-2.5 g/kg), carbendazim (1-2 g/kg); some in Chamarajanagar and Hassan treated the seeds with *Pseudomonas fluorescens*			
Organic manure in nursery (% farmers adopted)	Yes (60%) FYM	Yes (60%) FYM	Yes (90%) FYM	Yes (20%) FYM
Inorganic manure in nursery (% farmers adopted)	Yes (100%); Urea (40-50 kg/acre) and/or 20:20:0:13 (50-100 kg/acre) and/or 15:15:15 (25-50 kg/acre); Some applied MOP (25-50 kg/acre)	Yes (100%); Urea (25-50 kg/acre) and/or 20:20:0:13 (50-100 kg/acre) or 17;17:17 (50 kg/ acre) or 15:15:15. Some applied DAP (50 kg/acre) and MOP (50 kg/acre)	Yes (100%); Urea (20-50 kg/acre) and/or 20:20:0:13 (50 kg/acre) and/or 15:15:15 (50 kg/acre). Few applied 17:17:17 or DAP or ammonium sulphate	Yes (100%); Urea (20-50 kg/acre) and/or 20:20:0:13 (50 kg/acre); Some applied DAP (50 kg/acre) abd MOP (30-50 kg/acre)

Table 10: Contdd..

Parameters	Districts			
	Chikkamagaluru	**Kodagu**	**Davanagere**	**Shivamogga**
Planting time	2nd to 3rd week of July	3rd week of July to 1st week of August	1st week of June to 1st week of July	2nd to 3rd week of August
Seed rate	50-62.5 kg/ha	25-62.5 kg/ha	25-60 kg/ha	37.5-62.5 kg/ha
Seed treatment (% farmers adopted)	Yes (90%)	Yes (90%)	Yes (90%)	Yes (80%)
Chemicals used for seed treatment	carbendazim (1-2 g/kg)			
Organic manure in nursery (% farmers adopted)	Yes (40%) FYM	Yes (70%) FYM	Yes (60%) FYM	Yes (50%) FYM
Inorganic manure in nursery (% farmers adopted)	Yes (100%); 20:20:0:13 (50-100 kg/acre and MOP (10-30 kg/acre)	Yes (100%); Urea (20-50 kg/ acre) and/or DAP (20-50 kg/acre) and/or 15:15:15 (5-100 kg/acre) and/or 16:16:16 (50-100 kg/acre). Some applied MOP (10-50 kg/acre) 10:26:26 (50-100 kg/acre) and MOP	Yes (100%); Urea (25-50 kg/acre) and/or DAP (30-70 kg/acre) and/or 20:20:0:13 (50-125 kg/acre). Some applied 13:13:1 (50 kg/acre) and MOP (20-50 kg/acre)	Yes (100%); Urea (25-50 kg/acre) and/or 20:20:0:13 (50-100 kg/acre). Some applied DAP (20-50 kg/acre), 15:15:1 (50 kg/acre) and MOP (50 kg/acre)

C. Nursery and main field Management: Most of the planting was done in 2-4 week of August. However, in Chikmagaluru and Davangere, planting was done little earlier in June-July (Table 10). Considerable variation in seed rate was observed ranging from 25-62.5 kg/ha depending on the varieties used. On an average, about 80% of the farmers contacted adopted seed treatment with carbendazim + mancozeb (2-2.5 g/kg) or carbendazim (1-2 g/kg). Some farmers in Chamarajanagar and Hassan treated the seeds with *Pseudomonas fluorescens*. Some farmers used already treated seeds for sowing. On an average, about 56% of the farmers contacted applied organic manures like FYM in the nursery. All the farmers contacted applied chemical fertilizers like urea, DAP, MOP and complex fertilizers like 20:20:0:13 (factomphos), 19:19:19, 10:26:26, 15:15:15 and 17:17:17 (Table 10). About 10-90% farmers in different districts adopted line planting and rest followed random planting (Table 11). Some farmers from Davanagere adopted direct sowing. In recent years, Cauvery command area farmers are adopting drum seeder method of direct sowing, machine transplanting, alternate drying and wetting method of irrigation in Mandya and Mysuru districts due to technology spread and it is helpful for tail end farmers paddy cultivation. The farmers have adopted DSR and machine transplanting mainly due to yield advantage and to save the water. Fertilizers were applied @ 37.5-126.25 kg N/ha, 20-107.5 kg P_2O_5/ha and 18.5-98.75 kg K_2O/ha. On an average about 72.5% of the farmers contacted applied zinc sulphate in the field (Table 11). Still this year zinc deficiency was observed in many districts as the farmers could not apply the zinc due to non-availability and cost of complex fertilizer. On an average about 72.5% of the farmers contacted applied organic manure like FYM (1-7 t/acre depending on availability) and vermicompost in the field. Nutrients were applied in the form of 20:20:0:13 (factomphos), 19:19:19, 10:26:26, 17:17:17, 15:15:15, urea, DAP, SSP, MOP and zinc sulphate (Table 11).

Table 11: Details of main field management

Details	**Districts**			
	Mandya	**Mysuru**	**Chamaraja Nagara**	**Hassan**
Planting method	About 40-90% farmers contacted in Mysuru, Chamarajanagar and Hassan districts adopted line transplanting. Rest of the farmers adopted random transplanting where plant population per unit area was not maintained.			
Total N applied	78.75-107.5 kg/ha (100% applied)	65-126.25 kg/ha (100% applied)	66.75-108.75 kg/ha (100% applied)	45.5-105.6 kg/ha (100% applied)
Total P_2O_5 applied	25-50 kg/ha (100% applied)	25-107.5 kg/ha (100% applied)	43.75-66.25 kg/ha (100% applied)	25-82.5 kg/ha (100% applied)
Total K_2O applied	18.75-75 kg/ha (100% applied)	37.5-92.5 kg/ha (100% applied)	18.75-43.13 kg/ha (100% applied)	45-75 kg/ha (100% applied)
$ZnSO_4$ applied (21% or 33%)	Yes (100%) @ 16.25-32.5 kg/ha	Yes (100%) @ 16.25-32.5 kg/ha	Yes (100%) @ 16.25 kg/ha	Yes (80%) @ 16.25 kg/ha
Organic fertilizers applied	Yes (90%); FYM (1-3 t/acre)	Yes (50%); FYM (1-4 t/acre)	Yes (90%); FYM (2-4 t/acre)	Yes (30%); FYM (mainly; vermi-compost)
Remarks	Nutrients were applied in the form of 20:20:0:13 (factomphos), 19:19:19, 15:15:15, 17:17:17, urea, DAP, SSP, MOP and zinc sulphate.			

Table 11: Contdd..

Details	Districts			
	Chikkamagaluru	**Kodagu**	**Davanagere**	**Shivamogga**
Planting method	About 10-30% farmers contacted in Chikkamagaluru and Shivamogga districts adopted line transplanting and about 20% farmers in Davanagere adopted DSR. Rest of the farmers adopted random transplanting where plant population per unit area was not maintained.			
Total N applied	37.5-50 kg/ha (100% applied)	37.5-80 kg/ha (100% applied)	50-120 kg/ha (100% applied)	72.5-126.25 kg/ha (100% applied)
Total P_2O_5 applied	37.5-50 kg/ha (100% applied)	20-76.25 kg/ha (100% applied)	50-105.5 kg/ha (100% applied)	43.75-82.5 kg/ha (100% applied)
Total K_2O applied	30-82.5 kg/ha (100% applied)	18.5-98.75 kg/ha (100% applied)	37.5-80 kg/ha (100% applied)	18.75-75 kg/ha (100% applied)
$ZnSO_4$ applied (21% or 33%)	Yes (30%) @ 32.5 kg/ha	Nil	Yes (80%) @ 16.25-19.5 kg/ha	Yes (90%) @ 16.25-32.5 kg/ha
Organic fertilizers applied	Yes (90%); FYM (1-3 t/acre)	Yes (90%); FYM (1-2 t/acre)	Yes (90%); FYM (2-4 t/acre)	Yes (50%); FYM (2-7 t/acre)
Remarks	Nutrients were applied in the form of 20:20:0:13 (factomphos), 19:19:19, 15:15:15, 17:17:17, 10:26:26, urea, DAP, SSP, MOP, ammonium sulphate and zinc sulphate.			

D. Weeds and their Management: Overall, intensity of weeds was low. The details of different weeds recorded in different districts are presented in Table 12. Usage of herbicides was in general less. On an average, about 61% of the farmers contacted adopted only 1-2 hand weeding for management of weeds. Rest of the farmers applied herbicides along with hand weeding.

E. Specific needs of the farmers: Some of the common needs of the farmers were pest and disease resistant HYVs, mechanization in rice cultivation, availability of quality seeds in time, proper recommendation of fertilizers and pesticides, soil test for micronutrients and proper recommendation, subsidies on inputs, schemes and incentives from government, improvement in marketing facility, increase in MSP, Training of farmers in use of machineries and input application, availability of organic manure, reduction of wages of agricultural labours, timely availability of fertilizers and micronutrients and and knowledge/ training on improved rice production technology.

F. Input use: Implements like rotavator, tractor, power tiller, knapsack sprayer, puddler, power sprayer, hand sprayer, cultivator, grass cutter and combined harvester were used by the farmers mostly on hire basis. Progressive farmers had some of their own equipment. Few farmers in different districts used transplanter. Harvesting of rice crop by using combine harvesters and baling of straw considerably picking up in all the districts. Rice transplanting machines are being promoted from state department by providing subsidies in Davangere and Mandya and Mysore districts. Sree Kshetra Dharmastala Rural Development Programme (SKDRDP) and Private companies (Dhaksha machine planting) emerged to promote machine planting at Cauvery command area and MOU with the University for the speedy spread of paddy production enhancement technologies. Drum seeding technology (wet direct) also picking up at Mandya district due to pre-emergent selective weedicides available in the market for weed management. Almost all the farmers contacted in different districts told that they purchased part (50-100%) of their seed requirement from private or government sources. State department

of Agriculture, Universities and NGOs distributed the seeds to the farmers timely during the season. Canal was the main source of irrigation followed by shallow tube well. About 20-30% of the farmers in different districts expressed that there was scarcity of irrigation water. In general, the inputs in all districts were adequate except complex fertilizer (10:26:26) and zinc micronutrient because of which deficiency was seen in many fields. Major advisors to the farmers were private dealers followed by officials from state department of agriculture and university.

Table 12: Weeds and weed management

Details	**Districts**			
	Mandya	**Mysuru**	**Chamaraja Nagara**	**Hassan**
Weed intensity	Low	Low	Low	Low
Names of the weeds	*Echinoclova crusgalli, Echinoclova colona, Monochoria viginalis, Marsilea quadrifolia, Centella asiatica, Euphorbia hirta Cyperous procerus, C. defromis, C. iria, Fimbristylis miliaceae, Scirpus sp. Glinus oppositifolia, Eclipta alba, Panicum tripheron, Echinocloa coloma, Leptochlora chinensis, Spilanthus acmella, Digitaria sanguinalis, Ipomoea aquatica, Ammania baccifera, Alternanthera sessilis, Ludvigia parviflora*			
Weedicides used	Butaforce/Butanil (butachlor 50% EC), Nominee Gold (bispyribac sodium 10% SC), bensulfuron methyl 0.6% + pretilachlor 6% GR and others			
Percentage of farmers applied herbicides	Only hand weeding (40%); Hand weeding + herbicide (60%)	Only hand weeding (50%); Hand weeding + herbicide (50%)	Only hand weeding (60%); Hand weeding + herbicide (40%)	Only hand weeding (80%); Hand weeding + herbicide (20%)
Wild/weedy rice incidence	Nil	Nil	Nil	Nil
Only hand weeding	Weed were commonly recorded in and around rice fields. Hand weeding was common practice among the farmers. Majority of the farmers who applied herbicides also adopted hand weeding in most of the districts			

Table 12: Contdd..

Details	**Districts**			
	Chikkamagaluru	**Kodagu**	**Davanagere**	**Shivamogga**
Weed intensity	Low	Low	Low	Low
Names of the weeds	*Cyperous difformis, Echinochloa colona, Echinochloa crusgalli, Leptochlora chinensis, Marsilea quadrifolia, Scirpus spp., Glinus oppositifolia, Panicum tripheron, Panicum repens, Echlipha alba, Lindernia vernicaefolia* and *Ludvigia parviflora*			
Weedicides used	Butaforce/Butanil (butachlor 50% EC), pendimethalin, Nominee Gold (bispyribac sodium 10% SC), Londax power and others			
Percentage of farmers applied herbicides	Only hand weeding (60%); Hand weeding + herbicide (40%)	Only hand weeding (90%); Hand weeding + herbicide (10%)	Only hand weeding (60%); Hand weeding + herbicide (40%)	Only hand weeding (50%); Hand weeding + herbicide (50%)
Wild/weedy rice incidence	Nil	Nil	Nil	Nil
Only hand weeding	Weed were commonly recorded in and around rice fields. Hand weeding was common practice among the farmers. Majority of the farmers who applied herbicides also adopted hand weeding in most of the districts			

Table 13: Details of inputs used

Details	Districts			
	Mandya	**Mysuru**	**Chamaraja Nagara**	**Hassan**
Implements used	Implements like rotavator, tractor, power tiller, knapsack sprayer, puddler, power sprayer, hand sprayer, cultivator, grass cutter and combined harvester were used by the farmers mostly on hire basis. Progressive farmers had some of their own equipment. Few farmers in Mandya, Mysuru and Chamarajanagar used transplanter			
Source of seeds	Almost all the farmers contacted in different districts told that they purchased part (50-100%) of their seed requirement from private or government sources			
Source of irrigation	Canal (100%)	Canal (100%)	Canal (100%)	Canal (100%)
Scarcity of irrigation water	No (100%)	No (100%)	No (90%)	No (80%)
Availability of fertilizers/pesticides	Yes (100%)	Yes (90%)	Yes (100%)	Yes (100%)
Quality of fertilizers/pesticides	Satisfied (100%)	Satisfied (100%)	Satisfied (100%)	Satisfied (100%)
Advisors to the farmers	Dealers (80%); Univ. (20%)	Dealers (80%); Univ. (20%)	Dealers (90%); State Dept. (10%)	Dealers (60%); Univ. (40%); State Dept. (10%)

Table 13: Contdd..

Details	Districts			
	Chikkamagaluru	**Kodagu**	**Davanagere**	**Shivamogga**
Implements used	Implements like rotavator, tractor, power tiller, knapsack sprayer, puddler, power sprayer, hand sprayer, cono weeder, rotary weeder, cultivator, grass cutter and combined harvester were used by the farmers mostly on hire basis. Progressive farmers had some of their own equipment. Few farmers in Mandya, Davanagere and Shivamoga used transplanter			
Source of seeds	Almost all the farmers contacted in different districts told that they purchased part (50-100%) of their seed requirement from private or government sources			
Source of irrigation	Canal and shallow tube wells	Canal (100%); shallow tube wells	Canal (100%)	Canal (40%); Shallow tube wells (60%)
Scarcity of irrigation water	No (83%)	No (80%)	No (100%)	No (70%)
Availability of fertilizers/pesticides	Yes (100%)	Yes (100%)	Yes (100%)	Yes (100%)
Quality of fertilizers/pesticides	Satisfied (100%)	Satisfied (100%)	Satisfied (100%)	Satisfied (90%)
Advisors to the farmers	State Dept. (33.3%), Dealers (16.7%); Univ. (50%)	State Dept. (30%); Dealers (20%); Univ. (50%)	Own (10%); Dealers (70%); Univ. (20%)	Dealers (40%); State Dept. (20%); Univ. (40%)

Table 14. Prevalence of disease and pests in Southern Karnataka during *Kharif* 2025

Districts	Diseases						
	Bl	**NBl**	**BS**	**ShBl**	**ShR**	**FS**	**NBLS**
Mandya		L	L (2-3%)	L-M (4-16%)	L-M (3-25%)	L-M (2-12%)	
Mysuru	L (1-3%)	L (2%)		L (2-4%)	L	L	
Chamarajnagara	L	L-M (4-9%)		L-M (3-8%)	L	L (5-6%)	
Hassan		L (3-4%)		L-M	L	L (2%)	
Chikmagaluru		L-M (5-8%)		M (10-12%)	L	L-M (6-10%)	
Kodagu		L		L-M (6-8%)	L	L-M (4-8%)	
Davangere	L (2-5%)	L-M	L (5%)	L-M	L	L (2%)	
Shivamogga		L-M		L-M (3-12%)	L-M	L	L (2%)

Districts	Insect pests				
	SB	**LF**	**BPH**	**GLH**	**GB**
Mandya	L (2-3%)	L-M	L		L-M (2-12%)
Mysuru	L (1-3%)	L (1-2%)	L (1-5%)		M (10-20%)
Chamarajnagara	L-M (4-8%)	L (3-4%)	L-M (5-10%)		L (5%)
Hassan	L-M	L (2-4%)	L (2-3%)		L (2-5%)
Chikmagaluru	L-M (5-8%)	L-M (5-10%)	L (3-4%)		
Kodagu	L (2-4%)	L-M (5-8%)	L (2-3%)		
Davangere	L-M (3-7%)	L-M (3-7%)	L (3-7%)		
Shivamogga	L-M (3-7%)	L-M	L (1-4%)	L (2%)	L (2%)

G. Biotic stress and their management: District wise prevalence of different diseases and insect pests are presented in Table 14. Diseases like leaf and neck blast, brown spot, sheath blight, sheath rot and false smut were recorded in low to moderate intensity indifferent surveyed districts (Table 14) due to less rain fall. Sporadic incidences of narrow brown leaf spot were also noticed in few fields in Shivamoga. Sheath blight was noticed in patches with severity ranged from 16-18% on varieties like Jyothi, and MTU 1001. Bacterial blight intensity was negligible of 4-5% was noticed. False smut, Udbhatta and grain discoloration incidence of 6, 5.5 and 14-18 per cent respectively was observed in Superaman, MTU-1001 and Meenakshi, varieties. Insect pests like stem borer, leaf folder, brown plant hopper and gundhi bugs were commonly recorded. In the districts of Mandya, Mysuru and Hassan, the brown plant hopper and stem borer infestation of 6-8 per cent and 5-6 per cent was recorded during tillering, dough and grain filling stage. Ear head bug infestation 4-6 per cent was noticed at dough stage irrespective of the varieties. Brown plant hopper, yellow stem borer and ear head bug have been consistently recorded from past five years at Mandya, Mysuru and Hassan district. The details of different pesticides used for management of different diseases and insect pets are presented in Table 15. It was reported 100% of the farmers contacted adopted chemical plant protection measures. In general, the farmers adopted 1-3 sprayings and some farmers from

Chikmagaluru districts mixed 2 or more pesticides before spraying. During this year zinc and iron deficiency was observed in many districts as the farmers could not apply the zinc due to non-availability and high cost.

Table 15: Details of pest management

Details	Districts			
	Mandya	**Mysuru**	**Chamaraja Nagara**	**Hassan**
% age farmers adop-ting plant protection	100% farmers adopted chemical plant protection measures			
Names of pesticides	**Insecticides:** chlorpyriphos (50%) + cypermethrin (5%) (2 ml/l), chlorpyriphos 20 EC (2ml/l), cypermethrin (2 ml/l) and chlorantraniliprole for stem borer and leaf folder and imidacloprid (0.3-05 ml/l) for BPH **Fungicides:** carbendazim (1.25 g/l), propiconazole (1 ml/l), Nativo (trifloxystrobin + tebuconazole) (0.4 g/l) and hexaconazole (2 ml/l) for sheath blight and tricyclazole (0.5 g/l) and carbendazim (1.25 g/l) for blast			
# of pesticide sprays	1-3	1-3	1-2	1-2
Mixing of pesticides before application	Nil	Nil	Nil	Nil
Zinc deficiency	Yes (100%)	Yes (70%)	Yes (80%)	Yes (100%)
Iron deficiency			Yes (20%)	Yes (10%)

Table 15: Contdd..

Details	Districts			
	Chikkamagaluru	**Kodagu**	**Davanagere**	**Shivamogga**
% age farmers adop-ting plant protection	100% farmers adopted chemical plant protection measures			
Names of pesticides	**Insecticides:** chlorpyriphos 20 EC (2ml/l), Coragen (0.3 ml/l) and chlorpyriphos (50%) + cypermethrin (5%) (2 ml/l) for stem borer and leaf folder and imidacloprid (0.3-05 ml/l) for BPH **Fungicides:** Saaf (carbendazim + mancozeb) (2 g/l), carbendazim (1.25 g/l), Nativo (trifloxystrobin + tebuconazole) (0.4 g/l), hexaconazole (2 ml/l) and propiconazole (1 ml/l) for sheath blight and tricyclazole (0.5 g/l) and carbendazim (1.25 g/l) for blast			
# of pesticide sprays	2	2	1-3	2-3
Mixing of pesticides before application	Yes (10%); 2 pesticides	Nil	Nil	Nil
Zinc deficiency	Yes (100%)	Yes (80%)	Yes (90%)	Yes (100%)
Iron deficiency	Yes (30%)	Yes (80%)	Yes (30%)	Yes (20%)

H. Researchable issues: Among the biotic stresses, major problems in the region leaf and neck blast and sheath blight among the diseases and BPH, stem borer and leaf folder among the insects. Major abiotic constraint was salinity and alkalinity. Farmers want varieties suitable for DSR, HYVs with lodging resistance, short duration high yielding rice varieties, varieties resistant/tolerant to above mentioned biotic abiotic constraints and bio-fortified varieties with higher zinc and protein and low GI.

Table 16: Researchable issues

Parameters/Issues	**Districts**			
	Mandya	**Mysuru**	**Chamaraja Nagara**	**Hassan**
Rice ecology in your area	Irrigated	Irrigated	Irrigated; Rainfed lowland; upland	Irrigated; Rainfed lowland
Rice cultivation only in Kharif or both Kharif and Rabi	Kharif + Rabi	Kharif + Rabi (80%); Kharif (20%)	Kharif (60%); Kharif + Rabi (40%)	Kharif (70%); Kharif + Rabi (30%)
Number of years of experience in rice farming	5-20 years	5-20 Years	5-10 Years	5-20 Years
Main biotic constraints (diseases) in your area according to you	Sheath blight	Leaf blast and sheath blight	Neck blast, sheath blight	Neck blast, sheath blight
Extent of disease damage	10-25%	10-25%	10-25%	10-25%
Main biotic constraints (Insect pests) in your area according to you	BPH, Leaf folder and stem borer			
Extent of insect pest damage	10-25%	10-25%	10-25%	10-25%
Main abiotic constrains in your area according to you	Salinity and alkalinity			
Production constraints in your area according to you	Scarcity of agricultural labours, unavailability of quality seeds of HYVs, unavailability of fertilizers and pesticides, lack of mechanization, micronutrient deficiency			
Irrigation facilities in your area	Canal	Canal; Bore wells	Canal; Bore wells	Canal; Bore wells
Normally how many years it takes to change the rice variety	10-20 years	5-20 Years	5-20 Years	5-20 Years
Any other rice production issues in your area which the rice scientists need to address				
What is urgently required in your area as far as rice varieties are concerned				
Duration	Varieties suitable for DSR and varieties with lodging resistance			
Biotic stress resistance	Varieties having resistance/tolerance to blast, BPH, sheath blight, false smut, stem borer			
Abiotic stress resistance	Varieties having tolerance to salinity, high temperature			
Preferred grain quality	Varieties with medium slender grains and aromatic short grain rice varieties and good hybrids			
Nutritional quality	varieties with high zinc, high iron, high protein and low GI			

Table 16: Contdd..

Parameters/Issues	**Districts**			
	Chikkamagaluru	**Kodagu**	**Davanagere**	**Shivamogga**
Rice ecology in your area	Rainfed lowland; irrigated	Rainfed lowland; Hill	Irrigated; Rainfed upland	Irrigated; Rainfed lowland
Rice cultivation only in Kharif or both Kharif and Rabi	Kharif (70%); Kharif + Rabi (30%)	Kharif	Kharif (70%); Kharif + Rabi (30%)	Kharif (70%); Kharif + Rabi (30%)
Number of years of experience in rice farming	10-20 years	10-20 Years	5-10 Years	5-20 Years
Main biotic constraints (diseases) in your area according to you	Sheath blight, neck blast	False smut and sheath blight	Leaf blast, sheath blight	leaf and Neck blast, sheath blight
Extent of disease damage	10-25%	10-25%	10-25%	10-25%
Main biotic constraints (Insect pests) in your area according to you	BPH, Leaf folder and stem borer			
Extent of insect pest damage	10-25%	10-25%	10-25%	10-25%
Main abiotic constrains in your area according to you	acid sulphate soil	acid sulphate soil	Salinity, Alkalinity	Alkalinity
Production constraints in your area according to you	Scarcity of agricultural labours, unavailability of quality seeds of HYVs, unavailability of fertilizers and pesticides, lack of mechanization, micronutrient deficiency			
Irrigation facilities in your area	Bore wells	Bore wells; River water	Canal; Bore wells	Canal; Bore wells and river water
Normally how many years it takes to change the rice variety	10-20 years	5-20 Years	10-20 Years	5-20 Years
Any other rice production issues in your area which the rice scientists need to address				
What is urgently required in your area as far as rice varieties are concerned				
Duration	Varieties suitable for DSR and **varieties with lodging resistance**			
Biotic stress resistance	Varieties having resistance/tolerance to blast, BPH, sheath blight, false smut, stem borer			
Abiotic stress resistance	Varieties having tolerance to submergence, drought, salinity, high temperature			
Preferred grain quality	Varieties with medium slender grains and aromatic short grain rice varieties and good hybrids			
Nutritional quality	varieties with high zinc, high iron, high protein and low GI			

Kerala-2025-26 (Pattambi)

Districts surveyed: *Palakkad, Thrissur* and *Malappuram*
Particulars of survey

District	Block	Panchayats
Palakkad	Alathur, Palakkad, Nenmara, Chitoor, Shoranur, Kuzhalmannam, Pattambi, Thrithala and Kollengode	Kizhakkanchery, Parassery, Vadakkancheri, Alathur, Parali, Melarkode, Elavancheri, Perumatti, Nallapilli, Polpully, Chittoor, Ottappalam, Vallapuzha, Vaniyamkulam, Kuthannur, Pattambi, Amayur, Koppam, Ongallur, Nagalassery, Pattithara, Muthalamada, Peruvambu, Kollengode and Puthunagaram
Thrissur	Chovanoor, Chavakkad, Mulasserry, Anthikad and Puzhakkal	Katukambal, Porkulam, Vadakkekad, Mulasserry, Venkidangu, Elavally, Anthikad, Arimboor, Chazhoor, Adat and Tholoor
Malappuram	Perinthalmanna, Malappuram, Vandoor, Angadippuram and Areekode	Perinthalmanna, Aaliparambu, Marayur, Anakkayam, Pandikkadu, Porur, Chokkad, Kootilangadi, Moorkanad and Areekode

Widely prevalent rice varieties

District	Varieties
Palakkad	**HYVs**: Uma, Jyothi, and Ponmani, Kanchana, ASD, Sreyas, Aishwarya, Karuna, Harsha, Varsha, Akshaya and Supriya
Thrissur	**HYVs**: Uma and Jyothi
Malappuram	**HYVs**: Uma, Ponmani and Kanchana

Rice is the principal staple crop of Kerala and plays a vital role in ensuring food security and sustaining the livelihood of farming communities. To assess the existing cultivation practices, varietal preferences, production constraints, and pest and disease scenarios, a production-oriented survey was conducted August 2025 to January 2026 in the major rice-growing districts of Palakkad, Thrissur, and Malappuram. The survey covered key crop growth stages from tillering to maturity and included farmers representing different agro-ecosystems and socio-economic backgrounds. Lowland rainfed and irrigated systems were the predominant rice production environments in these districts. Popular varieties cultivated by farmers included Uma, Jyothi, Ponmani, Aishwarya, Karuna, and other locally adapted varieties, with yields ranging from low to high depending on management practices and environmental conditions. Farmers followed a combination of transplanting and direct-seeding methods and relied on both organic and inorganic nutrient sources. Pest and disease incidence, particularly bacterial leaf blight, stem borer, and leaf folder, posed significant challenges to stable production. In addition to biotic stresses, farmers faced several socio-economic and environmental constraints, including wild boar damage, labour shortages, high labour costs, and limited availability of quality seeds. Despite these challenges, farmers actively adopted recommended agronomic practices and relied on technical guidance from agricultural departments and research institutions. The findings of this survey provide valuable insights into the status of rice cultivation and highlight the need for improved varieties, effective pest and disease management strategies, and strengthened support systems to enhance rice productivity and sustainability in Kerala. Detailed district-wise observations and findings from the survey are presented in the following sections.

Palakkad: The survey was conducted during the heading, tillering milky, dough, and maturity stage of the crop. Lowland rainfed cultivation was the predominant farming system in the area while in eastern parts of the district, during rabi, irrigated system of cultivation is also prevalent. Climatic conditions were normal during both kharif and rabi seasons. The predominant varieties grown in the district were Uma, Jyothi, and Ponmani. Other varieties cultivated by the farmers are Kanchana, ASD, Sreyas, TPS-5 and Mahamaya. Majority of the farmers surveyed were having medium economic status. Parboiled and coarse-grained type of rice is preferred by the farmers. Majority preferred only rice for main meals while some farmers preferred wheat along with rice. However, there is no drastic change in food preference during the last ten years. The yield reported varied from 2.0 to 6.5 t/ha in both seasons. Crop sequence followed were rice-rice- fallow, rice-rice-pulses, rice-rice- green manure. Regarding cultivation practices, seed rate followed by farmers ranged from 65 to 80 kg /ha. During nursery preparation, farmers were applying only organic manure in the form of FYM or green leaf manure. Seed treatment using *Pseudomonas,* and *Trichoderma* are being caried out @ 10g-20g per kg of seeds, if provided from Krishi Bhavans.

For main field, many adopted green manuring and FYM (cow dung) or poultry manure. The quantity varied from 1 to 3 t/ha. Majority of farmers followed transplanting and a few adopted direct sowing. The fertilizer application ranged from 10-60 kg N / ha, 30-50 P_2O_5 / ha and 30-50 kg K_2O / ha. Farmers use Factomophos as basal fertilizer for N and P. For top dressing they preferred urea and MOP. Most of the farmers did not apply potash fertilizers as basal. Application of fertilizers in two split doses is the common practice. Second dose is usually applied at the panicle initiation stage. Many farmers reported about weed problem. Most of them rely on hand weeding and herbicides, recommended by extension officers or company staff for weed management. Common weeds reported were *Ehinochloa* spp., algae and *Cyperus* spp. Pre-emergent weedicides widely used by farmer were pyrasosulphuronethyl + pretilachlor (80 g/acre+400 ml/acre), bensulfuron ethyl + pretilachlor (4 kg/acre). Weedy rice problem is reported only from a few pockets. Common implements used by farmers are tractor, power sprayers, combined harvester etc. Most of the implement used are being hired by padashekhara samithis on payment basis. Seeds are either purchased from government /private agencies or previous year seed stored by them or from fellow farmers. Sources of irrigation varies depending on the location. Deep tube wells and canal irrigation are the main source. Electricity is the main source of power and no shortage in power is faced by respondents. Farmers reported difficulty in timely availability of key fertilizers, particularly urea and Factomphos, during the cultivation period. Plant protection chemicals were easily available in the district, however, farmers expressed uncertainty regarding their quality and reliability. For getting details regarding fertilizers and pesticides, farmers approached agricultural department officials, university personnel, and private suppliers. In addition, some farmers depended peer farmers for information and recommendations.

Pest and disease incidence ranged from moderate to severe levels. Bacterial leaf blight (BLB) was the most frequently observed disease. Other diseases such as sheath blight, brown spot, and false smut were present at lower levels. Farmers reported challenges in effectively controlling BLB despite following recommended management practices. Bleaching powder @2 kg/acre was applied by most of the farmers. Streptocycline sulphate (42 to 50 g/acre) was widely used for the management of BLB. Propiconazole (500 ml/ha) and Azoxystroin+ tebuconazole (80 g/acre) were commonly applied fungicides for managing fungal diseases. Leaf folder and stem borer were identified as the primary insect pests affecting the crop. Moderate infestations of case worm and brown planthopper were also noted. To manage insect pests, farmers used chemicals such as flubendiamide (100 ml/ha or 125 g/ha), Lambda-

cyhalothrin (750 ml/ha), Imidacloprid (350 ml/ha), cypermethrin (300 ml/ha), and chlorantraniliprole (3 ml/10 L). Most farmers applied pesticides two to three times during a single cropping cycle, and some reported mixing different pesticides to reduce labour requirements and costs. Iron toxicity was reported as a major abiotic stress in several fields. Liming was recognized as an effective corrective measure; however, farmers applied lime only when it was supplied through Krishi bhavans. Farmers also highlighted the shortage of quality seeds in adequate quantities. Crop damage caused by wild boars was a major concern, leading some farmers to discontinue rice cultivation altogether. Additionally, high labour costs and the lack of skilled labourers were significant constraints. Farmers expressed the need for improved weather-based crop insurance coverage and timely payment from procurement agencies for the rice supplied.

Thrissur: The survey was carried out during the heading, milky and dough stages of the rice crop. Lowland rainfed cultivation was the predominant farming system in the area. Most respondents were primarily engaged in rice cultivation. The rice variety Uma was the most widely cultivated among farmers, while some raised Jyothi also. Most farmers belonged to the medium economic category. Their staple diet mainly consisted of parboiled coarse rice. Although food habits have largely remained unchanged, some farmers reported a gradual increase in wheat consumption in recent years. The grain yield reported by farmers ranged between 4 and 6.5 t/ha. The seed rate adopted by farmers for broadcasting ranged from 65 to 100 kg/ha. Seed treatment with *Pseudomonas* at the rate of 10 g/kg was commonly practiced. Medium intensity weed infestation was reported and commonly occurring weeds were weedy rice, algae, *Sacciolepis* spp., *Cyperus* spp., *Echinochloa* spp. and others. Farm machinery such as tractors and combine harvesters were hired through padashekhara samithis on a rental basis. Some farmers have their own power sprayers. Seeds were procured from both government and private sources. Canal was the primary source of irrigation, and none of the farmers reported water scarcity. Electricity was the main source of power, and its availability was generally adequate. While fertilizer availability was reported as a constraint, pesticides were easily accessible through registered suppliers. However, farmers were sceptical about the quality of pesticides. Farmers maintained regular contact with agricultural department personnel, university experts, and private agencies for technical guidance.

Bacterial leaf blight was identified as the most serious disease and was reported as difficult to manage. Farmers attempted to control the disease through repeated applications of bleaching powder and streptomycin sulphate. However, the spray volume used was often insufficient; instead of the recommended 200 l/acre, most farmers applied only 80 to 100 l/acre. False smut was another disease observed in the fields, and propiconazole was commonly used for its management. Fungicides were generally applied only after disease symptoms became visible. For insect pest control, farmers relied on insecticides such as chlorpyriphos + cypermethrin (2 ml/l), lambda-cyhalothrin (1.5 ml/l), chlorantraniliprole (3 ml/10 l), flubendiamide (1 ml/10 l), and cartap hydrochloride (5 kg/acre). Farmers reported that insect pests were not a major concern. Pesticides were typically applied three to four times during a cropping season. Mixing of pesticides was a widespread practice, with some farmers combining two or three products in a single spray. High labour costs, shortage of skilled labourers, delay in procurement of harvested crop were identified as major challenges affecting rice cultivation.

Malappuram: The predominant rice ecosystem in Malappuram is irrigated cultivation under normal climatic conditions. At the time of the survey, the rice crop was in the heading and maturity stage. In some areas, amorphophallus and daincha were grown as summer crops. Earlier, the Uma variety was widely cultivated; however, due to severe disease incidence and

reduced yield, some farmers have shifted to cultivating Ponmani. In addition, a few farmers continue to grow Uma, and Kanchana varieties. Most farmers belong to the medium economic category. Rice continues to be the principal cereal crop, with coarse-grain parboiled rice being the preferred grain type. The recorded yield ranged from 2.5 to 10 t/ha. Farmers generally follow a seed rate of 75-80 kg/ha. Prior to sowing, seeds are commonly treated with *Pseudomonas fluorescens* at the rate of 10 g/kg. During land preparation, most farmers incorporated farmyard manure (FYM) and green manures as soil amendments, while some applied poultry manure. Transplanting is the predominant method of crop establishment, although direct sowing is practiced by a small number of farmers. Fertilizers are typically applied in two splits, with one application as basal and the other as top dressing. The fertilizer application rates varied between 20 to 60 kg N/ha, 10 to 40 kg P_2O_5/ha, and 10 to 60 kg K_2O/ha. Urea and Factomphos are the main sources of nitrogen and phosphorus, potassium is supplied mainly through muriate of potash (MOP). In addition, some farmers applied bleaching powder at 5 kg/ha along with fertilizers as a preventive measure against bacterial leaf blight. Top dressing generally includes urea and MOP.

Weed infestation levels ranged from low to medium across the surveyed areas. The major weed species identified were *Echinochloa colona, Echinochloa crusgalli Sacciolepis interrupta, Cyperus* sp. *Merselia quantifolia and Monochoria vaginalis*. Hand weeding was the primary weed management practice adopted by farmers. Regarding farm mechanization, commonly used implements included spades, weed cutters, tractors, power sprayers, and combine harvesters. Most of these implements were hired from Padashekhara Samithis on a rental basis. Seeds were mainly sourced from state government departments and private suppliers, although some farmers used seeds saved from previous harvests or obtained from fellow farmers. Irrigation water was readily available, with most farmers relying on canal irrigation. Electricity was the primary source of power, and no power shortages were reported. Farmers reported timely availability of fertilizers and pesticides and expressed satisfaction with their quality. Information related to crop protection and nutrient management was obtained from agricultural department officials, university personnel, private agencies, fellow farmers, and social media platforms.

The incidence of pests and diseases ranged from moderate to high. Bacterial leaf blight was the most prevalent disease, while sheath blight, brown spot and false smut were observed at low levels. Moderate to high incidence of neck blast especially in Ponamani variety was also recorded. Streptocycline at the rate 40 g/acre was the commonly used chemical for managing bacterial leaf blight. Propiconazole and Azoxystrobin+ teuconazole were the main fungicides used by farmers, The major insect pests reported were stem borer and leaf folder. Additionally, rice bug infestation during the milky stage and gall midge damage in nurseries were reported by some farmers. The insecticides commonly used included tetraniliprole, chlorantraniliprole, flubendiamide, acephate, cartap hydrochloride, cypermethrin, and lambda-cyhalothrin. These pesticides were generally applied two to three times per cropping season, and farmers ensured that different pesticides were not mixed during application. However, a few farmers did not use any insecticides. No major nutrient deficiency or toxicity symptoms were reported in the surveyed areas. Other major constraints included high labour costs, limited availability of quality seeds, and weed infestation, wild boar in certain locations. Farmers requested for rain water harvesting structures and rice mills. The production-oriented survey conducted across the major rice-growing districts of Kerala, namely Palakkad, Thrissur, and Malappuram, indicated that farmers are increasingly affected by climatic variability, particularly irregular rainfall patterns and elevated temperatures. These changing climatic conditions have raised concerns regarding crop productivity and stability.

Farmers expressed a strong preference for high-yielding rice varieties with resistance to major biotic stresses, especially bacterial leaf blight and stem borer, as these traits significantly reduce crop losses and improve yield reliability. In addition, some farmers emphasized the need for medium- to long-duration varieties with lodging resistance to ensure better crop standability under field conditions. There was also considerable demand for rice varieties with tolerance to drought and submergence, as well as high-yielding varieties suitable for direct-seeded rice (DSR) systems. Furthermore, many farmers showed interest in varieties with enhanced nutritional quality, particularly those with higher protein content and low GI. In addition to varietal requirements, farmers reported several production constraints that adversely affect rice cultivation. Among these, wildlife damage, particularly from wild boars, was identified as a major problem. Other key challenges included labour shortages, rising labour costs, limited access to quality seeds, and substantial yield losses due to pest and disease infestations. These constraints highlight the need for developing improved rice varieties and implementing effective crop and resource management strategies to enhance productivity and sustainability in the region.

Prevalence of diseases and insect pests in Kerala in Kharif' 2025

District	**Diseases**				
	Bl	**BS**	**ShBl**	**FS**	**BLB**
Palakkad	L-M	L-M	L-M	L-M	S
Thrissur	L-M	L-M	L-M	L-M	S
Malappuram	L-M	L-M	L-M	L-M	S

District	**Insect pests**				
	SB	**LF**	**BPH**	**CW**	**RB**
Palakkad	S	S	L-M	L	M
Thrissur	S	S	L	L	M
Malappuram	S	S	L	L	M

Kerala-2025-26 (Moncompu)

Districts surveyed: *Thiruvananthapuram, Alappuzha, Kottayam, Pathanamthitta, Ernakulam,* and *Kollam*

Particulars of survey

District	Blocks	Panchayats
Thiruvanan-thapuram	Parasala, Pallichal, Nedumangadu, Vamanapuram, Kattakada, Kazhakkuttam, Attingal, Varkala, Pulimath, Aryankode and Neyyatthinkara	Parassala & Karode (Parassala block), Malayinkeezhu & Pallichal (Pallichal block), Nedumangadu & Aruvikkara (Nedumangadu), Kallara & Manickal (Vamanapuram block), Aryanad & vellanadu (Kattakada block), Ulloor & Kazhakkuttam (Kazhakkuttam block), Chirayinkeezhu & Anchuthengu (Attingal), Varkala & Edava (Varkala block), Madavoor and Pallikkal (Pulimath block), Kollayil & Aryankode (Aryankode block), Neyyattinkara & Karumkulam (Neyyattinkara block)
Alappuzha	Ambalapuzha, Champakulam, Ramankari, Haripad and Cherthala	Ambalappuzha N, Purakkad, Takazhy & Ambalappuzha S (Ambalappuzha block), Edathwa, Champakulam, Nedumudy & Thalavady (Champakulam block), Ramankary, Pulinkunnu, Kavalam, Neelamperoor (Ramankary block), Veeyapuram, Harippad & Pallippad (Harippad), Thaneermukkam, Kadakarappally & Kanjikkuzhy (Cherthala block)
Kottayam	Ettumanoor, Kottayam, Madappally, Vaikom	Aymanam & Kumarakom (Ettumanoor block), Kumaranelloor, Puthupally, Nattakam (Kottayam Pallom block), Vazhapally & Paippad (Madapally block), Vaikom & Vechoor (Vaikom block)
Pathanamthitta	Thriruvalla and Adoor	Kadapra, Niranam, Peringara and Adoor
Ernakulam	Narakkal, Paravoor, Aluva, Nedumbassery, Kalamassery, Vyttila, Perumbavoor, Angamaly, Keezhmad, Poothrikka, Moovattupuzha, Kothamangalam	Pallipuram & Njarakkal (Narakkal block), Kottuvally & Chendamangalam (Paravoor block), Karumalloor & Varappuzha (Aluva block), Chengamanad & Nedumbassery (Nedumbassery block), Mulavukad & Kadamakudy (Kalamassery block), Kumbalangi & Thiruvangulam (Vyttilla block), Rayamangalam & Okkal (Perumbavoor block), Ayyampuzha & Thuravoor (Angamaly block), Choornikkara & Edathala (Keezhmad block), Mazhuvanoor & Kunnathunad (Poothrikka block), Avoly (Moovattupuzha block), Kothamangalam & Nellikuzhy (Kothamangalam block)
Kollam	Kollam, Kottarakkara, Karunagappalli, Kunnathoor, Punaloor	Kottarakkara & Kareepra (Kottarakkara block), Alappad & Oachira (Karunagappally block), Sooranad N. & Mynagappally (Kunnathoor block), Pattanapuram & Pattazhy S (Punaloor block)

Widely cultivated rice varieties

District	Varieties
Thiruvananthapuram	HYVs: Uma (MO16), Jyothi, Prathyasha and others
Alappuzha	HYVs: Uma (MO16), Pournami (MO 23), Jyothi, Manuratna and others
Kottayam	HYVs: Uma (MO16), Jyothi, Manuratna and others
Pathanamthitta	HYVs: Uma (MO 16) and Jyothi (PTB 39)
Ernakulam	Pokkali varieties: Pokkali, Choottu Pokkali, Chettivirippu, Cheruvirippu, Kuruka, Anakodan, Eravapandy, Bali, Orpandy and others
Kollam	HYVs: Uma (MO16), Jyothi, Prathyasha, Manuratna, Red Triveni, Sreyas and others

A production-oriented survey was undertaken in Kharif 2025 covering the districts of Thiruvananthapuram, Alappuzha, Pathanamthitta, Kottayam, Ernakulam, and Kollam in Kerala. The survey evaluated the cultivation practices, including irrigation, fertilization, pest and weed management and crop variety adoption, providing insights into methods that enhance or limit yield. Predominant rice varieites cultivated in the region were Uma (MO-16), Jyothi, Pournami (MO23), Prathyasha, Manuratna and others and pokkali rice varieties like Pokkali, Choottu Pokkali, Chettivirippu, Cheruvirippu, Kuruka, Anakodan, Eravapandy, Bali, Orpandy and others in Ernakulum district. Common weeds recorded in the region were *Fimbristylis* sp., *Echinochloa* sp., *Eichhornia crassipes*, and *Salvinia molesta.* Wild rice has become a major problem in parts of Kuttanad region. Among abiotic stresses, acidity was the major problem in some areas in Kuttanad region. Diseases like blast, brown spot and grain discoloration were recorded in low to moderate intensities while sheath blight and bacterial blight were recorded in moderate to severe intensities. Among the insect pests, stem borer, leaf folder and BPH were recorded in moderate to high intensity while gall midge, case worm, thrips and leaf miner were recorded in low to moderate intensities. Pokkali rice cultivation was observed in parts of Ernakulum district.

Thiruvananthapuram: Rice cultivation in Thiruvananthapuram district was primarily concentrated in the Parasala, Pallichal, Vamanapuram, Nedumangadu, Kattakada, Kazhakkuttam, Attingal, Varkala, Pulimath, Aryankode, and Neyyattinkara blocks, covering an area of around 1300 ha. Cultivation was undertaken during the Virippu, Mundakan, and Puncha seasons and Uma (MO16), Jyothi, Prathyasha were the varieties preferred by farmers. Infestations of rice thrips, stem borer, leaf folder, case worm and brown planthopper were recorded across the surveyed areas. The important rice diseases recorded in Thiruvananthapuram district were blast, sheath blight, bacterial leaf blight, sheath rot, and brown spot, with varying levels of incidence across different locations. The occurrence of weeds such as wild rice, *Fimbristylis* sp., *Echinochloa* sp., *Cyperus difformis, Eichhornia crassipes*, and *Salvinia molesta* was found to be severe in many rice-growing fields.

Alappuzha: In Alleppey district, paddy was cultivated in 7227.4 hectares area during Kharif 2025 season. The predominant rice varieties in the district were Uma (MO 16), Pournami (MO 23), Jyothi (PTB 39) and Manurathna with Uma being the ruling variety in the Kuttanad region. Many farmers have adopted the usage of drum seeder for sowing as it reduces the seed rate and occurrence of insect pests and diseases. The use of transplanters for planting rice seedlings were demonstrated at MSSRRS, Moncompu. Two new rice varieties were released from M.S.

Swaminathan Rice Research Station, Moncompu. KAU Aadhya (MO 24) is a high yielding medium duration rice variety with short bold white kernelled grains. This is the first white kernelled variety released from MSSRRS, Moncompu. The variety has a duration of 125-130 days with an average yield of 6500 to 7000 kilograms per hectare. KAU Aadhya is a photoinsensitive, non- lodging variety with medium tillering ability and intermediate plant height. It is developed from a cross between the popular variety Uma (MO16) and Thavalakkannan. The variety, MO 24 has slight tolerance to submergence during the early vegetative stage. Severe attack of insect pests, namely, thrips (20 ha), stem borer (297.2 ha), leaf folder (311.7 ha), brown plant hopper (93.5 ha), case worm (113.3 ha), black bug (86 ha), rice bug (60 ha) and diseases like bacterial leaf blight (527.4 ha), blast (75 ha), sheath blight (101.6 ha), brown spot (21.3 ha) were noticed. The wild rice has become a major problem during Kharif 2025, most probably due to spread through seed transport from one area to another.

MO 25 KAU Punya is a short duration red kernelled rice variety released from MSSRRS, Moncompu. The variety has duration of 110 days with an average yield of 5000 to 5500 kilograms per hectare. KAU Punya is developed from a cross between the two most popular rice varieties of Kerala, Jyothi and Uma. It is a semi tall, photo insensitive, non - lodging variety with long bold red kernelled grains. The variety possess seed dormancy of about two weeks and is moderately tolerant to major pests and diseases like stem borer, brown plant hopper, blast sheath blight and brown spot. MO 25 has good hulling and milling recovery with excellent cooking quality better than Jyothi and Uma. KAU Punya is recommended for AEU 4(Kuttanad) and is popularized in Kuttanad. The released rice varieties were cultivated for demionstation in KVKs and selected padasekarams in different blocks of Alappuzha and other districts in Kerala. The harvesting of paddy was performed by combine harvester. High cost of cultivation is a major constraint faced by rice farmers. High wages, limited working hours, and elevated land lease rates collectively reduce the profit margin of rice farmers. The high expenditure on spraying, sowing, and fertilizer application adds substantially to production costs. For the management of weedy rice, the patented KAU weed wiper was popularized in different blocks of Kuttanad. The weed wipers were distributed to the padasekarams as part of Frontline Demonstrations. The yield obtained from Kuttanad is 2250 – 3000 kg/acre. Paddy is procured at a price of ₹30 per kg, with the government-run Supplyco directly purchasing paddy from farmers at this rate.

During the Kharif season, stem borers were the predominant insect pests in the Kuttanad region, with their incidence recorded in many padasekharams. Leaf folders and caseworms were the other lepidopteran insect pests observed. Among diseases BLB, sheath blight, leaf spot and blast were recorded. Among abiotic stresses, acidity was the major problem. The application of lime (100 kg/acre) or dolomite (80 kg/acre) was recommended at 30 days after sowing to overcome the acidity problem. As in previous season(Rabi), soil acidity and high iron toxicity favoured the occurrence of grain discolouration and brown spot diseases. *Cyperus difformis* and *Echinochloa crusgalli* etc. were the major weeds observed and it was found along with wild rice.

Kottayam: In Kottayam district, nearly 6000 ha area was cultivated under rice during Kharif 2025. MO 16 (Uma) remained the dominant variety cultivated across most padasekarams, while medium duration variety Pournami (MO 23) is gradually gaining acceptance among farmers due to its field performance and grain quality. Manurathna, the short duration variety was also prefered by farmers in the delayed crop season. Soil acidity continues to be a major constraint in several padasekarams, and farmers commonly apply lime at the rate of 250 kg per

acre (150 kg at land preparation and 100 kg at 30 DAS) to manage soil pH. Periodic soil testing is essential to monitor acidity levels and to recommend appropriate liming practices. Major insect pests recorded during the season included rice thrips, black bug, stem borer, leaf folder, brown planthopper (BPH) and case worm. Important diseases observed during the season were sheath blight, bacterial leaf blight (BLB), brown spot and blast. Continuous monitoring and timely management practices helped in reducing severe pest outbreaks in many fields. Severe infestation of stem borer and leaf folder was reported from selected padasekarams. Weedy rice along with major weeds such as *Echinochloa* spp., *Fimbristylis* spp., *Monochoria vaginalis* and *Cyperus* spp. were widely distributed across most padasekarams

Pathanamthitta: In Pathanamthitta district, below 10 ha area was cultivated during Virippu Season. In the Upper Kuttanad region of Pathanamthitta district, paddy cultivation is mainly confined to the Puncha season, whereas other areas undertake cultivation in two cropping seasons annually. Major insect pests recorded in the region included stem borer, brown planthopper (BPH) and leaf folder. Important diseases observed during the season were sheath blight, bacterial leaf blight (BLB) and other minor foliar diseases. The pest and disease incidence varied depending on crop stage and prevailing weather conditions.

Ernakulam: In Ernakulam district, rice cultivation is carried out during the Virippu, Mundakan and Puncha seasons. Paddy cultivation is practiced in Narakkal, Paravoor, Aluva, Nedumbassery, Kalamassery, Vyttila, Perumbavoor, Angamaly, Keezhmad, Poothrikka, Muvattupuzha, Kothamangalam and Piravom blocks. The total cropped area of the district is 166,827.54 ha, of which 398.64 ha was cultivated during the Virippu season. The area under Pokkali cultivation was 247.83 ha. Rice varieties such as Uma, Jyothi and Pokkali types were commonly cultivated in the district. Pokkali cultivation is mainly concentrated in Narakkal, Paravoor and Vyttila blocks, and is also practiced to a lesser extent in Aluva and Kalamassery blocks.

Kollam: In Kollam district, out of the the total cropped area, around 1250 ha was under rice cultivation. Rice cultivation was practiced during the Virippu, Mundakan, and Puncha seasons using both direct sowing and transplanting methods. The major rice varieties cultivated included Uma, Jyothi, Prathyasha, Manuratna, Shreyas etc. Insect pests and diseases such as leaf roller, rice bug, caseworm, blast, bacterial leaf blight (BLB), and leaf spot were reported. Major weeds observed were wild rice, *Echinochloa* sp., Nagapola, and *Salvinia* sp. Weed management practices included the use of weedicides as well as hand weeding.

Pokkali rice cultivation: Pokkali cultivation is a unique traditional rice farming system practiced in the coastal saline tracts. The distinguishing feature of this system is that rice cultivation is restricted to the low salinity phase during the monsoon season, usually from June–July to mid-October, when salinity levels are naturally reduced due to freshwater influx. In this cultivation system 'Pokkali' is the most popular variety used. Other varieties of the region are Choottu Pokkali, Chettivirippu, Cheruvirippu, Kuruka, Anakodan, Eravapandy, Bali, Orpandy etc. The predominant weed flora in Pokkali fields includes *Echinochloa crusgalli*, *Eleocharis fistulosa*, *Fimbristylis miliacea*, *Monochoria vaginalis*, *Vallisneria spiralis*, *Nymphaea* spp., *Marsilea quadrifolia*, *Hygrophila (Asteracantha) longifolia*, *Limnophila heterophylla*, *Sphenoclea zeylanica*, *Cyperus difformis* and *Ludwigia octovalvis*. Floating and migratory weeds such as *Salvinia auriculata*, *Eichhornia crassipes* and *Lemna minor* also pose significant challenges to cultivation. Weed management in Pokkali fields is primarily achieved through ecological methods such as maintaining higher water levels and facilitating tidal water exchange. During the high saline phase, salt water ingress suppresses weed growth, and

subsequent decomposition of weed biomass along with associated flora and fauna enhances soil nutrient status and improves soil fertility.

Pest and disease incidence in Pokkali ecosystems is generally maintained below the economic threshold level. This reduced incidence is mainly attributed to the abundance of natural enemies and predators, inherent varietal tolerance, and the practice of single-season rice cultivation. However, sporadic incidence of stem borer, leaf folder and rice bug has been recorded in Pokkali fields. Farmers predominantly follow organic cultivation practices in Pokkali farming systems. Adoption of eco-friendly pest management strategies such as release of *Trichogramma* spp. through Trichocards @ 2cc per acre or 5 cc per hectare may be promoted for effective management of stem borer and leaf folder in rice. The farmers are reluctant to use pesticides with a view to cause toxicity to the fishes and prawns. Bird damage was a serious problem in the Pokkali rice ecosystem, mainly due to wetland birds like the purple morhen. This bird commonly inhabited marshy wetlands and rice fields and enters Pokkali fields from sowing (around June) until harvest (around November). It damaged the crop by feeding on buds, cutting paddy stems for nest building, pulling out soft inner plant tissues and creating bald patches in the field. In other areas of Ernakulam district, rice cultivation is primarily supported by canal irrigation, although rainfed farming was also practiced. Weedicides are applied to manage common weeds such as weedy rice, *Echinochloa* spp., and *Cyperus* spp. Rice crops were commonly affected during the season by diseases like brown spot, sheath blight, blast, and false smut. Timely application of pesticides helped control both insects and diseases.

Prevalence of diseases and insect pests in Kerala in 2025

Districts	**Diseases**				
	Bl	**BS**	**ShBl**	**GD**	**BLB**
Thiruvananthapuram	L	M	M	M	S
Alappuzha	L	M	S	S	S
Kottayam	L	M	S	M	S
Pathanamthitta	L	M	S	M	S
Ernakulam	L	M	M	M	S
Kollam	L	M	M	M	M

Districts	**Insect pests**						
	SB	**LF**	**BPH**	**GM**	**CW**	**Th**	**LM**
Thiruvananthapuram	L	S	S	-	L	L	-
Alappuzha	S	M	M	L	M	M	-
Kottayam	S	M	M	L	L	M	-
Pathanamthitta	S	M	S	L	M	L	-
Ernakulam	M	L	M	L	L	M	L
Kollam	M	S	M	-	L	L	L

LM: Leaf Miner; Th: Thrips

Maharastra-2025-26 (Karjat)

Districts surveyed: *Thane, Palghar, Raigad, Ratnagiri* and *Sindhudurg*

Table 1: Details of survey

Districts	Taluka/Block	Villages
Thane	Bhiwandi, Ambernath, Murbad, Shahapur and Kalyan	Dabhad (Asnoli), Ambadi, Indgaon, Kanhor, Kopivali, Khanivare, Sajai, Ambarje, Sarmal, Asnoli, Vehale, Mhaskal and Falegaon
Palghar	Jawhar, Vikramgad, Wada and Palghar	Raitale, Rampur, Nadanmal, Alonde, Vasuri, Onde, Pali, Shingada Pada, Posheri, Sagave, Girnoli and Mahim
Raigad	Karjat, Khalapur, Uran, Panvel, Alibag and Pen	Khandape, Mangaon, Vadap, Salape, Chevane, Vadavali, Chei, Aapti, Sarde, Kadape, Vasheni, Aapta, Sai, Dighati, Bhakarwad, Pandvadevi, Walwad, Javali, Aarav (Vashiwali) and Waravane
Ratnagiri	Mandangad, Dapoli, Lanja, Rajapur, Ratnagiri and Sangmeshwar	Chinchali, Shenale, Shirkhal, Palghad (Sondeghar), Karanjani, Gavhane, Nivoshi, Kondye, Mondhewadi, Unhale, Doniwade, Shirgaon, Bhatye, Manaskond and Kalambe
Sindhudurg	Malvan, Kudal, Sawantwadi, Vengurla and Kankavali	Kumbhar math, Bavkhalwadi, Chauke, Padave, Terse Bhabarde, Zarap, Bhom, Nirukhe, Kolgaon, Hodavada, Tulas, Nadgive, Karul and Phondaghat

Table 2: Widely prevalent rice varieties

Districts	Varieties
Thane	**HYVs:** Karjat-3, MTU 1010, Jaya, Rupali (Ankur), YSR, Spriha 911, Shubhangi, Daptari 1008, Daptari 100, Daptari 250, Om Sree Ram-125, Daptari 125, Devaki, Jordar, Shabri, Wada kolam, RTN-8, Warai, Kajart-8, Gujrath-11, Akshet, Shree-101, Asmita, Jyotika and Avni; **Hybrids:** Arize 6444, Gorakhnath, Loknath, Upaj, Arize-6129, NPH-30, Paturu 3434, VNR 2245, NP-125, Kaveri 3434, Kaveri-9090, KPH 468, Ankur-6077 and KPH-468
Palghar	**HYVs:** Karjat 3, Poonam, Sundar, MTU-1010, Karjat-6, Suma, Silk 277, Wada Kolam, Saguna, Sindhu, Komal 101, MTU-7029, Zordar, Sampada, Punam Gold, YSR, Rupali, Akshad, Mahuli, Om Shree 125, Mahalakshmi, Samrudhi, Ratnagiri 5, Karjat-184, Suraj, MPR-404, Durga, Sonal, Safari-Jaya, Karjat-6, Mahuli, Suvarna, Jyotica, VIP, Shree-1008, and Suprim Sona; **Hybrids:** Raja, Rasi 113, NP-125, Champion, Sahyadri, Sahyadri 2, Ankur -13555, Ankur-788, Rasi-336 and Ankur-7576
Raigad	**HYVs:** Jaya, Suvarna, Karjat-7, Karjat-9, MTU 1010, MTU-1153, Ratnagiri-8, Komal 101, Prassanna, Rupali, Jyotika, Shree 101, Sarthi, Leader Power, Asmita, Ajeeta, Ruchica, NR-348, S 911, Gangotri, YSR, Shabari, Supreme Sona, Elito, Chintu, Jordar, Sampada, NP-125, Shubhangi, Gajani, Amogh, MTU-7029, Virat Jet, Leo, Shrimant Jaya, Safari Jaya, VIP 125, MD 2001, MD 3001, Vedh Jaya, Nathpoha, Janaki and Swabhagya; **HYVs:** Gorakhnath-509, Loknath-505

Ratnagiri	**HYVs:** Karjat 2, Jaya, Sonam, Komal-101, Sarathi, Ratnagiri 8, Sadna, Rupali, Trupti, Poonam, Vaishnavi NR-241, Pooja, Wada Kolam, Sairam NR-9, Prasanna, Suvarna, Mohini, Shree-101, Karjat 7, Karjat-3, Ratnagiri 6, Karjat-9, Ratnagiri 1, Ratnagiri 8, Ratna, Daptari, Puja, Kasturi, Saguna, Poonam gold and others; **Hybrids:** Arize 6444, Ankur 7576, Syn 5251, Loknath 505, TATA-748, Gorakhnath, NPH-30, Upaj Mahico 5566, Ankur 6444
Sindhudurg	**HYVs:** Jaya, Karjat-3, Suvarna, Komal, Om Shriram, YSR, Sonam, Shubhangi, Shri 101, Vada Kolam, Prasanna, Poonam, Vaishnavi, Shriram Gold, Chintu, Kranti, MTU 7029, Jaishriram Gold and others; **Hybrids:** Arize 6444, Arize 6129, Gorakhanath, Loknath, Kaveri 9090, NPH-30

Production oriented survey was conducted in the Konkan region of Maharashtra which is predominantly rice growing belt with an average productivity of 2.58 (3.63 rough rice) t/ha. The region comprises of five districts *viz.* Thane, Palghar, Raigad, Ratnagiri and Sindhudurg. In *Kharif*-2025 season, a total of 307271 ha area was sown under rice cultivation in the Konkan region. The farmers of this region cannot grow any crop other than rice in *Kharif* because of high rainfall and geographically low land. The Production Oriented Survey for rice was undertaken at dough, maturity to harvesting stage of crop during the month of second week of October-to first week of November 2025. The details of the places surveyed in 2025 are presented in Table 1. The particulars of rice area in different districts of Konkan region are presented in Table 3. The details of different weather variables during the cropping season of 2025 in the five surveyed district are presented in Table 4. Weather conditions were in general normal and favourable for rice cultivation in the region. The onset of monsoon took place in May end and rainfall continued till first week of November. Farmers sown their seeds during end of May to 1st week of June and transplanted in July. Overall, weather conditions were good during growth stages. Total rainfall and its distribution was satisfactory in Konkan region. The maximum rainy days and highest rainfall was occurred in Ratnagiri district i.e.132 days with 4908.0 mm total rainfall followed by Raigad, Sindhudurg, Palghar and Thane districts were 122, 139, 95, and 112 days with total rainfall 4532.4, 4054.2, 3475 and 3194.4 mm, respectively. However, there was rainfall at the time of maturity and harvesting resulting in lodging of the crop and delay in harvesting.

The details of the varieties cultivated by different farmers are given in Table 2. Wide varietal diversity was observed in the region. Commonly grown rice varieties and hybrids in the region were HYVs like Karjat-3, MTU 1010, Jaya, Rupali (Ankur), YSR, Spriha 911, Shubhangi, Daptari 1008, Daptari 100, Daptari 250, Om Sree Ram-125, Daptari 125, Devaki, Jordar, Shabri, Wada Kolam, RTN-8, Warai, Kajart-8, Gujrath-11, Shree-101, Asmita, Jyotika, Avni, Poonam, Sundar, Karjat-6, Suma, Silk 277, Saguna, Sindhu, Komal 101, MTU-7029, Sampada, Prassanna, Punam Gold, Akshad, Mahuli, Mahalakshmi, Samrudhi, Ratnagiri 5, Karjat-184, Suraj, Pooja, MPR-404, Durga, Sonal, Safari-Jaya, Karjat-6, Mahuli, Suvarna, VIP, Shree-1008, Sarthi, Leader Power, Gangotri, Gajani, Amogh, VIP 125, MD 2001, MD 3001, Ratnagiri 1, Ratnagiri 6, Karjat-9, Vedh Jaya, Nathpoha, Elito, Chintu, Janaki and Suprim Sona and hybrids like Arize 6444, Gorakhnath, Loknath, Upaj, Arize-6129, NPH-30, Paturu 3434, VNR 2245, Raja, Rasi 113, NP-125, Kaveri 3434, Kaveri-9090, KPH 468, Ankur-6077, KPH-468, Champion, Sahyadri, Sahyadri 2, Ankur -13555, Ankur-788, TATA-748, Rasi-336 and Ankur-7576

Table 3: Particulars of rice area in different districts of Konkan region of Maharashtra (*Kharif'* 2025)

District	Total Geographical Area (ha.)	Total Cultivable Area (ha.)	Total Cultivated Area (ha.)	Net Irrigated Area (ha)	Area sown Under Rice (ha.)
Thane	955800	90000	54923	25000	55243
Palghar	534400	176300	142200	14980	79149
Raigad	715200	328600	124000	9455.5	70447
Ratnagiri	816400	60,000	45000	5000	47549
Sindhudurg	520700	79000	78000	7500	54883

Table 4: Weather data for different districts of Mahararahtra during *Kharif'* 2025

District/ Parameters	Months						
	May	Jun	Jul	Aug	Sep	Oct	Nov
Thane							
RD	8	13	31	24	21	12	3
TR (mm)	212.0	541.5	942.3	744.7	583.9	112.0	58.0
MMT (^{0}C)	29.7	29.8	20.6	22.3	24.2	28.4	23.4
T. Max (^{0}C)	33.2	32.3	22.0	23.8	26.5	31.6	26.5
T. Min (^{0}C)	26.2	27.2	19.2	20.8	21.9	25.2	20.3
SH	4.8	1.1	0.9	1.2	1.4	4.8	6.3
Palghar							
RD	6	17	22	24	19	7	-
TR (mm)	196	621	561	934	989	174	-
MMT (^{0}C)	29.2	24.7	24.3	23.7	24.4	29.9	-
T. Max (^{0}C)	31.2	26.6	26.4	26.2	25.9	31.1	-
T. Min (^{0}C)	27.2	22.8	22.2	21.2	22.8	28.8	-
SH	3.4	1.0	0.0	0.6	0.0	4.5	-
Raigad							
RD	07	22	30	26	22	12	03
TR (mm)	390.5	789.7	1125.5	1169.8	840.1	183.3	33.5
MMT (^{0}C)	29.9	28.0	26.8	26.2	26.2	27.9	25.0
T. Max (^{0}C)	32.6	31.4	28.9	28.5	28.8	33.1	29.6
T. Min (^{0}C)	27.1	24.6	24.6	23.8	23.5	22.7	20.4
SH	4.6	1.5	0.5	0.9	0.9	4.4	6.3
Ratnagiri							
RD	11	26	29	29	21	11	5
TR (mm)	657	824.6	960.2	1567.4	462.0	276.0	161.0
MMT (^{0}C)	26.1	25.9	25	24.2	24.1	25.5	22.9
T. Max (^{0}C)	31.8	30.0	28.4	27.6	28.0	31.5	30.2
T. Min (^{0}C)	20.4	21.9	21.6	20.8	20.2	19.5	15.6
SH	6.6	3.4	0.9	0.7	0.9	6.3	7.5
Sindhudurg							
RD	11	26	30	27	23	18	4
TR (mm)	582.8	697.6	1094.2	971.0	344.4	287.2	53.8
MMT (^{0}C)	27.7	35.9	25.0	24.5	24.4	26.1	23.8
T. Max (^{0}C)	33.3	30.8	29.3	29.3	29.5	32.7	32.4
T. Min (^{0}C)	22.1	21.0	20.7	19.6	19.3	19.4	15.1
SH	5.0	3.5	1.1	1.6	2.0	4.2	7.2

RD: Rainy days; TR: Total rainfall; MMT: Monthly Mean Temperature; T. Max: Maximum temperature; T. Min: Minimum temperature; SH: Sunshine hours

Table 5: General question on rice cultivation in district (to be filled by the co-operator in consultation with the officials from state department of agriculture)

Parameters	Districts		
	Thane	**Palghar**	**Raigad**
Total area under HYVs in the district (ha)	50997 ha	79149 ha	69247 ha
Most prevalent HYVs in the district	YSR, Jaya, Daptari 125, Spriha 911, Wada kolam, RTN-8, Shubhangi, Daptari 125, Om Sree Ram-125, Shabri Daptari 108, Rupali, Karjat-3, MTU 1010, Warai, RTN-8, Kajart-8, YSR, Komal, Ratna, Gujrath-11.	Karjat- # 3, 6, 184, Ratnagiri 5, MTU-1010, Komal 101, Silk 277, MTU-7029, Saguna, Zordar, Sampada, Poonam, Punam Gold, Wada Kolam, Samrudhi, Rupali, YSR, Om Shree 125, Suprim Sona.	Jaya, Suvarna, Karjat- # 5, 7, 9, Rupali , Komal 101, Wada Kolam, MTU 1010, Trupti, Wada Zinia, Shree 101, MTU-7029, YSR, Supersona , Kaveri Sona, Zordhar, NP-125, Shubhangi, Shivani, Om Shri Ram and Ratna
Total area under rice hybrids in the district	4246 ha	2625 ha	1200 ha
Most prevalent rice hybrids in the district	Arize 6444, Gorakhnath, Kaveri-9090, Loknath, Arize-6129, Kaveri 3434, Upaj, 2245, NP-125, KPH-468, Ankur-6077.	Raja, Rasi-113, NP-125, Champion, Sahyadri, Sahyadri 2, Ankur -13555, Ankur-788, Rasi-336 and Ankur-7576	Gorakhnath-509, NP-125, Loknath-505
Total area under basmati in the district	Nil	Nil	Nil
Most prevalent basmati varieties in the district	Nil	100%	Nil
Seed replacement rate	100 percent	Nil	100%
Whether farmers are using any heavy equipments like transplanter/combine harvester	No	Used Power tiller opareated harvester. Small Thresher	Yes, transplanter and power tiller operated harvester
Mention water saving technologies like SRI/laser leveling/DSR being used by the farmers	Nil	Nil	No
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	Yes, Guidance on IPM and weed management and mechanization, methods of rice cultivation	Disease and Pest diagnosis and their management, methods of rice cultivation, INM and mechanization	Methods of rice cultivation, INM, IPM in rice and mechanization
What are the general problems in rice cultivation in the district?	Non-availability of labour and high wages of the labour. Lack of storage & irrigation facilities.	Due to small land holding, farmers needs low cost mechanization	Non availability quality seeds and higher weges of the labour
Please provide any farmers association in the district	Farmer's groups registered under ATMA and "Agricultural Tools Bank" Association.	Farmer's groups registered under ATMA as a vegetables grower and Marketing purpose.	Co-op Rice Seed Prod Society, Vadap, Karjat, Shetkari Vikas Sanstha, Mahad; Vegetables growers and marketing groups under ATMA.
Whether availability of agricultural labours is sufficient?	No.	No,	No
Whether there is any marketing problem of the produce?	Yes	Lack of marketing facilities.	Yes.
Any major irrigation/power generation project in the district	3 Major and 15 Small Irrigation projects.	Bhatsa, lendi, Surya, DTPS and Wandri major and 16 minor irrigation projects in the district.	Ravalaje, Patnus, Kal, Rajnala, Hetawane major and 28 minor irrigation projets.
Any soil testing program undertaken?	Yes. Soil Health Improvement Programme.	Yes. Soil Health Improvement Programme.	No.
Any farmers' training program was organized by the state department of Agriculture/University	Integrated Rice Improvement and pest and disease management Programme	Rice Crop Protection Programme and demostations.	Hybrid Rice Improvement Programme and demostations

Table 5 Contd..: General question on rice cultivation in district (to be filled by the co-operator in consultation with the officials from state department of agriculture)

Parameters	Ratnagiri	Sindhudurg
Total area under HYVs in the district (ha)	45787 ha	54288 ha
Most prevalent HYVs in the district	Wadakolam, Komal 101, Punam, Jaya, Sai Ram NR-9, Suvarna, Rupali Karjat-# 2, 3, 6, 7, 9, Sonam, Ratnagiri # 1, 6, 8, Ratna, Daptari, Puja, Mohini, Prasanya, Trupti, Kasturi, Saguna, Poonam gold, Sadana	Jaya, Karjat 3, Sonam, Suvarna, Shri-101, Komal, Om Shree Ram, Wada kolam, YSR, Prasanaa, Punam, Shubhangi, Vaishnavi, Jaishriram Gold, Chintu , MTU-7029, Kranti.
Total area under rice hybrids in the district	1672 ha	594 ha
Most prevalent rice hybrids in the district	Syn 5251, Loknath 505, TATA -748, NPH-30, Gorakhnath, Upaj Mahiko 5566, Arise 6444, Ankur 7576.	Gorakhnath , 6444, 6129, Loknath, Kaveri-9090, NPH-30
Total area under basmati in the district	Nil	Nil
Most prevalent basmati varieties in the district	Nil	Nil
Seed replacement rate	100%	100%
Whether farmers are using any heavy equipments like transplanter/combine harvester	Use power tiller operated transplanter and harvester, eectric thresher.	No,Use tractor/power tiller for land cultivation
Mention water saving technologies like SRI/laser leveling/DSR being used by the farmers	Nil	Some farmers used DSR technique.
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	Different methods of rice cultivation, INM, IPM of rice, chemical weed management and Machanization.	Mechanization in harvesting, threshing, drum seeding and INM, IPDM in rice cultivation.
What are the general problems in rice cultivation in the district?	Shortage of labour, limitation for mechanization due to geographical situation and higher labour wages.	Labour shortage, limitation on mechanization due to small land holding
Please provide any farmers association in the district	Nil	Shetkari Kharedi Vikri Sangha-8, Shraddha Swayam Sahayata Bachatagat and other some Village wise different Mahila bachat Gats.
Whether availability of agricultural labours is sufficient?	No	No, Labour shortage and high rate of wages.
Whether there is any marketing problem of the produce?	Yes	Yes.
Any major irrigation/power generation project in the district	Natu nagar Irrigation Project, Ratnagiri Power Company is Major and 38 minor small scale projects.	Talamba, Aruna Tilari, Sarmala and Mahmmad wadi Irrigation projects and 28 other minor projects.
Any soil testing program undertaken?	NIl	Yes. Soil Health Improvement Programme organized by State govt.
Any farmers' training program was organized by the state department of Agriculture/University	Integrated Hybrid Rice Improvement Programme and field demostations, Sheti Shala etc	Integrated Rice crop protection Programme

A. General Information, cropping system and rice yield: The details of the number of villages surveyed and number of farmers contacted are presented in Table 7. Rice is grown as a main rainfed crop due to heavy rainfall in the region. The most common cropping pattern adopted by farmers in the region is rice-fallow, rice-pulses (chick pea, green gram, pigeon pea, black gram, horse gram, dolichos bean), rice-vegetables, rice- groundnut and Sometimes rice-chili and rice-fodder. Some farmers also cultivated other crops like finger millet, niger and sweet potato in part of their land. The farming systems of Konkan was also including goat farming in Palghar district and fish farming in Raigad district. Pulses after Kharif rice on residual moisture is a common practice in Palghar, Raigad, Thane, Sindhudurg and Ratnagiri districts. Area covered by different rice varieties in different districts is presented in Table 6. Rice yield in the region was low and ranged from 2000-3500 kg/ha among HYVs and 2800-

4200 kg/ha among the hybrids (Table 8). Heavy rainfall especially during maturity and harvesting time resulted in crop lodging causing huge economic loss to the farmers in almost all the surveyed districts. Rice yield in some of the surveyed places in most of the districts was affected due to poor crop stand due to low/ sub-normal dose of fertilizers, high incidence of bacterial blight and cultivation of low yielding local rice varieties.

Table 6: Variety/hybrid wise area coverage (ha) in different districts of Maharashtra during 2025

Variety/hybrids	Districts/area (ha)				
	Thane	Palghar	Raigad	Ratnagiri	Sindhudurg
HYVs/Improved					
Karjat-3	1160	2680		203	281
MTU 1010	740	750	417		
Jaya	1459		8283	940	1100
Rupali (Ankur)	1060	200	1783	456	
YSR	2200	250	716		584
Spriha 911	596				
Shubhangi	330		300		416
Daptari 1008	358				
Daptari 100	288				
Daptari 250	658				
Om Sree Ram-125	422	160			494
Daptari 125	658				
Devaki	408				
Jordar	565	350	683		
Shabri	406				
Wada Kolam	856	532		460	1463
Akshet	565				
Shree-101	285		777	255	538
Asmita	368		683		
Jyotika	286		967		
Avani	257				
Poonam		2400		160	172
Sunder		1100			
Suma		600			
Sindhu		400			
Akshad		195			
Karjat-6		661			
Saguna		400			
MTU-1153			243		
Suvarna			3800	560	1000
Kranti					166
Samrudhi		150			
Komal-101		350	2393	653	622
Mahuli		180			
Silk-277		550			
Pooja				356	
Poonam Gold		250			
Mahalakshmi		150			
Durga		80			

Variety/hybrids	Districts/area (ha)				
	Thane	**Palghar**	**Raigad**	**Ratnagiri**	**Sindhudurg**
RTN-5		95			
RTN-8			1243	590	
Ratnagiri-6				155	
Sampada		350	450		
CO-51					
Prasanna			200	230	188
Karjat-7			217	120	
Karjat-9			500		
Trupti				380	
Ruchika			493		
Ajeeta			403		
Sarathi			707	450	
Leader Power			307		
Swarna		350	273		179
Supreme Sona			600		
Karjat-2				640	
Sonam				610	1009
Nath Poha			118		
Janki			59		
Swabhagya			45		
Karjat-184		90			
Sadna				380	
Vaishnavi NR-241				286	225
Sree Ram NR-9				212	
Mohini				190	
Jai Shree Ram Gold					281
Chintu			300		206
Suraj		85			
MPR-404		80			
Sonal		80			
Safri-Jaya		70	400		
NR-348			243		
S911			243		
Gangotri			293		
Shabari			217		
Elito			350		
Gajani			200		
Amogh			183		
Virat Jet			750		
Leo			566		
Shrimant Jaya			1507		
VIP-125			440		
MD-2001			367		
MD-3001			367		
Vedh Jaya			567		
Others	8086	3438	22090	5890	12644
Hybrids					
Arize 6444	458			435	271

Variety/hybrids	Districts/area (ha)				
	Thane	**Palghar**	**Raigad**	**Ratnagiri**	**Sindhudurg**
Gorakhnath-509	769		59	165	21
Loknath-505	568		89	180	6.5
Upaj Mahyco 5566	380			45	
Arize-6129	115				
NPH-30	150			117	65
VNR 2245	72				
NP-125	135		300+295		
Kaveri-9090	205				21+12.33
Ankur-7576				160	
Ankur-6077	254				
Ankur-6444				48	
KPH-468	85				
Syn-5251				120	
Tata-748				112	
Raja		140			
Rasi 113		80			
Others	1055	305	535	290	197.17

Table 7: General information

Parameters	**Thane**	**Palghar**	**Raigad**	**Ratnagiri**	**Sindhudurg**
# of talukas/blocks covered	5	4	6	6	5
# of villages surveyed	13	12	20	15	14
# of farmers interviewed	13	12	20	15	14
Field ecosystem	RL (100%)	RL (100%)	RL (100%)	RL (100%)	RL (100%)
Weather conditions during cropping season	Weather conditions were in general normal and favourable for rice cultivation in the region. The onset of monsoon took place in May end and rainfall continued till first week of November. Farmers sown their seeds during end of May to 1st week of June and transplanted in July. Overall, weather conditions were good during growth stages. Toral rainfall and its distribution was satisfactory in Konkan region. However, there was rainfall at the time of maturity and harvesting resulting in lodging of the crop and delay in harvesting.				
Crop stage when survey was made	Maturity	Maturity	Maturity	Maturity	Maturity
Crop rotations	Rice is grown as a main rainfed crop due to heavy rainfall in the region. The most common cropping pattern adopted by farmers in the region is rice-fallow, rice-pulses (chick pea, green gram, pigeon pea, black gram, horse gram, dolichos bean), rice-vegetables, rice-groundnut and Sometimes rice-chili and rice-fodder. Some farmers also cultivated other crops like finger millet, niger and sweet potato in part of their land. The farming systems of Konkan was also including goat farming in Palghar district and fish farming in Raigad district. Pulses after Kharif rice on residual moisture is a common practice in Palghar, Raigad, Thane, Sindhudurg and Ratnagiri districts.				

RL: Rainfed lowland

Table 8: Average yields of different rice varieties as reported by the cooperators/farmers

Varieties	Yield (kg/ha) in different districts of Maharashtra					Remarks
	Thane	Palghar	Raigad	Ratnagiri	Sindhudurg	
Karjat-2				3000-3200	3000-3500	Heavy rainfall especially during maturity and harvesting time resulted in crop lodging causing huge economic loss to the farmers in almost all the surveyed districts. Rice yield in some of the surveyed places in most of the districts was affected due to poor crop stand due to low/ sub-normal dose of fertilizers, high incidence of bacterial blight and cultivation of low yielding local rice varieties.
Karjat-3		2800-3500				
Karjat-7		3000-3200	3000-3200			
Karjat-9			3000-3200			
YSR	2700-3200	2800-3000	2200-3000			
Jordar		2900-3000				
Komal		2800-3000	2800-3200	3000-3200	3200-3400	
Gujarat-11						
Minakshi-913	2800-3000					
MTU-1010						
Suvarna		2800-3200		2800-3200		
Mahsuri		2800-3200			3200-3400	
Daptari		2800-3200				
Wada Kolam	2600-2800	2800-3000	2500-2700			
Jaya			2800-3500		2500-3000	
Ruchika			2800-3000			
Jyothika			2800-3000			
VIP			3000-3200			
Gangotri			3200-3300			
Supreme Sona			2800-3000			
Supriya				3000-3200	3000-3200	
Sarathi				3000-3200		
Ratnagiri-1				3000-3200		
Ratnagiri-5				3300-3500		
Ratnagiri-8				3500-3600	3000-3500	
Indrayani				2800-2900		
Rupali				2800-3500		
Subhangi				3300-3500	2800-3400	
Sonam				3200-3500	1800-2000	
Pankaj					3000-3200	
OM-3					3300-3500	
Sammrudhi	3000-3200					
Zinnia	2200-2500					
Walai					2500-2800	
Bela					3000-3200	
Patnai					3000-3200	
Hybrids						
Loknath	3000-3200		2800-3800			
Arize 6444					3000-3500	
Kaveri-9090					4000-4200	

Table 9: Details of rice consumption pattern

Parameters	Districts				
	Thane	**Palghar**	**Raigad**	**Ratnagiri**	**Sindhudurg**
Status of farmers	Medium income (84.6%); Poor (7.7%); Rich (7.7%)	Medium income (91.7%); Poor (8.3%)	Medium income (85%); Poor (10%); Rich (5%)	Medium income (86.7%); Poor (6.7%); Rich (6.7%)	Medium income (92.8%); Rich (7.2%)
Per capita monthly rice consumption (kg)	3-5 kg	3-4 kg	3-5 kg	3-5 kg	2.5-5 kg
Composition of main meal	Rice + Wheat (61.5%); only Rice (38.5%)	Rice + Wheat (25%); only rice (75%)	Rice + Wheat (25%); only rice (75%)	Rice + Wheat (46.7%); only rice (53.3%)	Only rice (64.3%); Rice + Wheat (35.7%)
Preferred rice types	Polished rice (100%)	Polished rice (100%); parboiled (8.3%)	Polished rice (100%); Parboiled (5%)	Polished rice (100%); parboiled (40%)	Polished rice (100%); Parboiled (57.1%)
Rice grain type preference	Fine grain (92.3%); Coarse grain (69.2%)*	Fine grain (91.7%); coarse grains (75%)*	Fine grain (100%); Coarse grain (100%)*	Fine grain (100%); Coarse grains (80%)*	Fine grain (100%); Coarse grain (64.3%)*
Any changes in food habit in last 10 years	No (100%)	No (100%)	No (100%)	No (100%)	No (100%)

Coarse rice grains were mainly used by the farmers for rice chapati making

B. Rice consumption pattern: Survey was conducted on consumption pattern of rice among the farmers in different districts of Konkan region of Maharashtra (Table 9). Majority (~88%) of the farmers contacted were in the medium income group and rest were in poor category (~6%) and rice (~6%). Average per capita consumption of rice per month was 2.5-5 kg rice. About 39% of the farmers contacted told that their main meal consisted of both rice and wheat (chapatti). Rest of the farmers told that they consume only rice. Farmers in this region consume chapati made from rice flour (mainly from the coarse grains). Almost all the farmers contacted in different districts told that they used polished rice. In addition, some farmers (5-57%) from Palghar, Raigad, Ratnagiri and Sindhudurg districts also took parboiled rice along with polished rice. Regarding grain quality, more than 96% farmers in different districts told that they preferred fine grain quality rice. In addition, about 77% of the farmers contacted also used coarse grain rice varieties for consumption. Coarse rice grains were mainly used by the farmers for rice chapati making. In general, there was no change in the food habit except that some farmers included finger millet in their diet.

Table 10: Details of nursery management

Parameters	Districts				
	Thane	**Palghar**	**Raigad**	**Ratnagiri**	**Sindhudurg**
Planting time	1st-2nd Week of July	1st-3rd Week of July	Last week of June to 2nd Week of July	Mid June to mid July	Mid June to mid July
Seed rate	45-60 kg/ha	45-60 kg/ha	30-60 kg/ha	45-60 kg/ha	30-60 kg/ha
Seed treatment (% farmers adopted)	Yes (100%)	Yes (100%); Used treated seeds	Yes (95%); 80% farmers used treated seeds	Yes (93.3%)	Yes (92.8%)
Chemicals used for seed treatment	Thiram (3 g/kg seeds)	-	Thiram (2.5 g/kg seeds)	Thiram (3 g/kg seeds)	Thiram (2.5-3 g/kg seeds)
Organic manure in nursery (% farmers adopted)	Yes (15.4% only); FYM	Yes (25% only); FYM	No (100%)	Yes (66.7% only); FYM; poultry manure	Yes (50% only); FYM
Inorganic manure in nursery (% farmers adopted)	Yes (92.3% farmers); Urea @ 0.5-1.5 kg/R*	Yes (50% farmers); Urea @ 0.5-1.5 kg/R	Yes (80% farmers); Urea @ 0.5-1 kg/R	Yes (92.3% farmers); Urea @ 0.5-1 kg/R or urea (1.5 kg/R) + suphala (15:15:15) @ 0.5 kg/R*	Yes (100% farmers); Urea @ 1-2 kg/R
Weed management in nursery	Farmers in Palghar, Thane, Raigad, Ratnagiri and Sindhudurg (Partly) district practiced burning of nursery area with organic waste which is referred as 'Rab' for weed management in nursery. Rabbing method for nursery preparation is gradually decreasing among the farmers. However, now manual hand weeding is common practice for weed management. Farmers now prefer nursery on puddled field.				

1R=1000 sq. ft

C. Nursery and main field Management: In general, planting was done during middle of June to 3rd week of July (Table 10). Average seed rate used by the farmers ranged from 30-60 kg/ha for high yielding rice varieties and about 25 kg/ha in case of hybrids. Majority (92-100%) of the farmers contacted told that they treated the seeds with thiram (2.5-3 g/kg of seeds) or used already treated seeds for sowing. On an average 51% of the farmers contacted told that they applied organic matter like FYM and poultry manure in the nursery. Majority (82.9%) of the farmers contacted told that they applied chemical fertlizers like urea @ 0.5-2 kg/R or urea (0.5-1 kg/R) + suphala (15:15:15) @ 0.5 kg/R. Farmers in Palghar, Thane, Raigad, Ratnagiri and Sindhudurg (Partly) district practiced burning of nursery area with organic waste which is referred as 'Rab' for weed management in nursery. Rabbing method for nursery preparation is gradually decreasing among the farmers. However, now manual hand weeding is common practice for weed management. Farmers now prefer nursery on puddled field. Farmers use 20 to 30 days old seedlings for transplanting. This year monsoon was started in the month of May

farmers did their sowing in time and completed their transplanting up to third week of July. Transplanting was random and average plant population was 30-35 hills/m^2. In some part of Raigad district in saline soils farmers do not transplant the rice seedling but uprooted seedlings are uniformly scattered in the puddle fields locally called as 'Awatni'. Fertilizers were applied @ 30-129 kg N/ha, 15-54 kg P_2O_5/ha and 10-54 kg K_2O/ha (Table 11). None of the farmers contacted applied zinc sulphate. While most of the farmers applied nitrogenous fertilizers, about 85% of the farmers applied P and K fertilizers. Fertilizers like urea, 15:15:15, 18:18:10, Suphala (15:15:15), 19:19:19 (Sampurna) and DAP (18:46:0) were used by the farmers. Few farmers applied only urea. Few farmers from Palghar, Raigad and Ratnagiri applied FYM (1-4t/acre) or poultry manure (200 kg/acre) depending on its availability (Table 11).

Table 11: Details of main field management

Details	Districts					Remarks
	Thane	Palghar	Raigad	Ratnagiri	Sindhudurg	
Planting method	Farmers use 20 to 30 days old seedlings for transplanting. This year monsoon was started in the month of May farmers did their sowing in time and completed their transplanting up to third week of July. Transplanting was random and average plant population was 30-35 hills/m^2. In some part of Raigad district in saline soils farmers do not transplant the rice seedling but uprooted seedlings are uniformly scattered in the puddle fields locally called as 'Awatni'.					Fertilizers like urea, 15:15:15 18:18:10, 20:20:0, 19:19:19 (Sampurna) and DAP (18:46:0) were used by the farmers; Few farmers applied only urea. FYM application by progressive farmers
Total N applied	61-110 kg/ha (100 % farmers applied)	61-122 kg/ha (100 % farmers applied)	30-129 kg/ha (100 % farmers applied)	61-99 kg/ha (100 % farmers applied)	41-122 kg/ha (100 % farmers applied)	
Total P_2O_5 applied	15-30 kg/ha (84.6 % farmers applied)	15-36 kg/ha (75 % farmers applied)	15-37.5 kg/ha (90 % farmers applied)	15-45 kg/ha (86.7 % farmers applied)	15-54 kg/ha (92.8 % farmers applied)	
Total K_2O applied	10-30 kg/ha (84.6 % farmers applied)	15-30 kg/ha (66.7 % farmers applied)	15-37.5 kg/ha (90 % farmers applied)	15-48 kg/ha (86.7 % farmers applied)	10-54 kg/ha (92.8 % farmers applied)	
$ZnSO_4$ applied	Nil	Nil	Nil	Nil	Nil	
Organic fertilizer applied	No (100%)	Yes (25%) FYM (3-4 t/acre	Yes (5%); FYM (2 t/acre)	Yes (46.7%); FYM (1-2 t/ha); Poultry manure (200 kg/acre)	No (100%)	

D. Weeds and their Management: Overall, intensity of weeds was low to medium. The details of different weeds recorded in different districts are presented in Table 12. For managing weeds in the nursery, some farmers followed a local method, called *Rab*. None of the farmers contacted applied any herbicides and all of them followed 1-2 hand weeding for managing the weed problem.

Table 12: Weeds and weed management

Details	Districts					Remarks
	Thane	**Palghar**	**Raigad**	**Ratnagiri**	**Sindhudurg**	
Weed intensity	Low-medium					
Names of the weeds	*Isachne globosa, Cyperus dufformis, Oxalis* spp.*, Cyperus rotundus, Cyperus iria, Echinochloa colona, Echinochloa crusgalli, Sonchus* spp., *Achyranthes aspera*, *Ageratum conyzoides*, *Eleusine indica, Coix lacryma-jobi, Convolvulus arvensis, Celosia argentea, Ludwigia octovalvis, Ischaemum rugosum, Alternanthera triandra, Amaranthus spinosus, Leptochloa chinensis*, *Saccharum spontaneum, Digitaria sangunalis*, *Cynodon dactylon*, *Chenopodium album* and *Mimosa pudica*					Weeds were common in most of the fields surveyed
Weedicides used	Nil; Out of 74 farmers contacted, none used weedicide for the management of weeds. All the farmers contacted practiced only hand weeding (1-2)					
% of farmers applied herbicides	Nil	Nil	Nil	Nil	Nil	
Wild/weedy rice incidence	Nil	Nil	Nil	Nil	Nil	

E. Specific needs of farmers:

- Farmers need all inputs on subsidized rate as paddy cultivation is not profitable.
- Farmers need good market price for their produce.
- Farmers want irrigation facilities or finance for developing irrigation facilities with electricity.
- Farmers need financial support to purchase farm inputs for crop management.
- Farmers need low cost mechanization suitable for Konkan region to overcome labour problem.
- Farmers need quality and availability of seed and fertilizers in time.

F. Input use: Most of the farmers prepared their land by own wooden plough or hired Power Tiller/Tractor. Only few progressive farmers were having their own Power Tiller, Tractor. None of the farmer has harvester or thresher. In Thane and Palghar districts farmer has formed some "Farmers Agricultural Machinery and Tool Bank" to overcome labours problem in the district with support of Zilla-parishad. Exact information on seed replacement ratio in the region during Kharif 2025 is not available. Most of the farmers in Konkan region are having small land holding. Our cooperator reported most of the farmers purchased 75-100% of their seed requirement during Kharif 2025. Very few farmers used their own seed for at least one season. Seeds of improved varieties are supplied by Government agencies viz. Panchayat Samittee, Zilla Parishad, Agricultural Department, Agricultural University, Research Stations etc. Krishi Seva Kendras. Most of the farmers purchase seed every season, from private agro-service centers and private seed companies as well as Agril. Research Stations. Bore wells, river water, rain water and reservoirs were the main sources of irrigation. On an average 48% of the farmers contacted told that there was scarcity of irrigation water (Table 13). Majority (~90%) of the farmers contacted told that inputs like fertilizers and pesticides were available in time and majority of them were happy with their quality. In addition to their own decisions, farmers got advices from private dealers and officials of state department of agriculture and university.

Table 13: Details of inputs used

Details	Districts				
	Thane	**Palghar**	**Raigad**	**Ratnagiri**	**Sindhudurg**
Implements used	Most of the farmers prepared their land by own wooden plough or hired Power Tiller/Tractor. Only few progressive farmers were having their own Power Tiller, Tractor. None of the farmer has harvester or thresher. In Thane and Palghar districts farmer has formed some "Farmers Agricultural Machinery and Tool Bank" to overcome labours problem in the district with support of Zilla-parishad.				
Seed replacement rate in 2022	Exact information on seed replacement ratio in the region during Kharif 2025 is not available.				
Source of seeds	Most of the farmers in Konkan region are having small land holding. Our cooperator reported most of the farmers purchased 75-100% of their seed requirement during Kharif 2025. Very few farmers used their own seed for at least one season. Seeds of improved varieties are supplied by Government agencies viz. Panchayat Samittee, Zilla Parishad, Agricultural Department, Agricultural University, Research Stations etc. Krishi Seva Kendras. Most of the farmers purchase seed every season, from private agro service centers and private seed companies as well as Agril. Research Stations.				
Source of irrigation	Bore well, River and Rain water	Bore well, reservoir, River and Rain water	Bore well, reservoir, River and Rain water	Bore well, reservoir, River and Rain water	Shallow tube well, deep tube well, reservoir, River and Rain water
Scarcity of irrigation water	Yes (38.5% farmers)	Yes (50% farmers)	Yes (50% farmers)	Yes (53.3% farmers)	Yes (50% farmers)
Availability of fertilizers/pesticides	Available (76.9%)	Available (83.3%)	Available (95%)	Available (93.3%)	Available (100%)
Quality of fertile-zers/pesticides	Not Happy (23.1%)	Happy (100%)	Not Happy (15%)	Not Happy (6.7%)	Not Happy (7.1%)
Advisors to the farmers	Own decisions (100%); Dealers (53.8%); State Dept (69.2%)	Own decisions (75%); Dealers (16.7%); State Dept (75%); Univ (25%)	Own decisions (100%); Dealers (20%); State Dept (15%); Univ (25%)	Own decisions (40%); Dealers (20%); State Dept (53.3%); Univ (60%)	Own decisions (28.5%); State Dept (92.8%); Univ (85.7%)

G. Biotic stress and their management: District wise prevalence of different diseases and insect pests are presented in Table 14. During 2025, intensity of most of the diseases and insect pests were recorded in low to moderate except bacterial blight was high in different fields in Thane, Palghar and Raigad. The incidence of bacterial leaf blight disease was found severe particularly in lowland areas where crop submerged with water during heavy rainfall in Raigad, Thane Palghar and Ratnagiri districts of Konkan region. Most of the fields were observed infected with bacterial leaf blight disease in Raigad, Palghar and Thane districts, particularly on Minakshi, Samruddhi, Komal, Wada Kolam, Suvarna, Sarthi, Trupti, Trombay karjat

Kolam, Karat-2, Karat-4, Karat-9, Kranti, Jaya, Ratnagiri 7, Ratnagiri 8, Zordar and Modak, to the tune of 35-40% or more. Severity of false smut was found very less in some variety but severe in variety Rupali in Konkan region. Sheath rot incidence was in moderate range in all the districts of Konkan. Incidence of leaf blast was very low in Thane and Raigad and was moderate in Ratnagiri and Sindhudurg district. The incidence of caseworm was noticed on various varieties thoughout Konkan region after transplanting upto 15 %. There was low to medium incidence of stem borer noticed on varieties Sarthi, Karjat-3, Karat-5, Komal, Zordhar, wadakolam and Jaya during survey in most of the fields in all the districts. Gundibug and army worm incidence was noticed but it was low. Crabs and Rat incidence was low in every field in the region. The attack of leaf folder was also noticed in the some of the entries in the district but incidence was very low. Pesticides use by the farmers in the region was very low (Table 15). Very few farmers (7-10%) from Palghar, Raigad and Sindhudurg applied fungicides like propiconazole (1 ml/l) and carbendazim (1 gm/l) for brown spot and sheath rot diseases and insecticides like profenophos (1 ml/l), fipronil (4 kg/acre) for case worm and stem borer and dimethoate (1 ml/l) for BPH (Table 15).

Table 14: Prevalence of diseases and insect pests in Konkan region of Maharashtra during *Kharif'* 2025

District	Bl	ShBl	FS	BS	GD	ShR	BLB
Thane	L	-	L (1-3%)	-	-	L-M (3-12%)	M-S (10-35%)
Palghar	L	L (5-7%)	-	L-S (3-30%)	-	L-M (3-12%)	M
Raigad	L	L-M (8-10%)	T	L (4-5%)	M (8-15%)	L-M (3-12%)	L-M (3-25%)
Ratnagiri	M	M-S (25-30%)	L-S (3-30%)	L (2-3%)	M (15-20%)	L-M (5-20%)	L-M (8-20%
Sindhudurg	M	-	-	-	M (10-15%)	L-M (3-20%)	-

District	SB	LF	GB	AW	CW	CRB/ Rat
Thane	M (8-20%)	L	-	-	L-M (5-15%)*	L
Palghar	T (<2%)	-	-	-	L-M (6-10%)	L
Raigad	L-M (2-20%)	L	-	L	M (8-12%)	L
Ratnagiri	L	L	L	L	L-M (8-10%)	L
Sindhudurg	L	T (2%)	-	-	L	L

* At early stage after planting; Low to moderate (5-12%) intensity of leaf scald was recorded in few fields in Ratnagiri and Sindhudurg districts; moderate intensity (25%) of BPH was recorded in few fields in Ratnagiri (not wide spread)

H. Researchable issues: Among the biotic stresses, major problems in the region are bacterial blight, blast, false smut, sheath rot, sheath blight and stem borer and among abiotic stresses, submergence and flash flood are the major problems (Table 16). Farmers want varieties medium to long duration varieties with lodging resistance, varieties resistant/tolerant to above mentioned biotic constraints and bio-fortified varieties with higher zinc, high iron and low GI.

Table 15: Details of pest management

Details	Districts				
	Thane	Palghar	Raigad	Ratnagiri	Sindhudurg
% age farmers adopting plant protection	0%	8%	10%	0%	7%
Names of pesticides	Fungicides like propiconazole (1 ml/l) and carbendazim (1 gm/l) for brown spot and sheath rot diseases and insecticides like profenophos (1 ml/l), fipronil (4 kg/acre) for case worm and stem borer and dimethoate (1 ml/l) for BPH				
# of pesticide sprays	NA	1	1	NA	1
Mixing of pesticides before application	Nil	Nil	Nil	Nil	Nil
Zinc deficiency	Nil	Nil	Nil	Nil	Nil
Iron deficiency	Nil	Nil	Nil	Nil	Nil

Table 16: Researchable issues

Parameters/Issues	Thane	Palghar	Raigad	Ratnagiri	Sindhudurg
Rice ecology in your area	Rainfed lowland				
Rice cultivation only in Kharif or both Kharif and Rabi	Kharif				
	>20 years in all the districts except about 23-35% farmers in Thane and Ratnagiri have 10-20 years of experience				
Number of years of experience in rice farming	10-20 Years (77%); >20 Years (23%)	5-10 Years (33.3%); 10-20 Years (66.7%)	10-20 Years (95%); >20 Years (5%)	5-10 years (13.3%); 10-20 Years (73.3%); >20 Years (13.3%)	10-20 Years (93%); <5 Years (7%)
Main biotic constraints (diseases) in your area according to you	Main: Bacterial blight and sheath rot; others: leaf blast, sheath blight and false smut				
Extent of disease damage	10-25%	<10%	10-25%	10-25%	10-25%
Main biotic constraints (Insect pests) in your area according to you	Stem borer and case worm				
Extent of insect pest damage	Below 10%				
Main abiotic constrains in your area according to you	Submergence (especially during maturity stage)/flash flood				
Production constraints in your area according to you	Scarcity of agricultural labours, lack of irrigation facilities and lack of mechanization				
Irrigation facilities in your area	Lacking	Lacking	Lacking	lacking	Lacking in some areas
Normally how many years it takes to change the rice variety	< 5 years				
Any other rice production issues in your area which the rice scientists need to address	-				
What is urgently required in your area as far as rice varieties are concerned					
Duration	Medium to long duration HYVs having lodging resistance				
Biotic stress resistance	Varieties having resistance to BLB, sheath rot, stem borer and false smut				
Abiotic stress resistance	Varieties tolerant to submergence and drought				
Preferred grain quality	MS grain rice varieties				
Nutritional quality	Varieties with high Zn and iron and low GI				

Odisha-2025-26 (Cuttack)

Districts surveyed: *Bhadrak, Kalahandi, Kandhamal* and *Sambalpur*

Particulars of survey

District	Blocks	Villages
Bhadrak	Dhamnagar	Dalanga
Kalahandi	Biswanathapur, Bhabanipatana and Lanjigarh	Bakatapur (19.83153/83.42819), Dangiripada (20.060155/83.110323), Kalaguda (20.40010571/ 83.1208680), Kalam (19.980859/ 83.017622), Pastipada 20.820859/83.110625), Matinga Padar (20.027084/83.11279) and Bishwanathpur (19.820859/83.4282)
Kandhamal	Raikia	Lamungia, Gandrijia, Mandakia, Bhaluapada, Damaguda, Barepanga, Gardingia, Kandabada, Ghatalpanga, Jasinaju, Beredikia, Manikeswar, Bedaguba and Gamanadi
Sambalpur	Dhankouda and Maneswar	Fatabahal and Takba

Widely prevalent rice varieties

District	Varieties
Bhadrak	Swarna, CR 1009, CR Dhan 1017, Kalachampa and others
Kalahandi	Puja, Swarna, Jamuna, Lakshmi Gold, Konark, MTU 1001, Rani Dhan and Lalat and others
Kandhamal	Jamuna, Swarna, Puja and others
Sambalpur	Kalachampa, Swarna, CR 1009, CR 1017, CR Dhan 507 and others

Production oriented survey was conducted in 4 rice growing districts of Odisha during kharif season of 2025. A total of 24 villages were surveyed and during the survey a total of 99 farmers were contacted. Majority of the fields surveyed were either in irrigated ecosystem or in rainfed lowland ecosystem. Overall, weather conditions were favorable for rice cultivation. Common crop rotation practices followed by the farmers were rice-green gram, rice-black gram, rice-mustard, rice-rice and others. Commonly cultivated rice varieties were Puja, Swarna, Jamuna, Lakshmi Gold, Konark, MTU 1001, Rani Dhan and Lalat and others. Some farmers cultivated local rice variety Kalachampa. Most of the plantings were done in July to August. Average seed rate was 50-60 kg/ha. Seed treatment before sowing was not common among the farmers. Most of the farmers applied FYM or vermicompost both in nursery and main fields. In the main fields they applied about 80 kg N/ha, 40-50 kg P_2O_5/ha and 40 kg K_2O/ha. Intensity of common weeds was low to medium and hand weeding along or in combination with herbicide application was common practice for weed management. Implements like tractor, cultivator, sprayers and combined harvesters were used by the farmers mostly on hire basis. Canal was the main source of irrigation and all of them told about the scarcity of irrigation water. Among the biotic constraints, sheath blight, brown spot, stem borer, green leaf hoppers and grasshoppers were recorded in higher intensities in some places. Details of plant protection measures by the farmers were not available.

District wise observations

Bhadrak: Survey was conducted in one village in this district when most of the fields were in tillering stage. A total of 32 farmers were contacted during the survey. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favorable for rice cultivation. Common crop rotation practices followed by the farmers were rice-green gram, rice-black gram, rice-mustard, rice-rice and others. Widely predominant rice varieties in the district were Swarna, CR 1009, CR Dhan 1017, Kalachampa and others. Planting was done mainly during July to August. Most of the farmers contacted were from low-income group. Our cooperator reported that the farmers used both rice and wheat. Mostly they used parboiled rice. Average seed rate was 50 kg/ha and none of the farmers contacted treated the seeds before sowing. Most of the farmers contacted told that they applied FYM in the nursery and all of them told that they did not apply any chemical fertilizers in the nursery. In the main fields they applied about 80 kg N/ha. Information regarding other nutrients were not available. Some applied zinc sulphate. All the farmers told that they applied FYM in the main fields. Mostly farmers followed random method of planting where plant population per unit area was not maintained. Intensity of common weeds in and around rice fields was low to medium. Hand weeding was common among the farmers. Only few applied non-selective herbicide like paraquat before planting. Implements like tractor, cultivator, sprayers and combined harvesters were used by the farmers mostly on hire basis. The farmers told that they purchased half of their seeds for sowing. Canal was the main source of irrigation and all of them told about the scarcity of irrigation water. Diesel was the main source of power. Majority of the farmers expressed that fertilizers were not available in time. State department officials were the main advisors to the farmers. Diseases like blast, neck blast, sheath blight, brown spot, sheath rot, leaf scald and bacterial blight were recorded in low to moderate intensities. Insect pests like leaf folder, BPH, WBPH, green leaf hopper, and rice bugs were also recorded in low to moderate intensities. Detailed information regarding pesticide use was not available. Many farmers applied chlorpyriphos for management of insect pests. Major biotic problems faced by the farmers in the region were leaf blast, sheath blight and bacterial blight among the diseases and stem borer, leaf folder, BPH and WBPH among the insects. Among the abiotic problems, flash flood was the main concern. Farmers needed varieties suitable for DSR and varieties having tolerance to above mentioned stresses.

Kalahandi: Production oriented survey was conducted in 7 villages (in 3 blocks) in this district when the crops were in tillering to heading stage. A total of 20 farmers were contacted during the survey. Majority (>90%) of the fields surveyed were under rainfed lowland ecosystem and in general, weather conditions were favorable for rice cultivation. Major crop rotations followed by the farmers were rice-rice, rice-green gram and others. Commonly cultivated rice varieties were Puja, Swarna, Jamuna, Lakshmi Gold, Konark, MTU 1001, Rani Dhan and Lalat. Average rice yield ranged from 3000-4000 kg/ha. Most of the plantings were done in the month of July and August. Almost all the farmers contacted were from medium income group and their per capita monthly consumption of rice was about 10-15 kg. All the farmers expressed that they consumed only rice and they used both polished and parboiled rice for consumption. Average seed rate was 50 kg/ha and none of the farmers contacted treated the seeds before sowing. About 80% of the farmers contacted told that they applied FYM in the nursery and all of them told that they applied chemical fertilizers like urea (10-15 kg/bigha; 1 bigha= ~1333 m^2 area) and DAP (10-15 kg/bigha) in the nursery. Some also applied MOP in the nursery. In the main fields they applied about 80 kg N/ha, 40-50 kg P_2O_5/ha and 40 kg K_2O/ha. About 75% of the farmers told that they applied FYM (mainly) or vermicompost in the main fields. Many farmers followed direct sowing. Intensity of common weeds in and around rice fields was low

to medium. Hand weeding was common among the farmers. Major needs of the farmers in the region were improvement in irrigation facilities and good broad-spectrum herbicides. Implements like tractor, cultivator, sprayers and combined harvesters were used by the farmers mostly on hire basis. The farmers told that they purchased part of their seed requirement for sowing and rest used from previous year's harvest. Canal was the main source of irrigation and many farmers expressed about the scarcity of irrigation water. In general, fertilizers and pesticides were available in time and they were happy with their quality also. State department officials were the main advisors to the farmers. Among the diseases, sheath blight and brown spot were recorded in moderate to severe intensities. Other diseases like blast and bacterial blight were recorded in moderate intensities. Among the insect pests, stem borer, green leaf hopper and grasshoppers were recorded in high intensity in some fields. Other insects like gall midge and BPH were recorded in moderate intensitie. Detailed information regarding pesticide use was not available. Major biotic problems faced by the farmers in the region were leaf blast, sheath blight, brown spot and bacterial blight among the diseases and stem borer, BPH and WBPH among the insects. Among the abiotic problems, drought was the main concern. Farmers needed varieties suitable for DSR and varieties having tolerance to above mentioned stresses.

Kandhamal: Production oriented survey was conducted in 14 villages in Raikia block in this district when the crops were in tillering to milk stage. A total of 17 farmers were contacted during the survey. Majority of the fields surveyed were under rainfed low land ecosystem while some were under upland situation. In about 50% of the places visited, there were incidences of prolonged dryness or drought like conditions. Rice followed by rice was the main cropping sequence. Average rice yield ranged from 3000-3800 kg/ha. Almost all the farmers contacted were from medium income group and their per capita monthly consumption of rice was about 10-15 kg. All the farmers expressed that they consumed only rice and they used both polished and parboiled rice for consumption. Average seed rate was 50 kg/ha and none of the farmers contacted treated the seeds before sowing. About 94% of the farmers contacted told that they applied FYM in the nursery and about 82% of them told that they applied chemical fertilizers like urea (10-15 kg/bigha; 1 bigha= ~1333 m^2 area) and DAP (10-15 kg/bigha) in the nursery. In the main fields they applied about 80 kg N/ha, 40-50 kg P_2O_5/ha and 40 kg K_2O/ha. All the farmers told that they applied FYM in the main fields. Majority of the farmers followed direct sowing. Intensity of common weeds in and around rice fields was medium. There were incidences of wild rice (Balunga in local language) like *Oryza perennis* or *Oryza rufipogon* in some of the places visited. Most of the farmers followed hand weeding along with herbicide application. Major needs of the farmers in the region were improvement in irrigation facilities and good broad spectrum herbicides. Implements like tractor, cultivator, indigenous plough, sprayers and other indigenous implement were used by the farmers. The farmers told that they purchased part of their seed requirement for sowing and rest used from previous year's harvest. Canal was the main source of irrigation. Majority of the farmers contacted told that fertilizers and pesticides were not available in time. Private dealers and officials from state department of agriculture were the main advisors to the farmers. Among the diseases, sheath blight was recorded in high intensity in some of the fields. Other diseases like blast, brown spot, sheath rot and bacterial blight were recorded in low to moderate intensities. Among the insect pests, stem borer, leaf folder, BPH, gall midge, green leaf hoppers and grasshoppers were recorded in low to moderate intensities. Detailed information regarding pesticide use was not available. Major biotic problems faced by the farmers in the region were leaf blast, sheath blight and bacterial blight among the diseases and stem borer, leaf folder, BPH and WBPH among the insects. Among the abiotic problems, drought was the main concern. Farmers needed varieties suitable for DSR and varieties having tolerance to above mentioned stresses.

Sambalpur: Survey was conducted in two villages in this district when the crops were in tillering stage. A total of 30 farmers were contacted during the survey. The fields surveyed were under irrigated ecosystem and in general, weather conditions were favorable for rice cultivation. Common cropping sequences followed by the farmers were rice-mustard, rice green gram, rice-black gram, rice-rice and others. Widely prevalent rice varieties in the district were Kalachampa, Swarna, CR 1009, CR 1017, CR Dhan 507 and others. Almost all the farmers contacted were from low income group and their per capita monthly consumption of rice was about 10-15 kg. All the farmers expressed that they consumed both rice and wheat and they used both polished and parboiled rice for consumption. Seed treatment practices were not common among the farmers. Almost all the farmers told that they applied organic manure like cowdung and vermicompost in the nursery. Application of chemical fertilizers in the nursery was not common among the farmers. However, in the main fields, chemical fertilizers were applied. However, their dosages are not available. All of them applied FYM in the main fields at the time of land preparation. Intensity of common weeds in and around rice fields was low to medium. Common weeds encountered were *Cyperus rotundus*, *Echinochloa* spp. and others. Most of the farmers followed hand weeding along with herbicide application. However, details of herbicides applied are not available except some farmers applied non-selective herbicide Paraquat before sowing. Implements like tractor, cultivator, indigenous plough, sprayers and other indigenous implement were used by the farmers. Many farmers used tractor and combined harvester on hire basis. The farmers told that they purchased part of their seed requirement for sowing and rest used from previous year's harvest. Canal was the main source of irrigation and most of the farmers expressed about the scarcity of irrigation water. Majority of the farmers contacted told that fertilizers and pesticides were not available in time. Officials from state department of agriculture were the main advisors to the farmers. Diseases like blast, neck blast, sheath blight, brown spot, sheath rot, leaf scald, false smut, bacterial blight and rice tungro disease were observed in low to moderate intensities. Among the insect pests, incidence of green leaf hoppers was more in some fields. Other insect pests were recorded in low to moderate intensities. Insceticides like chlorpyriphos was commonly applied by the farmers. Major biotic problems faced by the farmers in the region were leaf blast among the diseases and BPH and WBPH among the insects. Among the abiotic problems, flash flood was the main concern. Farmers needed varieties suitable for DSR and varieties having tolerance to above mentioned stresses.

Prevalence of diseases and insect pests in different districts of Odisha in Kharif' 2025

Districts	Diseases								
	Bl	**NBl**	**ShBl**	**BS**	**ShR**	**LS**	**FS**	**BLB**	**RTD**
Bhadrak	L-M (5-10%)	L (5%)	L (5%)	L (5%)	L (5%)	L (5%)		M (10%)	
Kalahandi	M (20%)		M-S (20-30%)	M-S (20-30%)				M (20%)	
Kandhamal	L		M-S (20-30%)	L	L			M (20%)	
Sambalpur	M (10-15%)	L (5%)	L (5%)	L-M (5-20%)	T (1-2%)	L (5%)	L (5%)	M (10%)	L-M (5-10%)

Districts	Insect pests							
	SB	**LF**	**BPH**	**WBPH**	**GM**	**GLH**	**RB**	**GH**
Bhadrak	L	L (5%)	M (10%)	L (5%)		L (5%)	L (5%)	
Kalahandi	M-S (10-30%)		M (10-20%)		M (10-20%)	M-S (20-30%)		M-S (20-40%)
Kandhamal	M (10-20%)	L	L-M (5-10%)		L	M (10-20%)		L
Sambalpur	L-M (5-10%)	L (5%)	M (10-20%)	L (5%)	L (5%)	L-S (5-30%)	L	L

Puducherry-2025-26 (Karaikal)

District surveyed: *Karaikal*

Particulars of survey

District	Communes	Villages (latitude/longitude)
Karaikal	Neravy, Thirunallar, Nedungadu, Thirumalairayan Pattinam and Kottucherry	Neravy (10.893831/79.807847), Surakudi, Melaponbethi (10.9741333/79.777376), Nedungadu (10.974133/79.777376; 10.970282/79.76344), Kottucherry, Vizhidhiyur (10.899223/79.764061; 10.993876/79.815525), Ambagarathur (10.962539/79.728558; 10.962563/79.728575), Agalankannu (10.914923/79.767684; 10.921698/79.74643), Kurumbagaram (10.974133/79.777376), Kaliyanoar, Thennakudy (10.923555/79.746593), Pathakudi (10.9523/79.7686; 10.974133/79.777376), Nallazhundur (10.921698/79.74643), Thennakudy (10.923555/79.746593; 10.91756/79.747213), Surakkudy (10.4490/79.7777), Kezhaponbethi (10.974133/79.77376), Melakasakudi, Annavasal, Konnakavali (10.993876/79.815525), Nallambal, T.R. Pattinam (10.8658/79.8325), Varichikudi (10.993876/79.815525; 10.988598/79.817909), Ponbethy (10.974133/79.77376), Thirunallar (10.9261/79.7920), Karukkankudy (11.1225/79.66726), V. Kottapadi (10.923555/79.746593), Nedubethi (10.974133/79.797376) and Maadhur (10.9327/79.8319)

Widely cultivated rice varieties

Kharif season: ADT 45, IR 20 and CO 51 **Rabi season:** ADT36, ADT 38, ADT 39, ADT 43, ADT 45, ADT 46, ADT 51, CO-51, BPT 5204, CR 1009 (Ponmani), Improved White Ponni, IR 20, KKL (R) 2, Poongar, Karupu Kavuni, KKLR 2, Seeraga Samba, ADT 54, TKM 9 and TKM 13

In Karaikal district, rice cultivation under the Kuruvai season (June–July) covered an extent of 1,049.78 hectares, with a total production of 3,642.970 metric tonnes, registering an average productivity of 3.70 t/ha during 2025-26. The Samba season (August–January) accounted for a larger cultivated area of 3,524.82 hectares. Additionally, the Thaladi crop (September–October) was raised over an area of 976 hectares during the survey period. A comprehensive production-oriented survey was conducted in 15 revenue villages across the district during the period from August 2025 to February 2026.The objective is to gather detailed information on rice-based farming systems, including cropping patterns, irrigation sources, varietal preferences, production constraints, and management practices adopted by farmers. The field survey was conducted in Neravy, Thirunallar, Nedungadu, Thirumalairayan Pattinam and Kottucherry communes of Karaikal district covering a total of twenty eight villages, namely Neravy, Surakudi, Melaponbethi, Nedungadu, Kottucherry, Vizhidhiyur, Ambagarathur, Agalankannu, Kurumbagaram, Kaliyanoar, Thennakudy, Pathakudi, Nallazhundur, Thennakudy, Surakkudy,

Kezhaponbethi, Melakasakudi, Annavasal, Konnakavali, Nallambal, T.R. Pattinam, Varichikudi, Ponbethy, Thirunallar, Karukkankudy, V. Kottapadi, Nedubethi and Maadhur. A total of 100 farmers belonging to different landholding categories, including marginal, small, and large farmers, were interviewed.

Varieties and cropping systems: During Kharif season, farmers predominantly cultivated short-duration rice varieties such as ADT 45, IR 20 and CO 51. In the subsequent Rabi season, a wider range of varieties were grown under Cauvery-fed irrigation, such as ADT36, ADT 38, ADT 39, ADT 43, ADT 45, ADT 46, ADT 51, CO 51, BPT 5204, CR 1009 (Ponmani), Improved White Ponni, IR 20, KKL (R) 2, TKM 9 and TKM 13. Among these, CO 51, IR 20 and ADT 46 emerged as the most favoured variety due to its strong market demand, and higher profitability. In contrast, traditional rice cultivars such as Karuppu Kavuni, Poongar and Seeraga Samba were grown by a limited number of farmers mainly for household consumption rather than for commercial sale. The survey generated valuable ground- level insights into the existing production scenario and identified scope for enhancing productivity and sustainability in the region. Karaikal district, situated in the Union Territory of Puducherry, is primarily an agricultural region with a rice-centric cropping pattern**.** The predominant cropping sequences include Rice- Cotton, Rice-Pulse and Rice-Rice. Rice is the primary crop of Karaikal region grown during Kharif (June to September) and Rabi season (August to January). Cotton and Pulses such as green gram or black gram were cultivated as rice fallow or summer crop (January to March) by utilizing the residual moisture in the field. The survey revealed that rice cultivation in Karaikal district primarily relied on canal irrigation from the Cauvery River, farm ponds and groundwater resources like bore wells. More than 90% of the farmers contacted were from medium income group and about 70% of them told that they consumed only rice. Per capita rice consumption was 5-10 kg/month. Majority of the farmers said that they preferred fine grain and parboiled rice varieties. In general, there was no change in their food habit.

Seed Source, Seed Rate and Methods of Planting: The majority of farmers procured seeds from local agro service centres, private input dealers, and seed suppliers in nearby districts of Tamil Nadu. A limited number of farmers used their own saved seeds, particularly for commonly cultivated and locally adapted varieties. In a few instances, quality seeds were also sourced from state seed farm and research institutes. Direct seeding was the predominant method of rice cultivation in the surveyed area, while only a very small proportion of farmers adopted transplanting. The preference for direct seeding was mainly due to acute labour shortage during peak operations, reduced cost of cultivation, and the convenience of skipping nursery raising and transplanting. Transplanting was practiced only by a few farmers who aimed for better crop establishment and weed management, but its adoption was minimal compared to direct seeding. The seed rate varied depending on the method of planting followed by the farmers. Under direct seeding, farmers generally used a higher seed rate ranging from 65 to 75 kg per hectare to ensure adequate plant population. In contrast, the seed rate for transplanted rice ranged from 40 to 50 kg per hectare. Minor variations in seed rate were observed based on variety, seed availability and farmers' conventional practices.

Fertilizer application: Farmers applied both inorganic fertilizers and organic manures for crop nutrition, though the application levels varied across locations and management practices. Fertilizers were generally applied in split doses at basal, tillering and panicle initiation stages to support better crop growth and yield. The commonly adopted nutrient range observed in the surveyed fields is given below:

Crop establishment method	N (Kg/ha)	P_2O_5 (Kg/ha)	K_2O (Kg/ha)
Transplanted: Nursery	12-20	15-20	-
Transplanted: Main field	100-150	60-100	60-120
Direct seeded rice	100-162	60-120	60-120

In addition to chemical fertilizers, organic inputs such as farmyard manure (FYM) @ 1.5–2.0 t/ha and neem cake @ 40 kg/ha were applied by some farmers to enhance soil fertility and nutrient availability. Farmers commonly applied neem cake and neem oil along with urea during fertilizer application, which helps in improving nitrogen use efficiency and reducing nutrient losses.

Weeds and their management: Weed flora in the rice fields comprised a mixture of grasses, sedges and broad-leaved weeds, which were widely distributed across the surveyed locations. The dominant grassy weeds observed were *Leptochloa chinensis*, *Echinochloa colona*, *Echinochloa crus-galli* and *Panicum repens*. Among the sedges, *Cyperus rotundus*, *Cyperus iria*, *Cyperus difformis* and *Fimbristylis miliacea* were frequently recorded in the fields. In addition, several broad-leaved weeds such as *Marsilea quadrifoliata*, *Eclipta alba*, *Ludwigia parviflora* and *Sphaeranthus indicus* were also prevalent and acted as major competitors with the rice crop for nutrients, moisture and space in most of the surveyed areas. Farmers in the Karaikal region adopt both physical and chemical methods for effective weed management in rice fields. However, due to acute labour scarcity and higher labour charges, manual weeding is practiced only in a few fields. In cases where labour is available, farmers undertake hand weeding once or twice, usually around 25–30 and 45–50 days after sowing, to reduce weed competition during critical crop growth stages. Additionally, farmers widely rely on herbicides for weed control, particularly under direct-seeded rice conditions. The most commonly used herbicide in the region is Florpyrauxifen-benzyl 2.13% + Cyhalofop-butyl 10.64% EC (Novlect) for managing mixed weed flora. Other herbicides such as triafamone 20% + ethoxysulfuron 10% WG (Council active), 2,4-D amine salt (Green D), fenoxaprop-p-ethyl 6.7% EC (Rice star) and bispyribac sodium 10% SC (Nominee Gold) are also used by farmers depending on the weed intensity and composition. The herbicides commonly used by the farmers in the Karaikal region are presented in the table below.

Herbicides commonly used by the farmers
Post-emergence herbicides

Chemical name of the herbicide	Trade name	Dosage / ac
Florpyrauxifen-benzyl 2.13 % + Cyhalofop-butyl 10.64 % EC	Novlect	500 ml
Triafamone 20% + Ethoxysulfuron 10% WG	Council active	80 g
2, 4 D amine salt	Green D	400 – 600 ml
Fenoxaprop-p-ethyl 6.7 % EC	Rice star	300-350 ml
Bispyribac Sodium 10% SC	Nominee gold	80 – 100 ml

Insect pests and their management
Major pests observed during the survey were yellow stem borer, leaf folder, and brown planthopper at various locations, while minor pests such as grasshoppers and mites were also recorded during the survey period. Beneficial insects such as coccinellid beetles, dragonflies, damselflies, praying mantis and spiders were observed, indicating the presence of natural biological control agents in the rice ecosystem. The incidence of yellow stem borer and leaf folder

were predominant pest in both Kuruvai and Samba, suggesting their importance as key pests in the region. In Kuruvai, stem borer incidence was observed in CO 51 (13.86 %) and ADT 45 (12.69 %), while 10.00% leaf folder incidence was observed in the CO 51 variety. During samba season, stem borer incidence was observed in BPT 5204 (11.20 %) and IR 20 (8.54 %; leaf folder incidence was observed in BPT 5204 (17.14 %), ADT 46 (10.02 %) and IR 20 (8.26 %), BPH was observed @ 7 per hill in ADT 45 only in Nedungadu village. Furthermore, incidence of mites (7.5%) was observed in CO 51, indicating varietal susceptibility differences. Farmers generally adopted one to two rounds of insecticide spraying as a routine pest management practice in the surveyed fields. Rodent damage was also observed in BPT 5204, highlighting the presence of vertebrate pests alongside insect pests. The insecticides used by farmers for managing pest problems in rice are listed below.

Target Pest	**Name of the pesticide**	**Dosage / ac**
Leaf folder and Stem borer	Fipronil 5 % SC	400 ml
	Chlorantraniliprole 18.5 % SC	60 ml
	Fipronil 15 % + chlorantraniliprole 5 % SC	200 ml
	Chlorantraniliprole 0.35 % + Fipronil 0.35 % GR	4 kg
	Profenophos 50 % EC	600 ml
	Monocrotophos 36 % SL	500 ml
	Isocycloseram 18.1% SC	40 ml
Brown plant hopper	Pymetrozine 50 WG	120 g
	Bifenthrin 10 % EC	200 ml
Mite	Propargite 57% EC	400ml

Diseases and their management: The major diseases observed during the survey were blast, brown spot, grain discoloration, false smut, sheath rot and bacterial leaf blight at different locations, while the severity and distribution varied across varieties, and crop growth stages. The occurrence of the diseases was observed only during samba season. The occurrence of multiple diseases in the same field indicates the influence of varietal susceptibility and favourable climatic conditions for pathogen development. Among the varieties assessed, ADT 46 recorded the highest mean brown spot severity (36.38%), followed by IR 20 (28.38%), CO 51 (26.66%), and BPT 5204 (21.94%), while ADT 51 showed comparatively lower severity (11.11%). Sheath rot incidence was maximum in CR 1009 (20.00%) and no incidence in IR 50. The Improved white Ponni recorded 15.30% leaf blast incidence. Grain discoloration was observed in almost all varieties, though with varying intensity. The highest severity was recorded in ADT 46 (23.33%), followed by CR 1009 (20.00%), IR 20 (15.90%), ADT 51 (13.33%) and BPT 5204 (12.20%). The findings indicate that ADT 46 was comparatively more prone to both brown spot and grain discoloration. False smut incidence was comparatively low (3.33%) than the previous year and observed only in ADT 46. Bacterial Leaf Blight (26.66%) was also recorded in ADT 46, indicating its susceptibility to multiple diseases. Farmers generally relied on routine fungicide applications and seed treatment practices for disease management, along with the cultivation of locally preferred varieties. However, the adoption of integrated disease management practices was limited, indicating the need for awareness on resistant varieties, timely prophylactic sprays, and proper crop management to effectively minimize disease incidence and yield losses in rice ecosystems. The fungicides used by the farmers are

Name of the fungicide	Trade Name	Target disease	Dosage/ ac
Mancozeb 75% WP	Dithane M-45	Brown spot	400 g
Carbendazim 50%WP	Bavistin	Grain discoloration	200 g
Hexaconazole 5% SC	Contaf Plus	Sheath rot, Grain discoloration	400ml
Propiconazole 25%EC	Tilt	Blast, Grain discoloration	200ml
Copper Hydroxide 46.1%	Kocide	Bacterial Leaf Blight	500g
picoxstrastrobin + tricyclazole	Galileo	Leaf and neck blast	2 ml/l

Problems faced by the farmers:

- **Irrigation Water Scarcity During Kharif Season:** Water scarcity remained a critical concern during kharif. Since the district mainly receives rainfall during the North-East monsoon (October–December). To cope with this shortage, some farmers relied on government- installed borewells by paying nominal hourly charges, while others purchased water from private borewell owners at significantly higher rates. This increased the cost of cultivation and algal bloom in many fields.
- **Climate Variability and Flood-Induced Crop Losses:** Erratic and Unseasonal heavy rains led to temporary flooding in fields, which negatively affected crop growth and reduced productivity. Crop submergence due to heavy rains was another recurring issue. Prolonged water stagnation in fields led to reduced plant vigor and yield losses. Improved drainage facilities and the adoption of flood-tolerant rice varieties could help address this problem.
- **Agricultural Labour Shortage and Rising Dependence on Herbicides:** Labour shortage continued to affect farm operations, particularly during peak activities such as transplanting and harvesting. Migration of rural workers to urban areas in search of better employment, along with the engagement of labourers in Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) works, further reduced the availability of agricultural labour. As a result, several farmers shifted to direct seeding of rice. However, this method also demands labour for weeding, creating additional difficulties. Although there is growing interest in organic farming, labour scarcity has compelled many farmers to depend on chemical herbicides for weed control.
- **Poor Maintenance and Obstruction of Irrigation Channels:** Poor maintenance of irrigation channels further aggravated water management issues. Many channels were either silted up or obstructed due to encroachments, restricting the smooth flow of irrigation water to paddy fields. Regular desilting and restoration are needed to ensure efficient water distribution.
- **Non-Functional Borewells and Irrigation Uncertainty:** Non-functional borewells added to irrigation constraints. A notable proportion of borewells were found to be inoperative, which created water stress during critical stages of crop growth. Regular repair and maintenance are essential to improve their reliability.
- **Crop Damage by Stray and Wild Animals:** Crop damage by stray and wild animals such as rats, cattle, buffaloes, and peacocks were frequently observed. These animals caused losses by feeding on crops, trampling plants, and uprooting seedlings, increasing the need for protective measures like fencing and pest management.
- **Delayed Access to Harvesting Machinery:** Limited access to harvesting machinery caused delays during the harvest season. Non-availability of combine harvesters at the right

time resulted in crop losses due to grain shattering and bird damage in over-mature fields.

- **Lack of Government Procurement Centres and Market Access:** Marketing challenges persisted during the year. In Puducherry, the absence of dedicated government procurement centres for paddy and other produce has made it difficult for farmers to sell directly at assured prices. As a result, most farmers depend on private traders and middlemen, who often offer lower rates than the prevailing market value. This lack of organized and transparent local marketing facilities continues to reduce farmers' profit margins and bargaining power.

Needs of the farmers:

- Timely and adequate release of Cauvery water to meet irrigation requirements in kharif.
- Access to the government-supported borewell infrastructure to improve irrigation during kharif.
- Supply of quality agricultural inputs through state departments at subsidized rates.
- Allowing farmers to determine the sale price of their produce.
- Availability of harvester–cum–threshers, through government agencies on a rental basis at concessional charges.
- Herbicide-tolerant rice varieties suitable for local conditions.
- Government-backed drone services for efficient and timely pesticide application.
- Financial support and subsidies for Protective fencing to minimize crop losses caused by grazing and wild animals.
- Implementation of the Minimum Support Price (MSP) system to guarantee remunerative prices for agricultural produce.
- Strengthen local marketing infrastructure and regulated market channels to enhance fair price realization.

Highlights of the survey:

- The survey covered 15 villages across five communes of Karaikal district, involving 100 farmers representing different landholding categories.
- Direct-seeded rice was the predominant method of cultivation, largely driven by labour scarcity and reduced cost of establishment.
- The ADT 45, IR 20 and CO 51 were cultivated by the farmers during Kuruvai season using borewell, while ADT36, ADT 38, ADT 39, ADT 43, ADT 45, ADT 46, ADT 51, CO 51, BPT 5204,
- CR 1009 (Ponmani), Improved White Ponni, IR 20, KKL (R) 2, TKM 9 and TKM 13 and land races like Karuppu Kavuni, Poongar and Seeraga Samba were grown during Samba season under Cauvery-fed irrigation.
- CO 51, IR 20 and ADT 46 emerged as the most favoured variety due to strong market demand, and higher profitability.
- Fertilizer application practices varied across fields, with most farmers applying 100–162 kg N/ha along with recommended phosphorus and potassium doses limited use of organic inputs. Few farmers apply neem cake along with urea @ 40 kg/ha.
- Grassy weeds like *Leptochloa chinensis*, *Echinochloa colona*, *Echinochloa crus-galli* and *Panicum repens*; sedges like *Cyperus rotundus*, *Cyperus iria*, *Cyperus difformis* and *Fimbristylis miliacea* and broad-leaved weeds such as *Marsilea quadrifoliata*, *Eclipta alba*, *Ludwigia parviflora* and *Sphaeranthus indicus* were prevalent in most of the surveyed areas.

- Farmers employ both mechanical and chemical methods to manage weeds. Hand weeding is done twice on 25 -30 and 45 – 50 DAT by hiring 6-7 labourers per acre. The Florpyrauxifen- benzyl 2.13% + Cyhalofop-butyl 10.64% EC (Novlect), triafamone 20% + ethoxysulfuron 10% WG (Council active), 2,4-D amine salt (Green D), fenoxaprop-p-ethyl 6.7% EC (Ricestar) and bispyribac sodium 10% SC (Nominee Gold) were the weedicides used by the farmers depending on the weed intensity and composition.
- Yellow stem borer, leaf folder and brown planthopper were the major insect pests recorded, while natural enemies such as coccinellids and spiders were also present in the ecosystem. The Co 51 and BPT 5204 respectively recorded maximum yellow stem borer incidence during Kuruvai and Samba. The maximum leaf folder incidence was observed in ADT 45 and BPT 5204 during Kuruvai and Samba respectively
- Blast, brown spot, grain discoloration, false smut, sheath rot and bacterial leaf blight were observed during the survey period, with high severity in ADT 46. Brown spot was the most prevalent disease across varieties, grain discoloration and bacterial leaf blight were also recorded in notable levels. Sheath rot, blast and false smut were observed at relatively lower severity levels.
- Farmers largely depended on chemicals for pest and disease management, with limited adoption of integrated approaches.
- Mechanical harvesting by harvester cum thresher is adopted by the farmers due to acute shortage of labours.
- Key production constraints identified included irrigation water shortage during kharif, climate-induced flooding, labour scarcity, malfunctioning borewells, delayed machinery access and lack of government procurement facilities.

Punjab-Ludhiana-2025-26

Districts surveyed: *Ludhiana, Malerkotla, Jallandhar, Kapurthala, Patiala, Sangrur, Moga, Barnala, Ferozepur, Faridkot, Fatehgarh Sahib, Rupnagar, Muktsar, Bathinda, Mansa, SBS Nagar, Hoshiarpur, Gurdaspur, Tarn Taran* and *Amritsar*

Table 1: Particulars of survey

District	Blocks	Villages
Ludhiana	Machiwara, Samarla,	Payal, Hambra, Alamgir, Garhi Bet, Balian, Bagli Kalan, Ottalan, Bhourla, Machiwara, Jandiali, Neelon Kalan and Bardhalan
Malerkotla		Jarg, Bagrian, Bhumsi, Mohampura, Uppal Kheri, Upoki, Tolewal, Banvora and Akbarpur
Jallandhar	Noormahal	Maliwal, Bilga, Sangwal, Shakarpur, Nawa Pind, Jallowal and Haripur
Kapurthala	Sultapur Lodhi	Nasirewal, Brindhan, Kala Sanghian, Sheikarpur and Dogranwala
Patiala		Ranbirpura, Binaheri, Lohara, Binaheri, Nabha Mandi, Kabrala, KVK Patiala-Rauni and Reetkheri
Sangrur	Sunam and Lehragaga	Longowal, Patran, Dolewal, Sangatpura, Bhadhalwad and Gehlan
Moga		KVK Moga, Samadh Bhai, Gajjanwala, Drolli Bhai, Nawan Chuhar Chak and Nathu Wala Jadid
Barnala		Daneke, Tapa and Ugoke
Ferozepur		Mudki, Kau Singh Wala, Rotal Rohi, Kasoana, Mina Singh Wala, KVK Ferozepur, Alipur, Ghall Khurd and Lalle
Faridkot		Kotakpura
Fatehgarh Sahib		Anaitpura, Bassi Pathana, Sadomajra, Rupalheri, Chunni Kalan, Pir Jain and Sirhind
Rupnagar		Roopnagar, Bela, Sukhrampur, Behbalpur and Rukali Mangarh
Muktsar	Muktsar,	Bhullar, Doda,
Bathinda	Talwadi Sabo	Talwadi Sabo, Kaliyan Sukha, Jajjal, Kot Shamer, Rampura Phool and Mahi Mangal
Mansa	Budhlada	Jalwera, Musa and Biroke Kalan
SBS Nagar		Bharta Khurd, Mehrampur and Pallian Khurd, Garcha, Birowal, Thathiala and Soheta
Hoshiarpur		Khanpur
Gurdaspur		Langar Kot and Purana Shalla
Tarn Taran		Khem Karan and Tarn Taran (Local)
Amritsar		Rajasansi and Attari Wagha Border

Production oriented survey was conducted in 20 districts of Punjab viz., Ludhiana, Malerkotla, Jallandhar, Kapurthala, Patiala, Sangrur, Moga, Barnala, Ferozepur, Faridkot, Fatehgarh Sahib, Rupnagar, Muktsar, Bathinda, Mansa, SBS Nagar, Hoshiarpur, Gurdaspur, Tarn Taran and Amritsar during Kharif season of 2025. The details of villages surveyed are presented in Table 1. The fields surveyed were under irrigated ecosystem. The climatic conditions were not highly favourable for rice cultivations as there were incidences of excess rainfall in all the districts leading to temporary inundated condition (Table 3). During *Kharif*-2025 in Punjab state, paddy was cultivated on an area of around 32.49 lakh hectares of which 80 percent area was under non-basmati rice and 20 percent area was under Basmati rice. Among non-basmati rice, PR126 was most popular variety occupying 35 per cent area followed by PR 131. Other non-basmati varieties cultivated in the state were PR 128, PR 114, PR132, Supreme 110 and Pusa 44. The most popular basmati varieties grown were Pusa Basmati 1509, Pusa Basmati 1847, Pusa

Basmati 1121and Pusa Basmati 1718. The details of different rice varieties cultivated in different districts are presented in Table 2.

Table 2: Widely prevalent rice varieties

District	Varieties
Ludhiana	**HYVs:** PR 131, Pusa 44, PR 126, PR 132, PR 131, PR 128, PR 114 and others; **Basmati:** Pusa Basmati 1718, Pusa Basmati 1509, Pusa Basmati 1847, Pusa Basmati 1121 and others
Malerkotla	**HYVs:** PR 126, Pusa 44, supreme 110, Peeli Pusa and others; **Basmati:** Pusa Basmati 1121, Pusa Basmati 1509 and others
Jallandhar	**HYVs:** PR 114, Supreme 110, PR 131, PR 132, PR 126 and others; **Basmati:** Pusa Basmati 1121, Pusa Basmati 1509 and others
Kapurthala	**HYVs:** PR 126, **Basmati:**
Patiala	**HYVs:** PR 126, PR 131, Pusa 44, PR 114, PR 128 and others; **Basmati:** Pusa Basmati 1121, Pusa Basmati 1509 and other basmati varieties
Sangrur	**HYVs:** PR 126, Pusa 44, Peeli Pusa and others; **Basmati:** Pusa Basmati 1509, Pusa Basmati 1401 and others basmati varieties
Moga	**HYVs:** PR 114, PR 131, PR 126, Pusa 44, CR 212 and others, **Hybrids:** Sava hybrids and others
Barnala	**HYVs:** PR 121, PR 126, CR 212, Pusa 44, CR 321 and others
Ferozepur	**HYVs:** PR 114, Pusa 44, PR 131, CR 212 and others; **Basmati:** Pusa Basmati 1121, Pusa Basmati 1509, Pusa Basmatu 1847 and other basmati varieties
Faridkot	**HYVs:** PR 114, PR 126 and others; **Basmati:** Pusa Basmati 1847, Pusa Basmati 1121 and other basmati varieties
Fatehgarh Sahib	**HYVs:** PR 126, PR 132, PR 131, PR 128 and others
Rupnagar	**HYVs:** PR 131, PR 126, PR 128, PR 132, Supreme 110 and others; **Hybrids:** Private hybrids; **Basmati:** Pusa Basmati 1121, Pusa Basmati 1509 and others
Muktsar	**HYVs:** PR 131, PR 114, PR 126, PR 130 and others; **Basmati:** Pusa Basmati 1121, Pusa Basmati 1401, Pusa Basmati 1509 and others
Bathinda	**HYVs:** Peeli Pusa, Super 212, PR 126 and others; **Basmati:** Pusa Basmati 1509, Pusa Basmati 1885, Pusa Basmati 1718 and other basmati varieties
Mansa	**HYVs:** Pusa 44, PR 126, PR 131 and others; **Basmati**: Pusa Basmati 1401, Pusa Basmati 1692, Pusa Basmati 1509, Pusa Basmati 1121 and others
SBS Nagar	**HYVs:** PR 131, Supreme 110, PR 126, PVT varieties; **Basmati:** Pusa Basmati 1121 and others
Hoshiarpur	**HYVs:** PR 126, PR 131 and others; **Hybrids:** Sava 7501 and pvt hybrids
Gurdaspur	**HYVs:** Supreme 110, PR 131 and others; **Basmati:** Pusa Basmati 1121, Pusa Basmati 1509 and other basmati varieties
Tarn Taran	**HYVs:** PR 132, PR 131, Peeli Pusa and others; **Basmati:** Pusa Basmati 1121, Pusa Basmati 1718 and other basmati varieties
Amritsar	**HYVs**: PR 110, PR 121, PR 131 and others; **Hybrids**: Sava 7501; **Basmati**: Pusa Basmati 1718, Pusa Basmati 1692, Pusa Basmati 1121 and others

Table 3: General informations

Parameters	**Districts**				
	Ludhiana	**Malerkotla**	**Jallandhar + Kapurthala**	**Patiala + Sangrur**	**Moga + Barnala**
# of villages surveyed					
# of farmers interviewed	13	9	13 (7 + 6)	14 (8 + 6)	11 (7 + 4)
Field ecosystem	Irrigated	Irrigated	Irrigated	Irrigated	Irrigated
Weather conditions during cropping season	Excess rainfall in all the districts leading to temporary inundated condition				
Main Crop rotations	Rice-wheat was the major crop rotation practice followed by the farmers in all the districts. Few farmers also followed other cropping sequences like rice-potato-maize, rice-potato, rice-wheat-maize, rice-wheat-green gram and others				

Table 3: Contdd..

Parameters	**Districts**				
	Ferozpur + Faridkot	**Fatehgarh Sahib + Rupnagar**	**Muktsar + Bathinda + Mansa**	**SBS Nagar + Hoshiarpur**	**Gurdaspur + Tarn Taran + Amritsar**
# of villages surveyed					
# of farmers interviewed	10 (9 + 1)	14 (9 + 5)	11 (2+6+3)	8 (7 + 1)	10 (2+3+2)
Field ecosystem	Irrigated	Irrigated	Irrigated	Irrigated	Irrigated
Weather conditions during cropping season	Excess rainfall in all the districts leading to temporary inundated condition				
Main Crop rotations	Rice-wheat was the major crop rotation practice followed by the farmers in all the districts. Few farmers also followed other cropping sequences like rice-potato-maize and others				

A. Cropping system and rice yield: The fields surveyed were under irrigated ecosystem. During 2025, rice-wheat was the major crop rotation practice followed by the farmers in all the districts. Few farmers also followed other cropping sequences like rice-potato-maize, rice-potato, rice-wheat-maize, rice-wheat-green gram and others (Table 3). Average rice yield among the HYVs and hybrids ranged from 4839-9324 kg/ha while in case of basmati varieties, the yield ranged from 3588-6829 kg/ha.

Table 4: Average yields of different rice varieties as reported by the cooperators/ farmers

Varieties	Districts/ Yield (kg/ha)				
	Ludhiana	**Malerkotla**	**Jallandhar + Kapurthala**	**Patiala + Sangrur**	**Moga + Barnala**
PR 131	5273-6293		5893-6879		5739-6873
Pusa 44	5428-5998	5838-6591		6382-6571	4839-6839
PR 126	6820-9324	7284-7671	6278-7568	6276-7831	6872-7813
PR 132	6230-6581		6548		
Supreme 110		6931	5286-5893		
Peeli Pusa		5893			
PR 114			5839	6813	6451
PR 121				7213	5863-5981
Dogar Pusa					5915
Pusa Basmati 1718	4218				
Pusa Basmati 1121				3828	
Pusa Basmati 1509				3588-4293	
Pusa Basmati 1401				5212	
Hybrids			5632		

Table 4: Contdd..

Varieties	Districts/ Yield (kg/ha)				
	Ferozpur + Faridkot	**Fatehgarh Sahib + Rupnagar**	**Muktsar + Bathinda + Mansa**	**SBS Nagar + Hoshiarpur**	**Gurdaspur + Tarn Taran + Amritsar**
PR 131	5437-6882	5425-6934	6931	5225-6478	
Pusa 44	6248		4281-5317		
PR 126		6450-7291	7281	6225-7278	
PR 132		6528-7213			6934-7281
Supreme 110		6863		6278-6475	6348-8000
Peeli Pusa			5284		6531
PR 114	5838-6875				
PR 121					6571
PR 128		6278-6963			
PR 110					5123
CR 212	6159				
Dogar Pusa			5213-6234		
Pusa Basmati 1718					4563
Pusa Basmati 1509			4284		
Pusa Basmati 1401			5936		
Pusa Basmati 1847	3842				
Pusa Basmati 1885			4832		
Pusa Basmati 1692			3954		
Hybrids				6813-6829	

Table 5: Details of nursery management

Details	Districts				
	Ludhiana	**Malerkotla**	**Jallandhar + Kapurthala**	**Patiala + Sangrur**	**Moga + Barnala**
Planting time	In the state of Punjab, an area of about 1.17 lakh ha was under direct seeded rice (DSR), whereas rest was under puddled transplanted rice (PTR). Majority of farmers did direct seeding between May 20 to June 15. Rice crop was transplanted between June 9 to July 15 and Basmati was transplanted during first week of July to 4th week of July at farmer's field.				
Seed rate	12-15 kg/ha	12-14 kg/ha	12-15 kg/ha	12-15 kg/ha	12-15 kg/ha
Seed treatment (% farmers adopted)	Yes (23.1%)	Yes (44.4%)	Yes (30.1%)	Yes (42.8%)	Yes (27.3%)
Chemicals used for seed treatment	Sprint (2-4 g/kg)	Sprint (3 g/kg)	Sprint (3 g/kg)	Sprint (3 g/kg)	Sprint (3 g/kg)
Organic manure in nursery (% farmers adopted)	Yes (90.1%); FYM	Yes (100%); FYM	Yes (90.1%); FYM	Yes (100%); FYM	Yes (100%); FYM
Inorganic manure in nursery (% farmers adopted)	Yes (100%); urea (5-10 kg/ kanal) + DAP (3-8 kg/kanal); Some applied $ZnSO_4$ @ 3.5 kg/kanal and SSP (5-8 kg/Kanal)	Yes (100%); urea (5-8 kg/ kanal) + DAP (3-6 kg/kanal); Some applied $ZnSO_4$ @ 3-5 kg/kanal and SSP (7 kg/Kanal)	Yes (100%); urea (5-10 kg/ kanal) + DAP (3-8 kg/kanal); Some applied $ZnSO_4$ (21%) @ 2-6 kg/kanal and SSP (3-8 kg/Kanal)	Yes (100%); urea (5-10 kg/ kanal) + DAP (4-8 kg/kanal) Some applied $ZnSO_4$ @ 2-5 kg/kanal and SSP (5-8 kg/ Kanal)	Yes (100%); urea (5-10 kg/ kanal) + DAP (3-8 kg/kanal); Some applied $ZnSO_4$ @ 3-5 kg/kanal and SSP (5-8 kg/Kanal)

Table 5: Contdd…

Details	Districts				
	Ferozpur + Faridkot	**Fatehgarh Sahib + Rupnagar**	**Muktsar + Bathinda + Mansa**	**SBS Nagar + Hoshiarpur**	**Gurdaspur + Tarn Taran + Amritsar**
Planting time	In the state of Punjab, an area of about 1.17 lakh ha was under direct seeded rice (DSR), whereas rest was under puddled transplanted rice (PTR). Majority of farmers did direct seeding between May 20 to June 15. Rice crop was transplanted between June 9 to July 15 and Basmati was transplanted during first week of July to 4th week of July at farmer's field.				
Seed rate	12-15 kg/ha	12-14 kg/ha	12-15 kg/ha	12-15 kg/ha	12-15 kg/ha
Seed treatment (% farmers adopted)	Yes (30%)	Yes (57.1%)	Yes (18.2%)	Yes (37.5%)	Yes (42.8%)
Chemicals used for seed treatment	Sprint (3 g/kg)	Sprint (3 g/kg)	Sprint (3 g/kg)	Sprint (3 g/kg)	Sprint (3 g/kg)
Organic manure in nursery (% farmers adopted)	Yes (100%); FYM	Yes (92.8%); FYM	Yes (100%); FYM	Yes (87.5%); FYM	Yes (100%); FYM
Inorganic manure in nursery (% farmers adopted)	Yes (100%); urea (5-10 kg/kanal) + DAP (4-8 kg/kanal); Some applied $ZnSO_4$ @ 3-5 kg/kanal and	Yes (100%); urea (5-10 kg/kanal) + DAP (3-8 kg/kanal); Some applied $ZnSO_4$ @ 2-4 kg/kanal and	Yes (100%); urea (5-10 kg/ kanal); Some applied DAP (3-6 kg/kanal), $ZnSO_4$ (33% Zn) @ 3 kg/kanal and	Yes (100%); urea (5-10 kg/ kanal) + DAP (4-8 kg/kanal) Some applied $ZnSO_4$ (33% Zn) @ 3 kg/	Yes (100%); urea (5-10 kg/kanal) + SSP (3-7 kg/kanal); Some applied $ZnSO_4$ @ 2-5 kg/kanal and

Details	Districts				
	Ferozpur + Faridkot	**Fatehgarh Sahib + Rupnagar**	**Muktsar + Bathinda + Mansa**	**SBS Nagar + Hoshiarpur**	**Gurdaspur + Tarn Taran + Amritsar**
	SSP (5-8 kg/Kanal)	SSP (5 kg/Kanal)	SSP (4-8 kg/Kanal)	kanal and SSP (5-8 kg/ Kanal)	DAP (3-5kg/Kanal)

B. Nursery and main field Management: Most of the farmers used 12-15 kg/ha of seed rate for nursery sowing but for direct seeding they used 15-22 kg seed per ha. The seed treatment practices were applied by majority of the farmers. On an average about 35% of the farmers contacted adopted seed treatment mostly with Sprint (mancozeb 50% + carbendazim 25% WP) @ 3 g/kg (Table 5). On average about 96% of the farmers contacted applied FYM in the nursery (Table 5). All the farmers contacted in different districts told that they applied chemical fertilizers like urea and DAP in the nursery (Table 5). Many farmers also applied zinc sulphate and SSP in the nursery. In the state of Punjab, an area of about 1.17 lakh ha was under direct seeded rice (DSR), whereas rest was under puddled transplanted rice (PTR). Majority of farmers did direct seeding between May 20 to June 15. Rice crop was transplanted between June 9 to July 15 and Basmati was transplanted during first week of July to 4th week of July at farmer's field. Many farmers in different districts followed direct sowing. Transplanting was random in almost all the places. Mostly farmers transplanted 30-35 days old nursery. In most of the cases, planting density was inadequate i.e. it varied from 17-22 plants/m^2 as against recommended density of 33 plants/m2. Most of the surveyed farmers used overdose of nitrogen but many farmers skipped the application of phosphorus (P_2O_5) and potash (K_2O) in paddy crop, due to higher status of these nutrients in their soils. Application of Zinc sulphate (either 21 or 33%) is practiced by about 25-30% farmers but they used under dose of Zinc. Fertilizers like urea, DAP, SSP, MOP and zinc sulphate (21% or 33%) were used by the farmers to supply the nutrients.

Table 6: Details of main field management

Details	Districts				
	Ludhiana	**Malerkotla**	**Jallandhar + Kapurthala**	**Patiala + Sangrur**	**Moga + Barnala**
Planting method	Many farmers in different districts followed direct sowing. Transplanting was random in almost all the places. Mostly farmers transplanted 30-35 days old nursery. In most of the cases, planting density was inadequate i.e. it varied from 17-22 plants/m 2 as against recommended density of 33 plants/m^2.				
Total N applied (Kg/ha)	66-102 kg/ha (100% applied)	63-94 kg/ha (100% applied)	60-95 kg/ha (100% applied)	63-95 kg/ha (100% applied)	62-98 kg/ha (100% applied)
Total P_2O_5 applied (Kg/ha)	56-60 kg/ha (23.1% applied)	56-58 kg/ha (22.2% applied)	57-59 kg/ha (25% applied)	-	56-58 kg/ha (27.3% applied)
Total K_2O applied (Kg/ha)	-	-	-	28 kg/ha (14.3% applied)	-
$ZnSO_4$ applied (Kg/ha)	22 kg/ha (7.7% applied)	-	12-13 kg/ha (25% applied)	12-13 kg/ha (21.4% applied)	12-22 kg/ha (27.3% applied)
Organic fertilizers applied	Data not available				
Remarks	Fertilizers like urea, DAP, SSP, MOP and zinc sulphate (21% or 33%) were used by the farmers to supply the nutrients				

Table 6: Contdd..

Details	Districts				
	Ferozpur + Faridkot	**Fatehgarh Sahib + Rupnagar**	**Muktsar + Bathinda + Mansa**	**SBS Nagar + Hoshiarpur**	**Gurdaspur + Tarn Taran + Amritsar**
Planting method	Many farmers in different districts followed direct sowing. Transplanting was random in almost all the places. Mostly farmers transplanted 30-35 days old nursery. In most of the cases, planting density was inadequate i.e. it varied from 17-22 plants/m 2 as against recommended density of 33 plants/m^2.				
Total N applied (Kg/ha)	62-97 kg/ha (100% applied)	56-72 kg/ha (100% applied)	58-97 kg/ha (100% applied)	62-73 kg/ha (100% applied)	57-90 kg/ha (100% applied)
Total P_2O_5 applied (Kg/ha)	57-58 kg/ha (20% applied)	-	57 kg/ha (9.01% applied)	-	56 kg/ha (14.3% applied)
Total K_2O applied (Kg/ha)	-	-	-	12 kg/ha (12.5% applied)	8-10 kg/ha (28.6% applied)
$ZnSO_4$ applied (Kg/ha)	12 kg/ha (10% applied)	12 kg/ha (10% applied)	12 kg/ha (27.3% applied)	-	10-12 kg/ha (28.6% applied)
Organic fertilizers applied	Data not available				
Remarks	Fertilizers like urea, DAP, SSP, MOP and zinc sulphate (21% or 33%) were used by the farmers to supply the nutrients				

C. Weeds and their Management: Overall intensity of weeds was low throughout the state. Predominant weeds observed during the survey were *Leptochloa chinensis, Cyperus difformis* and *Echinochloa crusgalli* etc, in puddled transplanted rice. Weeds like *Eragrostis* spp. *Leptochloa chinensis*, *Echinichloa colona*, *Ammania* sp. were reported in case of direct seeded rice (DSR). All the farmers contacted applied different herbicides. Most of the farmers used pretilachlor, butachlor and some farmers also used bispyribac sodium as a post- emergence herbicide for weed control in transplanted rice crop but in DSR pendimethlin alone or pendimethalin+ pyrazosulfuron ethyl was commonly used as pre-emergence herbicides. Although bispyribac sodium was widely adopted post emergence herbicide but many other post emergence herbicides such as fenoxaprop, (cyhalofop-butyl), Vivaya (Penoxsulam 1.02% and Cyhalofop-Butyl 5.1% OD), Council Activ (triafamone 20% and ethoxysulfuron 10%) etc. were also used by some farmers. About 9-50% farmers contacted in different districts also followed hand weeding in addition to herbicide application. Even, some farmers did not use any weedicide in transplanted crop but they adopted cultural method of weed control i.e. ponding of water for the first 15 days of crop cycle (Table 7).

Table 7: Weeds and weed management

Details	**Districts**				
	Ludhiana	**Malerkotla**	**Jallandhar + Kapurthala**	**Patiala + Sangrur**	**Moga + Barnala**
Weed intensity	Low	Low	Low	Low	Low to medium
Names of the weeds	Predominant weeds observed during the survey were *Leptochloa chinensis*, *Cyperus difformis* and *Echinochloa crusgalli* etc, in puddled transplanted rice. Weeds like *Eragrostis* spp. *Leptochloa chinensis*, *Echinichloa colona*, *Ammania* sp. were reported in case of direct seeded rice (DSR).				
Weedicides used	Most of the farmers used pretilachlor, butachlor and some farmers also used bispyribac sodium as a post- emergence herbicide for weed control in transplanted rice crop but in DSR pendimethlin alone or pendimethalin+ pyrazosulfuron ethyl was commonly used as pre-emergence herbicides. Although bispyribac sodium was widely adopted post emergence herbicide but many other post emergence herbicides such as fenoxaprop, Clincher, Vivaya, Concil Active etc. were also used by some farmers.				
%age of farmers applied herbicides	Yes (100%)	Yes (100%)	Yes (100%)	Yes (100%)	Yes (90.1%)
Wild rice incidence	Nil	Nil	Nil	Nil	Nil
Remarks	About 9-50% farmers contacted in different districts also followed hand weeding in addition to herbicide application. Even, some farmers did not use any weedicide in transplanted crop but they adopted cultural method of weed control i.e. ponding of water for the first 15 days of crop cycle.				

Table 7: Contdd..

Details	**Districts**				
	Ferozpur + Faridkot	**Fatehgarh Sahib + Rupnagar**	**Muktsar + Bathinda + Mansa**	**SBS Nagar + Hoshiarpur**	**Gurdaspur + Tarn Taran + Amritsar**
Weed intensity	Low	Low	Low	Low to medium	Low
Names of the weeds	Predominant weeds observed during the survey were *Leptochloa chinensis*, *Cyperus difformis* and *Echinochloa crusgalli* etc, in puddled transplanted rice. Weeds like *Eragrostis* spp. *Leptochloa chinensis*, *Echinichloa colona*, *Ammania* sp. were reported in case of direct seeded rice (DSR).				
Weedicides used	Most of the farmers used pretilachlor, butachlor and some farmers also used bispyribac sodium as a post- emergence herbicide for weed control in transplanted rice crop but in DSR pendimethlin alone or pendimethalin+ pyrazosulfuron ethyl was commonly used as pre-emergence herbicides. Although bispyribac sodium was widely adopted post emergence herbicide but many other post emergence herbicides such as fenoxaprop, Clincher, Vivaya, Concil Active etc. were also used by some farmers.				
%age of farmers applied herbicides	Yes (100%)	Yes (100%)	Yes (100%)	Yes (100%)	Yes (100%)
Wild rice incidence	Nil	Nil	Nil	Nil	Nil
Remarks	About 28.6-50% farmers contacted in different districts also followed hand weeding in addition to herbicide application. Even, some farmers did not use any weedicide in transplanted crop but they adopted cultural method of weed control i.e. ponding of water for the first 15 days of crop cycle.				

Table 8: Details of inputs used

Details	Districts				
	Ludhiana	**Malerkotla**	**Jallandhar + Kapurthala**	**Patiala + Sangrur**	**Moga + Barnala**
Implements used	Most of the farmers contacted were progressive and have knowledge on improved rice production technologies. Implements like tractor, disc plough, cultivator, harrow, planker, laser leveller, combined harvester and others were used by the farmers. Many farmers possessed many of these implements. Most of the farmers used combine harvester on hire basis.				
Seed replacement rate	Not available. However, about 88-100% of the farmers contacted in these districts told that they purchased 50-80% of their seed requirement and used for sowing				
Source of irrigation	Canal (69.2%); Deep Tube well (92.3%)	Canal (77.8%); Deep Tube well (88.9%)	Canal (69.2%); Deep Tube well (92.3%)	Canal (78.6%); Deep Tube well (100%)	Canal (45.4%); Deep Tube well (54.4%)
Scarcity of irrigation water	No (100%)	No (100%)	No (100%)	No (100%)	No (100%)
Availability of fertilizers/ pesticides	Yes (100%)	Yes (100%)	Yes (100%)	Yes (100%)	Yes (100%)
Quality of fertilizers/ pesticides	Satisfied (100%)	Satisfied (100%)	Satisfied (100%)	Satisfied (100%)	Satisfied (100%)
Advisors to the farmers	State Dept (100%); Dealers (100%); Univ. (100%)	State Dept (100%); Dealers (100%); Univ. (100%)	State Dept (100%); Dealers (100%); Univ. (100%)	State Dept (100%); Dealers (100%); Univ. (100%)	State Dept (100%); Dealers (100%); Univ. (100%)

D. Common needs: Some of the common needs of the farmers were availability of broad-spectrum herbicides, short duration varieties and varieties suitable for DSR, higher MSP for HYVs, improved rice production and protection technologies and timely availability of seeds of HYVs.

E. Input use: Most of the farmers contacted were progressive and have knowledge on improved rice production technologies. Implements like tractor, disc plough, cultivator, harrow, planker, laser leveller, combined harvester and others were used by the farmers (Table 8). Many farmers possessed many of these implements. Most of the farmers used combine harvester on hire basis. Exact seed replacement rate data are not available. But 88-100% farmers contacted in different districts told that they purchased 50-80% of their seed requirement for sowing. Canal and deep tube wells were the main sources of irrigation (Table 8). In general, there was no scarcity of irrigation water. Farmers also expressed that fertilizers and pesticides were available in time and they were satisfied with their quality. In addition to their own decisions, farmers received advices from private dealers and officials of state department of agriculture and university (Table 8).

Table 8: Contd..

Details	Districts				
	Ferozpur + Faridkot	**Fatehgarh Sahib + Rupnagar**	**Muktsar + Bathinda + Mansa**	**SBS Nagar + Hoshiarpur**	**Gurdaspur + Tarn Taran + Amritsar**
Implements used	Most of the farmers contacted were progressive and have knowledge on improved rice production technologies. Implements like tractor, disc plough, cultivator, harrow, planker, laser leveller, combined harvester and others were used by the farmers. Many farmers possessed many of these implements. Most of the farmers used combine harvester on hire basis.				
Seed replacement rate	Not available. However, all the farmers contacted in these districts told that they purchased 60-80% of their seed requirement and used for sowing				
Source of irrigation	Canal (50%); Deep Tube well (100%)	Canal (100%); Deep Tube well (100%)	Canal (81.8%); Deep Tube well (100%)	Canal (50%); Deep Tube well (100%)	Canal (57.1%); Deep Tube well (100%)
Scarcity of irrigation water	No (100%)	No (100%)	No (100%)	No (100%)	No (100%)
Availability of fertilizers/ pesticides	Yes (100%)	Yes (100%)	Yes (100%)	Yes (100%)	Yes (100%)
Quality of fertilizers/ pesticides	Satisfied (100%)	Satisfied (100%)	Satisfied (100%)	Satisfied (100%)	Satisfied (100%)
Advisors to the farmers	State Dept (100%); Dealers (100%); Univ. (100%)	State Dept (100%); Dealers (100%); Univ. (100%)	State Dept (100%); Dealers (100%); Univ. (100%)	State Dept (100%); Dealers (100%); Univ. (100%)	State Dept (100%); Dealers (100%); Univ. (100%)

F. Biotic stresses and their management: The details of incidences of different rice diseases and insect pests are presented in Table 9. The overall incidence of rice diseases was low to moderate, but false smut was widespread in Punjab during the *Kharif*-2025. High incidence (30-60%) of false smut was recorded in many fields in Jandiali, Otalan, Neelon Kalan and Garhi Bet villages in Ludhiana on varieties like PR 126. In Malerkotla, heavy incidence of false smut (30-70%) was recorded in many fields in Mohampura, Bhumni, Uppal Kheri, Uppoki, Tolewal, Akbarpur on varieties like PR 126, Pusa 44, Sava 7501, Supreme 110 and others. In Kapurthala, 60-70% false smut incidence was recorded in many fields in Brindhan, Kala Sanghian, Sheikapur and Dogranwala villages on varieties like PR 126 and hybrids. Heavy false smut incidence (30-50%) was also recorded in parts of Patiala, SBS Nagar and Amritsar on varieties like PR 126, Pusa Basmati 1692, Sava 7501 and on other varieties. High incidence of false smut was also noticed in some fields in Patiala, Sangrur, Ferozepur, Rupnagar and Bathinda. Moderate incidence was recorded on varieties PR128 & Supreme 110 and low incidence was on PR131 in Gurdaspur, Hoshiarpur, Jalandhar, Pathankot, Fatehgarh Sahib, SBS Nagar and Faridkot. Heavy incidence of sheath blight (30-60%) was also recorded in Jandiali, Otalan and Neelon Kalan villages in Ludhiana on varieties like PR 126, Kala Sanghian village in Kapurthala and Ruphalheri village in Fatehgarh Sahib on varieties like PR 126. Low incidence of sheath blight was observed in the districts of Jalandhar, Taran Tarn, Barnala,

Kapurthala, Barnala, Moga, Ludhiana and Fatehgarh Sahib, on varieties PR126, Pusa44, PR131, Peeli Pusa and hybrids. Low to moderate incidence of Southern Rice Black Streak Dwarf Virus (SRBSDV)was observed on all rice cultivars in districts like Patiala, Fatehgarh Sahib, Rupnagar, SAS Nagar, Hoshiarpur, Gurdaspur and Sangrur. However, few fields from Patiala, Fatehgarh Sahib and Rupnagar districts were infected with high incidence. The disease was also observed in traces in some districts like Mansa and Bathinda. However, in some fields in Reet Kheri village in Patiala, SRBSDV incidence was very high (up to 50%) on varieties like PR 126 and PR 131. Brown spot incidence was very severe (70-80%) in few fields in Mohampura in Malerkota district on Pusa 44. Low to moderate incidence of bakanae/foot rot was recorded from Gurdaspur, Sangrur, Taran Tarn, Amritsar, Patiala, Mansa and Ferozepur districts on varieties Pusa Basmati 1401, Pusa Bas 1121 and Pusa Basmati 1509. Low to moderate incidence of neck blast was recorded from Sangrur, Muktsar, Bathinda and Fazilka districts on varieties Pusa Basmati 1401, Pusa Basmati 1121 &and Pusa Basmati 1509. Low incidence of sheath rot was recorded on variety Basmati 1121, Basmati 1509 from few fields in the districts of Patiala, and Ferozepur and low incidence of BB was recorded on susceptible variety Pusa 44 in Mansa and Sangrur.

Table 9: Prevalence of different diseases and insect pests in surveyed districts of Punjab in 2025

Districts	Diseases							
	NBl	**ShBl**	**BS**	**ShR**	**FS**	**Bak**	**BB**	**SRBSDV**
Ludhiana		L-S (2-60%)			L-S (3-60%)			T
Malerkotla		T	S (70-80%)		L-S (5-70%)			T-S
Jallandhar + Kapurthala		T-S (1-60%)			L-S (5-70%)			T-L
Patiala + Sangrur	L-M (5-20%)			T	T-S (1-50%)		L (3-5%)	T-S (1-50%)
Moga + Barnala		T-M (1-15%)			T-M (1-25%)	T		T
Ferozpur + Faridkot		T-M (1-15%)			T-M (1-20%)	L (3-5%)	T	T (1-2%)
Fatehgarh Sahib + Rupnagar		T-S (1-40%)			L-M (2-20%)			T-M (1-8%)
Muktsar + Bathinda + Mansa	T				T-M (1-15%)	L (2-5%)	T	L (1-5%)
SBS Nagar + Hoshiarpur		L (10-20%)			T-S (1-30%)			L-M (2-7%)
Gurdaspur + Tarn Taran + Amritsar					L-S (2-50%)	L (1-5%)		L (2-6%)

During *Kharif*- 2025, stunted rice plants infected with SRBSDV transmitted by white-backed planthopper were observed in farmers' fields across most of the grown rice varieties. A higher incidence of stunted plants was reported from Ropar, Fatehgarh Sahib, Mohali, Patiala, and Sangrur districts. More number of stunted plants in the earlier (15 June) transplanted rice varieties than the late transplanted in Fatehgarh Sahib and Ropar districts. An almost negligible incidence of SRBSDV was observed across 30 villages in south-west Punjab, specifically in Ferozepur, Faridkot, and Sri Muktsar Sahib. The presence of SRBSDV was detected only in trace amounts in five fields. However, overall insect pest populations-namely stem borers, leaf folders, and plant hoppers (WBPH and BPH) - were recorded at low to moderate levels this

year. Some farmers applied Chess or Osheen at nursery stage to manage WBPH. Some farmers applied pesticides like Padan, Osheen, Astra (Pymetrozine 50% WG), Chess, Parvat (pymetrozine), and Reinster (Chlorantraniliprole 0.83% + Fipronil 1.33% GR) for insect pest control. However, a higher incidence of stem borer infestation was reported in summer rice crops in Sri Muktsar Sahib district, leading farmers to apply excessive amounts of pesticides for SB control.

Districts	**Insect pests**				
	SB	**LF**	**BPH**	**WBPH**	**GM**
Ludhiana	T-L (1-2%)	T-L (1-2%)	T-L (2-3%)	T-L (2-3%)	
Malerkotla	T (1%)	T (1%)		T-L (1-3%)	
Jallandhar + Kapurthala	T-L (1-3%)	T-L (1-3%)	L (2-4%)	L (2-4%)	
Patiala + Sangrur	T-L (1-3%)	T-L (1-3%)	T-L (1-3%)	T-L (1-3%)	
Moga + Barnala	T-L (1-4%)	T (1-2%)	T-L (1-4%)	T-L (1-4%)	
Ferozpur + Faridkot	T (1-2%)	T (1-2%)	L (2-3%)	L (2-3%)	
Fatehgarh Sahib + Rupnagar	L (2-3%)	T (1-2%)	T-L (1-3%)	T-L (1-5%)	T (1%)
Muktsar + Bathinda + Mansa	T-L (1-3%)	T-L (1-3%)	T-L (1-3%)	T-L (1-3%)	
SBS Nagar + Hoshiarpur	T (1-2%)	T (1-2%)	L (2-3%)	L (2-3%)	
Gurdaspur + Tarn Taran + Amritsar	L (2-3%)	L (2-3%)	L (2-3%)	L (2-3%)	

G. Researchable issues: Among the biotic stresses, major problems in the region are sheath blight, false smut, brown spot, neck blast and SRBSDV among the diseases and BPH/WBPH, stem borer and leaf folder among insect pests. Major problems faced by the farmers were scarcity of agricultural labours, micronutrient deficiency and non-availability of quality seeds in some areas. Farmers want varieties suitable for DSR and short duration rice varieties and varieties tolerant to different biotic and abiotic stresses.

Table 10: Researchable issues

Details	Districts				
	Ludhiana	**Malerkotla**	**Jallandhar + Kapurthala**	**Patiala + Sangrur**	**Moga + Barnala**
Rice ecology in your area	Irrigated	Irrigated	Irrigated	Irrigated	Irrigated
Rice cultivation only in Kharif or both Kharif and Rabi	Kharif	Kharif	Kharif	Kharif	Kharif
Number of years of experience in rice farming	>20 years	>20 years	>20 years	>20 years	>20 years
Main biotic constraints (diseases) in your area according to you	Sheath blight, false smut; SRBSDV	Sheath blight, false smut; SRBSDV	Sheath blight, false smut; SRBSDV	Neck blast, False smut, SRBSDV	Sheath blight, false smut; SRBSDV
Extent of disease damage	10-25%	10-25%; 50%	10-25%	10-25%	10-25%
Main biotic constraints (Insect pests) in your area according to you	NA	NA	NA	NA	NA
Extent of insect pest damage	NA	NA	NA	NA	NA
Main abiotic constrains in your area according to you	NA	NA	NA	NA	NA
Production constraints in your area according to you	Scarcity of agricultural labours, micronutrient deficiency				
Irrigation facilities in your area	Canal, Borewells	Canal, Borewells	Canal, Borewells	Canal, Borewells	Canal, Borewells
Normally how many years it takes to change the rice variety	< less than 5 years	< less than 5 years	< less than 5 years	< less than 5 years	< less than 5 years
Any other rice production issues in your area which the rice scientists need to address					
What is urgently required in your area as far as rice varieties are concerned					
Duration	Varieties suitable for DSR, short duration rice varieties				
Biotic stress resistance	NA				
Abiotic stress resistance	NA				
Preferred grain quality	NA				
Nutritional quality	NA				

Table 8: Contd..

Details	Districts				
	Ferozpur + Faridkot	**Fatehgarh Sahib + Rupnagar**	**Muktsar + Bathinda + Mansa**	**SBS Nagar + Hoshiarpur**	**Gurdaspur + Tarn Taran + Amritsar**
Rice ecology in your area	Irrigated	Irrigated	Irrigated	Irrigated	Irrigated
Rice cultivation only in Kharif or both Kharif and Rabi	Kharif	Kharif	Kharif	Kharif	Kharif
Number of years of experience in rice farming	>20 years	>20 years	>20 years	>20 years	>20 years
Main biotic constraints (diseases) in your area according to you	Sheath blight, false smut	Sheath blight, false smut; SRBSDV	Neck blast, bacterial blight, false smut; SRBSDV	False smut	Sheath blight, false smut; bakanae
Extent of disease damage	>10%	10-25%	>10%	>10%	10-25%
Main biotic constraints (Insect pests) in your area according to you	NA	NA	NA	NA	NA
Extent of insect pest damage	NA	NA	NA	NA	NA
Main abiotic constrains in your area according to you	NA	NA	NA	NA	NA
Production constraints in your area according to you	Scarcity of agricultural labours, micronutrient deficiency				
Irrigation facilities in your area	Canal, Borewells	Canal, Borewells	Canal, Borewells	Canal, Borewells	Canal, Borewells
Normally how many years it takes to change the rice variety	< less than 5 years	< less than 5 years	< less than 5 years	< less than 5 years	< less than 5 years
Any other rice production issues in your area which the rice scientists need to address					
What is urgently required in your area as far as rice varieties are concerned					
Duration	Varieties suitable for DSR, short duration rice varieties				
Biotic stress resistance	NA				
Abiotic stress resistance	NA				
Preferred grain quality	NA				
Nutritional quality	NA				

Tamil Nadu-2025-26 (Aduthurai)

Districts surveyed: *Ariyalur, Thanjavur, Nagappattinam, Mayiladuthurai, Thiruvarur, Tiruchirappalli, Perambalur, Pudukkottai, Villupuram, Thiruvannamalai, Chengalpattu, Thiruvallur, Cuddalore, Vellore, Ranipet, Thiruppathur and Kallakurichi*

Particulars of survey

District	Villages surveyed
Ariyalur	Thirumanur, Sendurai, Ariyalur, Thirumalappadi, Pullampadi, Keelapalur and Melanakkuzhi
Thanjavur	Thirukarukavoor, Onbathaveli, Mannakkudi, Iluppakorai, Kalancheri, Saliyamangalam, Thugili, Vilangudi, Edaiyiruppu, Poondi, Budalur, Papnasam and Patteeswaram
Nagapattinam	Sikkal, Vaimedu, Keevalur, Karuppur, Ayakaranpulam, Sembodai, Thamaraipulam, Kallimedu, Thirumarugal, Thittacherry, Nagore and Thirupugalur
Mayiladuthurai	Thirunindriyur, Thirukurakukka, Manalmedu, Sirkali, Kuttalam, Kurumanakudi, Thiruvaduthurai and Tharangambadi
Thiruvarur	Podhakkudi, Lakshmangudi, Narikkudi, Sundarakkottai, Paravakkottai, Alangudi, Tholuvur, Nemmali, Semmankudi and Koradacheri
Tiruchirappalli	Anbil, Michaelpatti, Mettupatti, Vaaladi, Sirugamani, Lalgudi, Vayalur, Maruthandakurichi, Sathanoor and Ramanathanallur
Perambalur	Thirumanoor, Thirumalapadi, Keelapalur, Vetriyur, Sendurai, Elambalur, Siruvachur and Alambadi
Pudukkottai	Avudaiyarkovil, Arasarkulam, Adhanakottai, Kantharvakottai, Perungalur, Sooranviduthy, Vadakdu, Anavayal and Mangadu
Villupuram	Manjakuppam, Renganathapuram, Koonimadu, Semmankuppam, Gingee, Kallakurichi and Sankarapuram
Thiruvannamalai	Kolakkudi, Thirukkovilur, Polur, Indravanam, Perumkalathur, Chengapuram, Kuruvimalai and Vadakkumedu
Chengalpattu	Kattankolathur, Singaperumalkoil, Nellikuppam, Kadappakkam, Achirapakkam, Orathi and Pammal
Thiruvallur	Aliyur, Echchanguppam, Adanur, Alathur, Kanai, Illangadu, Kodukkur, Mathur, Pagandai and Veliyandal
Cuddalore	Mutlur, Pichavaram, Arasakkuzhi, Kothavasal, Rayapalayam, Kammapuram, Kumaramangalam, Vriddhachalam, Kurinchipadi and Panruti
Vellore	Virinjipuram, Thakkankulam, Kavanoor, Irungoor, Nallur, Pichanoor, Chettikuppam and Pasumathoor
Ranipet	Kaveripakkam, Paranji, Arakkonam, Sholinghur, Banavaram, Visharam, Pudupadi and Kalavai
Thiruppathur	Andiyappanur, Koratti, Jolarpet, Natrampalli, Ammanankoil, Vaniyambadi and Ambalur
Kallakurichi	Tirukoilur, Ulundurpe, Sankarapuram, Chinnaselam, Kalvarayan Hills and Vanapuram

Widely grown rice varieties

District	Varieties
Ariyalur	**HYVs:** CR 1009 Sub 1, CO 52, CR 1009 and IR 20
Thanjavur	**HYVs:** ADT 51, CR 1009, CR 1009 Sub-1, Swarna Sub-1, MTU 1190, ADT 54, CO 52, CO (R) 50, NLR 34449, RNR 15048, ADT 42, ADT 36, BPT 5204, IR 20, TPS 3, ADT 46, ADT 37, WGL 739 (Telangana Vari 1), ADT 57, ADT 39, ADT 59, ASD 21, CO 51, CO 56, ADT 52, ADT 58, TPS 5, TRY 3 and Traditional Paddy
Nagappattinam	**HYVs:** ADT 39, ADT 51, ADT 52, ADT 54, BPT 5204, CR 1009, CR 1009 Sub 1, Swarna Sub 1 and TKM 13
Mayiladuthurai	**HYVs/Improved:** ADT 51, CR 1009, CR 1009 Sub1, ADT 46, ADT 38, BPT 5204, ADT 54, ADT 58, CO 56, CO (R) 50, NLR 34449, TKM 13, Sadhana, Swarna Sub 1, TPS 3, TRY 3, Uma, IR 20, Karuppu Kavuni, Mappillai Samba, Seeraga Samba, Athur Kichili Samba, Sivan Samba and Thooya Malli
Thiruvarur	**HYVs:** ADT 51, CR 1009 Sub 1, MTU 7029, BPT 5204, I.W. Ponni, NLR 3254, CO 51, TPS 5, TKM 13, CO 55, ADT 54, ADT 58, ASD 16 and ASD 21
Tiruchirappalli	**HYVs:** BPT 5204, CR 1009 Sub-1, ADT 43, ADT (R) 45, ADT 51, ADT 54, CO 52, CO 56, IR 20, TKM 13, TRY 3 and Seeragasamba
Perambalur	**HYVs:** ADT45, BPT 5204, Amman Ponni, ADT 54, CO 55, ADT 53, ADT 57, CO (R) 50 and CO 43
Pudukkottai	**HYVs:** BPT 5204, CR 1009 Sub 1, ADT 39, CO 51 and ADT 51
Villupuram	**HYVs:** CR 1009 Sub 1, BPT 5204, I.W.Ponni, RNR 15048, NLR 34449, ADT 39, ADT 54, CO 52, CO 56 and JGL 1798
Thiruvannamalai	**HYVs:** ADT 37, BPT 5204, RNR 15048, I.W. Ponni, CO 51, CO 54, ADT 54, TPS 5, CO 55, Sowbagya and Amman
Chengalpattu	**HYVs:** I. W. Ponni, BPT 5204, NLR 34449, RNR 15048, MTU 1010, ADT 37 and CO 51
Thiruvallur	**HYVs:** ADT 54, ADT 58, TKM 13, I.W. Ponni and BPT 5204
Cuddalore	**HYVs:** BPT 5204, CO 50, CO 52, CO 56, CR 1009, CR 1009 Sub 1, KNM 1638, NLR 34449, TKM 13, TPS 3, TRY 3 and I. W. Ponni
Vellore	**HYVs:** ADT 37, CO 51, CO 54, Mahendra 606, RNR 15048 and NLR 34449
Ranipet	**HYVs:** ADT 37, CO 51, CO 54, Mahendra 606, MTU 1010, RNR 15048 and NLR 34441
Thiruppathur	**HYVs:** RNR 15048, CO 55, Amman, Super Amman, ADT 54, TKM 15, Amogh, Kurnool Sona, Meenakshi, Dhanista and Krishna Sona
Kallakurichi	**HYVs:** ADT 37, ADT 39, ADT 54, BPT 5204, CO 51, CO 54, CO 55, CR 1009 Sub 1 andI. W. Ponni

Particulars of rice area surveyed (*Samba / Thaladi*) 2025-26

District	Normal Rice Area (ha)	Area Planted (ha)	% age of area covered as against normal area
Ariyalur	20753	20509	98
Thanjavur	135000	130970	97
Nagappattinam	65000	63572	97
Mayiladuthurai	68532	68640	100
Thiruvarur	145000	145944	100
Tiruchirappalli	43609	54953	126
Perambalur	7300	7182	98
Pudukkottai	84936	80538	94
Villupuram	70000	69545	99
Thiruvannamalai	59355	81057	136
Chengalpattu	16257	12844	79
Thiruvallur	51413	47640	92
Cuddalore	90000	95308	105
Vellore	2164	3288	151
Ranipet	12900	13715	106
Thiruppathur	4729	4708	99
Kallakurichi	59214	45268	76
Total	**936162**	**945681**	**--**

Production oriented survey was conducted in seventeen districts of Cauvery delta zone in Tamil Nadu. Area under rice was marginally increased. Short duration rice varieties ADT 36, ADT 43, ADT (R) 45, TKM 13 and medium / long duration varieties CR 1009, CR 1009 Sub 1, ADT 38, ADT 39, ADT (R) 46, ADT (R) 49, ADT 51, Annapoorani, Jaiganesh, Amman, Mahindra-404, CO 43, CO 51, NLR 34449, CO 51, Improved White Ponni, CR 1009 and BPT 5204 were predominantly grown. Pest and disease incidences were noticed in all districts except Ariyalur. Among the insects, leaf folder, stem borer, BPH and gall midge were recorded. Mild incidence of bacterial leaf blight, false smut, blast, sheath blight, sheath rot, brown spot, grain discolouration diseases were recorded. Labour scarcity was the major constraint to the farmers.

District wise observations

Ariyalur: Seven villages were covered for Production Oriented Survey in this district. Rice crop was grown in 20509 ha in *samba / thaladi* season as against a normal area of 20753 ha. Canal, tanks and open wells were the major sources of irrigation. Direct seeding was practiced in the district due to drought. Rice - Pulses - Gingelly / Cotton cropping systems being followed in this district. Short duration rice varieties CR 1009 Sub 1, CO 52, CR 1009 and IR 20 were prominently grown in *rabi* season. The average yield was about 4.0-4.5 t/ha. Farmers generally used higher seed rate of 90 kg/ha. Few farmers only applied the recommended level of fertilizer @ 150:60:60 kg NPK/ha for *rabi* season. Hand weeding was commonly followed. Inputs like water, power and seeds were not adequately available to the farmers. Proper facilities for drying and storage were not available in many villages. No pest and diseases were noticed.

Thanjavur: Production Oriented Survey was conducted in thirteen villages of this district. Rice crop was grown in 130970 ha as against the normal area of 135000 ha in samba / thaladi season. Rice - Rice - Pulses / Gingelly, Rice - Pulses and Rice - Rice - Rice were the major

cropping systems followed. ADT 51, CR 1009, CR 1009 Sub-1, Swarna Sub-1, MTU 1190, ADT 54, CO 52, CO (R) 50, NLR 34449, RNR 15048, ADT 42, ADT 36, BPT 5204, IR 20, TPS 3, ADT 46, ADT 37, WGL 739-Telangana Vari 1, ADT 57, ADT 39, ADT 59, ASD 21, CO 51, CO 56, ADT 52, ADT 58, TPS 5, TRY 3, Traditional Paddy are the varieties grown. Herbicide, Butachlor @ 2.5 lit/ha at 3 DAT was used for the control of common wetland weeds. Nitrogenous fertilizers at recommended level (150 kg/ha), phosphorus and potash fertilizers at lower level (30 kg/ha) were applied by the farmers. Leaf folder, stem borer, false smut, brown spot and BLB incidence were noticed below ETL.

Nagappattinam: Production oriented survey was conducted in eleven villages of this district. Rice crop was grown in 63572 ha in *samba / thaladi* season as against a normal area of 65000 ha. It is located in the tail end of Cauvery river basin. Because of non availability of canal water direct sowing was followed in some places where bore wells are not available. Most of the farmers purchased new seeds every year for cultivation. Sufficient quantity of fertilizers and pesticides were available on time both in co-operative societies and in private shops. The varieties like ADT 39, ADT 51, ADT 52, ADT 54, BPT 5204, CR 1009, CR 1009 Sub 1, Swarna Sub 1, TKM 13 are predominantly grown in this district. Rice - pulses and Rice - Rice - Pulses were the major cropping systems followed. Insect pests like brown plant hopper, leaf folder, stem borer and thrips were observed under ETL. In case of diseases BLB, false smut and sheath blight were observed at a low level.

Mayiladuthurai: Production oriented survey was conducted in eight villages of this district. Rice crop was grown in 68640 ha in *samba / thaladi* season as against a normal area of 68532 ha. It is located in the tail end of Cauvery river basin. Because of non availability of canal water direct sowing was followed in some places where bore wells are not available. Most of the farmers purchased new seeds every year for cultivation. Sufficient quantity of fertilizers and pesticides were available on time both in co-operative societies and in private shops. The varieties like ADT 51, CR 1009, CR 1009 Sub1, ADT 46, ADT 38, BPT 5204, ADT 54, ADT 58, CO 56, CO (R) 50, NLR 34449, TKM 13, Sadhana, Swarna Sub 1, TPS 3, TRY 3, Uma, IR 20, Karuppu Kavuni, Mappillai Samba, Seeraga Samba, Athur Kichili Samba, Sivan Samba, Thooya Malli are predominantly grown in this district. Rice - pulses and Rice - Rice - Pulses were the major cropping systems followed. Insect pests like Brown plant hopper, leaf folder, stem borer were observed at low level. Low incidence of diseases like blast and BLB were observed.

Thiruvarur: Production Oriented Survey was conducted in ten villages of this district. Rice crop was grown in 145944 ha in *samba / thaladi* season as against a normal area of 145000 ha. Normally rice crop was cultivated with Cauvery river irrigation and bore wells. This year both canal water and bore well water was available for irrigation. The varieties grown are ADT 51, CR 1009 Sub 1, MTU 7029, BPT 5204, I.W. Ponni, NLR 3254, CO 51, TPS 5, TKM 13, CO 55, ADT 54, ADT 58, ASD 16, ASD 21 and predominantly grown in *samba / thaladi* season. Rice - rice - pulses, rice - rice and rice - rice - rice were the cropping sequences followed. The average yield of the district in *kharif* was about 5.5 - 6.0 t/ha. Direct seeding was also practiced in some areas. Few farmers applied zinc sulphate 0.5% + urea 1.0% as foliar spray to correct zinc deficiency in *rabi* crop. Combined harvesters were widely used. Pest and disease like brown spot, false smut, BPH and leaf folder and stem borer were observed in some places below ETL.

Tiruchirappalli: The survey was conducted in ten villages of this district. Rice crop was grown in 54953 ha as against a normal area of 43609 ha. Canal irrigation and bore wells were the major sources of irrigation. Rice - Rice, Rice - Rice - Pulses / Gingelly and Rice - Pulses were the predominant cropping systems followed. Rice varieties BPT 5204, CR 1009 Sub-1, ADT 43, ADT (R) 45, ADT 51, ADT 54, CO 52, CO 56, IR 20, TKM 13, TRY 3, Seeragasamba were grown in larger areas. Farmers applied higher level of nitrogenous fertilizer and lower level of phosphorus and potash fertilizers as against the blanket recommendation of 150:50:50 kg NPK/ha. Bacterial leaf blight and brown spot was noticed with low level of incidence. In case of insect pest, stem borer and leaf folder incidence were recorded to low level. Combined harvesters, threshers, transplanters and cono weeders were used by the farmers.

Perambalur: The survey was conducted in eight villages. Direct seeding of rice was practiced in larger areas in Perambalur district. Rice crop was grown in 7182 ha in samba season as against a normal area of 7300 ha. Area was drastically reduced because of drought. Canals and bore wells were the major sources of irrigation. Tanks were the supplemental source of irrigation. Rice-Rice, Rice-Rice-Pulses/Gingelly, Rice-Sugarcane-Rice and Rice-Onion were the cropping systems followed. Farmers used higher seed rate of 90-120 kg/ha. Government agencies contributed 20%, Private agencies 20% and farmers used their own seeds to the extent of ADT 45, BPT 5204, Amman Ponni, ADT 54, CO 55, ADT 53, ADT 57, CO (R) 50, CO 43 were largely grown in this district. Lower doses of NPK fertilizers were applied by the farmers. Resources like water, power, quality seeds and machineries were not adequately available. Insect like leaf folder, stem borer, gall midge, ear head bug and diseases like blast and false smut were noticed in ADT 45, BPT 5204, Amman Ponni, CO 55, CO 43, and CO (R) 50 in an area of 78.5 ha with low incidence

Pudukkottai: The survey was conducted in nine villages of this district. Rice crop was grown in a total area of 80538 ha in samba season as against normal area of 84936 ha. Canal, tanks and open wells were the major sources of irrigation. BPT 5204, CR 1009 Sub 1, ADT 39, CO 51, ADT 51 were the prominent rice varieties grown. Farmers used a higher seed rate of 80-90 kg/ha and adopted random method of planting with 40-50 hills/sq. m. Farmers used new seeds every time for cultivation. Seed treatment was not practiced. Quality fertilizers and pesticides were available in private shops. Combined harvesters and thrashers were widely used. Low incidence leaf folder, thrips and stem borer were noticed below ETL. In case of diseases blast and BLB was noticed below ETL.

Villupuram: Production oriented survey was conducted in seven villages of this district. Rice crop was grown in 69545 ha as against a normal area of 70000 ha in *Samba*. The varieties like CR 1009 Sub 1, BPT 5204, I. W. Ponni, RNR 15048, NLR 34449, ADT 39, ADT 54, CO 52, CO 56, JGL 1798 were predominantly grown. Tanks and open wells were the major sources of irrigation. Rice - Pulses / Onion / Maize was the major cropping system adopted. Direct sowing was practiced by the farmers. Conventional method of cultivation with random planting was followed in many places. Hand weeding was commonly done by the farmers. The pests like leaf folder, stem borer, BLB and brown spot were noticed in some places at low level.

Thiruvannamalai: During *rabi* season, the survey was conducted in eight villages of this district. Rice crop was grown in 81057 ha as against normal area of 59355 ha in samba. Rice - Rice - Rice, Rice - Rice and Rice - Rice - Groundnut were the major cropping sequences followed. Rice varieties ADT 37, BPT 5204, RNR 15048, I.W. Ponni, CO 51, CO 54, ADT 54, TPS 5, CO 55, Sowbagya, Amman were prominently grown in rabi season. The average rice yield was 5.0 - 5.5 t/ha in kharif and 4.5 - 5.0 t/ha in rabi season. Most of the farmers did

not apply any fertilizers for nursery. Weed infestation was medium in rice fields with weeds *like Echinocloa crusgalli, Cyperus rotandus* and *Marsilia quadrifolia*. Combine harvesters were used by 80 - 90% of farmers of this district. Inputs such as power, water and seeds were inadequate to the farmers. Power sprayers were widely used for spraying of insecticides and fungicides. Occurrence of leaf folder, stem borer, thrips, blast, brown spot, false smut and sheath blight were noticed in ADT 37, BPT 5204, RNR 15048, I. W. Ponni varieties below ETL.

Chengalpattu: The survey was conducted in seven villages of this district. Rice crop was grown in a total area of 12844 ha in *samba / thaladi* season as against normal area of 16257 ha. Canal, tanks and open wells were the major sources of irrigation. I.W. Ponni, BPT 5204, NLR 34449, RNR 15048, MTU 1010, ADT 37, CO 51 were the prominent rice varieties grown. Farmers used a higher seed rate of 80-90 kg/ha and adopted random method of planting with 40-50 hills/sq. m. Farmers used new seeds every time for cultivation. Seed treatment was not practiced. Quality fertilizers and pesticides were available in private shops. Combined harvesters and threshers were widely used. Low incidence of leaf folder, stem borer, gall midge, BPH, leaf blight and grain discolouration was recorded below ETL in I.W. Ponni, BPT 5204, NLR 34449, RNR 15048, MTU 1010, ADT 37, CO 51.

Thiruvallur: Production oriented survey was conducted in ten villages of this district. Rice crop was grown in 47640 ha as against a normal area of 51413 ha in *Samba / thaladi*. ADT 54, ADT 58, TKM 13, I.W. Ponni, BPT 5204 were mostly grown. Bore wells and tanks were the main sources of irrigation. Rice-Rice and Rice - Rice - Rice were the important cropping sequences followed. Optimum population of 40-50 hills/sq. m. was maintained. Harvester cum Thresher was widely used by farmers on hire basis. Water, electricity, seeds, storage and drying facilities were inadequate. Leaf folder, Stem borer, BPH, Gall midge, BLB, grain discolouration was noticed in below ETL. In some places green algae problem was observed.

Cuddalore: Ten villages were covered for production oriented survey in this district. Rice crop was grown in 95038 ha in *samba / thaladi* as against a normal area of 90000 ha. Direct seeding was practiced in the district due to drought. In this district, 55% of rice area was cultivated with Cauvery river irrigation and the remaining area was grown with bore wells. Rice - Rice - Rice, Rice - Rice - Pulses, Rice - Sugarcane and Rice - Rice - Groundnut is the normal cropping systems being followed in this district. Short duration rice varieties BPT 5204, CO 50, CO 52, CO 56, CR 1009, CR 1009 Sub 1, KNM 1638, NLR 34449, TKM 13, TPS 3, TRY 3, I. W. Ponni were prominently grown in *rabi* season. The average yield was about 4.0-4.5 t/ha and 4.5 - 5.0 t/ha in *kharif* and *rabi* seasons respectively. Few farmers only applied the recommended level of fertilizer application 150:60:60 kg NPK/ha for *rabi* season. Hand weeding was commonly followed. Inputs like water, power and seeds were not adequately available to the farmers. Proper facilities for drying and storage were not available in many villages. The insect pest like leaf folder and stem borer and disease like blast were noticed below ETL in BPT 5204, I. W Ponni, CR 1009 Sub 1 to the extent of 4600 ha.

Vellore: Production oriented survey was conducted in eight villages of this district. Rice crop was grown in 3288 ha as against normal area of 2164 ha in samba. ADT 37, CO 51, CO 54, Mahendra 606, RNR 15048, NLR 34449 was the varieties grown in the district. Tanks and open wells were the major sources of irrigation. Zinc sulphate was applied as basal application at the rate of 25 kg/ha or 0.5% foliar spray in many villages. Few farmers used bio fertilizers like *Azospirillum* and *Phosphobacteria* for rice cultivation as seed treatment and soil application. Water, electricity and quality seeds were inadequate. Leaf folder, stem borer, leaf

blast, brown spot and grain discolouration were noticed in ADT 37, CO 51, CO 54, Mahendra 606, RNR 15048, NLR 34449 below ETL.

Ranipet: Production oriented survey was conducted in eight villages of this district. Rice crop was grown in 13715 ha as against normal area of 12900 ha in samba. ADT 37, CO 51, CO 54, Mahendra 606, MTU 1010, RNR 15048, NLR 34441 was the varieties grown in the district. Tanks and open wells were the major sources of irrigation. Zinc sulphate was applied as basal application at the rate of 25 kg/ha or 0.5% foliar spray in many villages. Few farmers used bio fertilizers like *Azospirillum* and *Phosphobacteria* for rice cultivation as seed treatment and soil application. Water, electricity and quality seeds were inadequate. Leaf folder, stem borer, leaf blast, brown spot and grain discolouration were noticed in ADT 37, CO 51, CO 54, Mahendra 606, RNR 15048 and NLR 34449 below ETL.

Thiruppathur: Production oriented survey was conducted in seven villages of this district. Rice crop was grown in 4708 ha as against normal area of 4729 ha in samba. RNR 15048, CO 55, Amman, Super Amman, ADT 54, TKM 15, Amogh, Kurnool Sona, Meenakshi, Dhanista, Krishna Sona was the varieties grown in the district. Tanks and open wells were the major sources of irrigation. Zinc sulphate was applied as basal application at the rate of 25 kg/ha or 0.5% foliar spray in many villages. Few farmers used bio fertilizers like *Azospirillum* and *Phosphobacteria* for rice cultivation as seed treatment and soil application. Water, electricity and quality seeds were inadequate. Leaf folder, thrips and BLB were noticed in RNR 15048, CO 55, Amman, Super Amman, ADT 54, TKM 15, Amogh, Kurnool Sona, Meenakshi, Dhanista, Krishna Sona below ETL.

Kallakurichi: Production oriented survey was conducted in seven villages of this district. Rice crop was grown in 45268 ha as against a normal area of 59214 ha in *Samba*. The varieties like ADT 37, ADT 39, ADT 54, BPT 5204, CO 51, CO 54, CO 55, CR 1009 Sub 1, I. W. Ponni were predominantly grown. Tanks and open wells were the major sources of irrigation. Rice - Pulses / Onion / Maize was the major cropping system adopted. Direct sowing was practiced by the farmers. Conventional method of cultivation with random planting was followed in many places. Hand weeding was commonly done by the farmers. The pests like leaf folder, stem borer, blast, BLB and false smut were noticed in some places at low level.

Prevalence of diseases and insect pests in different districts of Tamil Nadu in 2025

Districts	Diseases					
	Bl	**BS**	**ShBl**	**FS**	**GD**	**BLB**
Ariyalur	-	-	-	-	-	-
Thanjavur	-	L	-	L	-	L
Nagappattinam	-	-	L	L	-	L
Mayiladuthurai	L	-	-	-	-	L
Thiruvarur	-	L	-	L	-	-
Tiruchirappalli	-	L	-	-	-	L
Perambalur	L	-	-	L	-	-
Pudukkottai	L	-	-	-	-	L
Villupuram	-	L	-	-	-	L
Thiruvannamalai	L	L	L	L	-	-
Chengalpattu	-	-	-	-	L	L
Thiruvallur	-	-	-	-	L	L
Cuddalore	L	-	-	-	-	-
Vellore	L	L	-	-	L	-
Ranipet	L	L	-	-	L	-
Thiruppathur	-	-	-	-	-	L
Kallakurichi	L	-	-	L	-	L

Districts	Insect pests					
	LF	**SB**	**BPH**	**Thrips**	**GM**	**EHB**
Ariyalur	-	-	-	-	-	-
Thanjavur	L	L	-	-	-	-
Nagappattinam	L	L	L	L	-	-
Mayiladuthurai	L	L	L	-	-	-
Thiruvarur	L	L	L	-	-	-
Tiruchirappalli	L	L	-	-	-	-
Perambalur	L	L	-	-	L	L
Pudukkottai	L	L	-	L	-	-
Villupuram	L	L	-	-	-	-
Thiruvannamalai	L	L	-	L	-	-
Chengalpattu	L	L	L	-	L	-
Thiruvallur	L	L	L	-	L	-
Cuddalore	L	L	-	-	-	-
Vellore	L	L	-	-	-	-
Ranipet	L	L	-	-	-	-
Thiruppathur	L	-	-	L	-	-
Kallakurichi	L	L	-	-	-	-

EHB: Ear Head Bug

Tamil Nadu-2025-26 (Coimbatore)

Districts surveyed: *Coimbatore, Dindigul, Tiruppur, Madurai, Kannyakumari, Tirunelveli, Thiruvannamalai, Kallakurichi, Erode* and *Tenkasi*

Particulars of survey

District	Blocks	Villages (latitude/longitude)
Coimbatore	Anaimalai and Thondamuthur	Kaliyapuram (10.5672/76.93993), Anaimalai (10.57657/76.94224), Sadivayal (10.94025/76.72614) and Kottur (10.50569/76.96566)
Dindigul	Guziliamparai, Thoppampatti, Palani, Dindigul and Vadasandur	Guziliamparai (10.67607/78.11119), Keeranur (10.57428/ 78.78669), A. Kalayamputhur (10.43573/ 77.45703), Neikarapatti (10.44932/77.45864), Thadikombu (10.44842/77.95476) and Vadasandur (10.52123/77.94354)
Tiruppur	Madathukulam, Kangayam, Dharapuram, Udumalpet and Vellakoil	Madathukulam (10.56433/77.3755), Vattamalai (10.9432/77.54593), Gavindapuram (10.70543/ 77.41879), Dhali (10.51719/77.19845), Karatholuvu (10.62127/77.36841) and Mudhor (11.04888/ 77.72863)
Madurai	Melur, Kottampatti and Madurai	Melur Vinayagapuram (10.01919/78.33674), Kottampatti (10.23625/78.3907), Melavalavoo (10.09806/78.35571), Valaiyanendal (9.81053/ 78.26316) and Tiruppuvanam (9.83603/ 78.2408)
Kannyakumari	Agastiswaram and Rajakamangalam	Nalloor (8.30184/ 77.18656), Parakkai (8.14285/ 77.45623), Theeroor (8.170247/77.460606) and Eraviputhur (8.153065/77.491384)
Tirunelveli	Ambasamudram, Thirunelveli and Cheranmahadevi	Ambasamudram (8.69821/77.44802), Pattamadai (10.66736/77.59024), Melaputhukudi (8.68236/ 77.53113) and Mukkudal (8.73787/77.5157)
Thiruvannamalai	Keelpennathur, Polur and Kalasapakkam	Keelpennathur (12.2506/79.2182), Polur (12.5107/79.1269) and Kalasapakkam (12.4340/ 79.1005)
Kallakurichi	Kallakurichi and Cinnaslem	Mangalam (12.0167/78.9883) and Namachivayapuram (11.6810/78.8920)
Erode	T. N. Palayam and Bhavanisagar	Arakkanvottai (11.4983/77.3488) and Kothamangalam (10.0601903/76.6350827)
Tenkasi	Shenkottai and Vasudevanavur	Shenkottai (9.178/77.293) and devipattinam (9.3734/ 77.4257)

Widely prevalent rice varieties

Districts	Varieties
Coimbatore	**HYVs:** ASD 16, CO 55, CO 51, Amman, Sadana, ADT 45, NLR, BPT 5204 and others
Dindigul	**HYVs:** CO 51, CO 50, BPT 5204, ADT 53, CO 55, Savithri, Jothimattai (local) and others
Tiruppur	**HYVs:** CO 55, CO 51, Savithri, Amman, Sadana, ADT 56 and others
Madurai	**HYVs:** ADT 55, ADT 57, ADT 58, CO 50, ASD 16, ADT 54, ADT 45, White Ponni and others
Kanyakumari	**HYVs:** TPS 5, TPS 3, ASD 16, Bharathi, RNR 15048 and others
Tirunelveli	**HYVs:** ADT 55, ASD 16, TPS 5, ASD 19, ADT 37, MPU 5, ASD 19 and others
Thiruvanamalai	**HYVs:** ADT 58, DAT 53, Amman, CO 51, ADT 37, ADT 43, NLR 3449, ASD 16, BPT5204, Sadana and others
Kallakurichi	**HYVs:** Amman, ASD 16, CO 51, Savithri, ADT 45 and others
Erode	**HYVs:** Amman, ADT 53, BPT 5204, Sadana, CO 51, Savithri, ADT 45 and others
Tenkasi	**HYVs:** Amman, ASD 16, ADT 56, TPS 5, ADT 53, ASD 19, Savithri, ADT 45, ADT 43, BPT 5204 and others

Table 3: Particulars of rice area in different districts of Tamil Nadu in 2025

District	Total Geographical Area (ha)	Total Cultivable Area (ha)	Total Cultivated Area (ha)	Total Irrigated Area (ha)	Area sown Under Rice (ha)	Area under DSR (ha)
Coimbatore	367097		165260	118917	2726	1182
Dindigul	626600.64	227711	220186	18081	6624	2300
Tiruppur	518634	248388	203639	132556	22300	7650
Madurai	374173	134496	120300	63554	12645	4275
Kanyakumari	167200	65804	167200	24367	10033	3750
Tirunelveli	387600	73875.016	67049.785	56155.42	38648.788	5350
Erode	638123	381422	334278	243745	48368	11400
Tenkasi	288244	114298.485	126534.16	668114	8300	2800
Salem	418263	230965	193728	83640	16732	2300

Table 4: Weather data for different districts of Tamil Nadu in 2025

District/ Parameters	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Coimbatore							
RD	5	4	2	4	5	5	2
TR (mm)	91.6	77.2	23.8	96.1	56.2	107.0	30.0
T. Max (^{0}C)	34.0	33.8	33.5	32.8	32.4	32.6	32.1
T. Min (^{0}C)	24.1	23.6	23.2	22.7	22.6	21.4	21.2
Dindigul							
RD	4	5	3	5	3	5	3
TR (mm)	91.3	87.2	63.8	71.4	25.3	67.5	49.0
T. Max (^{0}C)	34.2	34.0	31.7	31.2	30.3	30.7	30.0
T. Min (^{0}C)	23.9	23.7	23.2	22.6	22.3	21.1	21.0
Tiruppur							
RD	5	2	3	4	5	7	3
TR (mm)	179	58.4	21.6	65.0	53.8	18.2	26.7

District/ Parameters	Jun	Jul	Aug	Sep	Oct	Nov	Dec
T. Max (^{0}C)	31.4	31.2	31.3	31.8	31.5	30.7	29.4
T. Min (^{0}C)	23.1	22.9	22.3	22.6	22.2	21.0	19.4
Madurai							
RD	4	3	2	5	5	4	4
TR (mm)	66.3	91.0	23.5	68.4	33.7	41.2	35.5
T. Max (^{0}C)	32.2	31.9	31.6	31.0	31.2	30.7	30.4
T. Min (^{0}C)	24.0	23.5	23.3	23.0	22.1	20.9	21.2
Kanyakumari							
RD	7	7	6	6	4	7	7
TR (mm)	138.2	121.4	160.5	207.1	63.7	113.8	146.7
T. Max (^{0}C)	33.8	33.5	32.4	32.7	31.2	29.6	29.5
T. Min (^{0}C)	22.1	321.6	21.2	20.9	20.6	19.6	19.3
Tirunelveli							
RD	4	3	2	5	4	4	4
TR (mm)	127.0	62.4	19.9	63.5	81.2	49.6	31.0
T. Max (^{0}C)	33.6	33.0	31.8	31.5	31.2	30.8	30.7
T. Min (^{0}C)	24.4	23.1	22.7	22.5	22.1	21.9	20.8
Erode							
RD	3	4	4	5	4	6	4
TR (mm)	93.2	67.5	55.7	118.0	39.4	26.1	47.3
T. Max (^{0}C)	31.8	31.6	31.3	30.9	31.1	31.4	31.1
T. Min (^{0}C)	24.7	23.3	23.0	22.1	21.4	20.8	20.5
Tenkasi							
RD	6	3	2	6	4	5	3
TR (mm)	107.0	82.6	48.1	31.8	26.0	19.5	26.3
T. Max (^{0}C)	31.1	30.8	31.0	30.6	29.7	29.1	29.2
T. Min (^{0}C)	22.6	22.4	21.9	21.8	20.3	19.6	19.2
Salem							
RD	6	3	5	5	7	6	3
TR (mm)	147.3	49.6	71.8	41.7	83.0	47.5	18.2
T. Max (^{0}C)	32.2	31.6	31.3	31.5	31.4	31.5	31.1
T. Min (^{0}C)	25.2	24.0	23.7	22.4	21.6	20.3	19.5

RD: Rainy days; TR: Total rainfall; T. Max: Maximum temperature; T. Min: Minimum temperature

Table 5: General question on rice cultivation in district (to be filled by the cooperator in consultation with the officials from state department of agriculture)

Parameters	Coimbatore	Dindigul	Tiruppur	Madurai
Total area under HYVs in the district (ha)	2726 ha	6530 ha	22300 ha	12600 ha
Most prevalent HYVs in the district	Amman	ADT 53	Amman, CO 55, Sadana	ADT 55, ADT 57, ADT 58
Total area under rice hybrids in the district	Nil	Nil	Nil	Nil
Most prevalent rice hybrids in the district	Nil	Nil	Nil	Nil
Total area under basmati in the district	Nil	Nil	Nil	Nil
Most prevalent basmati varieties in the district	Nil	Nil	Nil	Nil
Seed replacement rate	95%	98%	98%	98%
Whether farmers are using any heavy equipments like transplanter/combine harvester	Combine harvester	Combine harvester	Combine harvester	Combine harvester
Mention water saving techno-logies like SRI/laser leveling/DSR being used by the farmers	DSR	DSR, SRI	DSR	DSR
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	-	-	-	-
What are the general problems in rice cultivation in the district?	Scarcity of labours, urea availability	Scarcity of labours	-	Urea availability
Please provide any farmers association in the district	Amaravathy Ayacut farmers association	-	-	Madurai farmers association
Whether availability of agricultural labours is sufficient?	No	No	Yes	No
Whether there is any marketing problem of the produce?	No	No	No	No
Any major irrigation/power generation project in the district	Amaravath; Aliyar Dam	-	Thirumoorthy dam	Vaigai dam
Any soil testing program undertaken?	Yes	Yes	Yes	Yes
Any farmers' training program was organized by the state department of Agriculture/University	Yes	Yes	Yes	Yes

Table 5: contdd..

Parameters	Kannyakumari	Tirunelveli	Erode	Tenkasi
Total area under HYVs in the district (ha)	10023 ha	37800 ha	48100 ha	8300 ha
Most prevalent HYVs in the district	TPS 5	ADT 55, ASD 16, TPS 5	Amman, ADT 53, Sadana	Amman, ASD 16, ADT 56
Total area under rice hybrids in the district	Nil	Nil	Nil	Nil
Most prevalent rice hybrids in the district	Nil	Nil	Nil	Nil
Total area under basmati in the district	Nil	Nil	Nil	Nil
Most prevalent basmati varieties in the district	Nil	Nil	Nil	Nil
Seed replacement rate	96%	96%	100%	98%
Whether farmers are using any heavy equipments like transplanter/combine harvester	Combine harvester	Combine harvester	Combine harvester (90%)	Combine harvester
Mention water saving techno-logies like SRI/laser leveling/DSR being used by the farmers	DSR, SRI	DSR	DSR, SRI	DSR
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	-	-	-	-
What are the general problems in rice cultivation in the district?	Scarcity of labours	Scarcity of labours	Rainproof structure indirect procurement centres	Labour scarcity
Please provide any farmers association in the district	Pechiparai farmers association	Alayudi Farmers Welfare Association	Lower bharani Project Farmers Welfare Association	-
Whether availability of agricultural labours is sufficient?	No	No	No	No
Whether there is any marketing problem of the produce?	No	No	Poor infrastructure	No
Any major irrigation/power generation project in the district	Pechiparai Reservoir and Perunchani Dam	Manimuthar Dam and Thamirabarani	Lower Bharani Project	-
Any soil testing program undertaken?	Yes	Yes	Yes	Yes
Any farmers' training program was organized by the state department of Agriculture/University	Yes	Yes	Yes	Yes

Table 6: Approximate area (ha) under major rice varieties in different districts of Tamil Nadu in 2025

Variety	Coimbatore	Dindigul	Tiruppur	Madurai	Kannyakumari	Tirunelveli	Erode	Salem
CO 55	235		3400					
Amman	482		2250				3400	1500
BPT 5204	368	1125					2250	
Sadana	310		2100				2000	
ADT 53	1350						3100	
ADT 56			1650					1400
ADT 55				2370		6735		
ADT 57				2145				
ADT 58				2060				1400
TPS 5					3540	3255		
ASD 16					3375	5300		
Bharathi					2193			
RNR 15048					1610			1500
CO 51								1000

Production oriented survey was conducted in 10 districts of Tamil Nadu viz., Coimbatore, Dindigul, Tiruppur, Madurai, Kannyakumari, Tirunelveli, Thiruvannamalai, Kallakurichi, Erode and Tenkasi when the crops were in booting to maturity stage. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice cultivation. Common crop rotations followed by the farmers were rice-rice, rice-black gram, rice-sugarcane, rice-banana, rice-maize, rice-tapioca and others. Commonly cultivated rice varieties were ASD 16, CO 55, CO 50, Savithri, ADT 53, ADT 56, CO 51, Amman, Sadana, ADT 45, NLR, ADT 55, ADT 57, ADT 58, TPS 5, TPS 3, ASD 16, Bharathi, RNR 15048, BPT 5204, Savithri, ADT 54, ADT 45, White Ponni, ADT 37, MPU 5, ASD 19 and others. Average yield among the HYVs were 6000-7000 kg/ha. Average seed rate was 60-75 kg/ha and treating the seeds before sowing was not very common among the farmers. Few treated the seeds with carbendazim and with bio-control agent, *Bacillus subtilis*. Some farmers applied FYM in the nursery and some applied chemical fertilizers like DAP in the nursery. In the main fields, fertilizers were applied @ 120-250 kg N/ha, 50-60 kg P2O5/ha, 50-60 kg K2O/ha and 10-20 kg ZnSO4/ha. Some applied FYM and green manure in the main fields. In general, intensity of weeds was low to medium. Hand weeding was common among the farmers. Some farmers also applied herbicides like Bentila (Bensulfuron Methyl 0.6% + Pretilachlor 6% GR), Council Activ (Triafamone 20% + Ethoxysulfuron 10% WG), Nominee Gold (bispyribac Sodium), Londax Power (Bensulfuron Methyl 0.6% + Pretilachlor 6% GR) and butachlor for management of weeds. Major needs of the farmers were better infrastructure in public procurement, better price of the produce, proper availability of agricultural labours and fertilizers, suitable varieties for DSR, HYVs with MS grain quality, biofortified and low GI and fertilizers and pest and disease resistant rice varieties. In general, the intensity of different pests and diseases was less. Major problem faced by the farmers were scarcity of labours and their high wages.

District wise observations

Coimbatore: Production oriented survey was conducted in four villages (in two blocks) in this district in Kharif season of 2025 when the crops were in maturity stage. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice

cultivation. Common crop rotations followed by the farmers were rice-rice, rice-black gram, rice-sugarcane, rice-banana and others were followed by the farmers. Widely prevalent rice varieties in the district were ASD 16, CO 55, CO 51, Amman, Sadan ADT 45, NLR, BPT 5204 and others. Average yield among the HYVs were 6000-6500 kg/ha. Most of the farmers contacted were from medium income group. Their per capita average rice consumption per month was 5.5-6 kg. They told they also used wheat for consumption. They mostly preferred parboiled rice and mostly fine grain rice. Average seed rate was 60-75 kg/ha and treating the seeds before sowing was not common among the farmers. Some farmers applied FYM in the nursery and some applied chemical fertilizers like DAP in the nursery. In the main fields, fertilizers were applied @ 160 kg N/ha, 50 kg P_2O_5/ha, 50 kg K_2O/ha and 10-20 kg $ZnSO_4$/ha. Many applied green manure in the main fields. Intensity of common weeds was low to medium. Hand weeding was common. About 50% farmers contacted also applied herbicides like Bentila (Bensulfuron Methyl 0.6% + Pretilachlor 6% GR), Council Activ (Triafamone 20% + Ethoxysulfuron 10% WG), Nominee Gold (bispyribac Sodium), Londax Power (Bensulfuron Methyl 0.6% + Pretilachlor 6% GR) for management of weeds. Major needs of the farmers were proper availability of labours, suitable varieties for DSR, HYVs with MS grain quality, biofortified and low GI and proper availability of fertilizers. Implements like cultivator, rotavator, power tillers and combine harvesters were used by the farmers mostly on hire basis. Almost all the farmers contacted told that they purchased their entire seed requirement. Canal was the main source of irrigation and about 50% farmers told that fertilizers and pesticides were not available in time. Private dealers were the main advisors to the farmers. Overall, disease and pests incidences were low. Some farmers applied pesticides like chlorpyriphos (1 l/ha) and chlorantraliprole for insects pests and propiconazole (500 ml/ha) for diseases. In general, farmers adopted 1-2 spraying. Major problems faced by the farmers were high cost of labours, micronutrient deficiency and insurance cover.

Dindigul: Production oriented survey was conducted in six villages (in 5 blocks) in this district in Kharif season of 2025 when the crops were in tillering to dough stage. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice cultivation. Common crop rotations followed by the farmers were rice-rice, rice-banana, rice-maize and others were followed by the farmers. Widely prevalent rice varieties in the district were CO 51, CO 50, BPT 5204, ADT 53, CO 55, Savithri, Jothimattai (local) and others. Average yield among the HYVs were 5000-6800 kg/ha. About 66% of the farmers contacted were from medium income group and rest were from low-income group. Their per capita average rice consumption per month was 5-7 kg. Most of the farmers contacted told they also used wheat for consumption. They told that they used both parboiled and polished rice for consumption and most of them used fine grain rice varieties for consumption. Average seed rate was 60-65 kg/ha and treating the seeds before sowing was not common among the farmers. Some farmers applied FYM in the nursery and some applied chemical fertilizers like DAP in the nursery. In the main fields, fertilizers were applied @ 120-175 kg N/ha, 40-60 kg P_2O_5/ha, 40-75 kg K_2O/ha and 15-25 kg $ZnSO_4$/ha. Some farmers applied green manure in the main fields. Farmers followed both line planting and random transplanting. Very few followed direct sowing. Intensity of common weeds was low to medium. Herbicides like Council Council Activ (Triafamone 20% + Ethoxysulfuron 10% WG), Nominee Gold (bispyribac Sodium) and others were used for management of weeds. Major needs of the farmers were mechanization for the small holder farmers, proper availability of labours, suitable varieties for DSR, HYVs with MS grain quality, biofortified and low GI and fertilizers and improvement in irrigation facilities. Implements like cultivator, rotavator, power tillers and combine harvesters were used by the farmers mostly on hire basis. Almost all the farmers contacted told that they purchased their entire seed requirement. Canal was the main source of irrigation and about 33% farmers

told that fertilizers and pesticides were not available in time. Private dealers were the main advisors to the farmers. Overall, disease and pests incidences were low. Some farmers applied pesticides like fipronil (1500 g/ha), cartap hydrochloride (2 ml/l) and chlorantraliprole for insects pests and tricyclazole and Saaf (carbendazim + mancozeb) (2-2.5 g/l) for diseases. In general, farmers adopted 1-2 spraying.

Tiruppur: Production oriented survey was conducted in six villages (in 5 blocks) in this district in Kharif season of 2025 when the crops were in booting to maturity stage. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice cultivation. Common crop rotations followed by the farmers were rice-rice, rice-black gram, rice-sugarcane and others. Widely prevalent rice varieties were CO 55, CO 51, Savithri, Amman, Sadana, ADT 56 and others. Average yield among the HYVs were 6400-7000 kg/ha. All the farmers contacted were from medium income group and their per capita average rice consumption per month was 5-7 kg. Most of the farmers contacted told they also used wheat for consumption. They told that they used both parboiled and polished rice for consumption and most of them used fine grain rice varieties for consumption. Average seed rate was 50-75 kg/ha and very few (~16%) treated the seeds with carbendazim (2 g/kg). Some farmers applied FYM in the nursery and some applied chemical fertilizers like DAP in the nursery. In the main fields, fertilizers were applied @ 120-250 kg N/ha, 40-60 kg P_2O_5/ha, 40-50 kg K_2O/ha and 10-20 kg $ZnSO_4$/ha. Some farmers applied green manure or FYM in the main fields. Farmers followed both line planting and random transplanting. Very few followed direct sowing. Intensity of common weeds was low to medium. Herbicides like pyrazosulfuron, Bentila (Bensulfuron Methyl 0.6% + Pretilachlor 6% GR), Council Council Activ (Triafamone 20% + Ethoxysulfuron 10% WG), Nominee Gold (bispyribac Sodium) and others were used for management of weeds. Major needs of the farmers were better infrastructure in public procurement, better price of the produce, proper availability of agricultural labours and fertilizers, suitable varieties for DSR, HYVs with MS grain quality, biofortified and low GI and fertilizers and pest and disease resistant rice varieties. Implements like cultivator, rotavator, puddler, disc plough, power tillers and combine harvesters were used by the farmers mostly on hire basis. Almost all the farmers contacted told that they purchased their entire seed requirement. Canal was the main source of irrigation and about 33% farmers told that fertilizers and pesticides were not available in time. Private dealers, officials from state department of agriculture and university were the main advisors to the farmers. Overall, disease and pests incidences were low. Some farmers applied pesticides like chlorantraliprole (2 ml/l) and acephate (500 g/acre) for insects pests and azoxystrobin (250 ml/acre) and Saaf (carbendazim + mancozeb) (2-2.5 g/l) for diseases. In general, farmers adopted 1-2 spraying.

Madurai: Five villages in 3 blocks were covered for production oriented survey when the crops were in booting to maturity stage. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice cultivation. The major crop rotation followed by the farmers was rice-rice. Widely prevalent rice varieties were ADT 55, ADT 57, ADT 58, CO 50, ASD 16, ADT 54, ADT 45, White Ponni and others. Average yield among the HYVs were 5400-6000 kg/ha. All the farmers contacted were from medium income group. Most of the farmers contacted told they also used wheat for consumption. They told that they used mainly parboiled fine grain rice varieties for consumption. Average seed rate was 50-62.5 kg/ha and very few (~20%) treated the seeds with carbendazim (2 g/kg). Some farmers applied FYM in the nursery and some applied chemical fertilizers like DAP in the nursery. In the main fields, fertilizers were applied @ 160-200 kg N/ha, 40-60 kg P_2O_5/ha, 40-50 kg K_2O/ha and 10-40 kg $ZnSO_4$/ha. Some farmers applied green manure or FYM in the main fields. Farmers followed both line planting and random transplanting. Very few followed direct

sowing. Intensity of common weeds was low to medium. Herbicides like Council Londax Power (Bensulfuron Methyl 0.6% + Pretilachlor 6% GR), Council Activ (Triafamone 20% + Ethoxysulfuron 10% WG), Nominee Gold (bispyribac Sodium) and others were used for management of weeds. Major needs of the farmers were better better price of the produce, proper availability of agricultural labours, suitable varieties for DSR, HYVs with MS grain quality, biofortified and low GI and fertilizers and pest and disease resistant rice varieties. Implements like cultivator, rotavator, puddler, power tillers and combine harvesters were used by the farmers mostly on hire basis. Majority of the farmers contacted told that they purchased their entire seed requirement. Canal followed by deep and shallow tube wells were the main sources of irrigation. Private dealers and officials from state department of agriculture were the main advisors to the farmers. Overall, disease and pests incidences were low. Information on pesticides use was not available.

Kanyakumari: Production oriented survey was conducted in four villages (in two blocks) in this district in Kharif season of 2025 when the crops were in heading to maturity stage. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice cultivation. Common crop rotation followed by the farmers was rice-rice-rice. Commonly cultivated rice varieties in the district were TPS 5, TPS 3, ASD 16, Bharathi, RNR 15048 and others. Average yield among the HYVs were 6000-7000 kg/ha. Most of the farmers contacted were from medium income group. Their per capita average rice consumption per month was 6-7.5 kg. They told they also used wheat for consumption. The farmers told that they used both parboiled and polished rice and both fine and coarse grain rice varieties for consumption. Average seed rate was 60-75 kg/ha and treating the seeds before sowing was not common among the farmers. Some farmers applied FYM in the nursery and some applied chemical fertilizers like DAP and urea in the nursery. In the main fields, fertilizers were applied @ 140-175 kg N/ha, 50-60 kg P_2O_5/ha, 40-50 kg K_2O/ha and 20 kg $ZnSO_4$/ha. Most of the farmers contacted told that they applied FYM (10 t/ha) or green manure in the main fields. Farmers followed both line planting and random transplanting. Intensity of common weeds was low to medium. Herbicides like Bentila ((Bensulfuron Methyl 0.6% + Pretilachlor 6% GR), Nominee Gold (bispyribac Sodium) and others were used for management of weeds. Hand weeding was very common among the farmers. Major needs of the farmers were remunerative price for the produce, timely availability of fertilizers, proper availability of agricultural labours, improvement in mechanization, suitable varieties for DSR, HYVs with MS grain quality and biofortified and low GI rice varieties. Implements like cultivator, rotavator, power tillers and combine harvesters were used by the farmers mostly on hire basis. Majority of the farmers contacted told that they purchased their entire seed requirement. Canal was the main source of irrigation and almost all the farmers contacted told that fertilizers and pesticides were available in time and they were happy with their quality. Private dealers were the main advisors to the farmers. Overall, disease and pests incidences were low. Some farmers applied pesticides like emmamectin benzoate (800-100 g/acre) and imidacloprid (100 ml/acre) for insect pests and azoxystrobin (250 ml/acre) and propiconazole (1 ml/l) for diseases. In general, farmers adopted 1-2 spraying.

Tirunelveli: Four villages in 3 blocks were covered for production oriented survey during kharif season of 2025 when the crops were in heading to maturity stage. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice cultivation. Common crop rotation followed by the farmers was rice-rice. Widely prevalent rice varieties in the region were ADT 55, ASD 16, TPS 5, ASD 19, ADT 37, MPU 5, ASD 19 and others. Average rice yield among the HYVs in the region ranged from 6000-6500 kg/ha. About 75% of the farmers contacted were from medium income group and rest were from

lower income group. Their per capita average rice consumption per month was 5-5.5 kg. They told they also used wheat for consumption. The farmers told that they mostly used polished rice and both fine and coarse grain rice varieties for consumption. Average seed rate was 50-62.5 kg/ha and treating the seeds before sowing was not common among the farmers. Very few applied FYM in the nursery and chemical fertilizers like DAP in the nursery. In the main fields, fertilizers were applied @ 165-175 kg N/ha, 50-80 kg P_2O_5/ha, 50-60 kg K_2O/ha and 20 kg $ZnSO_4$/ha. Some of the farmers contacted told that they applied FYM (4 t/ha) or green manure in the main fields. Farmers followed both line planting and random transplanting and few farmers also adopted direct sowing. Intensity of common weeds was low to medium. Herbicides like Council Activ (Triafamone 20% + Ethoxysulfuron 10% WG), Nominee Gold (bispyribac Sodium), Londax Power ((Bensulfuron Methyl 0.6% + Pretilachlor 6% GR), butachlor and others were used for management of weeds. Hand weeding was very common among the farmers. Major needs of the farmers were improvement in farm mechanization, better insurance coverage, proper availability of labours suitable varieties for DSR, HYVs with MS grain quality and biofortified and low GI rice varieties. Implements like cultivator, rotavator, power tillers and combine harvesters were used by the farmers mostly on hire basis. All the farmers contacted told that they purchased their entire seed requirement. Canal was the main source of irrigation and majority of the farmers contacted told that fertilizers and pesticides were available in time and they were happy with their quality. Private dealers and officials from state department of agriculture and university were the main advisors to the farmers. Overall, disease and pests incidences were low. Some farmers applied pesticides like fipronil (2 ml/l) for insect pests and azoxystrobin (250 ml/acre), Saaf (carbendazim + mancozeb) (2-2.5 g/l) and propiconazole (1 ml/l) for diseases. In general, farmers adopted 1-2 spraying.

Thiruvanamalai: Production oriented survey was conducted in 3 villages when the crops were in booting to mature stage. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice cultivation. Common crop rotations followed by the farmers were rice-banana, rice-maize, rice-rice, rice-pulses, rice-sugarcane and others. Most popular rice varieties cultivated were ADT 58, DAT 53, Amman, CO 51, ADT 37, ADT 43, NLR 3449, ASD 16, BPT5204, Sadana and others. Average rice yield among the HYVs in the region ranged from 6500-7000 kg/ha. The farmers contacted belonged to medium income group. Their per capita average rice consumption per month was 6.5-7 kg. They told they also used wheat for consumption. The farmers told that they mostly used polished rice and fine grain rice varieties for consumption. Average seed rate was 50-60 kg/ha and few farmers treated the seeds with biocontrol agent, Bacillus subtilis (10 g/kg of seeds). Few applied FYM in the nursery and most of them applied chemical fertilizers like DAP in the nursery. In the main fields, fertilizers were applied @ 140-180 kg N/ha, 70-80 kg P_2O_5/ha, 50-60 kg K_2O/ha and 20 kg $ZnSO_4$/ha. Some of the farmers contacted told that they applied FYM in the main fields. Intensity of weeds was low to moderate. Hand weeding was most common practice for weed management. Only few applied butachlor as pre-emergence weed management. Major needs of the farmers were better price for the produce, better insurance coverage, proper availability of labours, improvement in mechanization, suitable varieties for DSR, HYVs with MS grain quality, biofortified and low GI rice varieties, varieties tolerant to drought and high temperature and pest and disease resistant rice varieties. Implements like cultivator, rotavator, power tillers and combine harvesters were used by the farmers mostly on hire basis. All the farmers contacted told that they purchased their entire seed requirement. Canal was the main source of irrigation and majority of the farmers contacted told that fertilizers and pesticides were available in time and they were happy with their quality. Private dealers and officials from state department of agriculture were the main advisors to the farmers. Overall, disease and pests

incidences were low. Some farmers applied pesticides like fipronil (8 kg/acre) and chlorpyriphos (500 ml/ha) for insect pests and tebuconazole (500 ml/ha) for diseases. In general, farmers adopted 1-2 spraying. Availability of urea was an issue in some places.

Kallakaruchi: Survey was conducted in two villages in this district when the crops were in dough stage. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice cultivation. Common crop rotations followed by the farmers were rice-rice, rice-black gram and others. Widely prevalent rice varieties in this area were Amman, ASD 16, CO 51, Savithri, ADT 45 and others. Average rice yield among the HYVs in the region ranged from 6000-6800 kg/ha. The farmers contacted belonged to medium income group. Their per capita average rice consumption per month was 5.5-6 kg. They told they also used wheat for consumption. The farmers told that they mostly used parboiled rice and both fine and coarse grain rice varieties for consumption. Average seed rate was 60-70 kg/ha and none of the farmers contacted adopted seed treatment. Few applied FYM in the nursery few applied chemical fertilizers like DAP in the nursery. In the main fields, fertilizers were applied @ 160 kg N/ha, 50 kg P_2O_5/ha, 50 kg K_2O/ha and 20 kg $ZnSO_4$/ha. Some of the farmers contacted told that they applied FYM in the main fields. Intensity of weeds was medium and most of the farmers contacted applied herbicides like Bentila (Bensulfuron Methyl 0.6% + Pretilachlor 6% GR), Nominee Gold (bispyribac Sodium), Londax Power (Bensulfuron Methyl 0.6% + Pretilachlor 6% GR) and others along with hand weeding for management of weeds. Major needs of the farmers were better price for the produce, better insurance coverage, proper availability of labours, improvement in mechanization, suitable varieties for DSR, HYVs with MS grain quality, biofortified and low GI rice varieties, varieties tolerant to drought and high temperature and pest and disease resistant rice varieties. Implements like cultivator, rotavator, power tillers and combine harvesters were used by the farmers mostly on hire basis. All the farmers contacted told that they purchased their entire seed requirement. Canal was the main source of irrigation and majority of the farmers contacted told that fertilizers and pesticides were available in time and they were happy with their quality. Private dealers and officials from state department of agriculture were the main advisors to the farmers. Overall, disease and pests incidences were low. Some farmers applied pesticides like thiamethoxam (100 ml/acre) for insect pests and tricyclazole (0.6 g/l) and Saaf (carbendazom + mancozeb) (2-2.5 g/l)) for diseases. In general, farmers adopted 1-2 spraying.

Erode: Survey was conducted in two villages in this district when the crops were in maturity stage. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice cultivation. Common crop rotations followed by the farmers were rice-rice, rice-maize and others. Widely prevalent rice varieties in this area were Amman, ADT 53, BPT 5204, Sadana, CO 51, Savithri, ADT 45 and others. The farmers contacted belonged to medium income group. Their per capita average rice consumption per month was 5.5-6 kg. They told they also used wheat for consumption. The farmers told that they used both parboiled and polished rice and both fine and coarse grain rice varieties for consumption. Average seed rate was 50-60 kg/ha and none of the farmers contacted adopted seed treatment. Few applied FYM in the nursery few applied chemical fertilizers like DAP in the nursery. In the main fields, fertilizers were applied @ 160-165 kg N/ha, 50 kg P_2O_5/ha, 50 kg K_2O/ha and 20 kg $ZnSO_4$/ha. Some of the farmers contacted told that they applied FYM or green manure in the main fields. Intensity of weeds was medium and some of the farmers contacted applied herbicides like Nominee Gold (bispyribac Sodium), Londax Power ((Bensulfuron Methyl 0.6% + Pretilachlor 6% GR) and others along with hand weeding for management of weeds. Major needs of the farmers were better price for the produce, better insurance coverage, proper availability of labours, improvement in mechanization, suitable

varieties for DSR, HYVs with MS grain quality, biofortified and low GI rice varieties and varieties tolerant to pests and diseases. Implements like cultivator, rotavator, power tillers and combine harvesters were used by the farmers mostly on hire basis. All the farmers contacted told that they purchased their entire seed requirement. Canal was the main source of irrigation and all of them expressed that fertilizers and pesticides were available in time and they were happy with their quality. Private dealers and officials from state department of agriculture were the main advisors to the farmers. Overall, disease and pest incidences were low. Some farmers applied pesticides like chlorpyriphos (250 ml/acre) for insect pests and azoxystrobin (250 ml/acre) for diseases. In general, farmers adopted 1-2 spraying.

Tenkasi: Survey was conducted in two villages in this district when the crops were in maturity stage. The fields surveyed were under irrigated ecosystem and in general, the weather conditions were favourable for rice cultivation. Common crop rotations followed by the farmers were rice-tapioca, rice-banana, rice-maize and others. Commonly grown rice varieties were Amman, ASD 16, ADT 56, TPS 5, ADT 53, ASD 19, Savithri, ADT 45, ADT 43, BPT 5204 and others. Average rice yield among the HYVs ranged from 5500-6000 kg/ha. Their per capita average rice consumption per month was 4.5-7.5 kg. They told they also used wheat for consumption. The farmers told that they used polished rice and fine grain rice varieties for consumption. Average seed rate was 50-60 kg/ha and all the farmers contacted treated the seeds with Bacillus subtilis (10 g/kg of seeds). Few applied organic manures like poultry manure or green manure in the nursery. In the main fields, fertilizers were applied @ 160 kg N/ha, 50 kg P_2O_5/ha, 60 kg K_2O/ha and 20 kg $ZnSO_4$/ha. Some of the farmers contacted told that they applied FYM or green manure (5-10 t/ha) in the main fields. Intensity of weeds was low and most of the farmers contacted adopted hand weeding for management of weeds. Major needs of the farmers were better insurance cover, improvement in marketing facility, government support for export of organic rice, improvement in mechanization, proper availability of labours, suitable varieties for DSR, HYVs with MS grain quality, biofortified and low GI rice varieties, varieties tolerant to high temperature and varieties tolerant to pests and diseases Implements like cultivator, rotavator, power tillers and combine harvesters were used by the farmers mostly on hire basis. All the farmers contacted told that they purchased their entire seed requirement. Canal and shallow tube wells were the main source of irrigation and all of them expressed that fertilizers and pesticides were available in time and they were happy with their quality. Private dealers and officials from state department of agriculture were the main advisors to the farmers. Overall, disease and pests incidences were low.

Prevalence of diseases and insect pests in different rice growing districts of Tamil Nadu in 2025

Districts	Diseases						
	Bl	**NBl**	**BS**	**ShBl**	**ShR**	**FS**	**BLB**
Coimbatore	L	L	L	L (2%)	L	L	L (5-6%)
Dindugul	L (2%)	L (4-6%)	L (2-6^%)	-	L (2-6%)	-	L (2-6%)
Tiruppur	L (5-6%)	L	L (2-5%)	-	-	L	L (3-5%)
Madurai			L (2%)				L (5%)
Kanyakumari	L	L	L (5-6%)	L (5%)	L	L (3%)	L (2%)
Tirunelveli	L (3%)	L	L (3-6%)	-	L	-	L-M (5-8%)
Thiruvanamalai	L (5%)	L (2-3%)	L (5%)	-	L	L (5%)	L (4%)
Kallakaruchi			L (5%)	L (5-6%)	L	L (2-3%)	L (5%)
Erode	L (2%)	L-M (5-8%)	L (5%)	+	L	+	L (5-6%)
Tenkasi	L	-	L (3-6%)	+	-	L (4%)	L (5-6%)

Moderate (5-10%) incidence of grain discoloration in some fields in Tirunelveli, Thiruvannamalai and Tenkasi

Districts	Insect pests						
	SB	**LF**	**BPH**	**RH**	**WM**	**GLH**	**CW**
Coimbatore	+	L (5-6%)	+	-		-	-
Dindugul	L (5-7%)	L (2-6%)	-	-		L (2-5%)	L (5-6%)
Tiruppur	L-M (2-8%)	L (5-6%)	L (2%)	L (3%)	L (4-5%)	-	-
Madurai	L (2-5%)	L (5%)	L (5%)		L (2%)		
Kanyakumari	L-M (2-8%)	L (5%)	L (3%)	-		-	L (4-5%)
Tirunelveli	L (5-6%)	L (5%)	-	-		-	-
Thiruvanamalai	L (2-4%)	L (4%)	-	-		-	-
Kallakaruchi	L (5%)	L (5%)				L (3%)	
Erode	L (2-4%)	L (4%)	L (3%)	-		-	-
Tenkasi	L (3%)	-	-	-		+	-

Low incidence (2%) of horned cater pillar in some fields in Madurai; low incidence of cut worm in some fields in Tirunelveli

Telangana-2025-26 (Rajendranagar)

Districts surveyed: *Nalgonda, Rangareddy, Vikarabad, Yadadri Bhuvanagiri, Karimnagar, Kamareddy, Nizamabad, Peddapally, Rajanna Siricilla, Jagtial, Warangal, Medak* and *Khammam*

Table 1: Particulars of surveyin Telangana state in 2025-2026

Districts	Mandals	Villages
Nalgonda	Vemulapally, Damaracharla, Adividevulapally, AD Pally, Anumala, Nidamanoor and Tripuraram	Buggababigudem, Kondaprole, Balaji Nagar, Damaracharla, Veerlapalem, Ulshayapalem, Hazarigudem, Chalmareddygudem, Vallabhapur, Chinnaanumala, ARS, Kampsagar, Babusaipeta and KVK- Kampasagar **(13)**
Rangareddy	Yacharam	Gungal, Chowdarpally, Yacharam, Chintapatla and Mondi Gourelly **(5)**
Vikarabad	Yalala and Bommaraspet	Chennaram, Metlakunta, Regadimailaram, Bennur and ARS, Tandur **(5)**
Yadadri Bhuvanagiri	Bommalaramaram and Yadadri Bhuvanagiri	Mariyala, Nayakuni Thanda and Kunoor **(3)**
Karimnagar	Manakondur	Gangipally and Chenjerla **(2)**
Kamareddy	Banswada and Nusrullabad,	Banswada and Nemali **(2)**
Nizamabad	Varni, Dhupally, Edapally, Makloor, Bodhan and Morthad	Varni, RS & RRS, Rudur, Jaithapur, Kothapally, Pentakurd, Kopparthi Camp and Dhupally **(7)**
Peddapally	Kalvasrirampur	Kunaram and Jagannathapur **(2)**
Rajanna Sircilla	Tangallapally, Vemulawada, Ellandakunta and Boinpally	Baddenapally, Thippapur, Potthur, Kondrupaka and Potthur **(5)**
Jagtiyal		RARS, Polasa and Jatial **(2)**
Warangal		RARS, Warangal **(1)**
Medak	Narsapur, Narasapur, Kowdipally, Papannapet and Tekmal,	ARS-Nathanaipally, Reddipally, Chandur, KVK-Tuniki, Harchand Thanda, Nagsanpally, Kowdipally, Kukatlapally, Papannapet and Tekmal **(10)**
Khammam	Chintakani	Lacchagudem, Narasimhapuram, Nagiligonda, Poddutur and Chintakani **(5)**
Total: 13	**Total: 32**	**Total: 63**

The Rice Production-Oriented Survey (POS) for 2025–26 was conducted across **13** districts of Telangana in collaboration with progressive farmers, Krishi Vigyan Kendras (KVKs) of PJTAU and NGO-KVKs, Telangana Rythu Vignan Kendras (TRVKs), and the State Department of Agriculture. The survey was carried out in randomly selected farmer fields at intervals of 20-25 km and is conducted twice during each crop season, first at the tillering to maximum tillering stage, and subsequently at the grain filling to maturity stage in collaboration with TRVKs, KVKs, Dept. of Agricukture and Progressive farmers. The survey covered major rice-growing regions during the *Kharif*, 2025 and *Rabi* 2025–26 seasons. It included districts from the Southern Telangana Zone (Nalgonda, Rangareddy, Vikarabad, and Yadadri Bhuvanagiri), Northern Telangana Zone (Karimnagar, Kamareddy, Nizamabad, Peddapally, Rajanna Siricilla, and Jagtial), and Central Telangana Zone (Warangal, Medak, and Khammam). Overall, 63 villages were surveyed during the *Vanakalam,* 2025 and *Yasangi,* 2025–26 seasons. The survey findings revealed that major insect pests and diseases during *kharif,* 2025 included leaf folder, yellow stem borer (in the form of dead hearts and white ears), leaf and panicle mite, bacterial leaf blight (BLB), and grain discolouration. During *rabi*, 2025–

26, the major problems identified were stem rot, leaf and neck blast, brown planthopper (BPH), and yellow stem borer (YSB). In addition to these biotic stresses, several abiotic stresses such as cold injury, sulphide toxicity, algal blooms, and salinity were also reported across different locations in the state. It was also observed that the duration of *rabi* rice was significantly extended by 15–25 days due to severe cold conditions during the second fortnight of November and throughout December 2025. This trend was witnessed during the POS visits in Karimnagar, Khammam, and Nalgonda districts. Farmers faced challenge in raising nurseries during the *rabi* season, and the establishment of DSR was also adversely affected due to low temperatures. Analysis of district-wise POS data of Telgangana for *kharif,* 2025 revealed that, severe incidence of bacterial leaf blight in parts of Kamareddy and Nizamabad districts. Leaf mite incidence was particularly severe in Nalgonda district, especially in Jaisreeram-type varieties during September-October months. Panicle mite was predominantly observed in coarse grain varieties in both seasons, while grain discolouration was more common in fine grain varieties during *kharif* and *rabi* seasons. Sporadic incidence of gall midge was reported in Khammam district irrespective varieties. Thrips incidence of was observed in Chowdarypally village of Ranga Reddy.During *rabi,* 2025–26, stem rot and leaf blast (hybrid rice seed production areas) were found to be severe in Karimnagar district. Additionally, leaf folder incidence was observed across most of the surveyed locations during the *kharif* season. Based on observations over the past five years, major hotspot locations for pests and diseases were identified. Regional Agricultural Research Station (RARS), Warangal was noted as a hotspot for bacterial leaf blight, while Regional Sugarcane and Rice Research Station (RS&RRS), Rudrur was identified as a hotspot for gall midge and bacterial leaf blight under natural epiphytotic conditions. The key researchable issues identified during the Rice POS druing 2025-26 in Telangana across *kharif* and *rabi* seasons include the compatibility of miticides with insecticides and fungicides, and the need for effective chemical control measures for bacterial leaf blight, alternate chemicals for control of leaf and panicle mite with grain discolouration, Additionally, developing a suitable package of practices for stem rot management during the *rabi* season is essential. Most effective herbicides for control of new emerging weeds under DSR (Ex. jungle rice). Further, the efficacy of drone-based pesticide application in rice needs to be critically evaluated, particularly whether a spray volume of 10 liters per acre is adequate for effective coverage and control.

The Rice Production-Oriented Survey (POS) for the year 2025–26 was carried out in **13** districts of Telangana in collaboration with Progressive Farmers, Krishi Vigyan Kendras (KVKs) of PJTAU and NGO - KVKs, Telangana Rythu Vignan Kendras (TRVKs), and the State Department of Agriculture. The survey was conducted across major rice-growing regions during *Kharif,* 2025 and *Rabi*, 2025–26 seasons. It covered districts such as Nalgonda, Rangareddy, Vikarabad, and Yadadri Bhuvanagiri in the Southern Telangana Zone **(4 districts)**; Karimnagar, Kamareddy, Nizamabad, Peddapally, Rajanna Siricilla, and Jagtial in the Northern Telangana Zone **(6 districts)**; and Warangal, Medak and Khammam in the Central Telangana Zone **(3 districts)**. In total, **63** villages were surveyed during the *Vanakalam*, 2025 and *Yasangi,* 2025–26 seasons. The findings of the survey indicated that major insect pests and diseases observed during *kharif* 2025 included leaf folder, yellow stem borer (manifesting as dead hearts and whitears), leaf and panicle mite and bacterial leaf blight (BLB) and grain discolouratiion. During *rabi,* 2025–26, key issues identified were stem rot, leaf and neck blast, brown planthopper (BPH), and yellow stem borer (YSB). In addition to these biotic stresses, several abiotic stresses such as cold injury, sulphide toxicity, algal bloom, and salinity were also reported across different locations in the state. Detailed information on various aspects of rice cultivation including seasonal conditions, crop area coverage, crop management practices,

cost of cultivation, and the occurrence and management of biotic and abiotic constraints was collected and discussed with farmers. The data were gathered through a participatory approach involving interactions with Scientists from TRVKs, Subject Matter Specilist from KVKs, progressive farmers, seed producers, Agricultural Extension Officers (AEOs), Mandal Agricultural Officers (MAOs), Assistant Directors of Agriculture (ADAs), District Agricultural Officers (DAOs), and input dealers at village, mandal, and district levels.

A. General information

A.1: Seasonal Conditions

South-West Monsoon-2025: The South-West Monsoon is crucial for the agriculture sector. Rainfall received during the period from June to September, 2025 is 968.4 mm as against the normal of 748.6 mm showing deviation of 33%, over all status being Excess.

North-East Monsoon: Normally, in Telangana State, 14% of annual rainfall is received from North- East Monsoon. The average rainfall received during October to December is 189.6 against the normal rainfall of North-East Monsoon is 110.20 mm and deviation is 72% Excess.

Winter period: During winter period, actual rainfall received is 6.5 mm as against normal of 12.5 mm with deviation of -48% Deficit.

Hot Period: During this week, actual rainfall is received 5.1 mm as against the normal of 1.9 mm with deviation of 168% Excess.

Table. 2. Month wise rainfall received in Telangana from 01.6.2025 up to 18.03.2026

Month	Normal (mm)	Actual rainfall (mm)		% deviation to normal	Status
		2024-25	2025-26		
June, 2025	130.3	159.2	104.2	-20	Deficit
July, 2025	227.4	294.9	238.0	5	Normal
August, 2025	215.8	209.7	378.5	75	Excess
September, 2025	167.1	298.8	267.7	60	Excess
S W Monsoon	**740.6**	**962.6**	**988.4**	**33**	**Excess**
October, 2025	90.1	64.6	175.4	95	Excess
November, 2025	15.7	6.0	14.1	3	Normal
December, 2025	4.4	15.7	0.1	-98	Large Deficit
N E Monsoon	**110.2**	**86.3**	**189.6**	**72**	**Excess**
January, 2025	8.0	0	0.1	-99	Large Deficit
February, 2025	4.5	0.2	6.4	42	Excess
Winter Monsoon	12.5	0.2	6.5	-48	Deficit
March,2026 as on 18.3.2026	6.7	0.0	5.1	-24	Deficit
Cumulative Total	**870.0**	**1049.1**	**1189.6**	**37**	**Excess**

Table 3: District wise rainfall status and deviation of rainfall during the period from 01.06.2025 to 18.03.2026

S. No.	Districts	No. of Districts	Status & deviation
1	Adilabad, Komarambheem Asifabad, Nirmal, Kamareddy, Karimnagar, Medak, Sangareddy, Siddipet,Warangal, Mulug, Jangaon, Hanumakonda, Mahabubabad, Khammam, Badradri Kothagud, Rangareddy, Vikarabad, Medchal Malkajgiri, Mahabubnagar, Narayanpet, Wanaparthy, Nagarkurnool, Jogulamba Gadwal, Yadadri Bhongiri, Hyderabad, Suryapet and Nalgonda	**27**	Excess
2	Mancherial, Nizambad, Peddapally, Jagtial Rajanna Sircilla and Jayashanker Bhupalpally	**6**	Normal
3	Nil	**0**	Deficit
4	Nil	**0**	Large Deficit

Rainfall Impact and *Yasangi,* 2025-26 Season Outlook:

- The state received 33% excess rainfall during the southwest monsoon, with an actual rainfall of 988.4 mm compared to a normal of 740.6 mm.
- During the North-East Monsoon the State has received cumulative rainfall of 189.6 mm against the normal rainfall of 110.2 mm, recording a deviation of +72%, thereby falling under the "Excess" category.
- During the Winter Period Monsoon, the State has received cumulative rainfall of 6.5 mm against the normal rainfall of 12.5 mm, recording a deviation of -48%, thereby falling under the "Deficit" category.
- Excess rainfall received at the fag end of the Southwest (SW) Monsoon and during the Northeast (NE) Monsoon created favourable conditions for enhanced crop area coverage during the ensuing *Rabi* season.
- As a result, 81.20 lakh acres of crops have been sown during the current season, as against 74.23 lakh acres during the corresponding period last year.

A.2: Crop coverage

In Telangana, rice is mostly cultivated under wells, tanks and canals in an area of around 67,30,408 acres against normal area of 62,47,868 acres during *kharif*, 2025, whereas 57,02,906 acres against normal area of 51,48,850 acres during *rabi*, 2024-25 (www.agri.telangana.gov.in). Among the districts, Nalgonda is the the major rice grown area during *kharif*, 2025 (5,38,433 acres) and *rabi*, 2025-26 (5,58,492 acres).

Table 4. District wise normal and actual rice area covered during *kharif*, 2025 and *rabi*, 2025-26 **(Area in acres)**

S. No.	DISTRICT	*Kharif, 2024*			*Rabi*, 2024-25		
		Normal Area	Actual Area	% Cov. over NA	Normal Area	Actual Area	% Cov. over NA
Southern Telangana Zone							
1	Rangareddy	121286	135618	11.81%	85888	103516	20.52%
2	Medchal-Malkajgiri	17631	17646	0.09%	12237	16499	34.83%
3	Vikarabad	119290	131608	10.32%	75838	105305	38.86%
4	Mahabubnagar	171780	216605	26.09%	123964	159608	28.75%
5	Nagarkurnool	129047	160839	24.64%	128380	152262	18.60%
6	Wanaparthy	187361	200247	6.88%	127438	180754	41.83%
7	Gadwal (Jogulamba)	87228	94363	8.18%	60659	66643	9.87%
8	Narayanpet	145175	186508	28.47%	116625	157807	35.30%
9	Nalgonda	478158	538433	12.60%	484851	558492	15.19%
10	Suryapet	455074	466451	2.50%	445700	484025	8.60%
11	Yadadri Bhuvanagiri	275339	282897	2.75%	251919	314972	25.03%
	Total	**2187369**	**2431215**	**-**	**1913499**	**2299883**	**-**
Northern Telangana Zone							
12	Nizamabad	412164	437680	6.19%	392408	424492	8.18%
13	Kamareddy	292787	316340	8.04%	229387	246110	7.29%
14	Karimnagar	269834	276879	2.61%	257509	274000	6.40%
15	Jagtiyal	300273	312420	4.05%	277019	29380	-89.39%
16	Peddapalli	209286	210046	0.36%	194903	208728	7.09%
17	RajannaSiricilla	172601	185420	7.43%	163015	182320	11.84%
18	Adilabad	1941	2375	22.36%	311	440	41.48%
19	Mancherial	159664	156360	-2.07%	100734	120581	19.70%
20	Nirmal	125482	137227	9.36%	99841	125060	25.26%
21	Asifabad (K. Bheem)	56106	56000	-0.19%	16705	23500	40.68%
	Total	**2000138**	**2090747**	**-**	**1731832**	**1634611**	**-**
Central Telangana Zone							
22	Medak	269043	300817	11.82%	230071	269773	17.26%
23	Sangareddy	127186	151222	18.90%	83986	102340	21.85%
24	Siddipet	333202	363350	9.05%	316900	367847	16.07%
25	Warangal (Rural)	127950	130225	1.78%	96414	105652	9.58%
26	Warangal (Urban)	141984	145601	2.55%	121165	111380	-8.08%
27	JayashankarBhupalpalli	108106	114653	6.06%	77439	89000	14.93%
28	Janagoan	196799	213978	8.73%	173040	196210	13.39%
29	Mehabubabad	203909	214547	5.22%	134564	152851	13.59%
30	Mulugu	99628	105000	5.39%	46182	60420	30.84%
31	Khammam	287928	295012	2.46%	173910	234645	34.92%
32	Bhadradri Kothagudem	164626	174041	5.72%	49848	78294	57.07%
	Total	**2060361**	**2208446**	**-**	**1503519**	**1768412**	**-**
	Grand Total	**6247868**	**6730408**	**-**	**5148850**	**5702906**	**-**

A.3: Crop stage at the time of survey

The roving survey was conducted in **13** major rice growing districts of Telangana State covering **68** villages in different districts, when the crop was between maximum tillering to maturity stage during *kharif*, 2025 whereas tillering stage to PI stage during *rabi*, 2024-25.

A.4: Crop rotation practiced

Among various cropping systems, rice followed by rice was the most dominant practice across all surveyed districts. Other cropping systems observed included rice-fallow, green manure-rice-rice, rice-pulses, rice-zero tillage maize / sunflower, and rice-rice-vegetables, depending on water availability and other influencing factors. In Khammam district, rice – zero tillage maize was observed in the surveyed village during *rabi* season.

A.5: Varietal Scenario in Telangana state

According to the Department of Agriculture, Government of Telangana, fine grain varieties occupied an area of 40.0 lakh acres, while coarse grain varieties covered 26.8 lakh acres during the *Kharif,* 2025 season. The major varieties cultivated by farmers include BPT 5204, RNR 15048, KNM 1638, MTU 1010, KNM 118, Siddi, JGL 24423, MTU 1224, JSR-type private varieties, IR-64, RNR 28361, WGL 915, JGL 27356, DRR Dhan 75, KNM 12510, KNM 7715, and MTU 1061 *etc*. Among the Jai Sreeram grain types (such as JGL 27356, Ankur 101, Pooja, Sriram Gold, Ankur Sona, Super Aman, Sowbhagya, Siri Sampada, and Aman Gold), along with HMT Sona, RNR 21278, MTU 1271, and the local variety Ganga Kaveri, as well as other fine varieties like Mahindra Sowbhagya, are widely popular among farmers. Several coarse rice varieties cultivated in the state include Kunaram Sannalu, MTU 1010, Jagtial Rice-1, WGL 1537, IR-64, Tellahamsa, Bathukamma, MTU 1061, MTU 1153, MTU 1156, 7029, and MTU 1001. Additionally, the local variety Ganga Kaveri which known for both fine and coarse grain types is widely grown in the Makthal division of Narayanpet district, as well as in Nizamabad and Kamareddy districts, during both *Kharif* and *Rabi* seasons.

During the *rabi* season, farmers in Warangal, Karimnagar, Vikarabad, Yadadri Bhuvanagiri (Pochampally), the Musi belt of Rangareddy, and Nalgonda districts predominantly cultivate private hybrids. Commonly grown hybrids include Kaveri 272, Kaveri 175, Kaveri 468, VNR 22258, Rasi 113, Mahindra 303, 27P31, RX 100, and Bio 799. Furthermore, hybrid seed production is mainly carried out in the Manakondur and Huzurabad divisions of Karimnagar, the Husnabad division of Siddipet, and Warangal district during the *Rabi* season.

B. Crop Management

B.1: Seed rate and source of seed:

Dry Direct Seeded Rice (DSR) is widely practiced in the Kallur, Pinapaka, Chandrugonda, Sattupally, Aswaraopet, and Vemsoor mandals of Khammam district during *kharif* season, while wet direct-seeded rice has been extensively adopted across Telangana during the *Rabi* season. Under dry direct sowing, farmers typically use a seed rate of 15 kg per acre for fine-grain varieties and 20 kg per acre for coarse-grain varieties. In the transplanting method, the seed rate ranges from 20 to 25 kg per acre. For dry-to-wet converted rice, the seed rate varies between 10–18 kg per acre for fine varieties and 12–25 kg per acre for coarse varieties during the *rabi* season. Farmers have observed that seed rate significantly influences weed growth in DSR field. There is a common perception that lower seed rates increase the risk of weed infestation; hence, most farmers tend to adopt higher seed rate in wet or dry DSR.

Seeds are generally procured from sources such as the Telangana State Seed Development Corporation (TSSDC), National Seeds Corporation (NSC), PJTSAU research stations, District Cooperative Marketing Societies (DCMS), and private input dealers. For research paddy or hybrid varieties, the seed rate typically ranges from 6 to 8 kg per acre. The cost of hybrid seeds ranges from ₹1,100 to ₹1,300 per 3–4 kg pack, depending on the seed company. To promote awareness on quality seed, PJTAU organized a program titled "Quality Seed Every Village" (QSEV) in June 2025. The primary objective of this initiative was to deliver new high-yielding rice varieties directly to farmers, encourage local seed multiplication, and facilitate distribution within the same village. Under the QSEV program, a majority of the seed kits distributed across the state were focused on rice, based on the prevailing varietal patterns in the respective districts. Further, mondal nodal officer

Demonstration of drone seeding device at Ramanpadu village, Mahabubnagar district

B.2: Seed treatment

Across the surveyed villages, only about 5–10% of farmers were practicing wet seed treatment. Typically, seeds were soaked for 24 hours in a solution containing either Carbendazim (1.0 g per kg of seed per litre of water) or a combination of Mancozeb + Carbendazim (2.5 g per kg of seed per litre of water) to enhance seed protection. When farmers in each village were questioned, it was evident that, the low adoption of seed treatment was mainly due to a lack of awareness about its benefits. Many farmers were not familiar with its role in preventing seed-borne diseases and improving crop establishment.

B.3: Sowing and Planting

The nurseries of long-duration varieties were sown between the last week of May and June, with planting completed by the first FN June, 2025, particularly in Nizamabad, Kamareddy, and Rajanna Siricilla districts. However, sowing was delayed in the NSP canal areas, including Khammam, Nalgonda, and Suryapet districts. During the *rabi,* 2025-26 season, paddy transplanting was delayed due to cold injury, stunted growth and zinc deficiency at the nursery stage. Further, duration of rice varieties / hybrids are also extended during this current *rabi* season.

B.4: Organic manures and inorganic fertilizers applied

The majority of the farmers were applied inorganic fertilizers @ 2-10 kg of N, 1-6 kg P and 2.0-3.0 kg K_2O in the farm of DAP or 20-20-0-13 or other complex fertilizers. It was observed that, application of sheep manure or poultry manure @ 600-850 kg per 3-4 cents of nursery area especially during *rabi* season. The growth of nurseries was affected during *rabi* season due to cold injury, sulphide injury and salinity.

B.5: Fertilizer application

The majority of the farmers in the surveyed districtsts are applying NPK in the form of complex fertilizers *viz.,* 12-32-16, 20-20-0-13, DAP, 10-26-26, 16-20-0-13, 17-17-17, 19-19-19, 28-28-0 ranging from 1 to 3 bags per acre as a basal dose. Majority of the farmers are applying the complex fertilizers (50-150 kg/acre) as basal followed by top dressing of Urea (150-200 kg/acre) in 2-3 split doses at tillering stage, booting and just before panicle initiation depending on duration of the varieties.

B.6: Methods of planting

A major challenge observed during the field visits was the acute shortage of labour for transplanting. Migrant labourers from Uttar Pradesh, Bihar, Odisha, Jharkhand, and Chhattisgarh are primarily engaged in paddy transplanting across Telangana, commonly following the Bengal planting method. The cost of transplanting using this method is approximately ₹4,500–5,500 per acre. These labourers, mainly from Uttar Pradesh, Bihar, and Jharkhand, typically work in teams of around 10-12 members and achieve an efficiency of 1.5 to 2.0 hectares per day (from 6:00 AM to 6:00 PM). A key feedback received from farmers was that transplanting shock is higher when paddy is transplanted by migrant labour compared to local labour. This is mainly because migrant workers tend to thoroughly clean the soil around the root zone of seedlings before transplanting. As a result, the seedlings experience greater transplanting shock, leading to delayed establishment during the early growth stage. In certain districts such as Ranga Reddy and Vikarabad, where migrant labour is scarce, the cost of transplanting is higher, ranging from 6,000 to 8,000 per acre.

In Telangana, direct-seeded rice methods such as drum seeding, dry DSR, and wet DSR under puddled conditions are becoming increasingly popular during both *Kharif* and *Rabi* seasons. Among these, wet DSR under puddled conditions is the most widely practiced during the *Rabi* season. However, major challenges associated with DSR include weed management and poor germination in saline patches. Additionally, dry direct seeding using a seed-cum-fertilizer drill is commonly practiced in the Wyra and Sattupally divisions of Khammam district during *Kharif*. In transplanted rice fields, the plant population generally ranges from 15 to 24 hills per square meter, irrespective of variety or planting time. In contrast, dry-to-wet converted rice fields tend to have a higher plant population, ranging from 40 to 60 hills per square meter.

Drone Seeding:

Professor Jayashankar Telangana Agricultural University (PJTAU) has developed a drone-based seeding device in collaboration with M/s. Marut Dronetech Pvt. Ltd., Hyderabad. Presently, large-scale on-farm testing of this technology is being carried out during *rabi*, 2025–26 in farmers' fields by KVK Kampasagar, KVK Bhadradri Kothagudem, and KVK Jammikunta. The drone seeding is targeted to achieve the 6-8 kgs for fine grain varieties and 10-12 kgs for coarse grain varieites to complete the sowing within 10 minutes per acre.

In Telangana, farmers use various rice planting methods depending on factors like water availability, labor costs, and soil conditions. The ranking of methods of planting as follows:

1. Normal transplanting is still holds good where sufficient labour force is available.
2. Dry converted wet rice – Broadcasting of sprouted seed
3. Wet Direct Sowing – Broadcasting in puddled soil
4. Drum seeding
5. DSR using seed cum ferti drill
6. Machine planting
7. Drone seeding (on-farm testing)

B.7: Intensity of weeds

The predominant weed flora in rice fields includes *Echinochloa colona, Echinochloa crus-galli, Cynodon dactylon, Cyperus rotundus, Leersia hexandra, Panicum repens, Euphorbia* spp., and *Parthenium* spp. In Direct Seeded Rice (DSR), whether under drum seeding or wet direct seeding methods, weeds such as *Ischaemum rugosum* (locally known as Tonagi) and jungle rice are the major species commonly observed in farmers' fields.

B.8: Weed management

In the surveyed districts, the majority of farmers applied both pre-emergence and post-emergence herbicides in rice during the *kharif* and *rabi* seasons. Only a small proportion of farmers practiced manual weeding, mainly due to acute labour shortages. The most commonly used herbicide for tank mixing with other weedicides is Bispyribac sodium 10% SC (Nominee Gold), applied at 100 ml per acre as a post-emergence herbicide. Additionally, some farmers have been mixing Bispyribac sodium 10% SC with newly introduced herbicides. A reduced dose of 30–50 ml per acre, in combination with other herbicides, is also a widely observed practice across the surveyed districts.

Overall, the use of both pre- and post-emergence herbicides is prevalent among farmers in the surveyed areas. The commonly used herbicides in rice cultivation are as follows:

- Penoxsulam 1.02% + Cyhafolop-butyl 5.1% OD @ 900 ml per acre
- Triafamone 20% and Ethoxysulfuron 10% WG @ 90 g per acre (Council Active)
- Penoxsulam 1.02% + Cyhalofop-butyl 5.1% OD @ 900 ml per acre (Vivaya)
- Penoxsulam 2.5% OD (Assert) @ 400 ml per acre
- Bensulfuron Methyl 0.60 % + Pretilachlor 6% GR @ 4 kg per acre (Eraze Strong / Londax Power)
- Fenoxaprop-p-ethyl 6.7% w/w @ 350 ml per acre
- Beflubutamid 2.5% GR @ 4 kg per acre
- Pretilachor @ 600 ml per acre
- Fenoxaprop-p-ethyl 6.9 EC (6.7% w/w) @ 350 ml per acre
- Bentazone 48% SL @ 350 ml per acre
- Pyrazosulfuron Ethyl 10% WP @ 60 g per acre
- Pendimethalin @ 1000 ml per acre
- Penoxsulam 0.97%+ Butachlor 38.8% SE @ 900 ml per acre

Further, during the POS visit to rice fields, it was observed that farmers are mixing the 2-3 herbicides especially as post emergence herbicide at 20-25 days after sowing in DSR for control of weeds. The most commonly mixing cocktail mixtures of herbicides are as follows:

- Triafamone 20% and Ethoxysulfuron 10% WG @ 90 g per acre + Fenoxaprop-p-ethyl 6.7% w/w @ 350 ml per acre + Bispyribac sodium 10% SC @ 30 ml per acre

- Penoxsulam 1.02% + Cyhalofop-butyl 5.1% OD @ 900 ml per acre (Vivaya) + Bentazone 48% SL @ 350 ml per acre
- Penoxsulam 2.5% OD (Assert) @ 400 ml per acre + Bentazone 48% SL @ 350 ml per acre + Bispyribac sodium 10% SC @ 30 ml per acre

C. Insect-Pests & Diseases scenario observed during rice POS

During the rice POS, the pest scenario in rice has been assessed during *kharif,* 2025 and *rabi*, 2025-26 in response to adoption of new varieties, package of practices, pest managaement practices and cost of cultivation. The significant achievements of the POS, 2025-26 as detailed below.

- The Rice Production-Oriented Survey (POS) for 2025–26 was conducted across 13 districts of Telangana in collaboration with progressive farmers, Krishi Vigyan Kendras (KVKs) of PJTAU and NGO-KVKs, Telangana Rythu Vignan Kendras (TRVKs), and the State Department of Agriculture. The survey covered major rice-growing regions during the *Kharif*, 2025 and *Rabi* 2025–26 seasons. It included districts from the Southern Telangana Zone (Nalgonda, Rangareddy, Vikarabad, and Yadadri Bhuvanagiri), Northern Telangana Zone (Karimnagar, Kamareddy, Nizamabad, Peddapally, Rajanna Siricilla, and Jagtial), and Central Telangana Zone (Warangal, Medak, and Khammam). Overall, 63 villages were surveyed during the *Vanakalam,* 2025 and *Yasangi,* 2025–26 seasons.
- The survey findings revealed that major insect pests and diseases during *kharif,* 2025 included leaf folder, yellow stem borer (in the form of dead hearts and white ears), leaf and panicle mite, bacterial leaf blight (BLB), and grain discolouration. During *rabi*, 2025–26, the major problems identified were stem rot, leaf and neck blast, brown planthopper (BPH), and yellow stem borer (YSB). In addition to these biotic stresses, several abiotic stresses such as cold injury, sulphide toxicity, algal blooms, and salinity were also reported across different locations in the state.
- It was also observed that the duration of rabi rice was significantly extended by 15–25 days due to severe cold conditions during the second fortnight of November and throughout December 2025. This trend was witnessed during the POS visits in Karimnagar, Khammam, and Nalgonda districts. Farmers faced challenge in raising nurseries during the *rabi* season, and the establishment of DSR was also adversely affected due to low temperatures.
- Analysis of district-wise POS data of Telgangana for *kharif,* 2025 revealed that, severe incidence of bacterial leaf blight in parts of Kamareddy and Nizamabad districts. Leaf mite incidence was particularly severe in Nalgonda district, especially in Jaisreeram-type varieties during September-October months. Panicle mite was predominantly observed in coarse grain varieties in both seasons, while grain discolouration was more common in fine grain varieties during *kharif* and *rabi* seasons. Sporadic incidence of gall midge was reported in Khammam district irrespective varieties. Thrips incidence of was observed in Chowdarypally village of Ranga Reddy. During *rabi,* 2025–26, stem rot and leaf blast (hybrid rice seed production areas) were found to be severe in Karimnagar district. Additionally, leaf folder incidence was observed across most of the surveyed locations during the *kharif* season.
- Based on observations over the past five years, major hotspot locations for pests and diseases were identified. Regional Agricultural Research Station (RARS), Warangal was noted as a hotspot for bacterial leaf blight, while Regional Sugarcane and Rice Research Station (RS&RRS), Rudrur was identified as a hotspot for gall midge and bacterial leaf blight under natural epiphytotic conditions.

- The key researchable issues identified during the Rice POS in Telangana across *kharif* and *rabi* seasons include the compatibility of miticides with insecticides and fungicides, and the need for effective chemical control measures for bacterial leaf blight, alternate chemicals for control of leaf and panicle mite with grain discolouration, Additionally, developing a suitable package of practices for stem rot management during the *rabi* season is essential. Most effective herbicides for control of jungle rice. Further, the efficacy of drone-based pesticide application in rice needs to be critically evaluated, particularly whether a spray volume of 10 liters per acre is adequate for effective coverage and control.

Table 5: Occurrence of insect-pests (% Incidence) in the surveyed districts during *Kharif*, 2025 & *Rabi*, 2025-26

District	Insect pests						
	YSB (WE)	GM	LF	WM	LM	PM	Hispa
Nizamabad	5-20%	10-60%	-	-	-	-	-
Kamareddy	-	-	-	-	-	-	-
Karimnagar	-	-	-	-	-	-	-
Rajanna Siricilla	1-5%	1-10%	-	-	-	5-20%	-
Peddapally	-	5-25%	-	-	-	5-15%	-
Jagtial	1-5%	1-10%	-	-	-	-	-
Warangal	-	5-15%	-	-		-	-
Medak	5-10%	-	5-15%	-	-	1-20%	-
Khammam	-	5-15%	5-15%	-	-	-	-
Yadadri Bhuvanagiri	-	1-5%	-	-	-	-	1-5%
Rangareddy	1-5%	-	1-5%	-	-	-	-
Vikarabad	1-5%	-	-	-	-	1-10%	-
Nalgonda	5-15%	-	1-20%	5-15%	5-25%	-	-

Source: The data presented in the table is incidence of insect-pests and diseases in the surveyed farmer fields (isolated patches). The incidence of pests and diseases may vary from village to village in the respective districts also. The information also collected from concerned district ADAs, MAOs, AEOs and farmers interaction. GM: Gall midge: YSB: Yellow stem borer, LF: Leaf folder, LM: Leaf Mite; PM: Panicle Mite; WM: Whorl Maggot

Table 6: Incidence of rice diseases (% incidence) in the surveyed districts during *Kharif*, 2025 & *Rabi*, 2025-26

Districts	BLB	NB	ShB	GD	BS	FS	ShR	LB (*Rabi*)
Nizamabad	5-30%	5-30%	5-15%	5-10%	-	1-5%	1-10%	-
Kamareddy	5-25%	-	-	-	-	-	-	-
Karimnagar								5-20%
Rajanna Siricilla	-	-	-	-	1-5%	-	-	-
Peddapally	-	-	5-20%	5-20%	-	-	-	-
Jagtial	-	-	-	5-10%	1-5%	-	-	-
Warangal	5-30%	-	5-10%	1-10%	-	-	-	-
Medak	-	-	-	5-15%		-	5-15%	-
Khammam	-	-	-	-	5-10%	-	-	5-10%
Yadadri Bhuvanagiri	-	3.4-10.8%	-	3-8%	-	-	-	-
Rangareddy	-	-	-	1-5%	-	-	-	-
Vikarabad	-	1-20%	-	1-20%	-	1-5%	-	-
Nalgonda	-	-	-	5-20%	5-40%	-	-	M-S

Note: *BLB: Bacterial Leaf Blight; NB: Neck Blast; ShB: Sheath Blight; GD: Grain discolouration; BS: Brown spot; FS: False smut; ShR: Sheath rot*

D. Plant protection information:

D.1: Pesticide application equipment

The most commonly used plant protection equipements for spraying of pesticides are as follows

- Taiwan sprayer
- Tractor mounted sprayer
- Drones (UAVs)
- Battery operated knapsack sprayer

Farmers across all surveyed districts are increasingly using drones for pesticide spraying on an outsourcing basis, primarily due to labor shortages. The cost of drone spraying ranges from Rs. 400 to 500 per acre, with 10-20 liters of spray fluid used per acre. The farmers raising concern over application of 10 liter spray fluid per acre using drones. Additionally, tractor-mounted sprayers are widely used in Nalgonda districts, offering a more cost-effective option at Rs. 300 per acre. However, tractor-mounted sprayers pose a higher risk of pesticide exposure to operators, time consuming and also involved for labourers.

D.2: Total no. of pesticides sprayed in the crop season

In the surveyed villages, 60-70% of farmers did not conduct a single pesticide spraying during *Kharif,* 2025. Overall, pesticide usage remained less across surveyed districts, except in Kamareddy, Nalgonda and Nizamabad districts, where applications were comparatively higher. Due to heavy rains during kharif season, the number of pesticide sprayings were comparatievely lower across the surveyed locations. However, the application of combination granules (3G, 4G, or 0.4G) at the tillering stage (15-20 DAP) is a common practice adopted by farmers in the majority of the surveyed districts. But, majority of the farmers are mixing the granules with urea, which is quite common practice observed across the surveyed districts.

List of insecticides and fungicides used by the farmers

S. No.	Insect-pests /diseases	Chemicals used
1.	Gall midge	Carbosulfan 25% EC (Marshall), Fipronil 0.3 G and 0.6G, Carbofuran 3G, Carbosulfan 25% EC
2.	Stem borer, Hispa, whorl maggot and leaf folder	**Nursery to Tillering stage:** Carbofuran 3G, Cartap Hydro Chloride 4G, Chlorantraniliprole 0.4G, Fipronil 0.3%G, Flubendiamide 0.7%G Chlorpyriphos 50%EC + Urea **PI to Booting stage:** Chloranthraniliprole 18.5 SC (Coragen), Cartap Hydrochloride 50% WP, Chlorantraniliprole 9.6% + Lambda cyhalothrin 4.6% (Ampligo), Flubendiamide 39.35 SC, Acephate 75 SP. Chlorpyriphos 50%EC and 20%EC, Thiamethoxam + Chlorantraniliprole (Virtako), Tetraniliprole (Vayego), Isocycloseram 18.1% W/W SC (Insipio)
3.	BPH	Pymetrozine 50% WG (Chess), Triflumezopyrim 10% SC (Pexlon), Dinotefuran 20 % SG (Osheen), Acephate 500 + Imidacloprid 18 % SP (Lancer Gold),
4	Leaf/panicle mite	Spiromesfin 240 SC (Oberon), Abamectin 1.9% EC (Ababin)
	Blast (Leaf and Neck blast)	Tricyclazole 18% + Mancozeb 64%WP (Merger/Trozole), Isoprothiolane 40%EC, Kasugamycin 3%L, Kresoxim methyl

S. No.	Insect-pests /diseases	Chemicals used
		44.3%SC, Picoxystrobin 6.78% + Tricyclozole 20.33% SC (Galileo Sensa/Salsa/Fanton/Kronos), Propiconazole 10.7% + Tricyclazole 34.2% SE (Filia/Slogan), Pyraclostrobin 100 g/L (Seltima), Azoxystrobin 12.5 + Difenoconazole 11.4% SC, Azoxystrobin 16.7% + Tricyclazole 33.3% SC (Azotrix).
6	Sheath Blight	Hexaconazole 5%EC, Propiconazole 25%EC, Validamycin 3%L, Tebuconoazole (Folicur), Tebuconazole + Trifloxystrobin (Nativo). Azoxystrobin + Tebuconazole (Custodia), Picoxystrobin 7% + Propiconazole 12%SC (Galileo Way), Thifluzamide 24%SC (Pulsor), Propiconazole 10.7% + Tricyclozole 34.2% SE (Filia), Captan 70%+Hexaconazole 5% WP (Taqat), Carbendazi, 25% + Flusilazole 12.5% (Lusture), Flupyroxad 62.5 g/L + Epoxiconazole 62.5 g/L EC
7	BLB	Copper Hydroxide 53.8% DF (Kocide 2000) Copper Sulphate Pentahydrate 23.99% w/v SC (Mastercop). Copper oxy chloride + Plantamycin or Paushamycin or Crocin or Agrimycin; Kasugamycin 5% + Copper Oxychloride 45% (Conika or Graliz), Copper Sulphate 47.15% + Mancozeb 30% WDG (Devona)
8.	Stem rot	Tebuconzole 25.9%EC (Folicur), Hexaconazole, Validamycin 3%L, Propiconazole 25%EC, Hexaconazole 5%EC, Iprobenphos 48%EC, Carbendazim 25% + Mancozeb 50% WS (Sprint), Copper Sulphate 47.15% + Mancozeb 30% WDG (Cuprofix).
9.	Sheath rot and GD	Propiconozole 25%EC, Carbendazim 12% + Mancozeb 63% WP (Saaf),

Source: Interaction with farmers during POS visits, ADAs and MAOs

D.3: Mixing of different pesticides and spraying of Bio's for the management of pests and diseases

The majority of farmers in the surveyed districts were routinely mixing at least one insecticide and fungicide, while others were using cocktail mixtures of various molecules in different proportions without knowing their compatibility. It was observed that both farmers and input dealers were aware that Tricyclazole is incompatible with many insecticides. They are seeking advice from university scientists regarding pesticide compatibility. The following are the common cocktail mixtures of insecticides and fungicides used by farmers:

- Tricyclazole + Lambda-cyhalothrin
- Propiconazole + Fipronil
- Hexaconazole + Chlorpyrifos
- Acephate + Imidacloprid + (Propiconazole)
- Tebuconazole + Buprofezin
- Validamycin + Diafenthiuron
- Triflumezopyrim + Sprint or Saff or Nativo or Isoprothiolane or Gelelio Sensa
- Cartap hydrochloride + Saff or Sprint or Trifloxystrobin + Tebuconazole or Isoprothiolane
- Tricyclazole + Chlorantraniliprole

E. Cost of cultivation

The cost of cultivation of paddy in all the surveyed districts ranging from 22,000 to 35,000/. During the POS, 2025-26, the highest cost of cultivation was recorded in Nizamabad district whereas lowest was recorded in Vikarabad district. Overall, the crop condition is good across the state except few locations, where severe incidence of insect-pests and diseases was noticed. Majority of the farmers in the surveyed districts were sold the produce at IKP centers of their respective village or AEOs cluster. The major cost of cultivation is incurring on labour cost for transplanting followed by harvesting. Among the districts surveyed, the low yields were recorded in Vikarabad district.

F. Harvesting

The cost of harvesting paddy ranged from ₹2,700 to ₹3,200 per acre, depending on crop condition, field size, and location. The cost of a paddy straw bale was approximately ₹40-45 per bale. Overall, it was observed that farmers achieved very good yields during *Kharif*, 2025. The majority of farmers in the surveyed districts expressed satisfaction with their yields, supported by favorable paddy prices and additional bonus provided by the Government of Telangana. However, during *Rabi*, 2025–26, farmers anticipated an increase in harvesting costs due to rising diesel prices and its limited availability. Harvesting machinery is widely available across most parts of Telangana, including remote areas. Farmers now have access to relatively low-cost machinery, and transportation has become easier with the use of tractors with trolley.

The suitability of harvesters varies by region and field conditions. For instance, in the Miryalaguda division, track-type harvesters are predominantly used for paddy harvesting. Farmers reported that tyre-type harvesters tend to create deep ruts in the fields, making subsequent land preparation and leveling more difficult. Tyre-type machines are generally more suitable for low-lying, tank-irrigated areas, whereas track-type machines are preferred in canal-irrigated systems for efficient harvesting.

G. Farmers outreach programmes

In order to forecast the incidence of pests and diseases in rice and alert the farmers on epidemic occurrence of major problem in field, Principal Scientist (Rice), PJTSAU, Institute of rice research, Rajendranagar, has given need based **alert messages (5 Nos.) and YouTube modules (3 Nos, PJTSAU YouTube channel) / TV programmes** in vernacular language (TELUGU) to farmers, Commissionerate, Dept. of Agriculture, DAATTCs, KVKs, NGOs and wide publicity was given through print and electronic media.

Name of Knowledge material / publication	Title of content	Publisher / Producer	Publication No / Volume No
Alert message	Varilo Udhrutumavuthunna Kandam Toliche purugu and Ullikodu	PS (Rice) & Head	***Yasangi* Rice/01/ 2024-25 dated 10.01.2025.**
Alert message	*Yasangi* varilo medavirupu mariyu kandam kullu tegulu – Nivarana	PS (Rice) & Head	***Yasangi* Rice/02/ 2024-25 dated 03.04.2025.**

Name of Knowledge material / publication	Title of content	Publisher / Producer	Publication No / Volume No
Alert message	Prasthutam Vanakalam Varilo Rythulu Edukuntunna Samasyalu – Yajamanya Cheryalu.	PS (Rice) & Head	***Vanakalam*/Rice/03/2025-26; Dated: 19.09.2025.**
Alert message	Yasangi varilo meda virupu tegulu nivarna	PS (Rice) & Head	***Yasangi* Rice/04/2025-26, dated 14.03.2026.**
Alert message	Stemborer management in rice	PS (Rice) & Head	***Yasangi* Rice/05/2025-26, dated 17.03.2026.**
YouTube Module	Management of neck blast in *rabi* rice	Electronic Wing	**Uploaded on 04.04.2025**
YouTube Module	Bacterial Leaf Blight Control in Rice	Electronic Wing	**Uploaded on 11.10.2025**
YouTube Module	**Stem Rot Management in Rice**	**Electronic Wing**	**Uploaded on 11.03.2026**

H. Researchable issues

1. Chemical of control of leaf and panicle mite along with grain discoluration.
2. Compatability of miticides with insecticides and fungicides for application of mixutres in the field at a time.
3. Weed management in DSR.
4. Evaluation of organic potash and inorganic potash (MOP) as comprasion study.
5. Development and deployment of data-driven AI tools for prediction and early warning of insect pests and diseases in rice using existing production-oriented survey datasets.
6. Characterization and virulence profiling of *Magnaporthe grisea* and *Xanthomonas oryzae pv. oryzae* in Telangana.
7. Evaluation of organic farming products for their efficacy in plant protection in rice cultivation.
8. Investigation of insect pest and disease dynamics under different rice establishment methods.
9. Development of rice varieties suitable for direct seeding systems.
10. Breeding and development of nutrient-enriched rice varieties with enhanced zinc, iron, and protein content.
11. Development of high-yielding rice varieties with resistance to cold and salinity stress and improved head rice recovery (HRR) through genome editing, in collaboration with IIRR, Rajendranagar.
12. Development of climate-smart technologies for dry direct seeding and wet direct seeding in rice.
13. Management of algal assemblages in rice fields through the application of suitable chemical interventions.
14. Assessment of weed flora shifts across establishment methods and management of herbicide-resistant weeds in rice ecosystems.
15. Development of mechanized rice residue management strategies and profitable rice-based cropping systems.
16. Isolation, characterization, and optimization of pheromone blends for rice gall midge management.

Uttar Pradesh-2025-26 (Masodha)

Districts surveyed: *Ayodhya, Ambedkar Nagar, Amethi, Sultanpur and Barabanki*

Table 1: Particulars of survey

Districts	Block/Taluka	
Ayodhya	Harintinganj, Sohawal, Bikapur and Milkipur	Khagarahat, Dharehata, Malethu Kanak, Ghatampur, Hisamuddinpur, Ghatauli, Meerpur, Karandi, Dawatiapara and Mawar
Ambedkar Nagar	Akbarpur, Katehri, Jalalpur and Tanda	Kajari, Avsanpur, Ainwa, Baijupur, Burganna, Golpur, Baragawn and Purabux
Amethi	Jagdishpur and Shukul Bazaar	Dharmapur (Kateri), Bhatmau, Iswarpur and Dakhingaon
Sultanpur	Kurebhar, Dhanpatganj and Baldirai	Bhagwanpur (Phulela Chauraha), Saraiya, Saraiya Bharthi, Pipergaon and Bishwa
Barabanki	Safdarganj, Haidergarh and Ramnagar	Asandra, Safdarganj Bazar, Gaura, Gangapur and Pura Ladai

Table 2: Widely prevalent rice varieties

Districts	Varieties
Ayodhya	**HYVs:** NDR-2065, NDR 97, NDR-359, Narendra Lalmati, Sarjoo 52, Komal Mahsuri, Shahbhagi, IR64-Sub 1, NDR-2064, Sambha Mahsuri, Swarna, Sambha Mahsuri-Sub 1, Malviya-156, Malviya106, Dilkhush and otheres **Hybrids:** Arize 6444 Gold and 27P37
Ambedkar Nagar	**HYVs:** NDR-97, NDR 2064, 27P31, 27P67, MTU 7029, NDR 359, Sarjoo 52, NDR 2065, Sambha Mahsuri, Narendra Lalmati, Sambha Mahsuri-Sub 1, Pan Mahsuri, Swarna Sub-1, Malviya-153, Malviya-106, Dilkhush and others; **Hybrids:** Arize 6444 Gold, Gorakhnath 509
Amethi	**HYVs:** NDR 359, NDR 3112-1, NDR 2064, NDR 2065, NDR 97, Sarjoo 52, NDR 2065, Sambha Mahsuri, Narendra Lalmati, Sambha Mahsuri-Sub 1 and Lal Mahsuri **Hybrids:** Arize 6444 Gold, 27P37, 27P63 and others
Sultanpur	**HYVs:** NDR 2064, NDR 359, NDR 3112-1, NDR 2065, Malviya-153, Malviya-106, Narendra Lalmati, Sambha Mahsuri, Damini, Moti Gold, Sarjoo 52, NDR 97, Narendra Lalmati, Sambha Mahsuri, Swarna Sub 1, Damini Gold and others **Hybrids:** 27P37, 27P63, Gorakhnath 509, Pan 720, Arize 6444 Gold, Kaveri Gold, 27P37, 27P63 and others
Barabanki	**HYVs:** NDR-97, NDR 359, Sarjoo 52, NDR 2064, NDR 2065, NDR 2064, NDR 359, NDR 3112-1, NDR 2065, Malviya-153, Malviya-106, Sabha Mahsuri, Swarna, Dilpasand, Narendra Lalmati, Moti Gold and others; **Hybrids:** Arize 6444 Gold, 27P63, 27P33, RH 10, Bajrangi 101, Pan 804 and 27P38

Production oriented survey of rice growing areas was conducted in five districts of eastern Uttar Pradesh viz., Ayodhya, Ambedkar Nagar, Amethi, Sultanpur and Barabanki when the crops were in booting to maturity stage in *Kharif* 2025. The details of survey are presented in Table 1. Though overall, climatic conditions were normal for rice cultivation, there were instances of excess rainfall in many places visited in Barabanki district (Table 6). The details of rainfall in the surveyed districts from June to September, 2025 are presented in Table 4. The details of different varieties and hybrids cultivated in different surveyed districts are presented

in Table 2. The most popular rice varieties were HYVs like BPT 5204, Swarna, Sarjoo 52, NDR 97, NDR 2064, NDR 2065, Sambha Mahsuri-Sub 1, Shahbhagi, NDR 359, MTU 7029, Swarna-Sub-1, IR 64-Sub 1, Damini, Malviya-153, Malviya-106, Dilkhush, Narendra Lalmati and others and hybrids Arize 6444 Gold, Kaveri Gold, 27P3727P63, 27P38, Gorakhnath-509 and Gorakhnath-510 among the farmers of Eastern U.P. The details of rice area occupied by different class of rice varieties are presented in Table 3.

Table 3: Area under rice cultivation of surveyed districts during *Kharif*, 2025

Districts	Area (ha) under rice cultivation			
	Scented/ Basmati	Hybrid	Other	Total
Ayodhya	2500	44050	39010	85560
Ambedkar Nagar	1502	57010	79731	138243
Amethi	6000	27000	56632	89632
Sultanpur	1800	55000	70517	127317
Barabanki	2710	67435	159958	230103

Table 4: Rainfall distribution in surveyed districts during *Kharif,* 2025

Districts	Rainfall (mm)							
	June		July		August		September	
	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual
Ayodhya	106.5	90.8	306.1	298.0	282.0	173.0	196.7	128.7
Ambedkar Nagar	106.5	41.83	237.0	158.6	282.0	172.4	196.7	133.7
Amethi	93.6	37.5	299.2	143.6	283.4	210.5	189.5	193.6
Sultanpur	87.3	34.2	198.0	198.0	289.5	278.6	202.8	88.6
Barabanki	98.4	66.5	299.7	310.08	781.6	409.2	203.6	120.9

A. General information, cropping system and rice yield: The details of number of villages and number of blocks surveyed are presented in Table 6. A total of 45 farmers were contacted during the survey. The rice fields surveyed were under irrigated ecosystem. Main crop rotations followed by the farmers were rice-wheat (Main), rice-mustard, rice-pulses, rice-vegetables, rice-sugarcane, rice-pea, rice-wheat-black gram/green gram, rice-potato, rice-potato-pepper mint (mentha), rice-wheat-mentha, rice-mustard-green gram, rice-pea-green gram, rice-chick pea and rice-wheat-vegetables. Average rice yield among different HYVs ranged from 3500-4800 kg/ha while in case of hybrid varieties the yield ranged from 4800-6000 kg/ha (Table 7).

Table 5: General question on rice cultivation in district (to be filled by the cooperator in consultation with the officials from state department of agriculture)

Parameters	Districts		
	Ayodhya	**Ambedkar Nagar**	**Amethi**
Total area under HYVs (ha)	39010 ha	79731 ha	56632 ha
Most prevalent HYVs in the district	NDR 97, NDR 2065, NDR 2064, Samba Mahsuri, MTU 7029	NDR 97, NDR 359, NDR 2064, Sarjoo 52, MTU 7029, Samba Mahsuri	NDR 359, NDR 2064, Sarjoo 52, Samba Mahsuri Sub-1
Total area under rice hybrids	44050 ha	57010 ha	27000 ha
Most prevalent rice hybrids in the district	27P63, Arize 6444 Gold, Goraknath 509	Arize 6444 Gold, Goraknath 509, 27P63	Arize 6444 Gold, 27P63
Total area under ~~basmati~~/scented in the district	2500 ha	1502 ha	6000 ha
Most prevalent basmati	Narendra Lalmati, Basmati varieties	Narendra Lalmati, Malviya 106	Narendra Lalmati, Basmati varieties
Seed replacement rate	80%	70%	70%
Whether farmers are using any heavy equipments like transplanter/combine harvester	Yes; Combine harvester	Yes; Combine harvester	Yes; Combine harvester
Mention water saving technologies like SRI/laser leveling/DSR being used by the farmers	Yes; DSR by few farmers	Yes; DSR by few farmers	Yes; DSR by few farmers
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	Yes; Plant protection measures	Yes; Plant protection measures	Yes; benefits of balanced application of fertilizers
What are the general problems in rice cultivation in the district?	Shortage of labours and quality seeds	High input cost	High labour wages
Please provide any farmers association in the district	_	-	-
Whether availability of agricultural labours is sufficient?	No	No	No
Whether there is any marketing problem of the produce?	No	No	No
Any major irrigation/power generation project in the district	Yes; Sarada Sahayak Canal	Yes; NTPC Tanda	Canal irrigation
Any soil testing program undertaken?	Yes	Yes	Yes
Any farmers' training program was organized by the state department of Agriculture/University	Yes, regular training program by Dept. of Agriculture, KVKs and University	Yes, regular training program by Dept. of Agriculture, KVKs and University	Yes, regular training program by Dept. of Agriculture, KVKs and University

Table 5: General question on rice cultivation in district (to be filled by the cooperator in consultation with the officials from state department of agriculture)

Parameters	**Districts**	
	Sultanpur	**Barabanki**
Total area under HYVs (ha)	70517 ha	159958 ha
Most prevalent HYVs in the district	NDR 2064, Sarjoo 52, NDR 97, Swarna, Samba Mahsuri	NDR 2064, NDR 97, BPT 5204, NDR 359, Damini
Total area under rice hybrids	55000 ha	67435 ha
Most prevalent rice hybrids in the district	Arize 6444 Gold, Hyb. 27p63, Hyb. 27p37, Goraknath 509	Arize 6444 Gold, Hyb. 27p38, Hyb. 27p63
Total area under basmati/scented in the district	1800 ha	2710 ha
Most prevalent basmati	Narendra Lalmati, Basmati variety	Narendra Lalmati, Basmati variety, Pusa RH 10
Seed replacement rate	75%	75%
Whether farmers are using any heavy equipments like transplanter/combine harvester	Yes; Combine harvester	Combine harvester
Mention water saving technologies like SRI/laser leveling/DSR being used by the farmers	Yes	Yes; DSR in limited scale
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	Use of plant protection measures and balanced application of fertilizers	Use of plant protection measures
What are the general problems in rice cultivation in the district?	shortage of agricultural labours and crop damage by wild animals	shortage of agricultural labours and their high wages
Please provide any farmers association in the district	Kisan Club	Kisan Club, FPOs
Whether availability of agricultural labours is sufficient?	No	No
Whether there is any marketing problem of the produce?	No	No
Any major irrigation/power generation project in the district	Sarda Sahayak Irrigation project	Sharda Sahayak Canal
Any soil testing program undertaken?	Yes	Yes
Any farmers' training program was organized by the state department of Agriculture/University	Yes, regular training program by Dept. of Agriculture, KVKs and University	Yes, regular training program by Dept. of Agriculture, KVKs and University

Table 6: General information

Parameters	Districts				
	Ayodhya	**Ambedkar Nagar**	**Amethi**	**Sultanpur**	**Barabanki**
# of talukas/ blocks covered	4	4	2	3	3
# of villages surveyed	10	8	4	6	5
# of farmers interviewed	10	10	8	8	9
Field ecosystem	IR (100%)	IR (100%)	IR (100%)	IR (100%)	IR (100%)
Weather conditions during cropping season	Normal	Normal	Normal	Normal	Excess rainfall (77.8%)
Crop stage when survey was made	Booting to Dough	Milk to mature	Heading to milk	Heading to dough	Heading to maturity
Crop rotations	Main crop rotations followed by the farmers were rice-wheat, rice-mustard, rice-pulses, rice-vegetables, rice-sugarcane, rice-pea, rice-wheat-black gram/green gram, rice-potato, rice-potato-pepper mint (menthe), rice-wheat-mentha, rice-mustard-green gram, rice-pea-green gram, rice-chick pea and rice-wheat-vegetables				

IR: Irrigated

Table 7: Average yields of different rice varieties as reported by the cooperators/ farmers

Variety/hybrids	Yield (kg/ha)				
	Ayodhya	**Ambedkar Nagar**	**Amethi**	**Sultanpur**	**Barabanki**
Samba Mahsuri	4000	3500-4200	3800	3800	4200
Swarna		4500-4800			
NDR 2065	4500		4800	4500	4500
NDR 359			3800-4200	4500	
Dilkhush					
Arize 6444 Gold	5500-6000	5500-5800	5400-5500	5500	5200-5600
Goraknath 509				4800	
Hyb. 27p63	5200-5800				6000
Hyb. 27p37	5900				

B. Rice consumption pattern: Survey was conducted on consumption pattern of rice among the farmers in different surveyed districts of this part of eastern Uttar Pradesh (Table 8). All the farmers contacted were from medium income group. Average per capita consumption of rice per month was 2-6 kg rice and 100% of the farmers contacted told that their main meal consisted of both rice and wheat. On an average, about 95% of the farmers contacted told that they preferred polished rice and about 87% of them told that they used fine grain rice varieties for consumption. In general, there was no change in the food habit.

Table 8: Details of rice consumption pattern in different districts of Uttar Pradesh

Parameters	Districts				
	Ayodhya	**Ambedkar Nagar**	**Amethi**	**Sultanpur**	**Barabanki**
Status of farmers	Medium income (100%)	Medium income (100%)	Medium income (100%)	Medium income (100%)	Medium income (100%)
Per capita monthly rice consumption (kg)	4-6 kg	4-5 kg	2-4 kg	2-5 kg	4-6 kg
Composition of main meal	Rice + Wheat (100%)	Rice + Wheat (100%)	Rice + Wheat (100%)	Rice + Wheat (100%)	Rice + Wheat (100%)
Preferred rice types	Polished rice (100%)	Polished rice (100%)	Polished rice (75%); parboiled (25%)	Polished rice (100%)	Polished rice (100%)
Rice grain type preference	Fine grain (100%)	Fine grain (100%)	Fine grain (37.5%); coarse grain (62.5%)	Fine grain (100%)	Fine grain (100%)
Any changes in food habit in last 10 years	Yes (20%)	No (100%)	No (100%)	No (100%)	No (100%)

Table 9: Details of nursery management

Parameters	Districts				
	Ayodhya	**Ambedkar Nagar**	**Amethi**	**Sultanpur**	**Barabanki**
Planting time	1st to 3rd week of June	End of May to 3rd week of June	1st to 4th week of June	1st to 4th week of June	End of May to end of June
Seed rate	30-35 kg/ha (HYVs); 15-25 kg/ha (hybrids	30-35 kg/ha (HYVs); 15 kg/ha (hybrids	28-35 kg/ha (HYVs); 15 kg/ha (hybrids	30 kg/ha (HYVs); 15 kg/ha (hybrids	30 kg/ha (HYVs); 15 kg/ha (hybrids
Seed treatment (% farmers adopted)	Yes (10%)	No (100%)	No (100%)	No (100%)	No (100%)
Chemicals used for seed treatment	carbendazim (2 g/kg seed)				
Organic manure in nursery (% farmers adopted)	Yes (80%); FYM	Yes (100%); FYM	Yes (87.5%); FYM	Yes (100%); FYM	Yes (100%); FYM; green manure
Inorganic manure in nursery (% farmers adopted)	Yes (100%); urea (50-80 kg/ha) and/or DAP (50-80 kg/ha)	Yes (100%); urea (50-80 kg/ha) or DAP (50-80 kg/ha)	Yes (100%); urea (70-80 kg/ha)	Yes (100%); urea (50-80 kg/ha) or DAP (50-80 kg/ha)	Yes (77.8%); urea (60-70 kg/ha) or DAP (80 kg/ha)

C. Nursery and main field Management: Average seed rate used by the farmers ranged from 28-35 kg/ha for HYVs while in case of hybrids it was 15 kg/ha. Seed treatment was not a common practice among the farmers and only about 10% farmers from Ayodhya treated their seeds (Table 9). Some farmers used already treated seeds. On an average 93% of the farmers contacted from different districts told that they applied organic manure like FYM in the nursery (Table 9). About 95% of the farmers contacted told they applied chemical fertilizers like urea (50-80 kg/ha) and/or DAP (50-80 kg/ha) in the nursery (Table 9). Most of the plantings were done in the month of June. Majority of the farmers contacted in surveyed districts adopted

random transplanting where plant population per unit area was not maintained. Some farmers in Ayodhya followed direct sowing while few farmers in Ambedkar Nagar and Sultanpur followed line planting. In the main fields, fertilizers were applied @ 100-120 kg N/ha, 50-60 kg P_2O_5/ha and 40-50 kg K_2O/ha (Table 10). Nitrogen and phosphorus fertilizers were applied by most of the farmers. However, comparatively less number of farmers contacted applied potassic fertilizers. All the farmers contacted told that they applied zinc sulphate (10-25 kg/ha) in the main field (Table 10). Our co-operator reported that some farmers also applied nano urea and nano zinc also. Micronutrients like Zinc and Sulphur deficiency were observed in surveyed areas. To supply essential nutrient to the crop farmers were using inorganic fertilizers viz. Urea, NPK, DAP, SSP, MOP, and Zinc sulphate. On an average about 62% of the farmers contacted applied organic matter in the main fields (Table 10). Majority of the farmers contacted applied FYM (8-10 t/ha). Some farmers also added other green manures like dhaincha, urd bean and moong bean in the fields to improve the soil health and yield potential of the crop. Plant growth promoters *viz.,* Zyme (8-10 kg/acre), Biozyme and Microzyme are being used by some progressive farmers.

Table 10: Details of main field management

Details	**Districts**				
	Ayodhya	**Ambedkar Nagar**	**Amethi**	**Sultanpur**	**Barabanki**
Planting method	Majority of the farmers contacted in surveyed districts adopted random transplanting where plant population per unit area was not maintained. Some farmers in Ayodhya followed direct sowing while few farmers in Ambedkar Nagar and Sultanpur followed line planting				
Total N applied	100-120 kg/ha (100% applied)	100-120 kg/ha (100% applied)	100-120 kg/ha (100% applied)	100-120 kg/ha (100% applied)	100-120 kg/ha (100% applied)
Total P_2O_5 applied	50-60 kg/ha (100% applied)	50-60 kg/ha (90% applied)	50-60 kg/ha (100% applied)	50-60 kg/ha (100% applied)	50-60 kg/ha (100% applied)
Total K_2O applied	40-50 kg/ha (50% applied)	50 kg/ha (40% applied)	40-50 kg/ha (100% applied)	40-50 kg/ha (100% applied)	40-50 kg/ha (33% applied)
$ZnSO_4$ applied (21% or 33%)	15-20 kg/ha (100% applied)	15-22 kg/ha (100% applied)	15-20 kg/ha (100% applied)	10-20 kg/ha (100% applied)	15-25 kg/ha (100% applied)
Organic fertilizers applied	Yes (60%); FYM (8-10 t/ha)	Yes (70%); FYM (8-10 t/ha)	Yes (100%); FYM (10-15 t/ha); vermi-compost	Yes (50%); FYM (8-10 t/ha)	Yes (33%); FYM (8-10 t/ha)
Remarks	Nutrients were applied in the form of urea, DAP, SSP, MOP and zinc sulphate. About 20-22% of the farmers contacted in Ambedkar Nagar and Barabanki applied growth regulator 'Zyme' (10 kg/acre).				

D. Weeds and their Management: Overall intensity of weeds was low to medium. Commonly recorded weeds were *Echinochloa colona, E. crusgalli, Eclipta alba, Cyperus rotundus, C. iria, Digitaria* sp., *Eleusine indica*, *Cloeme viscosa, Paspalum distichum* L, *Dactyloctenium aegyptium* and *Fimbristylis dichotoma.* Almost all the farmers contacted adopted herbicide application. In addition to herbicide application, all of them also adopted hand weeding for the management of weeds. Only few farmers from Barabanki followed only hand weeding (Table 11). Commonly used herbicides were Butachlor (1.5-2.5 l/ha), pretilachlor (1.5 l/ha), Nominee Gold (200 ml/ha), metsulfuron methyl (20-30 g/ha) and others (Table 11).

Table 11: Weeds and weed management

Details	Districts				
	Ayodhya	**Ambedkar Nagar**	**Amethi**	**Sultanpur**	**Barabanki**
Weed intensity	Low to medium	Low to medium	Low to medium	Low to medium	Low to medium
Names of the weeds	Commonly recorded weeds were *Echinochloa colona, E. crusgalli, Eclipta alba, Cyperus rotundus, C. iria, Digitaria* sp., *Eleusine indica*, *Cloeme viscosa, Paspalum distichum* L, *Dactyloctenium aegyptium* and *Fimbristylis dichotoma*				
Weedicides used	Butachlor (1.5-2.5 l/ha), pretilachlor (1.5 l/ha), Nominee Gold (200 ml/ha), metsulfuron methyl (20-30 g/ha) and others				
%age of farmers applied herbicides	Almost all the farmers contacted adopted herbicide application. In addition to herbicide application, all of them also adopted hand weeding for the management of weeds. Only few farmers from Barabanki followed only hand weeding				
Wild/weedy rice incidence	Nil	Nil	Nil	Nil	Nil

E. Common needs of the farmers: Some of the common needs of the farmers were timely availability of quality seeds HYVs, improvement in farm mechanization including availability of solar pumps, timely availability of fertilizers and plant protection chemicals, availability of agricultural labours, medium duration high yielding varieties with medium slender grain, improvement in marketing facilities and disease and pest tolerant rice varieties. The survey team reported that subsidized seeds, agro-chemicals, plant protection inputs and farm machineries including solar pumps were provided to the farmers by Govt. agencies. Scarcity of farm labourers coupled with higher labour wages are the major constraint in rice production in the surveyed districts.

F. Input use: Implements like sprayer, cultivator, tractor, paddy thresher, rotavator and combine harvester were used by the farmers. Progressive farmers had some of their own equipment and other farmers hired the implements. Use of combine harvester and paddy thresher was common practice among the rice farming community of the Eastern Uttar Pradesh. All the farmers contacted in different districts told that they purchased 50-100% of their seed requirement. Majority of the farmers have small holding size and using farm machinery on hired basis in the surveyed districts. Soil testing programme is being promoted by the govt. agencies and providing Soil Health Card to farmers. Few farmers are doing organic rice cultivations in small areas. Shallow tube wells, canal and deep tube wells were the main sources of irrigation (Table 12). On an average, about 84% of the farmers contacted told that inputs like fertilizers and pesticides were available and they were happy with their quality (Table 12). To promote new varieties/technologies and minimize the cost of cultivation to enhancing the overall income of the rice growing farmers through organizing training programmes, Kisan Mela and Kisan Gosthies at KVKs of Agriculture University and Department of Agriculture, Govt. of Uttar Pradesh. The main source of farmers' finance are own resources, Kisan Credit Card, P.M. Kisan Samman Nidhi and cooperative societies. In addition to their own decisions, farmers received advices from officials of state department of agriculture, university and private dealers.

Table 12: Details of inputs used

Details	Districts				
	Ayodhya	**Ambedkar Nagar**	**Amethi**	**Sultanpur**	**Barabanki**
Implements used	Implements like sprayer, cultivator, tractor, paddy thresher, rotavator and combine harvester were used by the farmers. Progressive farmers had some of their own equipment and other farmers hired the implements. Use of combine harvester and paddy thresher was common practice among the rice farming community of the Eastern Uttar Pradesh.				
Source of seeds	All the farmers contacted in different districts told that they purchased 50-100% of their seed requirement.				
Source of irrigation	Shallow tube wells (80%); Deep tube well (20%); Canal (10%)	Shallow tube wells (90%); Canal (10%)	Shallow tube wells (80%); Canal (60%)	Shallow tube wells (62.5%); Deep tube well (12.5%); Canal (25%)	Shallow tube wells (100%); Deep tube well (20%); Canal (10%)
Scarcity of irrigation water	No (100%)	No (100%)	No (87.5%)	No (100%)	No (100%)
Availability of fertilizers/pesticides	Yes (90%)	Yes (100%)	No (50%)	Yes (83%)	Yes (100%)
Quality of fertilizers/pesticides	Satisfied (100%)	Satisfied (100%)	Satisfied (87.5%)	Satisfied (100%)	Satisfied (100%)
Advisors to the farmers	Own decisions (20%); State dept. (80%); Dealers (20%); Univ (90%)	Own decisions (20%); State dept. (90%); Dealers (30%); Univ (90%)	Own decisions (87.5%); State dept. (75%); Univ (75%)	Own decisions (50%); State dept. (50%); Univ (50%)	Own decisions (55.5%); State dept. (88.9%); Univ (100%)

Table 13: Prevalence of diseases and Insects in Eastern Uttar Pradesh during *Kharif' 2025*

Districts	Diseases				
	BS	**ShBl**	**FS**	**ShR**	**BLB**
Ayodhya		L-M (5-20%)	L (2-3%)		L-M (5-10%)
Ambedkar Nagar	L (5-6%)	M (15-20%)	T (1-2%)		L-M (5-10%)
Amethi	M (15-20%)	M (10-20%)		M (8-10%)	L-M (5-16%)
Sultanpur	M (10-15%)	M (10-20%)	L-M (3-15%)		M (10%)
Barabanki	M (10-12%)	L-M (5-20%)	L (1-5%)		L-M (5-15%)

Districts	Insects			
	SB	**LF**	**GLH**	**GB**
Ayodhya	T (0.5-1%)		L (3-4 insects/hill)	
Ambedkar Nagar	T (0.5-1%)			
Amethi	T (0.5-2%)			
Sultanpur	T-M (1.5-10%)	L-M (5-15%)		L-M
Barabanki	T-M (1-9%)	L (3-4%)	L (5%)	

G. Biotic stresses and their management: The details of occurrence of different diseases and insect pests are presented in Table 13. Overall, the incidences of different diseases like brown spot, sheath blight, false smut, sheath rot and bacterial blight were low to moderate. Among the insect pests, stem borer, leaf folder, gundhi bug and green leaf hoppers were observed in low to moderate intensities. Compared to Kharif 2024, incidence of BPH was much less in Kharif season of 2025. On an average, about 89% of the farmers contacted adopted plant protection measures. The details of different insecticides and fungicides used by the farmers are presented in Table 14. Farmers adopted 1-2 spraying. None of the farmers contacted mixed 2 or more pesticides before spraying. Zinc deficiency symptoms were observed in almost all the places visited. Some of the common problems were shortage of labours and their high wages, damage by stray animals, lack of mechanization, unavailability of quality seeds in time and micronutrient deficiency

Table 14: Details of pest management

Details	**Districts**				
	Ayodhya	**Ambedkar Nagar**	**Amethi**	**Sultanpur**	**Barabanki**
% age farmers adopting plant protection	80%	80%	100%	100%	88.9%
Names of pesticides	**Insecticides**: Fertera (chlorantraniliprole 0.4% GR) (4 kg/acre), cartap hydrochloride (400-500 ml/ha), fipronil 5% SC (2-3 ml/l) and chlorpyriphos 20 EC (1000-1250 ml/ha) for stem borer and leaf folder and imidacloprid (100 ml/acre) and thiamethoxam 12.6% + Lambda-cyhalothrin 9.5% ZC (80-100 ml/acre) for BPH **Fungicides**: propiconazole (500 ml/ha), difenoconazole (1 ml/l), azoxystrobin + difenoconazole (400-500 ml/ha), hexaconazole (1 l/ha), Nativo (tebuconazole + trifloxystrobin) (200-300 g/ha) and carbendazim (500 gm/ha) for sheath blight and false smut and copper oxychloride + streptocycline for bacterial blight				
# of pesticide sprays	1-2	2	1-2	1-2	1
Mixing of pesticides before application	No (100%)	No (100%)	No (100%)	No (100%)	No (100%)
Zinc deficiency	Yes (100%)	Yes (100%)	Yes (100%)	Yes (100%)	Yes (100%)

H. Researchable issues: Among the biotic stresses, major problems in the region are sheath blight, bacterial blight, brown spot and false smut among the diseases and brown plant hopper, stem borer and leaf folder among the insect pests (Table 15). Among the abiotic problems, Submergence, drought (early drought), high temperature and salinity were the main problem. Scarcity of agricultural labours, unavailability of quality seeds and other inputs, lack of mechanization and micronutrient deficiency were different production constraints faced by the farmers. Farmers expressed the need for varieties suitable for DSR, varieties having resistance to sheath blight, false smut, bacterial blight, BPH and stem borer. Farmers also expressed the need for varieties having tolerance to submergence, drought and salinity. Farmers also expressed the need of high yielding varieties with medium slender grain and bio-fortified rice varieties.

Table 15: Researchable issues

Details	Districts				
	Ayodhya	**Ambedkar Nagar**	**Amethi**	**Sultanpur**	**Barabanki**
Rice ecology in your area	Irrigated	Irrigated	Irrigated	Irrigated	Irrigated
Rice cultivation only in Kharif or both Kharif and Rabi	Kharif	Kharif	Kharif	Kharif	Kharif
Number of years of experience in rice farming	5-20 years	5-20 years	5-20 years	5-20 years	10-20 years
Main biotic constraints (diseases) in your area according to you	Sheath blight, bacterial blight, brown spot and false smut				
Extent of disease damage	<10%	<10%	10-25%	10-25%	<10%
Main biotic constraints (Insect pests) in your area according to you	BPH, Stem borer and leaf folder				
Extent of insect pest damage	<10%	<10%	<10%	<10%	<10%
Main abiotic constrains in your area according to you	Drought	Drought	Drought, high temperature	Drought	Drought
Production constraints in your area according to you	Scarcity of agricultural labours, micronutrient deficiency, unavailability of quality seeds and lack of mechanization				
Irrigation facilities in your area	Available; Bore well	Available; Bore well	Available; Bore well; canal	Available; Bore well, canal	Available; Bore well, canal
Normally how many years it takes to change the rice variety	5-10 years	5-10 years	5-10 years	5-10 years	5-10 years
Any other rice production issues in your area which the rice scientists need to address					
What is urgently required in your area as far as rice varieties are concerned					
Duration	Varieties suitable for DSR				
Biotic stress resistance	Varieties tolerant to bacterial blight, sheath blight, false smut, BPH and stem borer				
Abiotic stress resistance	Varieties with tolerance to drought, high temperature, submergence and salinity				
Preferred grain quality	High yielding rice varieties with medium slender grain				
Nutritional quality	Varieties with high iron, zinc and high protein and with low GI				

Uttarakhand-2025-26 (Pantnagar)

Districts surveyed: *Udham Singh Nagar* and *Nainital*

Table 1: Particulars of Survey

District	Blocks surveyed	
Udham Singh Nagar	Jaspur, Khatima, Bazpur, Kashipur, Kiccha, Sitarganj, Rudrapur and Gadarpur	Patrampur (29.29052; 78.84127), Bhuriya Tharu (28.96348; 79.939.1), Bhikampuri (29.23566; 79.179.1), Dhakid (29.18518; 79.04081), Bannakhera (29.23419; 79.16103), Saijana (28.95086; 79.93568), Jagatpur Patti (29.25361; 79.8756), Chachar (28.8989; 79.5062), Banga (28.89935; 79.5143), Makhwara (29.12959; 79.23871), Kanthgri (28.87053; 79.63143) and Jaitpur Ghosi (29.18286; 79.0268)
Nainital	Kotabagh, Ramnagar and Haldwani	Haripur Kalid (29.36308; 79.32001), Mankandpur-Bailparao (29.87796; 79.86193), Kausa Bangar (29.34051; 79.32209), Mota Haldu (29.23419; 79.16103), Naya Rampur (29.38447; 79.27991), Kamaluwa Ganja (29.21566; 79.45454), Ginti Gaon (29.38226; 79.30), Naripur Lamachaur (29.22522; 79.43018), Bajauniya Haldu)29.3378; 79.32066) and Musabangar (29.3442; 79.32193)

Table 2: Widely prevalent rice varieties

District	Prevalent varieties
Udham Singh Nagar	**HYVs:** PR 113, PR 121, PR 126, PR 131 and HKR 47: **Basmati:** Pusa Basmati 1509, Pusa Basmati 1121, Pusa Basmati 1692 and Pant Sugandh Dhan 27
Nainital	**Bhabar area**: Pant Dhan 11, Govind, HKR 47, PR 113, PR 126 and US 312 (hybrid); **Hilly area**: Gulabo, Pant Dhan 4, NDR 359, PR 113 and US 312 (hybrid)

Table 3: Particulars of rice area

District	Total Geographical Area (ha.)	Total Cultivable Area (ha.)	Total Cultivated Area (ha.)	Total Irrigated Area (ha.)	Area Under Rice (ha.)
US Nagar	286495	150024	133356	133130	101815
Nainital	425100	97662	45956	29337	10337

Table 4: Weather conditions during Kharif 2025 at Pantnagar (Udham Singh Nagar)

Weather Data	Months						
	May	June	July	Aug	Sep	Oct	Nov
Rainy Days (No.)	6	9	12	20	5	2	0
Total RainFall (mm)	88.40	186.60	367.60	811.40	64.60	69.40	0.00
Max. Temperature (^{0}C)	35.50	34.93	33.10	31.28	32.60	30.40	27.08
Min. Temperature (^{0}C)	23.82	25.98	26.05	24.92	24.98	18.90	11.16
RH % (Morning)	67.14	76.33	78.58	90.36	89.10	86.65	93.36
RH % (Evening)	39.66	57.55	69.93	76.94	68.03	53.38	41.88

Table 5: General questions on rice cultivation in district (to be filled by the co-operator in consultation with the officials from state department of Agriculture)

Parameters	Districts	
	Udham Singh Nagar	**Nainital**
Total area under HYVs in the district	50-55%	25-30%
Most prevalent HYVs in the district	PR 113, PR 121, PR 126, PR 131, HKR 47, Pusa Basmati 1509, Pusa Basmati 1121, Pusa Basmati 1692, Pant Sugandh Dhan 27.	**Bhabar area**: Pant Dhan 11, Govind, HKR 47, PR 113, PR 126, US 312; **Hilly area**: US 312, Gulabo, Pant Dhan 4, NDR 359, PR 113.
Total area under rice hybrids in the district	NA	NA
Most prevalent rice hybrids in the district	NA	NA
Total area under basmati in the district	Less than 1%	Less than 1%
Most prevalent basmati varieties in the district	Pusa Basmati 1509, Pusa Basmati 1121, Pusa Basmati 1692, Pant Sugandh Dhan 27.	NA
Whether farmers are using any heavy equipments like transplanter /combine harvester	Yes	No
Mention water saving technologies like SRI/laser levelling/DSR being used by the farmers	Yes (DSR on small scale)	Yes (DSR in hilly upland areas)
Whether survey team gave any advice to the farmers during survey? If yes, then what are those?	Avoid cultivation of summer rice. Use RDFs. Apply recommended doses of pesticides in consultation with the experts/scientists.	Use quality seeds of latest and recommended varieties, apply only the need based and recommended doses of fertilizers and pesticides.
What are the general problems in rice cultivation in the district?	Higher wages of labour, Insufficient rice counters where farmers can sell their produce.	Non-availability of labour and Insufficient rice counters where farmers can sell their produce
Please provide any farmers association in the district	Not known	Not known
Whether availability of agricultural labours is sufficient?	No	No
Whether there is any marketing problem of the produce?	Insufficient rice counters where farmers can sell their produce.	Insufficient rice counters where farmers can sell their produce.
Any major irrigation/power generation project in the district	Khatima hydro power Station, Lohiahead, Khatima	No
Any soil testing program undertaken	Yes	Yes
Any farmers training program was organized by the state department of agriculture/university	Trainings by State Agriculture department and university KVKs	Trainings by State Agriculture department and university KVKs

Production oriented survey was conducted in Udham Singh Nagar and Nainital districts of Uttarakhand which is a predominant rice growing area. The details of the survey are presented in Table 1 & 6. The particulars of rice area, production and productivity are given in Table 3. The details of different weather parameters recorded in the district are presented in Table 4. The details of rice varieties cultivated in these two districts are presented in Table 2. Production

oriented survey was conducted in 49 villages of 7 blocks of district Udham Singh Nagar during cropping season of rice. The district Udham Singh Nagar falls under *Tarai* belt of the state. Weather conditions for rice cultivation in general were normal. Most of the farmers in the district were marginal or sub-marginal. Since, rice is the major crop in the kharif season; most of the fields (50-55%) were occupied with rice. Due to favourable weather conditions, there was nice crop stand, in almost all the areas surveyed. PR 113, PR 121, PR 126, PR 131, HKR 47, Pusa Basmati 1121, Pusa Basmati 1509, Pusa Basmati 1121, Pusa Basmati 1692 and Pant Sugandh Dhan 27 were the major varieties predominantly grown in this district.

The farming system of Nainital district is an integration of food grains, vegetables, fruits and livestock production system. The district is comprised of 4 farming situations namely; Bhabar plain including foot hills, lower hills (rainfed and irrigated), mid hills (rainfed and irrigated) and high hills (rainfed). Rice, wheat, maize, soybean, ragi, grain amaranth, ginger, pea, tomato, cole crops, brinjal, bhindi, guava, jackfruit etc. are mainly grown in bhabar and foot hills, while Rice, wheat, soybean, maize, tomato, potato, cauliflower, French bean, mango, lime, peach and pear are mainly cultivated in lower hills. In Nainital, production-oriented survey was conducted in 15 villages of 3 blocks of two farming situations namely Bhabar plain including foot hills, and lower hills (rainfed and irrigated) at crop maturity. The general weather conditions for rice cultivation were normal. Most of the farmers were sub-marginal. The area under rice cultivation was more in Bhabar as compared to hills. Good crop stand was noticed in Bhabar compared to hilly areas. Pant Dhan 4, PR 113, US 312, NDR 359, Gulabo and HKR 47 were some of the varieties grown by the farmers in Bhabar region, whereas, US 312, PR 113, PR 126 and HKR 47 mainly grown in foot and lower hills in Kotabagh and Ramnagar blocks of Nainital district.

Table 6: General information

Parameters	**Districts**	
	Udham Singh Nagar	**Nainital**
# of talukas/blocks covered	8	3
# of villages surveyed	12	10
# of farmers interviewed	12	10
Field ecosystem	Irrigated (100%)	Irrigated (30%); Hill (70%)
Weather conditions during cropping season	In general weather conditions were normal and favourable for rice cultivation	
Crop stage when survey was made	Heading to dough	Booting to milk
Crop rotations	Rice-wheat was the predominant cropping sequence. Other crops rotations followed by the farmers were rice-wheat-mustard, rice-mustard-potato, rice-pea-potato, rice-mustard-pea, rice-mustard, rice-wheat-pea, rice-wheat-horse gram, rice-soybean-pea, rice-wheat, rice-soybean, rice-wheat-soybean, rice-pea-finger millet, rice-wheat-finger millet, rice-wheat-tomato, tice-potato-ginger, rice-tomato-soybean, rice-tomato-finger millet, rice-potato, rice-potato-soybean, rice-soybean, rice-cabbage-horse gram and rice-maize	

A. Cropping system and rice yield: Rice-wheat was the predominant cropping sequence. Other crops rotations followed by the farmers were rice-wheat-mustard, rice-mustard-potato, rice-pea-potato, rice-mustard-pea, rice-mustard, rice-wheat-pea, rice-wheat-horse gram, rice-

soybean-pea, rice-wheat, rice-soybean, rice-wheat-soybean, rice-pea-finger millet, rice-wheat-finger millet, rice-wheat-tomato, tice-potato-ginger, rice-tomato-soybean, rice-tomato-finger millet, rice-potato, rice-potato-soybean, rice-soybean, rice-cabbage-horse gram and rice-maize (Table 6). Average rice yield among the high yielding varieties in plain area ranged from 4000-5700 kg/ha (Table 7). However, yield of basmati and aromatic short grain rice varieties was expected to be 20-25q/ha.

Table 7: Average yields of different rice varieties as reported by the co-operators/farmers

Varieties	Yield (kg/ha)	
	Udham Singh Nagar	**Nainital**
PR 126	5700	5600
PR 113	5600	-
HKR 47	5400	5200-5400
VL Dhan 312	-	4000-4200
VL Dhan 85	-	4000-4200

Table 8: Details of rice consumption pattern

Parameters	Districts	
	Udham Singh Nagar	**Nainital**
Status of farmers	Medium income (83.3%); Rich (16.7%)	Medium income (100%)
Per capita monthly rice consumption (kg)	6-10 kg	6-10 kg
Composition of main meal	Rice + Wheat (100%)	Rice + Wheat (100%)
Preferred rice types	Polished rice (75%); Parboiled (25%)	Polished rice (90%); Parboiled (10%)
Rice grain type preference	Fine grain (100%)	Fine grain (90%); coarse grain (10%)
Any changes in food habit in last 10 years	No (100%)	No (100%)

B. Rice consumption pattern: Survey was conducted on consumption pattern of rice among the farmers in Udham Singh Nagar and Nainital districts of Uttarakhand. Majority (80-100%) of the farmers contacted were in the medium income group (Table 8). Average per capita consumption of rice per month was 6-10 kg rice (Table 8). All the farmers contacted told that their main meal consisted of both rice and wheat and about 75-90% of the farmers told that they used polished rice. Almost all the farmers (90-100%) contacted in both the districts told that they preferred fine grain rice varieties. In general, there was no change in the food habit.

C. Nursery and main field Management: Entire area Udham Singh Nagar district is irrigated and most of the farmers followed recommended agronomic package of practices. However, in Nainital district, only Bhabar area is irrigated and farmers follow recommended agronomic package of practices. Planting was done between 1st week to 4th week of July. Average seed rate was 20-25 kg/ha and farmers adopted random planting where plant population per unit area was not maintained. About 40% farmers from both the districts told that they adopted seed treatment with carbendazim (2 g/kg of seeds) before sowing (Table 9) and another 30-40% farmers told that they purchased already treated seeds for sowing. Application of organic manure in the nursery was not common and only 20% farmers from Nainital applied FYM in

the nursery. However, all the farmers contacted applied chemical fertilizers like urea (2-3 kg/1000 m^2) or NPK (5 kg/1000 m^2) or urea (2-3 kg/1000 m^2) + NPK (2-5 kg/1000 m^2) or only DAP (5 kg/1000 m^2) in the nursery (Table 9). In the main fields, farmers applied fertilizers @ 120 kg N/ha, 60 kg P_2O_5/ha and 40 kg K_2O/ha. Almost all the farmers contacted told that they applied zinc sulphate @ 25 kg/ha. Fertilizers like DAP, urea, MOP, Zinc sulphate and NPK (19:19:19) were commonly used by the farmers. Zn deficiency is a common problem in the district. Farmers in the district unanimously applied zinc sulphate @ 25 Kg/ha or sprayed the crop with 5 Kg zinc sulphate + 20 Kg urea/ha to manage Zinc deficiency/Khaira disease. Few farmers also applied bio-fertilizer named biozyme. Application of organic manures like FYM in the fields is not common among the farmers of US Nagar district. About 60% of the farmers in Nainital applied FYM (100 kg/ha) depending on its availability.

Table 9: Details of nursery management

Parameters	**Udham Singh Nagar**	**Nainital**
Planting time	1st to 4th week of July	2nd to 4th week of July
Seed rate	20-25 kg/ha	20-25 kg/ha
Seed treatment (% farmers adopted)	Yes (41.7%); Purchased treated seeds (417%); Rest did not adopt seed treatment	Yes (40%); Purchased treated seeds (30%); Rest did not adopt seed treatment
Chemicals used for seed treatment	Carbendazim 50% WP (2 g/kg seeds)	Carbendazim 50% WP (2 g/kg seeds)
Organic manure in nursery (% farmers adopted)	No (100 %)	Yes (20%); No (80 %) FYM
Inorganic manure in nursery (% farmers adopted)	Yes (100% farmers); Urea (2-3 kg/1000 m^2) or urea (2-3 kg/1000 m^2) + NPK (2-5 kg/1000 m^2) or only DAP (5 kg/1000 m^2)	Yes (100% farmers); Urea (3 kg/1000 m^2) or NPK (5 kg/1000 m^2) or DAP (5 kg/1000 m^2)

Table 10: Details of main field management

Details	**Udham Singh Nagar**	**Nainital**
Planting method	Random planting (100%); Plant population per unit area was not maintained	
Total N applied	120 kg/ha (100% farmers applied)	120 kg/ha (100% farmers applied)
Total P_2O_5 applied	60 kg/ha (100% farmers applied)	60 kg/ha (100% farmers applied)
Total K_2O applied	40 kg/ha (100% farmers applied)	40 kg/ha (100% farmers applied)
$ZnSO_4$ applied	25 kg/ha (100% farmers applied)	25 kg/ha (90% farmers applied)
Organic fertilizers applied	Nil	Yes (60% farmers); FYM (100 kg/ha)
Remarks	Fertilizers like DAP, urea, MOP, Zinc sulphate and NPK (19:19:19) were commonly used by the farmers. Zn deficiency is a common problem in the district. Farmers in the district unanimously applied zinc sulphate @ 25 Kg/ha or sprayed the crop with 5 Kg zinc sulphate + 20 Kg urea/ha to manage Zinc deficiency/Khaira disease. Few farmers also applied bio-fertilizer named biozyme.	

D. Weeds and their Management: Overall, intensity of weeds was low. The details of different weeds recorded in different districts are presented in Table 11. The details of different weedicides used by the farmers are presented in Table 11. All the farmers contacted in US Nagar and about 30% farmers contacted in Nainital applied different pre-emergence and post emergence herbicides along with hand weeding (Table 11). About 70% farmers contacted in Nainital adopted only hand weeding.

Table 11: Weeds and weed management

Details	**Districts**		
	Udham Singh Nagar	**Nainital**	**Remarks**
Weed intensity	Low	Low	Most of the farmers adopted hand weeding along with herbicide application
Names of the weeds	*Echinochloa colona, Echinochloa crusgalli, Cynodon dactylon, Ischaemum rugosum, Eclipta alba, Eclipta prostrata, Cyperus iria, Cyperus* spp. and others		
Weedicides used	Applied (100%) along with hand weeding	Applied (30%) along with hand weeding; Rest 70% only hand weeding	
Percentage of farmers applied herbicides	Pre-emergence: pretilachlor 50% EC and butachlor 50% EC Post-emergence: bispyribac Sodium 10% SC		
Wild/weedy rice incidence	Nil	Nil	

Table 12: Details of inputs used

Details	**Udham Singh Nagar**	**Nainital**
Implements used	Implements like tractor, harrow, bund-maker, cultivator and combine harvester were used by the farmers. Combine harvested was hired by majority of the farmers in both districts. Progressive farmers possessed their own implements like tractor, harrow and cultivator	
Seed replacement rate in 2025	Seed replacement rate is not available. However, 100% farmers contacted in both the districts purchased 40-100% of their seed requirement	
Source of irrigation	Shallow tube wells (100%)	Shallow tube wells (60%); canal (40%)
Scarcity of irrigation water	No (100%)	No (90%)
Availability of fertilizers/pesticides	Available (91.6%)	Available (100%)
Quality of fertilizers /pesticides	Happy with the quality (100%)	Happy with the quality (100%)
Advisors to the farmers	Own decisions (16.7%); State department (100%); Dealers (8.3%); University (100%)	State department (80%); University (100%)

E. Input use: Implements like tractor, harrow, bund-maker, cultivator and combine harvester were used by the farmers. Combine harvested was hired by majority of the farmers in both districts. Progressive farmers possessed their own implements like tractor, harrow and cultivator. Seed replacement rate is not available. However, 100% farmers contacted in both the districts purchased 40-100% of their seed requirement. Shallow tube wells and canal are the main sources of irrigation in the district. Most of the farmers contacted expressed that there was no scarcity of irrigation water. Majority of the farmers contacted told that fertilizers and

pesticides are available in time and they were happy with their quality. In addition to their own decisions, farmers took advices from officials of state department of agriculture and university staffs. Some of the common problems expressed by the farmers were scarcity of labours and improvement in marketing facility (more number of counters/points where the farmers can sell their produce). Majority of the farmers reported the problem of zinc deficiency.

Table 13. Prevalence of major diseases and insect pests in US Nagar and Nainital districts of Uttarakhand in 2025

Districts	Diseases								
	Bl	**BS**	**ShBl**	**ShR**	**FS**	**GD**	**Bak**	**Khaira**	**BLB**
US Nagar	-	L	L-M	L	L-M (3-10%)	L	L	L	M-S
Nainital	M	M	L-M	T-L (1-3%)	L				L-M

Districts	Insect pests					
	SB	**LF**	**BPH**	**WBPH**	**GB**	**RH**
US Nagar	M (10-20%)	L-M (3-15%)	L-M (5-15%)	L	L	L
Nainital	M (10-15%)	L-M (3-10%)	L-M (5-25%)	L-M		

Table 14: Details of pest management

Details	**Udham Singh Nagar**	**Nainital**
% age farmers adopting plant protection	Adopted (100%)	Adopted (100%)
Names of pesticides	**Insecticides**: Cartap hydrochloride 4% GR (10-19 kg/ha), cartap hydrochloride 50% SP (1 kg/ha), fipronil 5%SC (500 g/acre), chlorantraniliprole 18.5% SC (150 ml/ha), chlorantrainiliprole 50% SP (1 kg/ha), chlorpyriphos 50 + cypermethrin 5% (300 ml/acre), acephate 75% WP (500 g/ha), Profenofos 40% + Cypermethrin 4% EC (1000 ml/ha), Thiamethoxam 1.0% w/w + Chlorantraniliprole 0.5% w/w GR (Virtako) (2.5 kg/ha) for stem borer, leaf folder and whorl maggot; pymetrozine 50% WG (300 g/ha), thiamethoxam 25% WG (100 g/ha), acephate 75%wp (500 g/ha), buprofezin 25% SC (1000 ml/ha) and imidacloprid 17.8% SL (60 ml/acre) for plant hoppers; **Fungicides:** propiconazole (500 ml/ha) for sheath blight and copper hydroxide + streptomycin (500 g + 18 g/ha) for BLB	
# of pesticide sprays	2-5	2-4
Mixing of pesticides before application	Yes (41.7%); mixed 2-3 pesticides	Yes (30%); mixed 2 pesticides
Zinc deficiency	Yes (100%)	Yes (100%)

F. Biotic stress and their management: Prevalence of different diseases and insect pests in Udham Singh Nagar and Nainital districts are presented in Table 13. Among the diseases, sheath blight and bacterial blight were widespread. Sheath blight was recorded in low to moderate intensity and bacterial blight was recorded in moderate to severe intensity. Other diseases recorded were blast, brown spot, sheath rot, false smut, grain discoloration, bakanae and khaira in low to moderate intensity. Among the insect pests, brown plant hopper, leaf folder and stem borer were widespread in low to moderate intensity. BPH infestation was high in some fields in Nainital on variety US 312. Other insect pests recorded were WBPH, gundhi bug, rice hispa and rice whorl maggot. All the farmers contacted told that they applied different pesticides and fungicides for management of different insect pests and diseases. The details of different pesticides used by the farmers are presented in Table 14. In general, farmers adopted

2-5 pesticide application. About 30-40% of the farmers contacted told that they mixed 2-3 pesticides before application. Zinc deficiency was commonly observed in most of the surveyed areas.

Table 15: Researchable issues

Parameters/Issues	**Udham Singh Nagar**	**Nainital**
Rice ecology in your area	Irrigated (100%)	Irrigated (40%); Hill (60%)
Rice cultivation in Kharif or both Kharif and Rabi	Kharif (100%)	Kharif (100%)
# of years of experience in rice farming	5-10 Years (50%); 10-20 Years (50%)	5-10 Years (30%); 10-20 Years (70%)
Main biotic constraints (diseases) in your area according to you	Sheath blight, bacterial blight, false smut and brown spot	Leaf blast, Sheath blight, false smut, bacterial blight and brown spot
Extent of disease damage	10-25%	10-25%
Main biotic constraints (Insect pests) in your area according to you	BPH, stem borer and leaf folder	BPH, stem borer and leaf folder
Extent of insect pest damage	10-25%	10-25%
Main abiotic constrains in your area according to you	Zinc deficiency	Zinc deficiency
Production constraints in your area according to you	Micronutrient deficiency especially Zinc and scarcity of agricultural labours	Micronutrient deficiency especially Zinc and scarcity of agricultural labours
Irrigation facilities in your area	No	No
Normally how many years it takes to change the rice variety	Less than 5 years (50%); 5-10 years (50%)	Less than 5 years (90%); 5-10 years (10%)
Any other rice production issues in your area	-	Development of HYVs for Bhabbar areas
What is urgently required in your area as far as rice varieties are concerned		
Duration	HYVs suitable for DSR and HYVs with lodging resistance	
Biotic stress resistance	HYVs with resistance to blast, BLB, false smut, sheath blight, BPH and stem borer	
Abiotic stress resistance	HYVs tolerant to zinc deficiency	HYVs tolerant to zinc deficiency
Preferred grain quality	Aromatic short grain	Aromatic short grain
Nutritional quality	HYVs with high zinc	HYVs with high zinc and high iron

G. Researchable issues: Among the biotic stresses, major problems are sheath blight, bacterial blight, false smut and brown spot among the diseases and BPH, stem borer and leaf folder among insect pests. Among abiotic stresses, micronutrient deficiency especially zinc was the major problem. Farmers want varieties suitable for DSR, rice varieties resistant/tolerant to above mentioned biotic constraints, varieties with lodging resistance, aromatic short grain rice varieties and bio-fortified varieties with high zinc.

West Bengal-2025-26 (Bankura)

District surveyed: *Jhargram*

Particulars of survey

District	Blocks	Villages (Latitute; Longitude)
Jhargram	Jhargram	Shirshi (22.49; 86.99), Jashpur (22.54; 86.94), Betkundri (22.49; 86.99), Tilabad (22.53; 86.95) and Dhengya (22.51; 86.98)

Widely prevalent varieties

District	Varieties
Jhargram	**HYVs:** Gaurav, MTU-1010, MTU-7029, BB-11, MTU 1153, Lalat, Indrani, Shankar and others

Table: Particulars of rice area in Jhargram district of West Bengal (*Kharif'* 2025)

District	Total Geographical Area (ha.)	Total Cultivable Area (ha.)	Total Cultivated Area (ha.)	Net Irrigated Area (ha)	Area sown Under Rice (ha.)	Area under DSR (ha)
Jhargram	3,02,439	2,07,375	1,68,448	61,224	1,38,998	390

Table: Weather data for Jhargram district of West Bengal during *Kharif'* 2025

District/ Parameters	Months					
	Jun	Jul	Aug	Sep	Oct	Nov
Thane						
RD	18	26	25	21	10	01
TR (mm)	451.75	510.25	311.6	235.4	154.3	1.15

RD: # of rainy days; TR: Total rainfall

Table: Approximate area (ha) under major rice varieties in Jharkhand district of West Bengal in 2025

Variety	Area (ha)	Variety	Area (ha)
MTU 7929	124700	MTU-1010	8,600
Gaurav	4,200	Others	1498

Production oriented survey was conducted in Jhargram district of West Bengal involving 16 farmers from 5 villages. There were incidences of drought in some parts of the district. Popular rice varieties cultivated by the farmers in this region are Gaurav, MTU-1010, MTU-7029, BB-11, MTU 1153, Lalat, Indrani, Shankar and others. Common crop rotations followed by the farmers were rice-potato, rice-potato-sesame, rice-mustard-vegetables, rice-mustard, rice-vegetables-vegetables and rice-wheat. Most of the farmers told that they applied organic manure like FYM and chemical fertilizers both in nursery and in main fields. The intensity of common weeds was low to medium. Farmers followed either hand weeding or both hand weeding and herbicide application. Some common needs of the farmers were availability of agricultural equipment on hire and availability of inputs in time. Most of the farmers expressed the scarcity of irrigation water. The biotic constraints like blast, neck blast, sheath blight, brown spot, stem borer, leaf folder and BPH were recorded in low to moderate intensities. Among the abiotic constraints, drought is the major problem in this area. Common problems faced by the farmers were shortage of labours, non-availability of agricultural equipment in time, crop damage by wild elephants and lack of irrigation facilities.

District-wise observations

Jhargram: Production oriented survey was conducted in 5 villages in Jhargram block of Jhargram district when the crops were in maturity stage. A total of 16 farmers were contacted during the survey. The fields surveyed were under upland ecosystem. Overall, the weather conditions were not favourable for rice cultivation as there were incidences of drought or prolonged dryness during the crop season. Popular rice varieties cultivated by the farmers in this region are Gaurav, MTU-1010, MTU-7029, BB-11, MTU 1153, Lalat, Indrani, Shankar and others. Common crop rotations followed by the farmers were rice-potato, rice-potato-sesame, rice-mustard-vegetables, rice-mustard, rice-vegetables-vegetables and rice-wheat. Average rice yield ranged from 5500 to 7000 kg/ha among the HYVs like Gaurav, Swarna, MTU 1010, BB-11, Lalat, Indrani, Shankar and MTU 1153. Most of the farmers contacted belonged to lower income category group and average per capita consumption of rice per month was 4-6 kg rice. More than 90% farmers contacted told that their main meal consisted of both rice and wheat. Almost all the farmers told that they preferred parboiled coarse grain rice. In general, there was no change in their food habit. Average seed rate used by the farmers was 40-50 kg/ha and about 75% of the farmers contacted told that they treated the seeds before sowing. Almost all the farmers contacted told that they applied FYM in the nursery and also chemical fertilizers like urea (40 kg/ha) or 10:26:26 (35-40 kg/ha). In the main fields, fertilizers were applied @ 70-80 kg N/ha, 35-40 kg P_2O_5/ha and 35-40 kg K_2O/ha. About 30% farmers contacted told that they applied zinc sulphate @ 10 kg/ha. Fertilizers like urea, SSP, MOP, 10:26:26 etc were used. All the farmers told that they applied FYM in the main field at the time of field preparation. The intensity of common weeds like *Echninochloa* spp., *Marsilia quadrifolia*, *Eclipta alba*, *Ammania* spp., *Ludwigia* pp. and others were recorded in low to moderate intensities. About 60% of the farmers contacted told that they followed only hand weeding while rest followed both hand weeding and herbicide application like bispyribac sodium, pretilachlor, pyrazosulfuron ethyl, paraquat etc. Some common needs of the farmers were availability of agricultural equipment on hire and availability of inputs in time. Farmers used agricultural implements like threshers, combine harvesters and sprayers. Most of the farmers told that they purchased the seeds for sowing. Main sources of irrigation were canal followed by shallow tube wells and almost all the farmers expressed about the scarcity of irrigation water. Farmers told that inputs like fertilizers and pesticides were available in time and they were happy with their quality. Farmers got advices from officials from state department of agriculture regarding input use and other doubts. The biotic constraints like blast, neck blast, sheath blight, brown spot, stem borer, leaf folder and BPH were recorded in low to moderate intensities. Farmers applied different pesticides like hexaconazole (1-2 ml/l) and propiconazole (1 ml/l) for diseases like sheath blight and brown spot and Furadan, imidacloprid (0.5 ml/l) and acephate (1-2 g/l) for insect pests like stem borer, leaf folder and BPH. Symptoms of zinc deficiency was observed in some areas. Common problems faced by the farmers were shortage of labours, non-availability of agricultural equipment in time, crop damage by wild elephants and lack of irrigation facilities. Among the abiotic constraints, drought is the major problem in this area. Farmers want varieties resistant/tolerant to constraints like sheath blight and drought.

Table: Prevalence of diseases and insect pests in Jhargram district of West Bengal during *Kharif'* 2025

District	Diseases				Insect pests		
	Bl	**NBl**	**ShBl**	**BS**	**SB**	**LF**	**BPH**
Jhargram	L-M (2-10%	L-M (2-10%	L-M (2-10%	L-M (2-10%	L-M (2-10%	L-M (2-10%	L-M (2-20%

West Bengal-2025-26 (Chinsurah)

Districts surveyed: *Nadia, Hooghly, Purba Bardhaman, Murshidabad, South 24 Parganas* and *North 24 Parganas*

Table 1: Particulars of survey

Districts	Blocks	Villages
Nadia	Krishnaganj	Tungi (23.424128/88.750694)
Hooghly	Balagarh	Punui (23.7484788/88.26444264)
Purba Bardhaman	Memari-I and Ketugram-II	Kalanabagram (23.10365736/88.0413784), Nirol (23.43258312/88.1132456) and Dhandalsa (23.4220376/88.5583008)
Mushidabad	Beldanga	Bhabta, Sri Krishnapur, Sarulia, Barua, Mahula and Hareknagar,
South 24-Parganas	Gosaba	Bally, Rangabelia, Manmathanagar-Janagheri, Satjelia, Dulki and Gosaba Uttar Paschim Para
North 24-Parganas	Amdanga	Bodai (88.47/22.80) and Denga Dengi

Table 2: Widely prevalent rice varieties

Districts	Varieties
Nadia	**HYVs**: IET 4786 (Shatabdi), Pratikshya, Swarna (MTU 7029), Lalat, SS-1 and others; **Hybrids:** PAN 802 and othes; **Local**: Dudheswar and others
Hooghly	**HYVs/Improved**: Swarna (MTU 7029), BB-11, MTU 1075, Pratikshya, Rajendra Mahsuri, IET 4786 (Shatabdi), IET 4094, Khitish, MTU 1156, Bidhan Suruchi, CR 1017, Gobindabhog, MTU 1153, Notia, MTU-1010, CR 800 and others
Purba Bardhaman	**HYVsImproved**: Swarna (MTU 7029), Ranjit, Gobindobhog, Ratna, Nilanja, Badshbhog, IET 4786 (Shatabdi), IET 4094, IR 36, MTU 1010, IR 64, MTU 1153, aromatic rice varieties and others
Murshidabad	**HYVs**: Swarna (MTU 7029), MTU 1156, MTU 1153, MTU 1010, IET 4786 (Shatabdi), Bidhan Suruchi, IR 36, Lalat, GB 1, GB 3, BB-11, Vijay and others
South 24-Parganas	**HYVs/Improved**: Ajit, MTU 1010, Banskathi, Gitanjali, MTU 1001, Gobindobhog, Nona Swarna, CR 1017, Pratikshya, Jamuna, CSR 36, CSR 43, Santoshi, Jirakathi, Jai Shri Ram, Dhiren, Ranjit Sub-1, IET 4786 (Shatabdi), Shreya and others; **Hybrid**: Mali 4, PAN 802, GMS 2264, Arize 6129, Arize 6444 Gold and others; **Local:** Dudheswar, Kalma, Dadsal, Kanakchur, Harinkhuri and others
North 24-Parganas	**HYVs**: IET 4786 (Shatabdi), Swarna (MTU 7029), GB 3, Pratikshya, Yamuna, Maharaj, Phalguni, Sagar, Meghna, Gobindobhog, Kalonunia, Karpur Kanti and Nona Swarna

Production oriented survey was conducted in six districts of this part of West Bengal viz. Nadia, Hooghly, Purba Bardhaman, Murshidabad, South 24-Parganas and North 24-Parganas when the most of the crops were in maturity stage. The details of the places surveyed are presented in Table 1. A total of 59 farmers from 19 villages in 6 districts were contacted during survey (Table 7). The fields surveyed were either under irrigated ecosystem (Table 7). In general, weather conditions were normal for rice cultivation. However, in Nadia, there were reports of prolonged dryness or drought like situation in about 50% places surveyed. On the other hand, there were reports of excess rainfall or flood like situation in many places in Murshidabad (Table 7). The details of different weather parameters in different districts are presented in Table 4. The particulars of rice area during 2025 in the surveyed districts are presented in Table 3. The details of different varieties cultivated in different districts are presented in Table 2. Commonly cultivated rice varieties were HYVs or improved varieties like IET 4786 (Shatabdi),

Pratikshya, Swarna (MTU 7029), Lalat, SS-1. BB-11, MTU 1075, Rajendra Mahsuri, IET 4094, Khitish, MTU 1156, Bidhan Suruchi, CR 1017, Gobindabhog, MTU 1153, Notia, MTU-1010, MTU 1156, CR 800, Ranjit, Ratna, Nilanja, Badshbhog, IR 36, IR 64, GB 1, GB 3, BB-11, Vijay, CSR 36, CSR 43, Santoshi, Jirakathi, Jai Shri Ram, Dhiren, Ranjit Sub-1, Ajit, Banskathi, Gitanjali, MTU 1001, Yamuna, Maharaj, Phalguni, Sagar, Meghna and Nona Swarna and hybrids like Mali 4, PAN 802, GMS 2264, Arize 6129, Arize 6444 Gold and others. Some farmers also cultivated local varieties like Dudheswar, Kalma, Dadsal, Kanakchur, Harinkhuri, Kalonunia,, Karpur Kanti and others. Variety wise area of selected rice varieties in different surveyed districts are presented in Table 6.

Table 3: Particulars of rice areas in the surveyed districts of West Bengal during 2024

District	Total geographical area (ha)	Total cultivable area (ha)	Total cultivated area (ha)	Total irrigated area (ha)	Area under paddy (ha)	Area under DSR (ha)
Nadia	3,89,920.35	2,71,185	2,70,045	2,37,639	75,726	
Hooghly	3,13,400	2,137,20	2,13,690	1,75,230	2,47,730 (Aus, Aman, Boro)	
Purba Bardhaman	5,22,427	4,00,037	3,91,080	3,44,510	3,76,052	60
Murshidabad	5,25,499	3,98,344	3,35,600	2,68,500	1,97,960	5,650
S 24-Parganas	9,48,710	6,63,863	3,60,300	1,68,325	3,29,890	600
N 24-Parganas	4,09,400	2,45,530	2,45,530	1,54,310	2,22,910	-

Table 4: Details of weather data in the surveyed districts of West Bengal in 2024

Weather parameters	Months							
	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan
Nadia								
# of Rainy days	09	17	12	13	06	0	02	0
Total rainfall (mm)	177.3	212.4	73.9	125.1	119.9	0	82.6	0
MMT (^{O}C)	31.2	29.6	30.3	31.2	26.5	23.2	18.8	17.5
Maximum temp (^{O}C)	40.1	35.6	36.8	37.4	35.2	33.2	28.6	29.6
Minimum temp (^{O}C)	22.4	23.6	23.8	25.0	17.8	13.2	9.0	5.4
Hooghly								
# of Rainy days	0	30	30	20	7	0	0	NA
Total rainfall (mm)	0	402.67	237.52	171.38	84.28	0	0	NA
Maximum temp (^{O}C)	38.3	35.9	34.8	34.4	32.5	30.8	27.2	NA
Minimum temp (^{O}C)	25.2	24.5	24.3	24.4	18.2	17.6	14.1	NA
Sunshine hours	7.3	5.7	6.1	6.3	7.2	6.6	6.1	NA
Purba Bardhaman								
# of Rainy days	22	31	31	29	13	01	0	NA
Total rainfall (mm)	275.5	497.1	321.02	155.23	116.84	0.29	0	NA
Maximum temp (^{O}C)	33.9	32.4	32.5	33.4	32.3	29	26	NA
Minimum temp (^{O}C)	26.5	26.9	26.5	26.5	23.8	19	15	NA
Murshidabad								
# of Rainy days	16	24	22	15	08	01	0	0
Total rainfall (mm)	140.6	302.0	303.5	135.5	117.8	46.4	0	0
S 24-Parganas								
# of Rainy days	23	30	29	23	16	02	0	0
Total rainfall (mm)	297.08	605.20	362.22	217.08	159.13	1.9	0	0
N 24-Parganas								
# of Rainy days	24	27	30	24	14	NA	NA	NA
Total rainfall (mm)	285	565	281	167.87	129.64	NA	NA	NA

MMT: Monthly mean temperature; NA-Not available

Table 5: General Question of Rice Cultivation In District (To Be Filled By The Cooperator In With The Officials From State Department of Agriculture

Parameters	Districts		
	Nadia	**Hooghly**	**Purba Bardhaman**
Total Area under HYVs in the district (ha)	84657 ha	240000 ha	331062 ha
Most prevalent HYVs in the District	IET 4786, Pratikshya	Swarna	Swarna
Total area under rice hybrids in the district (ha)	75 ha	Nil	20 ha
Most prevalent rice hybrids in the district	PAN 802	Nil	-
Total area under ~~basmati~~/scented in the district	Nil	Nil	44970 ha
Most prevalent ~~basmati~~/Scented varieties in the district	Nil	Nil	Gobindobhog
Seed replacement rate	36%	35%	80%
Whether farmers are using any heavy equipments like transplanted/combine harvester	Combine harvester	Combine harvester and paddy transplanter	Yes; combine harvester
Mention water saving technologies like SRI/laser leveling/DSR being used by the farmers	SRI, DSR; area is very less	SRI, Drum seeder, zero tillage, SARP technology	SRI and zero tillage
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	Yes; judicious use of fertilizers and proper time of sowing	Yes	Yes
What are the general problems in rice cultivation in the district?	Disease (sheath blight) and nematode problem	Flood, pests and diseases, natural calamity	Pests and diseases and natural calamity
Please provide any farmers association in the district	-	Many SHGs, FPOs and FPCs (Farmers producing company)	Kamarhati FPC, Mukundaram FPC
Whether availability of labors is sufficient?	Optimum	insufficient during peak period; dependence on migratory labours	
Whether there is any marketing problem of the produce?	problem of low price of local varieties	No	Some times
Any major irrigation/power generation project in the district	NA	Yes	DVC
Any soil testing program undertaken?	Soil health card	Yes	Yes
Any farmers' training program was organized by the state department of Agriculture/ University	Yes	Yes	Yes

Table 5 Contd..: General Question of Rice Cultivation In District (To Be Filled By The Cooperator In With The Officials From State Department of Agriculture

Parameters	Districts		
	Murshidabad	**S-24 Parganas**	**N-24 Parganas**
Total Area under HYVs in the district (ha)	282360 ha (Kh-197960 + Rb-84400)	180000-200000 ha	220000 ha
Most prevalent HYVs in the District	Swarna, MTU 1156, MTU 1153, MTU 1010, IET 4786, Bidhan Suruchi	Ajit, MTU 1010, 1001, Dhiren, Ranjit Sub-1	Pratikshya, IET 4786, GB 3, Swarna
Total area under rice hybrids in the district (ha)	Nil	80000-85000 ha	50 ha
Most prevalent rice hybrids in the district	Nil	PAN 802, Mali 4, GMS-2264, Arize hybrids	Pvt hybrids
Total area under basmati/scented in the district	Nil	Negligible	Nil
Most prevalent basmati varieties in the district	Nil	NA	Nil
Seed replacement rate	85-90%	80-90 % (Rabi); 40-50% Kharif	10%
Whether farmers are using any heavy equipments like transplanted/combine harvester	Yes	Yes	Yes
Mention water saving technologies like SRI/laser leveling/DSR being used by the farmers	Yes	NA	SRI in some pockets
Whether survey team gave any advice to the farmers during survey? If yes, then what are those	Yes	Yes; regarding use of organic manure, timely plant protection measures, timely sowing	Yes; regarding use of organic manure during nursery management, soil testing
What are the general problems in rice cultivation in the district?	Uncertain rainfall, flood	Water logging, salinity, poor drainage	Infestation of BPH and stem borers
Please provide any farmers association in the district	-	Cooperatives, FPOs/FPCs, Kisan Gosthi	
Whether availability of labors is sufficient?	Yes	More or less	No
Whether there is any marketing problem of the produce?	Yes	No	NA
Any major irrigation/power generation project in the district	-	_	NA
Any soil testing program undertaken?	Yes	Yes (under soil health and fertility management)	Yes, through soil soil health card
Any farmers' training program was organized by the state department of Agriculture/ University	Yes	Yes	Yes, by state department

Table 6: Variety wise area coverage (ha) in different districts of West Bengal during *Kharif* 2025

Variety/ Hybrid	Districts					
	Nadia	**Hooghly**	**P. Bard-haman**	**Murshi-dabad**	**S-24 P**	**N-24 P**
IET 4786	35012	45000	7550	50000		100000
Pratikshya	37475	1000				20000
Swarna	21237	80000	321227	130000		50000
BB 11		40000				
MTU 1075		700				
Raj. Mahsuri		1000				
MTU 1156		5000		25000		
Bidhan Suruchi		5000		25000		
CR-1017		300				
Gobindobhog		4750	44915		10000-12000	
Badshabhog			55			
MTU 1153		500				
Notia		2000				
MTU 1010		5000	1800	15000	28000-30000	
CR 800		1000				
Ranjit			185			
IET 4094			50			
IR 36			90			
IR 64			120			
MTU 1153			60	18000		
Dudheswar					90000-95000	
Ajit					32000-35000	
Banskathi					25000-30000	
Gitanjali					15000-18000	
MTU 1001					10000-12000	
Nona Swarna					8000-10000	2000
CSR 36/43					5000-6000	
Santoshi					5000-6000	
GB 3						50000
Hybrids						
Mali 4					42000-45000	
Pan 802					35000-40000	
GMS 2264					20000-25000	
Arize 6129					8000-10000	
Arize Gold					8000-10000	
Other hybrids						50
Others				19450	15000-20000	860

Table 7: General information

Parameters	Districts		
	Nadia	**Hooghly**	**Purba Bardhaman**
# of talukas/blocks covered	1	1	2
# of villages surveyed	1	1	3
# of farmers interviewed	8	10	11
Field ecosystem	Irrigated (100%)	Irrigated (100%)	Irrigated (100%)
Weather conditions during cropping season	Abnormal (50%); drought or prolonged dryness	Normal (100%)	Normal (100%)
Crop stage when survey was made	Maturity	Maturity	Maturity
Crop rotations	Common crop rotations followed by the farmers were rice-rice, rice-rice-rice, rice-wheat-rice, rice-rice-jute, rice-rice-wheat-Jute, fallow-jute, rice-potato/onion-rice, rice-mustard-rice, rice-lentil-rice, rice-mustard-Jute, rice-onion-Jute, rice-vegetables, rice-potato-sesame, rice-mustard, rice-potato/wheat and rice-potato-pumpkin and others		

Table 7 contdd..: General information

Parameters	Districts		
	Murshidabad	**South 24 Parganas**	**North 24 Parganas**
# of talukas/blocks covered	1	1	1
# of villages surveyed	6	6	2
# of farmers interviewed	10	10	10
Field ecosystem	Irrigated (100%)	Irrigated (100%)	Irrigated (100%)
Weather conditions during cropping season	Abnormal (100%); Excess rainfall leading to local inundation	Normal (100%)	Normal (100%)
Crop stage when survey was made	Maturity	Maturity	Maturity
Crop rotations	Common crop rotations followed by the farmers were rice-mustard-vegetables, rice-sesame-rice, rice-vegetables-vegetables, rice-lentil-vegetables, rice-mustard-rice, rice-potato-sesame, rice-rice, rice-lathyrus, rice-potato, rice-onion, rice-pea-rice, rice-pea, rice-sesame and others		

In Murshidabad and North 24 Parganas, some farmers cultivated other crops like vegetables and jute in part of their land

Table 8: Average yields of different rice varieties as reported by the farmers

Varieteis	Nadia	Hooghly	P. Bardhaman	Murshidabad	S 24-Parganas	N 24-Parganas
Pratikshya	4800				4500-4950	4700-4800
Lalat	4800					
IET 4786/ Shatabdi	5000-6300	5200-5600	5500-5650	4900-5500	4000	4800-5100
Swarna	5000-5500	4700-4900	5000-6000	5000-5900		
MTU-1153				5100-5600		
MTU 1156						
MTU 1010				4800-5100		
Ksitish		4400				
CR-1017					4125-5850	
Santoshi					5850	
IET 4094		5000				
Jamuna					5400-6750	4800-4900
Shreya					4875	
Ratna			5300-5400			
BB-11				5000-5100		
IR 36				4500		
Bidhan Suruchi				5100		
Jai Shri Ram					6300	
Maharaj						4700-4900
Phalguni						4700-4800
Sagar						4800-4900
Meghna						4800
Gobindobhog			3400-3600			
Dudheswar	3500				2250	
Jeerakathi					3125-3375	
Mali 4					4950	

A. Cropping system and rice yield: Farmers adopted different cropping systems. Common crop rotations followed by the farmers were rice-rice, rice-rice-rice, rice-wheat-rice, rice-rice-jute, rice-rice-wheat-Jute, rice-fallow-jute, rice-potato/onion-rice, rice-mustard-rice, rice-lentil-rice, rice-mustard-Jute, rice-mustard-vegetables, rice-sesame-rice, rice-vegetables-vegetables, rice-lentil-vegetables, rice-onion-Jute, rice-vegetables, rice-potato-sesame, , rice-potato, rice-onion, rice-pea-rice, rice-pea, rice-lathyrus, rice-mustard, rice-potato/wheat and rice-potato-pumpkin and others (Table 7). Average rice yield among different HYVs and hybrids ranged from 4000-6000 kg/ha while in case of aromatic short grains the yield was 2250-3600 kg/ha (Table 8).

Table 9: Details of rice consumption pattern

Parameters	Districts		
	Nadia	**Hooghly**	**Purba Bardhaman**
Status of farmers	Medium income (100%)	Medium income (100%)	Medium income (100%)
Per capita monthly rice consumption (kg)	10-16 kg	7-10 kg	10-12 kg
Composition of main meal	Only rice (100%)	Rice + Wheat (100%)	Rice + Wheat (90%); Only rice (10%)
Preferred rice types	Parboiled rice (100%)	Parboiled rice (100%)	Parboiled rice (100%)
Rice grain type preference	Fine grain (100%)	Fine grain (100%)	Fine grain (45%); Coarse grain (55%)
Any changes in food habit in last 10 years	No (100%)	No (100%)	No (100%)

Table 9 contdd..: Details of rice consumption pattern

Parameters	Districts		
	Murshidabad	**S 24-Parganas**	**N 24-Parganas**
Status of farmers	Medium income (50%); Poor (50%)	Medium income (100%)	Medium income (100%)
Per capita monthly rice consumption (kg)	6-8 kg	15-20 kg	10-13 kg
Composition of main meal	Rice + wheat (90%); Only rice (10%)	Only Rice (100%)	Rice + Wheat (60%); Only rice (40%)
Preferred rice types	Parboiled rice (100%)	Parboiled rice (100%)	Parboiled rice (100%)
Rice grain type preference	Fine grain (60%); Coarse grain (100%)	coarse grain (100%)	Fine grain (100%)
Any changes in food habit in last 10 years	No (100%)	No (100%)	No (100%)

In Murshidabad, about 40% farmers told that they have shifted from coarse grains to fine grain

B. Rice consumption pattern: Survey was conducted on consumption pattern of rice among the farmers in different surveyed districts of this part of West Bengal. On an average about 91% of the farmers contacted were from medium income group rest were from lower income group (Table 9). Average per capita consumption of rice per month was 6-12 kg rice. Most of the farmers from Nadia and South 24 Parganas and about 40% of the farmers from North 24 Parganas consumed only rice. Some farmers consumed 3 meals consisting of rice (Table 9). Almost all the farmers contacted from different districts told that they consumed mainly parboiled rice. Farmers consumed both fine and coarse grains. Most of the farmers fromMurshidabad, Nouth 24 Parganas and about 55% farmers from Purba Bardhaman consumed coarse grain rice. In general, there was no change in food habit. However, farmers in general preferring fine grain rice grains for consumption.

Table 10: Details of nursery management

Details	Districts		
	Nadia	**Hooghly**	**Purba Bardhaman**
Planting time	3rd week of July to 1st week of August	1st to 2nd week of July	End of July to 1st week of August
Seed rate	30-40 kg/ha	45-75 kg/ha	37.5-45 kg/ha
Seed treatment (% farmers adopted)	Yes (100%)	Yes (100%)	Yes (90.1%)
Chemicals used for seed treatment	carbendazim (2 g/kg of seeds)	carbendazim (2 g/kg of seeds)	carbendazim (2 g/kg of seeds); mancozeb (2.5 g/kg of seeds)
Organic manure in nursery (% farmers adopted)	Yes (25%); Oil cake	Yes (100%); FYM (6-7.5 kg/1333 m2)	Yes (100%); FYM (7-8 q/1333 m2), vermi-compost (100-150 kg/1333 m2), poultry manure
Inorganic manure in nursery (% farmers adopted)	100% applied; Urea (4 kg/1000 m^2) + SSP (0.25 kg/m^2); Few applied MOP and 10:26:26	100% applied; Urea (4-7 kg/1333 m2)	54.5% applied; Urea (75 kg/ha) + 10:26:26 (100 kg/ha);

Table 10 contdd..: Details of nursery management

Details	Districts		
	Murshidabad	**S 24-Parganas**	**N 24-Parganas**
Planting time	3rd to 4th week of June	2nd week of July to 2nd week of August	NA
Seed rate	50-70 kg/ha	30-37.5 kg/ha	30-45 kg/ha
Seed treatment (% farmers adopted)	Yes (80%)	No (100%)	Yes (70%)
Chemicals used for seed treatment	carbendazim (2 g/kg of seeds); mancozeb (2 g/kg of seeds); carbendazim + mancozeb (2 g/kg of seeds)	NA	carbendazim (2 g/kg of seeds)
Organic manure in nursery (% farmers adopted)	Yes (50%); FYM	No (100%)	Yes (80%); FYM, Oil cake
Inorganic manure in nursery (% farmers adopted)	100% applied; N (60-80 kg/ha) + P_2O_5 (35-40 kg/ha) and K_2O (35-40 kg/ha)	100% applied; Urea (22.5-75 kg/ha) or 10:26:26 (2.5-75 kg/ha) or 14:35:35 (30-37.5 kg/ha); Few applied MOP and SSP	NA

C. Nursery and main field Management: Average seed rate used by the farmers ranged from 30-75 kg/ha. On an average about 73% of the farmers contacted told that they adopted seed treatment with carbendazim (2 g/kg seeds) or SAAF (mancozeb + carbendazim) (2-2.5 g/kg) or mancozeb (2.5 g/kg). On an average 75% of the farmers contacted applied organic matter like FYM, oilseed cake and poultry manure in the nursery (Table 10). On an average about 91% of the farmers contacted applied chemical fertilizers like urea, 10:26:26, SSP, 14:35:35 and MOP (Table 10). Planting was done in between end of June to 1st week of August. Many farmers from Hooghly, Purba Bardhaman and Mushidabad adopted line planting. Many farmers from North 24 Parganas adopted direct sowing. In the main fields, fertilizers were applied @ 50-150 kg N/ha, 25-65 kg P_2O_5/ha and 12-80 kg K_2O/ha (Table 11). Many farmers from Murshidabad applied zinc sulphate in the main fields. Some sprayed 0.5 g $ZnSO_4$ + 10 g urea/l of water (Table 11). Fertilizers like urea, DAP, SSP, MOP. 10:26:26, 14:35:35 were applied by the

farmers. Majority of the farmers contacted (90-100%) in different districts applied FYM (7-11 q/ha), mustard cake and vermicompost (Table 11).

Table 11: Details of main field management

Details	Districts		
	Nadia	**Hooghly**	**Purba Bardhaman**
Planting method	Random planting (87.5%); Line planting (12.5%)	Random planting (30%); Line planting (70%)	Random planting (27.3%); Line planting (72.7%)
Total N applied	70-80 kg/ha (100% applied)	135-150 kg/ha (100% applied)	50-150 kg/ha (100% applied)
Total P_2O_5 applied	35-40 kg/ha; (100% applied)	25-30 kg/ha; (100% applied)	25-41 kg/ha; (100% applied)
Total K_2O applied	35-40 kg/ha; (100% applied)	12-15 kg/ha; (100% applied)	45-60 kg/ha; (100% applied)
$ZnSO_4$ applied	-	-	-
Organic fertilizers applied	Applied (100%); FYM 10 q/ha	Applied (100%); FYM (7-10 q/ha); mustard cake (150-225 kg/ha)	Applied (100%); FYM (10-11 q/ha); Vermicompost
Fertilizers applied	Fertilizers like urea, DAP, SSP, MOP. 10:26:26, 14:35:14 were applied by the farmers		

Table 11 contdd..: Details of main field management

Details	Districts		
	Murshidabad	**S 24-Parganas**	**N 24-Parganas**
Planting method	Random planting (40%); Line planting (60%)	NA	Direct sowing (90%) Machine planting (10%)
Total N applied	61-82 kg/ha (100% applied)	NA	100-110 kg/ha (100% applied)
Total P_2O_5 applied	35-40 kg/ha; (100% applied)	NA	40-65 kg/ha; (100% applied)
Total K_2O applied	58-60 kg/ha; (100% applied)	NA	50-80 kg/ha; (100% applied)
$ZnSO_4$ applied	Applied (100%); Dose not available; some sprayed 0.5 g $ZnSO_4$ + 10 g urea/l of water	NA	-
Organic fertilizers applied	Applied (100%); FYM 10 q/ha	Applied (90%); FYM (7-10 q/ha)	Applied (100%); FYM (10-11 q/ha); Vermi-compost
Fertilizers applied	Fertilizers like urea, DAP, SSP, MOP. 10:26:26, 14:35:14 were applied by the farmers		

Table 12: Weeds and weed management

Details	Districts		
	Nadia	**Hooghly**	**Purba Bardhaman**
Weed intensity	Low to high	Low to medium	Medium
Names of the weeds	*Echinochloa colona, Echinochloa crusgalli*, *Cyperus rotundus*, *Cynodon dactylon, Cyperus difformis, Ageratum conyzoides, Marsilia quadrifolia, Ipomoea* spp. (Kalmi), *Chenopodium album*, *Monochoria vaginalis* and some unidentified grasses and sedges		
Weedicides used	butachlor, pretilachlor 50 EC @ 750 ml/ha, Saathi (pyrazosulfuron Ethyl 10% WP) (200 g/ha), Fighter (2, 4-D Ethyl Ester 20% W.P.) (5 ml/10 l) and others		
Percentage of farmers applied herbicides	100% farmers applied along with hand weeding	Nil; 100% farmers followed only hand weeding	81% farmers contacted applied herbicides along with hand weeding; rest followed only hand weeding
Wild rice incidence	Nil	Nil	Nil
Remarks	Weed intensity was high in some fields in Nadia district. None of the farmers contacted in Hooghly district applied herbicides. Most of the farmers who applied herbicides also adopted hand weeding		

Table 12 contdd..: Weeds and weed management

Details	Districts		
	Murshidabad	**S 24-Parganas**	**N 24-Parganas**
Weed intensity	Low to medium	Medium	High
Names of the weeds	*Echinochloa colona, Echinochloa crusgalli*, *Cyperus rotundus*, *Cynodon dactylon, Cyperus difformis, Ageratum conyzoides, Marsilia quadrifolia, Ipomoea* spp. (Kalmi), *Chenopodium album*, *Monochoria vaginalis* and some unidentified grasses and sedges		
Weedicides used	butachlor, pretilachlor 50 EC @ 750 ml/ha, Saathi (pyrazosulfuron Ethyl 10% WP) (200 g/ha) and others		
Percentage of farmers applied herbicides	90% farmers applied along with hand weeding; 10% farmes applied only herbicides	Nil; 100% farmers followed only hand weeding	100% farmers contacted applied herbicides along with hand weeding
Wild rice incidence	Nil	Nil	Nil
Remarks	Weed intensity was high in most of the fields in North 24 Parganas district. None of the farmers contacted in South 24 Parganas district applied herbicides. Most of the farmers who applied herbicides also adopted hand weeding		

D. Weeds and their Management: Overall intensity of weeds was medium except in North 24 Parganas where weed intensity was recorded high in some places. Common weeds observed in and around rice fields were *Echinochloa colona, Echinochloa crusgalli*, *Cyperus rotundus*, *Cynodon dactylon, Cyperus difformis, Ageratum conyzoides, Marsilia quadrifolia, Ipomoea* spp. (Kalmi), *Chenopodium album*, *Monochoria vaginalis* and some unidentified grasses and sedges (Table 12). About 80-100% of the farmers contacted in Nadia, Purba Bardhaman, Murshidabad and North 24 Parganas applied herbicides along with hand weeding. The farmers

from Hooghly and South 24 Parganas followed only hand weeding for management of weeds (Table 12). The details of different herbicides used by the farmers are presented in Table 12.

Table 13: Details of inputs used

Details	**Districts**		
	Nadia	**Hooghly**	**Purba Bardhaman**
Implements used	Implements like tractor, leveller, pump, power tiller, rotavator, thresher, power sprayer, sprayer and combine harvester were used by the farmers. Progressive farmers owned these instruments and others used these implements on hire basis. Combined harvester was used on hire basis		
Source of seeds	87-100% farmers contacted in the surveyed districts told that they purchased part of their (10-50%) of seed requirement		
Source of irrigation	Shallow tube well (62.5%); RLI (37.5%)	RLI (100%)	Deep tube wells (55%); Canal (45%)
Scarcity of irrigation water	No (100%)	No (100%)	No (100%)
Availability of fertilizers/pesticides	Not available (50%)	Available (100%)	Not Available (36.4%)
Quality of fertilizers/pesticides	Satisfied (87.5%)	Satisfied (100%)	Not Satisfied (36.4%)
Advisors to the farmers	State Dept. (100%)	State Dept. (100%); Pvt Dealers(100%)	Own decision (81.8%); State Dept. (45.5%); Pvt Dealers (45.5%)

RLI: River lift irrigation

Table 13 contdd..: Details of inputs used

Details	**Districts**		
	Murshidabad	**S 24-Parganas**	**N 24-Parganas**
Implements used	Implements like tractor, leveller, pump, power tiller, rotavator, thresher, power sprayer, sprayer and combine harvester were used by the farmers. Progressive farmers owned these instruments and others used these implements on hire basis. Combined harvester was used on hire basis		
Source of seeds	80-100% farmers contacted in the surveyed districts told that they purchased part of their (30-90%) of seed requirement		
Source of irrigation	Shallow tube well (30%); Deep tube wells (70%); Canal (10%)	NA	Shallow tube wells (100%)
Scarcity of irrigation water	Yes (50%)	NA	No (100%)
Availability of fertilizers/pesticides	Not available (20%)	Available (100%)	Available (100%)
Quality of fertilizers/pesticides	Not Satisfied (50%)	Satisfied (100%)	Satisfied (100%)
Advisors to the farmers	State department (100%)	Pvt Dealers (100%)	Pvt Dealers (100%)

E. Specific needs of farmers: Some of the common needs of the farmers were availability of combine harvesters on hire basis, availability of drones for pesticide application on hire basis, paddy weeder, timely availability of quality seeds of HYVs, improvement in irrigation facilities, information on new better varieties and availability of seeds of those varieties,

availability of implements on hire basis, subsidy on price of pesticides and fertilizers, diseases and pest resistant rice varieties, improvement in marketing facility, availability of agricultural labours, availability of organic manure, increase in minimum support price and technical support for improved rice cultivation.

F. Input use: Implements like tractor, leveller, pump, power tiller, rotavator, thresher, power sprayer, sprayer and combine harvester were used by the farmers. Progressive farmers owned these instruments and others used these implements on hire basis. Combined harvester was used on hire basis. About 80-100% farmers contacted in the surveyed districts told that they purchased part of their (10-90%) of seed requirement (Table 13). Shallow tube wells, deep tube wells, canal and lift irrigation from rivers and reservoirs were the main sources of irrigation. In general, there was no scarcity of irrigation water except in some parts of Murshidabad. In general, fertilizers and pesticides were available and farmers were happy with their quality except some cases in Nadia, Purba Bardhaman and Murshidabad. In addition to their own decisions, farmers received advices from officials of state department of agriculture and private dealers. Personnel from local pesticides and fertilizers shops were the main advisors to the farmers in most of the districts surveyed.

Table 14: Prevalence of diseases and insect pests in West Bengal during *Kharif*' 2025

Districts	**Diseases**							
	Bl	**NBl**	**ShBl**	**BS**	**ShR**	**FS**	**BLB**	**RTD**
Nadia			L-M (5-10%)	L-M (5-10%)	L-M (5-10%)		L-M (5-10%)	
Hooghly		L (5%)	M (15-20%)	L-M (5-20%)	M (10-15%)			
P. Bardhaman	L-M (5-10%)	L-M (5-20%)	M (10-15%)	M (15%)	M (15%)	L-M (5-10%)	L-M (3-10%)	S (>50%)
Murshidabad			L (5%)	L-M (5-10%)	L-M (4-20%)		L-M (5-25%)	
S 24-Parganas			M-S (15-35%)		M (15-25%)			
N 24-Parganas	M (15-25%)							

There was low (2-3%) incidence of BLS in some fields of Swarna in Puba Bardhaman

Table 14 contdd..:

Districts	**Insect pests**					
	SB	**LF**	**BPH**	**GLH**	**GM**	**GB**
Nadia	M (10-15%)	M (10-15%)				
Hooghly	L-M (5-12%)		S (35-60%)*			
P. Bardhaman	L-M (5-15%)	L-M (5-10%)	S (40-50%)	S (>50%)	L-M (5-15%)	
Murshidabad	L-M (5-15%)	L-M (4-10%)		L-M (5-10%)	L-M (4-15%)	L-M (2-10%)
S 24-Parganas	M-S (20-30%)		M-S (20-30%)			
N 24-Parganas	M (10-25%)		M (10-25%)			

Minor incidence of mite (5%) and grasshoppers in some fields in P. Bardhaman; Low incidence of rats (2-5%) in some fields in Murshidabad

G. Biotic stresses and their management: The details of occurrence of different diseases and insect pests are presented in Table 14. The diseases like blast, neck blast, sheath blight, sheath rot, false smut, brown spot and bacterial blight were commonly observed in varying intensities in different farmers' fields. Insect pests like stem borer and BPH were wide spread. Other insect pests like leaf folder, green leaf hopper, gall midge and gundhi bugs were observed in some fields (Table 14). Rice tungro disease which was not recorded in past few years was observed in severe intensities (>50%) in many fields in in Nirol and Dhandalsa villages of Purba Bardhaman district on varieties like Swarna. Very high population of green leaf hoppers was recorded in those fields in Nirol and Dhandalsa villages in P. Bardhaman on rice variety Swarna. Moderate to severe intensities of sheath blight was recorded in some fields in Rangbelia and Manmathanagar villages in South 24 Parganas on varieties like CR 1017, Jamuna, Dudheswar, Jai Shri Ram, Pratikshya and Shatabdi. BPH was severe on varieties like Swarna, CR 800, Khitish, Shatabdi, IET 4094 and MTU varieties in all the places surveyd in Hooghly district. It was also very severe in many fields of Nabagram/Kala Nabagram village in Purba Bardhaman district on varieties like Swarna, Gobindobhog, IET 4786 and Ratna (Table 14). Moderate to severe incidence of Stem borer and BPH were recorded in in Rangbelia, Manmathanagar, Bally, Satjelia and Dulki villages in South 24 Parganas on varieties like Pratikshya, Jirakathi, Cr 1017, Shreya and Shatabdi. All the farmers contacted told that they applied different pesticides to manage the biotic stresses. Different pesticides used by the farmers in different surveyed districts are presented in Table 15. The number of spraying/pesticide application ranged from 1-4 and most of the farmers contacted from Nadia district mixed 2 different pesticides before application.

Table 15: Details of pest Management

Details	**Districts**		
	Nadia	**Hooghly**	**Purba Bardhaman**
% age farmers adopting plant protection	100%	100%	100%
Names of pesticides	**Insecticides**: Coragen (chlorantraniliprole 18.5% SC) (4.5 ml/15 l) and Ferterra (chlorantraniliprole 0.4% GR) (15 kg/ha) for stem borer; imidacloprid (0.3 ml/l) and pymetrozine (0.6 g/l) for BPH **Fungicides**: validamycin (1 ml/l), Contaf Plus (hexaconazole 5% SC) and propiconazole (1 ml/l) for sheath blight; carbendazim + mancozeb (1.5 g/l) for brown spot; Galileo (picoxystrobin 6.78% + tricyclazole 20.33% SC) (1.5 ml/l), Nativo (trifloxystrobin + tebuconazole) (0.4 g/l) and Spectrum (azoxystrobin 11% + tebuconazole 18.3% w/w SC) (2 ml/l) for blast and sheath blight and streptomycin (1 g/10 l) for bacterial blight of rice		
# of pesticide sprays	2-3	2-3	3-4
Mixing of pesticides before application	Yes (100%)	Nil	Nil
Zinc deficiency	Yes (100%)	Nil	Nil

Table 15 contdd..: Details of pest Management

Details	Districts		
	Murshidabad	**S 24-Parganas**	**N 24-Parganas**
% age farmers adopting plant protection	100%	100%	100%
Names of pesticides	**Insecticides**: Barroz (cartap Hydrochloride 7.5% w/w + emamectin benzoate 0.25% w/w GR), Kritap (cartap hydrochloride 50 SP) (1-2 g/l), Ferterra (chlorantraniliprole 0.4% GR) (15 kg/ha), Hamla (chlorpyriphos) (400 ml/acre), Takumi (flubendiamide 20% WG (Water Dispersible Granule) (40-100 g/acre), Decis (deltamethrin) (180 ml/acre), Ban (chlorpyriphos 40%) (40 ml/acre) and Canon (chlorpyriphos 50% + cypermethrin 5% EC) (400 ml/acre) for stem borer and imidacloprid (0.3 ml/l) and pymetrozine (0.6 g/l) for BPH **Fungicides**: hexaconazole (1.5 ml/l), propiconazole (1 ml/l) and V3 (Validamycin 3% L (400 ml/acre) for sheath blight and carbendazim + mancozeb (1.5 g/l) and carbendazim (1 g/l) for brown spot		
# of pesticide sprays	1-2	2-3	2
Mixing of pesticides before application	Nil	Nil	Nil
Zinc deficiency	Yes (20%)	Nil	Nil

Table 16: Researchable issues

Parameters/Issues	Districts		
	Nadia	**Hooghly**	**Purba Bardhaman**
Rice ecology in your area	IR (75%); RL (25%)	IR (100%)	IR (100%)
Rice cultivation only in Kharif or both Kharif and Rabi	Kharif and Rabi	Kharif and Rabi	Kharif and Rabi
Number of years of experience in rice farming	>20 years	10-20 years	10-20 years
Main biotic constraints (diseases) in your area according to you	Sheath blight, bacterial blight, Brown spot, leaf blast and false smut		
Extent of disease damage	10-25%	10-25%	10-25%
Main biotic constraints (Insect pests) in your area according to you	BPH, stem borer		
Extent of insect pest damage	10-25%	10-25%	10-25%
Main abiotic constrains in your area according to you	Drought	flash floods	flash floods
Production constraints in your area according to you	Scarcity of agricultural labour		
Irrigation facilities in your area			canal and bore wells
Normally how many years it takes to change the rice variety	10-20 years		
Any other rice production issues			
What is urgently required in your area as far as rice varieties are concerned			
Duration	varieties with lodging resistance and suitable for DSR		
Biotic stress resistance	HYVs with resistance to BPH, stem borer, sheath blight and leaf blast		

Parameters/Issues	Districts		
	Nadia	**Hooghly**	**Purba Bardhaman**
Abiotic stress resistance	varieties with tolerance to submergence and drought		
Preferred grain quality	varieties with MS grain quality		
Nutritional quality	varieties with high iron and high protein		

IR: Irrigated; RL Rainfed low land

H. Researchable issues: Among the biotic stresses, major problems in the region are sheath blight followed by bacterial blight, blast, brown spot and false smut among the diseases and stem borer and BPH among the insect pests. Among the abiotic problems, salinity and Submergence/ drought/flash flood was the main problem. Major problems faced by the farmers were scarcity of agricultural labours, lack of mechanization, lack of irrigation facilities, unavailability of fertilizers and pesticides and unavailability of quality seeds. Farmers want rice varieties with lodging resistance varieties suitable for DSR, varieties having tolerance to sheath blight, blast, bacterial blight, brown spot, false smut, stem borer and BPH, varieties having tolerance to salinity, submergence and drought, MS grain varieties and varieties with high iron, zinc and protein and low GI (Table 16).

Table 16 contdd..: Researchable issues

Parameters/Issues	Districts		
	Murshidabad	**S 24-Parganas**	**N 24-Parganas**
Rice ecology in your area	IR, RL and RU	IR (100%)	RL (100%)
Rice cultivation only in Kharif or both Kharif and Rabi	Kharif and Rabi	Kharif	Kharif and Rabi
Number of years of experience in rice farming	5-20 years	>20 years	>20 years
Main biotic constraints (diseases) in your area according to you	Sheath blight, bacterial blight, Brown spot and leaf blast		
Extent of disease damage	<10%	10-25%	10-25%
Main biotic constraints (Insect pests) in your area according to you	BPH, stem borer		
Extent of insect pest damage	<10%	<10%	10-25%
Main abiotic constrains in your area according to you	Drought, submergence, salinity, flash floods		
Production constraints in your area according to you	Scarcity of agricultural labour, lack of irrigation facilities		
Irrigation facilities in your area	bore wells, reservoirs, open well	reservoirs	bore wells
Normally how many years it takes to change the rice variety	10-20 years		
Any other rice production issues in your area			
What is urgently required in your area as far as rice varieties are concerned			
Duration	varieties with lodging resistance and suitable for DSR		
Biotic stress resistance	HYVs with resistance to BPH, stem borer, bacterial blight, sheath blight and leaf blast		
Abiotic stress resistance	varieties with tolerance to submergence and salinity		
Preferred grain quality	varieties with MS grain quality		
Nutritional quality	varieties with low GI and high protein, zinc and iron		

IR: Irrigated; RL Rainfed low land; RU: Rainfed upland

Abbreviations:

Bl- Blast, NBl- Neck Blast, BS- Brown spot, ShBl- Sheath blight, ShR- Sheath rot, FS- False smut, LS- Leaf scald, StR- Stem rot, GD- Glume discoloration, NBLS- Narrow brown leaf spot, BaK- Bakanae, KSm- Kernel smut, UDB- Udbatta, KH- Khaira, BB- Bacterial leaf blight, BLS-Bacterial leaf streak, RTV- Rice tungro disease, SRBSDV-Southern rice black-streaked dwarf virus

BPH-Brown Plant Hopper, WBPH- White Backed Plant Hopper, GLH- Green Leaf Hopper, LF- Leaf Folder, SB- Stem Borer, GM- Gall Midge, RH- Rice Hispa, WM- Whorl Maggot, GH- Grass Hopper, CW- Case Worm, GB- Gundhi Bug, PM- Panicle Mite, MT- Mite, RB- Rice Bug, AW- Army Worm, WTN- White Tip Nematode, TERM- Termite, RT- Rice Thrips, HCP- Horned Caterpillar, MB- Mealy Bug, LH- Leaf Hopper, WG- White Grub, STB-Stink bugs

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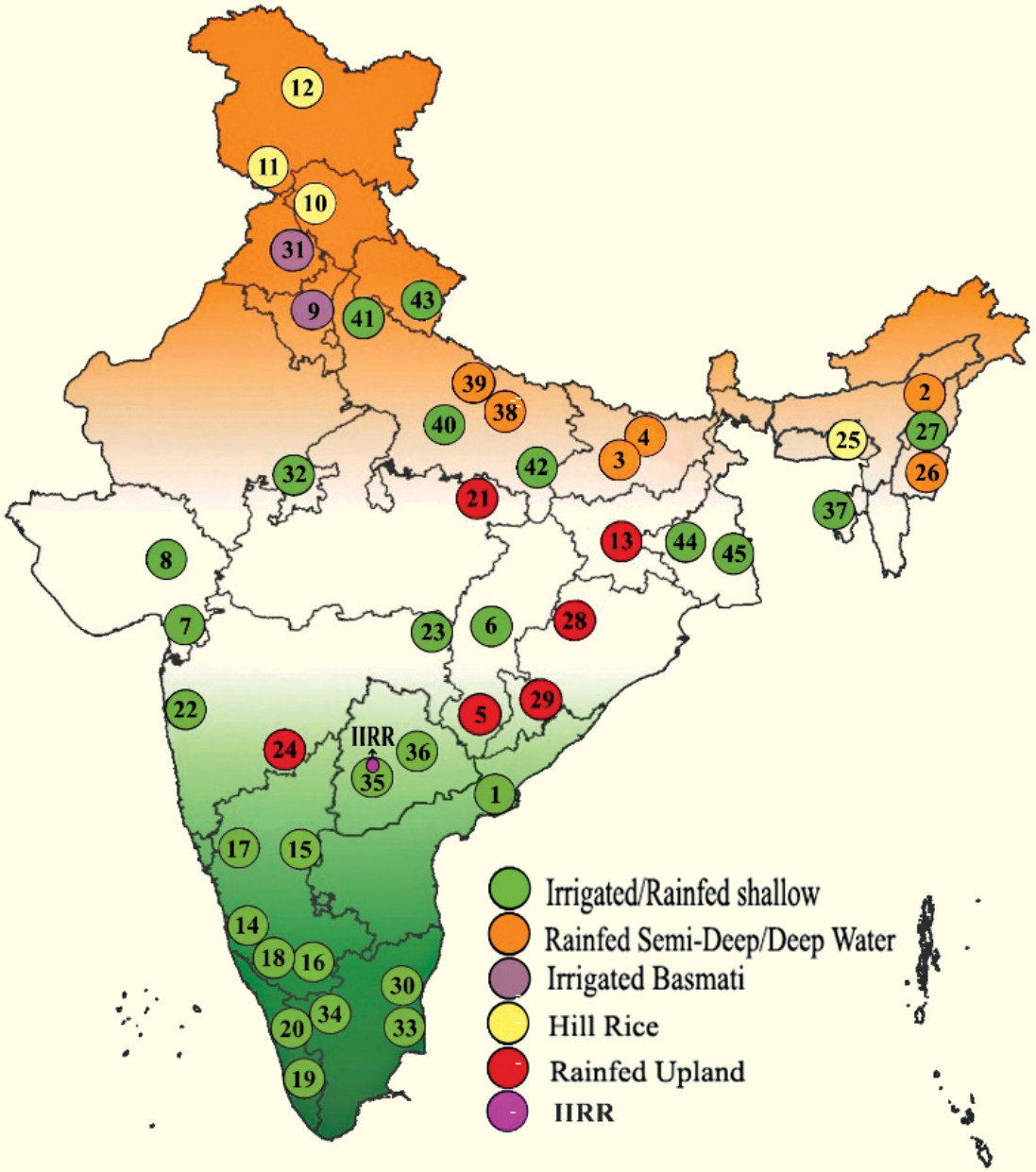
Severe BPH infestation in Kuttanad region in Kerala, K' 25

Stem borer infestation in Kuttanad region of Kerala K'25



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