

चावल अनुसंधान समूह बैठकों की प्रारूप कार्यवाही

Draft Proceedings of 59th Annual Rice Group Meetings

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All India Coordinated Research Project on Rice (AICRPR)

ICAR-Indian Agricultural Research Institute, New Delhi

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ICAR-Indian Institute of Rice Research

Indian Council of Agricultural Research
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DRAFT PROCEEDINGS

59th Annual Rice Research Group Meetings
18-19th & 24-26th, 2024
(Hybrid Mode)

**All India Coordinated Research
Project on Rice (AICRPR)**



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SESSION I : INAUGURAL SESSION

- Chief Guest** : Dr. Himanshu Pathak, Secretary, DARE & DG, ICAR, New Delhi
Guest of Honor : Dr. Ajay Kohli, Interim Director General, IRRI, Philippines
Guest of Honor : Dr. T.R. Sharma, DDG (CS) ICAR, New Delhi
Guest of Honor : Dr. A.K. Singh, Director, ICAR-IARI, New Delhi
Guest of Honor : Dr. S.K. Pradhan, ADG (FFC), ICAR, New Delhi
Guest of Honor : Dr. D.K. Yadava, ADG (Seeds), ICAR, New Delhi
Rapporteurs : Drs. J. Aravind Kumar & S.L. Krishnamurthy, ICAR-IIRR, Hyderabad

The inaugural session of the 59th Annual Rice Research Group Meeting was held at ICAR-IARI, New Delhi (Dr C Subrahmanyam Auditorium, NASC Complex) on 25th April 2024. The Chief Guest of the inaugural session was Dr Himanshu Pathak, DG, ICAR & Secretary, DARE. The other dignitaries on the dias were: Dr Ajay Kohli, DG (Interim), IRRI; Dr TR Sharma, DDG (CS), ICAR; Dr AK Singh, Director, ICAR-IARI; Dr DK Yadava, ADG (Seeds), ICAR; Dr SK Pradhan, ADG (FFC), ICAR; Dr RM Sundaram, Director ICAR-IIRR; Dr AK Nayak, Director, ICAR-NRRI; Dr C Viswanathan, Joint Director, ICAR-IARI; Dr R Mahendar Kumar, PS, ICAR-IIRR and Mr Vijay Sethia. The welcome address was given by Dr C Viswanathan. Director's report was presented by Dr RM Sundaram. He emphasized on the new initiatives taken that included genome edited lines, genomic predictions, coloured rice trial, and DNA fingerprinting of AICRPR entries. Location specific dry DSR to be tested. Development of slender (medium and short) grain type varieties to be given emphasis. AICRPR system should become vibrant and focus on profitability.

Dr AK Nayak stressed on the increase of production and productivity in the rainfed areas. He emphasized on the development of climate resilient varieties. Rice production system should be nature oriented. Success in water and nutrient use efficiency should be enhanced.

Dr SK Pradhan emphasized on the sustainable production system in rice. He also informed the audience that development of multi stress tolerant lines is very essential.

Dr DK Yadava stressed on the importance of increasing the seed replacement ratio in rice. Increase in the genetic gain in the varietal development programs should be given emphasis. More focus on the development of Zone specific varieties. He emphasized on the digitalization of AICRPR data and the declining area of cultivation under the hybrids is a major concern.

Dr AK Singh emphasized more on PPP mode in development and commercialization of technologies. DSR is the way forward especially in the rainfed ecologies and DSR specific varieties should be developed. Trait (herbicide tolerance) specific MoU has been signed for the first time between ICAR and private sector.

Mr Vijay Sethia has emphasized on the importance of rice husk and ash for different purposes including pest protection and for water filtration.

Dr Ajay Kohli emphasized on the scale up of simple technologies. Also, the emerging technologies like genome editing and artificial intelligence should also be utilized on priority. Rice is going to be the healthiest model crop for nutrition in the future. Small and marginal farmers should get the benefits from the government policies.

Dr TR Sharma, DDG (CS) emphasized on the utilization of the available genetic and genomic resources to enhance the productivity of rice. He also underscored the importance of region specific product profiling. Also the breeders should focus on the development of new plant type, "Smart Plant" with more than 1000 grains, multiple stress tolerance, desirable grain quality, bio-fortified varieties, early maturing and high photosynthetic rate. Broadening the genetic base of varieties using pre-breeding approach. Also, domestication of wild type rice utilizing the genome editing technologies should also be carried out. He stressed on the introgression of input responsive genes/QTLs in the background of mega varieties through MABC. AI/machine learning technologies should be utilized in rice breeding program especially in the selection of the parents. The emerging pest and pathogens like false smut, nematodes and bakanae needs to be prioritized. Value addition using the ultra-low GI varieties is necessary. He stressed on the deployment of resistant genes according to the prevalence of races. Another important aspect is the mainstreaming the development of japonica rice varieties. Metagenome analysis of rhizosphere of wild and land races should be carried out. The program on development of hybrids for different ecologies needs to be strengthened.

Dr Himanshu Pathak, DG, ICAR emphasized on the transformational changes that have to be taken up for the betterment of rice production and productivity. Replacement of the old varieties and promotion of new varieties is a priority. The narrative of water use efficiency of rice needs to be changed on the contrary to the general perception. Rice is the most climate resilient crop compared to the other crops as it is grown under different ecologies that include hill, rainfed and irrigated ecologies. He requested for ideas on the transformational changes of the AICRP on rice – what exactly needs to be done in line with the present case scenario? He emphasized on the utilization of the technologies like genome editing on priority.

GOI is very receptive to new changes even at policy level and ready to fund the new changes. He has informed the audience that the council is ready to fund project on various programs that include: project for young scientists, issues of national priority, product delivery, Vikshit Bharat projects and hubs of IARI university. Action plan for rice research for the future (2047) needs to be prepared by IIRR and NRRI, and due recognition and support would be provided by the council. Finally, he congratulated the rice community and wished them good luck. Vote of thanks was presented by Dr R Mahender Kumar.

TECHNICAL SESSION - Review of Results and Progress Report

Chairman : Dr. T. R. Sharma, DDG (CS), ICAR, New Delhi
Co-Chairman : Dr. S.K. Pradhan, ADG (FFC), ICAR New Delhi
Rapporteurs : Drs. Suneetha Kota ICAR-IIRR and P. V. Ramana Rao, ANGRAU

CROP IMPROVEMENT

The technical session of crop improvement review of research results and progress report of 2023-24 conducted on 25.04.2024. Dr. T. R. Sharma, DDG (CS), ICAR, New Delhi acted as Chairman and Dr. S. K. Pradhan, ADG (FFC), ICAR, New Delhi acted as Co-chair. The session started with presentation of Dr. A.V.S.R. Swamy, Principal Scientist and PI (AICRIP-PB) on the progress of varietal improvement for irrigated ecology, rainfed ecology and breeder seed production. Dr. A. S. Hari Prasad, Principal Scientist & PI-Hybrid Rice presented the progress of Hybrid rice conducted during Kharif 2023. He has presented the overview of the trials conducted in irrigated trials coordinated by ICAR-IIRR, rainfed trials coordinated by ICAR-NRRI. 43 varieties in CVRC (28 varieties and 15 hybrids) and 68 varieties (55 varieties and 13 hybrids) in SVRC released during 2023-24 for different ecologies including aromatic short grain and Biofortified varieties. A total of 42 funded centres and 79 voluntary centres participated in conduct of breeding trials during Kharif 2023. He also briefed about location wise trials conducted, data provided, trial considered for analysis. The data receipt of 91.1% of data from funded and 81.0% from voluntary centres with an average 86.05%. He also briefed the number of test entries promoted in each breeding trials conducted during Kharif 2023-24. He also presented the pre-breeding activities under taken by ICAR-IIRR and the progress of work on pre-breeding for different traits including culm strength, utilization of wild rice and chromosome segment substitution lines (CSSLs) for yield improvement using wild rice accessions. Further, the research progress related false smut screening and identification of QTL's for false smut reported. Informed the house about the sharing of the pre-breeding material and germplasm to various institutes and AICRPR centres. He further highlighted the importance of two years station trial data for nomination of promising entries in AICRIP. He also stressed for incorporation of biotic stress resistance genes in nominating entries by the breeders. Dr. AVSR Swamy informed the following new initiatives to be taken up during upcoming kharif 2024-25,

1. Bio-fortification trials
2. Coloured Rice trial
3. Target 1000 grains/panicle
4. Fingerprinting of AICRPR entries
5. Genetic gain calculation based on historical data of AICRPR
6. Separate NIL's trial
7. Genome Edited lines for evaluation
8. Zonal Wise promotions of entries

Dr. AVSR Swamy also presented the progress made in breeder seed production in rice. Breeder seed production of 470 varieties and 2 hybrids across 46 centers produced the required quantity of breeder seeds as per the DAC indent. He also presented monitoring tour program of AICRIP conducted during 2023.

Dr. A.S. Hariprasad, Principal Scientist and Head, (Hybrid rice section) ICAR-IIRR, presented the progress report of hybrid rice trials conducted during Kharif 2023. A total of 152 rice hybrids are released so far, of which 105 hybrids through CVRC and 47 through SVRC. During Kharif 2023, 15 rice hybrids were released which included 14 through CVRC and one SVRC. Approximately 3.5 million ha area is under hybrid rice cultivation and there is need to put effort to enhance the hybrid rice cultivation with additional test locations particularly in zone II and zone-IV. During Kharif 2023, 21 hybrids were promoted from IVT, AVT1 to AVT2. In the initial hybrid rice trials, 36 hybrids identified as promising and promoted to AVT1 and four IHRT trials will be constituted during Kharif, 2024. After the elaborate presentation of Dr. Swamy and Dr. Hariprasad the following points discussed

- ✓ Dr. V. P. Singh enquired whether wild rice being cultivated being evaluated for aroma, also whether any strategies are being implemented to improve brown rice recovery of more than 80 per cent and is there any association between aroma and protein. Also, he asked whether colored rice has any other additional advantage. He said that when Pusa basmati tested with SDS there was 10% aroma and 10% protein. In response, Dr. Swamy said that wild rices being evaluated for aroma as integral objective. Dr. Haritha from IARI said that the protein content of released basmati varieties ranged from 6-8.5%. Dr. R. M. Sundaram, Director, IIRR informed the house that the coloured rice was taken as pilot project in 2023 and in the first year only the anthocyanin content is being estimated and in future the different fractions of anthocyanin will be estimated with the help of ISARC and other organizations.
- ✓ Chairman Dr. T.R. Sharma enquired about the traits that being evaluated apart from aroma in coloured rice as well as scented rice. Dr. Sundaram answered that micronutrients like Fe and Zn being estimated in coloured rices.
- ✓ Dr. Deepak informed the house that Mahamaya from Raipur is the best variety for flaked rice and has emphasized that research efforts be improved regarding the development of varieties suitable for flaked rice, puffed rice and popped rice. Dr. T. R. Sharma, Chairman requested that post-harvest technology research be improved so that the available varieties can be evaluated for making flaked, puffed and popped rice.
- ✓ Dr. P. V. Satyanarayana, PS from ARS, Ragolu, ANGRAU has opined that there should be impact analysis about the varieties recently released in the past ten years regarding the varietal replacement of old varieties by the recently released ones. Chairman sir informed the house that the coordinating unit has the information. Dr. R.M. Sundaram, Director, IIRR informed the house that the impact analysis of the varieties of IIRR has been completed. Based on production oriented survey and breeder seed indent a preliminary information about the varietal replacement rate can be estimated and further a detailed study is required to know the correct

information about the varietal replacement rate. The chairman informed that there can be collaborative study with IIRR and NEAP to initiate such impact analysis studies.

- ✓ Dr. Gopalkrishnan from IARI has informed that a detailed study is needed to know regarding the value addition especially the actual quantities of rice being diverted to puffing, popping and flaking so that the research efforts could be strengthened for value addition.
- ✓ Dr. Deepak informed that most of the hybrid rice research is being take up by private sector compared to public sector and public sector research on hybrid rice should be improved. Dr. Hari Prasad informed the house that there was little gap in public sector research on hybrid rice from 2005 to 2015 but after the creation of Consortium research project on hybrid rice the public sector research on hybrid rice was strengthened and the hybrids are being released from IIRR, IARI and other public sector organizations.
- ✓ Dr. A. K. Singh enquired about the status of International hybrid rice consortium with IRRI. Dr. Hari Prasad informed that the material is being multiplied and the same will be shared in the ensuing kharif.

In concluding remarks, the co-chair Dr. S. K. Pradhan informed that the research progress in irrigated ecology is satisfactory and the rate of promotion is high in irrigated ecology compared to rainfed ecology. Also, the promotions of hybrids in rainfed ecology is also low. Hence, the research efforts on rainfed ecology needs to be improved and strengthened in both varieties and hybrids. Further, the chairman in his concluding remarks informed the house that an action plan regarding the specific material being imported and also the material should be quantified before imports in 15 days of time by the coordinating units. He also informed that the pre-breeding research needs to be strengthened in rainfed ecology. He appreciated the efforts regarding the new programmes on nitrogen use efficiency and the efforts on commercialization of hybrids to be improved. The session was concluded with the final remarks of the chairman.

CROP PRODUCTION

- Chairman** : Dr. A. Subba Rao, Ex. Director, ICAR-IISS
Co-Chairman : Dr A K Nayak, Director, ICAR-NRRI
Co-Chairman : Dr S. Sheshshayee, Head, Plant Physiology, UAS, Bangalore
Rapporteurs : Dr Gobinath, Mangal Deep Tuti, Akshay S Sakhare.

The session was under the chairmanship of Dr. A. K. Nayak (Director ICAR-NRRI, Cuttack) and co-chaired by Dr. M.S. Sheshshayee (Prof. Crop Physiology, UAS-B, PAMC Member). The Session was started with the presentation by the Dr. Mahendra Kumar (PI, Agronomy) with salient findings from the various trials such as Wet DSR, Dry DSR, Weed Dynamics, Resource use efficiency and collaborative trials of Soil Science taken up by the Agronomy co-operating centers. At the end of the presentation, the following points were discussed

- Dr. AK Singh inquired about the N content of Nano Urea. He suggested to use latest Nano urea which contains 16% of nitrogen.
- Dr. AK Singh, expressed his interest and attention towards the Nano urea evaluation where yield reduction was observed. He urged the group to use the new and upgraded dose (16%) of IFFCO nano urea for upcoming year, and asked to remove the nano urea treatment alone from this year onwards.
- The Chair allowed a farmer Mr. Parminder Singh to share his experience on Dry DSR in Haryana Region. Mr. Parminder Singh, shared his experiences of Dry DSR which was initiated in 15 years back.

Dr. MBB Prasad Babu (PI, Soil Science) presented the results and salient findings of 2023 from the Co-ordinated trials *i.e.* long-term fertilizer experiment, Management of Sodic Soil using nano Zn formulation, Management of Acid Soil, Residue management in RBCS, Nano fertilizers for increasing NUE, Yield maximization, organic and natural farming and assessing the potential of biofortified varieties with agronomic biofortification.

- It was queried that variety Sahbhagidhan grain yield was very high, which was more than its potential yield.
- Further, audience wanted to know the reason of success for wet direct seeding.
- Dr. B N Singh wanted to know the source of IRRI genotypes used in Agronomy trial.

Dr. P. Raghuvver Rao (PI Plant Physiology) presented the results and salient findings of 2023 from the Co-ordinated trials of Plant Physiology viz Application of Silicon, drought stress tolerance, heat stress tolerance, MAS, Submergence stress tolerance and low light stress tolerance trials. The following points were observed by Chair and Co-Chair.

- Inclusion of variety Swarna in Low Light stress trial as Swarna is low light stress tolerant variety.
- Dr Sheshshayee observed that the coordinated efforts of three disciplines agronomy, soil science and Plant Physiology can help for breeding climate resilient varieties.
- Further he suggested that the Plant physiology should be strengthened by inducting Plant Physiology posts.
- Dr. A. K. Nayak observed AICRPR system is very important activity for varietal improvement.
- NRM trials of agronomy and soil science are conducted with universities. Dr. Nayak suggested to try to bring out some recommendations with those universities.
- Data should be systematically observed and rejected in order to avoid data discrepancy.

CROP PROTECTION

Chairman : Dr R Jagdeeshwar, Ex-DR, PJTSAU, Hyderabad & PAMC Member
Co-Chairman : Dr Sanjay Sharma, Principal Scientist, Entomology, IGKV, Raipur
Rapporteurs : Drs. Ch Padmavathi, D Ladhalakshmi, ICAR-IIRR, Hyderabad.

ENTOMOLOGY

Dr. V Jhansilakshmi, PI of Entomology Coordinated Programme presented the results of the trials conducted during Kharif 2023 in the afternoon of 25th April 2024. The entomology program was focussed on various aspects like host plant resistance studies, chemical control, biocontrol studies, ecological studies, IPM trials, population dynamics of insect pests and natural enemies in rice ecosystem and monitoring through light traps. The trials were conducted at 39 locations (29 funded & 9 voluntary centres including IIRR) in 22 states and two Union Territories. She apprised the house that 1685 entries were screened comprising of 1422 pre-breeding lines and varieties, 97 hybrids, 2 germplasm lines and 164 checks. These entries were evaluated against 13 insect pests in 218 valid tests (47 greenhouse tests and 171 field tests). She presented the most promising cultures identified in pest specific screening trials viz., Planthoppers, gall midge, leaf folder, stem borer and the National Screening nurseries of IIRR and NRRI. In all the trials, 102 entries (6.1% of the tested) were promising against various insect pests, out of which 42 entries (41.2%) were under retesting.

She presented the results of insect biotype and population monitoring studies of plant hoppers and revealed that PTB 33 (with bph2+Bph3+ Bph32+unknown factors) and RP 2068- 18-3-5 (with Bph33t gene) were promising in 13 and 10 tests, respectively out of 13 locations. Six entries viz., Aganni, INRC 3021, INRC 17470, W1263, Kavya, RP 5923, ARC 5984 and ARC 6605 with Gm8 and Gm 1 genes were promising for gall midge. In Planthopper population monitoring trial, IIRR brown planthopper population was more virulent than the other BPH populations viz., Ludhiana, Pantnagar and New Delhi in terms of highest nymphal hatching, short incubation and nymphal periods, lowest winged insects. In Gall midge monitoring trial, there is variation in the pattern of virulence. Aganni (Gm8) holds promise at Jagtial, and Ragolu but low virulence was observed at Warangal. Low virulence against W1263 (Gm1) was observed at Pattambi. Akshayadhan (with Gm4 + Gm8) was promising at Jagtial and low virulence was recorded at Warangal.

In prophylactic management of rice hoppers in southern black streak virus disease affected areas, there was no incidence of the disease though the trial was conducted at all the locations. In Optimum Pest Control Trial. analysis of grain yield revealed that among the test entries, yields were higher in KMR 3 and RP5587-273-1-B-B-B (4.2-4.3/ha) followed by CR Dhan 317. Cul M9 and Suraksha had lower damage for gall midge, stem borer and leaf folder though the yields are very low.

In the influence of crop establishment methods on pest incidence, the incidence of insect pests was high in aerobic rice followed by direct seeding and semi-dry rice while the incidence was low in normal transplanting and mechanical transplanting methods of crop

establishment. Low incidence of stem borer, leaf folder, whorl maggot, and case worm was observed in different main plots of crop establishment methods and sub-plots of straw incorporation techniques at all the locations in Cropping system influence on insect pest incidence (CSIP) trial. The slow-release formulations recorded maximum catches compared to the normal formulations in the case of yellow stem borer and leaf folder across locations in Evaluation of pheromone blends for insect pests of rice (EPBI) trial. In the evaluation of entomopathogens against sucking pests, *Lecanicillium saksenae*, *Beauveria bassiana* and *Metarhizium anisopliae* treatments exhibited promising efficacy in controlling pests such as ear head bugs and hoppers. Natural enemies (Mirid bugs, Spiders, Coccinellids) were more abundant in plots treated with biological control agents, suggesting a potential ecosystem-friendly approach to pest management.

She highlighted the results of the Integrated Pest Management Special (IPMs) trial that was conducted with zone-wise practices at 18 locations in 41 farmers' fields, in collaboration with plant pathologists, and weed specialists in a farmer participatory mode. Low incidence of insect pests, diseases and weeds was recorded in IPM plots resulting in higher grain yield and BC ratio as compared to FP plots. Population dynamics of insect pests and natural enemies in rice ecosystem revealed that the yellow stem borer, BPH, leaf folder and gall midge as major pests and rice hispa, whorl maggot as minor pests across locations. Gall midge and stem borer incidence displayed positive correlation with maximum and minimum temperature. The talk ended with the summary of the population dynamics of rice insect pests assessed through light trap catches that were recorded during the whole year across locations throwing light on the prevalence of pests and natural enemies in the various zones.

PLANT PATHOLOGY

Dr. M. Srinivas Prasad, PI, Principal Scientist and Head, Plant Pathology, IIRR, Hyderabad presented the results of AICRPR Plant Pathology trials conducted during 2023 at different hot spot locations in India. A total of 16 trials were conducted during 2023 at 48 AICRPR locations on host plant resistance, field monitoring of virulence of two major rice pathogens, disease management and special screening trials against false smut and brown spot diseases of rice. He mentioned that five national screening nurseries comprising of 1,492 entries of Initial and advanced breeding lines and new rice hybrids were evaluated at 48 centers for their reactions to major rice diseases. Among the tested entries, 121 entries were found to be resistant/moderately resistant to 2-4 major rice diseases across the tested locations. Some of the promising entries in NSN-1 were IET# 30830 (MR to NB, SHB, BS, BB and SHR), 29820 (R to NB, MR to SHR, RTD and GD), 29891 (MR to NB, SHB and BB), 30078 (MR to SHB, BB and SHR), 30233 (MR to LB, BS and SHR) and 30877 (MR to SHB, BB and SHR). In NSN-2, IET # 31710 showed resistance reaction to NB, MR to BS, SHR and 31719 moderately resistant to NB, SHR & GD. In NSN-H, entries viz., IET# 31420 (R to LB, NB&SHR & MR to SHB) showed resistant or moderate resistant reaction to four diseases and 31383 (MR to SHB, BS&SHR), 31391 (MR to NB, SHB&SHR), 31402 (R to SHR&MR to NB, SHB), 31405 (MR to LB, BS&SHR) and 31422 (R to SHR& MR to LB, NB) were showed resistant or moderate resistant reaction to three diseases. In

NHSN IET # 31436 (MR to SHB, BB, SHR &GD), 31460 (MR to BS, BB, SHR &GD), 31466 (MR to NB, BS, SHR &GD), 31473 (MR to LB, NB, BS &GD), 31489 (MR to NB, SHB, BS &BB) showed resistant or moderate resistant reaction against four diseases. In DSN, genotypes viz., NLRBL-5 (MR to NB, SHB, BS &SHR), NLRBL-7 (MR to SHB, BS, BB &SHR), NLRBL-8 (MR to NB, SHB, BB &SHR), NLRBL-5 (MR to NB, SHB, BS &SHR), NLRBL-7 (MR to SHB, BS, BB &SHR), NLRBL-8 (MR to NB, SHB, BB &SHR) showed moderate resistant reaction against four diseases. He also presented the results of monitoring of field virulence of blast pathogen (*Pyricularia oryzae*) and bacterial blight pathogen (*Xanthomonas oryzae* pv. *oryzae*). He mentioned that there was a minor shift in the virulence profile of blast pathogen in some of the hot spot locations. The reaction pattern of *Pyricularia oryzae* isolate from Lonavala and Cuttack were distinct from the rest of the isolates. Regarding monitoring of field virulence of bacterial blight pathogen, Based on the reactions of the isolates on single BB resistance genes differentials, the isolates from Cuttack, IIRR, Raipur, Maruteru and Chiplima were categorized as highly virulent and majority of the isolates were categorized as moderately virulent. Disease observation nursery trial revealed that, sheath blight and bakanae severity was high in early sown crop, whereas leaf blast and sheath rot incidence was high in the late sown crop. With respect to effect of fungicides on location specific diseases, the new combi-product, azoxystrobin 5.1% + tebuconazole 9.1% + prochloraz 18.2% EC (3.5 ml/l) showed broad spectrum activity against leaf blast, neck blast, sheath blight, brown spot and sheath rot. Among the two different formulations of the bioagent seed treatment with *T. asperellum* Strain TAIK1 followed by seedling dip @ 10 g/l of liquid formulation and spraying of specific fungicide viz., hexaconazole @ 2ml/l at tillering stage for sheath blight, isoprothiolane @1.5 ml/l at panicle emergence neck blast disease and propiconazole @1ml/l at booting stage for false smut disease was effective. In special IPM trial, he mentioned that IPM practices performed better compared to farmer practices against leaf blast, neck blast, brown spot, sheath blight, sheath rot, false smut and bacterial blight at most of the locations. He mentioned that 53.63% of leaf blast PDI recorded the yield reduction of 37.21%, 73.41% of sheath blight PDI recorded the yield reduction of 40.13%; 66.88% of bacterial blight PDI, caused a yield loss of 31.35%. Among the 112 lines of AVT trial screened either artificially and naturally, and 14 entries found as tolerant and these results are preliminary and these results must be confirmed.

Dr G.S. Laha, Principal Scientist, Plant Pathology, ICAR-IIRR, presented the results of Production Oriented Survey-2023. He informed that the survey was conducted in 16 states by 18 AICRPR centres. He informed that, the monsoon was near normal for the year. He also presented the varietal diversity, rice consumption pattern, cropping sequences and yield. He informed that NABARD reported 40-45% of mechanisation in various cultivational practices in rice crop. However, there were 5 major cyclones during 2023. Hybrid rice varieties occupied a significant area in states like Uttar Pradesh, Haryana, Chhattishgarh and Gujarat and its area is increasing in states like Karnataka, West Bengal and Maharashtra. Diseases like leaf and neck blast, sheath blight, sheath rot, brown spot, false smut and bacterial blight were widespread throughout India. Sheath blight has become a major problem in many areas like eastern India, Kerala and north western India. Bacterial blight was recorded in high intensity in several places like Bihar,

Jammu region, Kerala, Konkan region of Maharashtra, Puducherry, Telangana and parts of West Bengal. There was no report of SRBSDV (southern rice black streaked dwarf virus) from any of the surveyed areas in 2023. Among the insect pests, stem borer, leaf folder and BPH were very wide spread. Leaf folder was severe in parts of Kerala and brown plant hopper was severe in parts of Kerala and West Bengal.

After the presentation, Dr Mridul Chhakraborti from NRRI expressed his view about the terminology of gene differentials for characterizing BPH biotypes as they are from different backgrounds with known genes. Dr Deepak Sharma, PAMC member, IGKV, Raipur updated the house that in the plains of Chhattisgarh, the mutant variety Vikram TRC with yield of 6 tonnes per hectare has reasonably replaced the high-yielding varieties and MTU 1010 whereas in Jagdalpur and Hilly regions of Chhattisgarh, hybrids are popular in limited area.

Dr PV Satyanarayana, PS & Head, ARS, Ragolu, Andhra Pradesh suggested compiling the varietal spread in different States by interacting with Officials from the Department of Agriculture. For his query on reduction in the bacterial blight in some states, Dr GS Laha replied that the reduction in Punjab and Haryana could be due to the policy of the Government of Punjab wherein a variety is to be released only if it has a minimum level of resistance to bacterial blight. Dr. B. N. Singh, former Director, ICAR-NRRI, Cuttack asked about the area under Telngana Sona. The Chairman, Dr R Jagdeeshwar, Ex-DR, PJTSAU, Hyderabad & PAMC Member informed that the area under Telangana Sona is around 5 Lakh hectares in various parts of Telangana, Andhra Pradesh and Karnataka. Dr Rakesh Seth, Principal Scientist, ICAR-IARI, Karnal, enquired about the status of Bakanae in Punjab and Haryana.

In the concluding remarks, Dr. Sanjay Sharma, Principal Scientist, Entomology, IGKV, Raipur and co-chairman of the session congratulated all the speakers and expressed that Plant Pathology and Entomology programs are highly balanced covering all the major areas of crop protection. He remarked that POS is the eye of the research system and asked to simplify the proforma of POS to get more information.

In his final remarks, the Chairman appreciated the donors identified in screening trials against major insect pests and diseases and urged the co-operators to register the material with NBPGR. He said that the incidence of stem borer has increased in many locations and insecticides were not effective at the flowering stage. Hence, he insisted on identifying effective alternate molecules. He also said to revisit gall midge biotypes as the incidence is increasing. He appreciated Dr Ladha Lakshmi, Senior Scientist, Plant Pathology, ICAR-IIRR for developing protocol for artificial screening of false smut and informed the co-operators to take her help in screening entries for resistance.

PRE WORKSHOP INAUGURAL SESSION

Chairman	:	Dr.SK Pradhan, ADG (FFC), ICAR, New Delhi
Co-Chairman	:	Dr. R.P. Kaushik, Chairman, PAMC
Co-Chairman	:	Dr R.M. Sundaram, Director, ICAR-IIRR
Co-Chairman	:	Dr A.K. Nayak, Director, ICAR-NRRI
Co-Chairman	:	Dr C. Viswanadhan, Joint Director, ICAR-IARI
Rapporteurs	:	Drs V. ChinnaBabu Naik, Mangal Deep Tuti and P. Senguttuvel

The inaugural session of the 59th Pre-Annual Rice Research Group Meeting was held virtually on April 18 and 19, 2024, at ICAR-Indian Institute of Rice Research, Hyderabad. Dr. SK Pradhan, ADG (FFC), ICAR, New Delhi, chaired the session, with Dr. R.P. Kaushik, Chairman, PAMC, as Co-Chair, along with Dr. RM Sundaram, Director of ICAR-IIRR, Hyderabad, Dr. AK Nayak, Director of ICAR-NRRI, Cuttack, and Dr. C. Viswanadhan, Jt. Director (R), ICAR-IARI, New Delhi, also serving as Co-Chairs. PAMC members, including Dr. Deepak Sharma, Dr. A. Subba Rao, Dr. R. Jagadeeshwar, and Dr. M.S. Sheshshayee, participated in the workshop.

Dr. R.M. Sundaram, Director, ICAR-IIRR, welcomed all the members of the All India Coordinated Research Project on rice (AICRPR), seed industry and all other stakeholders. He provided a brief overview of the AICRPR programme, varieties & hybrids released for various ecosystem, current rice production and productivity and way forward for increasing climate resilient rice varieties. Dr. SK Pradhan applauded the co-operators for their impressive work in the AICRPR network, stressing the importance of developing nutritionally enriched and pest-resistant varieties to address the prevailing climate change challenges.

Dr. R.P. Kaushik emphasized the pivotal role of AICRPR in India's rice production targets and urged the development of varieties suited to diverse conditions, particularly aerobic and bio-fortified rice varieties. He acknowledged ICAR-IIRR's development of the DRR-Dhan 48 variety with high zinc content and applauded their collaboration with State bank of India on the Aerobic/DSR under CSR project.

Dr. AK Nayak praised the Rice AICRPR team efforts and emphasized the adoption and use of modern genomic tools & molecular breeding techniques for enhancing yield gain, pest and diseases, possibilities of obtaining carbon credits for the DSR farmers and thorough data analysis for trial variations. Dr. Gopal Krishnan S, Head of Genetic and Plant Breeding at ICAR-IARI, New Delhi, welcomed the PAMC members and commended PAU and HAU for their exemplary trial conduct and timely data submission

Dr. Deepak Sharma congratulated all AICRP centres for their contributions and encouraged genetic material exchange with novel traits among the centres for breeding programs. He also stressed the importance of promptly filling vacant positions for the proper conduct of AICRPR trials and timely submission of data from different centres. Dr. A. Subba Rao highlighted the significance of soil health and cost calculation for nutrients in rice trials. Dr. R. Jagadeeshwar lauded the AICRPR team efforts and emphasized the

importance of crop protection strategies in managing pests and diseases in rice ecosystems.

Overall, the session covered various topics including varietal development, breeding techniques, data analysis, soil health, and crop protection, displaying the collaborative efforts and achievements of the rice research community.

The programme ended with vote of thanks

CROP IMPROVEMENT (Pre-Workshop)

Chairman : Dr A. K. Singh, Director IARI, New Delhi
Rapporteurs : Dr. Suneetha Kota, Dr. Jyothi Badri, Dr. R Abdul Fiyaz, and Dr. MridulChakraborti
Drs Meera Kumari Kar, Lambodhar Behera and Anantha M S

IRRIGATED TRIALS

During Breeder's group meet held at NASC complex on 24th April 2024. Dr. AK Singh, Chaired the session, Dr. SK Pradhan and Dr. Ravindra Babu co-chaired the session, Dr. RM Sundaram and Dr. Vishwanathan participated in the meeting. Dr. AVSR Swamy given the introduction remarks.

Dr. SK Pradhan has given remarks that one to one interaction will be made about the performance of the lines. Good entries should be promoted and evaluated properly. Dr. Sundaram had informed the house about the new initiatives taken in this year.

Dr. V Ravindra Babu informed the house that emphasis should be given for popularising of the new varieties in collaboration with state governments and state agricultural universities. The soil samples of the irrigated trials are to be analysed to know the nutrient status of the soils. More emphasis on genome edited lines, direct seed rice and aerobic trials. Research work should focussed on the farmer's needs. Conventional breeding should be encouraged utilising wild genotypes and germplasm. Hybrid rice should be promoted in future in terms of area. Donor lines should be share with the co-operating centres.

Dr. AK Singh given his remarks as a chairman of the programme followed by ecology wise presentations made by IIRR for irrigated, NRRI for rainfed and IARI for basmati ecologies.

Results of irrigated experiments are presented by Dr S.V Sai Prasad, Dr. G. Padmavathi, Dr. J. Aravind Kumar, Dr. Suneetha Kota, Dr. Jyothi Badri, Dr. M.S. Anantha and Dr. Abdul Fiyaz. Monitoring tour report of different teams was presented by Dr. Suvarna Rani.

Trial wise discussions and deliberations made are presented below.

- Proposal to consider the SS grains type entries with appropriate duration checks considering the test weight to be included in MS trial.
- The recent released varieties for low P should be included as checks in LPT trial
- DRR Dhan 64 introduced as observational check, did not surpassed the existing yield check and hence suggested to be discontinued.
- DRRH 4 which was included as observational check be tested for one more year as observational check
- Based on single location data, promotion of entry should be on >10% will be considered.

- The NILs, which are nominated with same genes and with similar genome recovery are to be eliminated.
- From ensuing kharif season, complete set of all three of a trial (IVT, AVT1 & AVT2) will be sent to cooperating centres for evaluation. Seed should not be accepted beyond the cut-off date April 30th.
- Non-performing centres over consecutive years will be reviewed based on QRT recommendations and further action will be initiated on the inclusion of the centres in AICRPR testing.
- Co-operators submitting entries for AICRPR nominations should accompany complete station trial data for 2 consecutive season/ 2 years along with complete pedigree details. Without proper details, the culture may not be accepted to AICRPR inclusion.

RAINFED TRIALS

Dr Krishnendu Chattopadhyaya presented the progress report of Rainfed trials (10) in which 211 entries were tested of which 28 were found to be promising / promoted based on their yield advantage over respective checks.

In AVT 1 EDS, the entry IET 30330, IET 31193 were recommended for repeat due to their good performance under normal locations but moderate performance under drought locations.

Dr. Pradhan suggested to relook into the flowering duration of NILs and also performance of entries in each trial before finalizing their promotion. NILs of Co-51 for herbicide tolerance was submitted to NRRRI from TNAU Coimbatore, but the entry was not tested during 2023. Hence it was suggested to include in Kharif 2024.

Dr B N Singh suggested to initiate a DSR trial for the duration of 125 days which is very much essential in UP, Jharkhand and Odisha for which IR 64 Drt 1 or Swarna Shreya may be taken as check.

Dr R M Sundaram informed the house that DSR trial on pilot basis has been started in 2023 and will be continued in 2024 and agreed to include checks suggested checks DRR Dhan 42, Swarna Shreya.

Later trait verification data was presented by Dr Mrudul Chakraborty in which stresses like drought and submergence was discussed. Main problem in stress tolerant trials was less number of testing locations.

Dr R M Sundaram, Director IIRR urged the cooperators to take up such trials so that we will get more number of locations in these trials. He also suggested to conduct these trials under rain out shelters available with cooperators. If needed additional funds will be granted from AICRPR budget. NILs of Improved Samba Mahsuri for drought tolerance were recommended for repeat in 2024.

Later Dr Mrudul Chakraborty presented the modified criteria for promotion of entries under stress trials. Dr Santosh Rathod (Statistics) suggested the house to go for homogeneity test followed by Bartler test to minimize CD.

Dr S K Pradhan, ADG ICAR suggested to form a committee (involving Director, ICAR IIRR, Director ICAR NRRI, Director ICAR IARI, Head (Genetics)-IARI and 2 to 3 scientists from ICAR IIRR, ICAR NRRI and ICAR IARI) to relook into the criteria for promotion like CD 5% or 10% for rainfed trials, Homogeneity test etc. He suggested to come out with recommendations before completion of workshop.

NATIONAL BASMATI TRIALS: ICAR IARI NEW DELHI

The entries nominated under IVT-BT (15 varietal entries and 1 hybrid entry), AVT1-BT (2 entries), AVT1-NIL (4 entries) and AVT2-NIL (1 entry) were evaluated in a combined trial of IVT-BT. The trial constituted of 30 entries of which 15 varietal entries and 1 hybrid entry in IVT-BT; 2 entries in AVT1-BT; 4 entries in AVT1-NIL; 1 entry in AVT2-NIL; two recurrent parents namely, Ranbir Basmati, and Pusa Basmati 1509; five checks namely, Pusa Basmati 1 (Yield Check), Pusa Basmati 1121 (Yield and Quality Check), Taraori Basmati (Quality Check), Pusa RH10 (Hybrid Check) and a Local Check. Trial was conducted at 11 locations in the GI region earmarked for Basmati rice cultivation of which data from only six locations was considered.

Out of 16 entries in IVT-BT, 12 entries have been promoted based on both yield and grain quality.

The entry, IET 31291 (UPR 4636-18-2-1-1) possessed marginally low elongation ratio of 1.68 though showed significant yield superiority over the best varietal check, Pusa Basmati 1121 and hence promoted under benefit of doubt.

Two entries namely, IET 30533 and IET 30535 tested in AVT1-BT have been promoted to AVT2-BT.

In AVT1-BT, four NILs two each in the genetic backgrounds of Ranbir Basmati and Pusa Basmati 1509 have been tested, of which the entry IET31307 has been promoted based on trait verification and quality parameters, while the other NIL IET31306 has been considered for re-testing in AVT1-BT.

The entry IET 30553 (Pusa 3057-9-69-37-160-9-185-1) in AVT2-BT was found resistant to bakanae with per cent disease reduction of 72.0% during Kharif 2022 and 45.5% during Kharif 2023 as compared to its recurrent parent, Pusa Basmati 1509 (RP). Quality wise it is similar to its recurrent parent. Based on two years of testing for yield, quality as well as bakanae disease resistance, the entry IET 30553 has been found promising.

General observation

1. Inclusion of two observational checks one each in early and mid-early categories has been suggested. In the early category, either Pusa Basmati 1509 or Pusa Basmati 1692 has been recommended by the house.

2. At present 90% of Basmati rice being exported is in the form of either parboiled rice or steamed rice, it has been emphasised to consider the testing of parboiled rice or steamed rice for the quality parameters instead of raw rice under practice.
3. It has been recommended to present the data of grain chalkiness in quantitative terms as percentage grain chalkiness rather than qualitative observations like presence, absence or very occasionally present.
4. For quality analysis, samples should be collected from the trials conducted in at least two more locations in the GI area of Basmati rice in addition to IARI.
5. More locations should be included for screening of disease and pests.

During the pre-group meeting held at ICAR-IIRR, Hyderabad on 18 – 19th April 2024 in which 40 funded centres of AICRPR made presentations regarding the research priorities and achievement during last year.

PMAC members Dr. RP Kaushik, Dr. Subba Rao, Dr. Deepak Sharma, Dr. Sesha Sai and Dr. Jagdeesh actively participated in the meeting and evaluated the performance of the centres and graded them.

CROP PRODUCTION (Pre-Workshop)

Chairman : Dr. A. Subba Rao, Ex. Director, ICAR-IISS
Co-Chairman : Dr. A. K. Nayak, Director, ICAR-NRRI
Co-Chairman : Dr. M.S. Sheshashayee, Professor, Crop Physiology, UAS, Bangalore

Virtual meeting of Crop Production Cooperators on 22-04-2024:

As a part of 59th AICRPR workshop, the Crop Production group meeting (54 participants) was held on online mode on 22nd April 2024 (10:00 AM to 12.00 AM) organized by ICAR-IIRR. The meeting was convened as a part of ARGM programme to discuss the constraints of trials conducted at different centers along with thorough discussion on the trials to be conducted and to prepare a draft technical programme for the coming season (2024-25). A total of 54 participants including Scientists from Crop Production Section of IIRR, Agronomy, Soil Science and Plant Physiology co-operators from different location and representatives from private agro-industries attended group meeting.

The meeting was started with the welcome by Dr. R M Kumar. He presented the details of experiments currently undertaking in Agronomy section along with other collaborative trials and sought the suggestions modifications in trials and constraints faced during experimentation. The following points were discussed.

- ✓ Available soil nutrient status before and after the experimentation should be provide in nutrient response trials. (AVT trials)
- ✓ Proper methodology to be followed for aerobic, LPT and LNT and DSR experiments. LNT and LPT trials will be conducted with 2 doses of N/P (50% and 100% RDN)
- ✓ Minimum plot size of 20m² to be followed and sowing to be completed in time.
- ✓ In herbicide tolerant trials, newly developed broad spectrum herbicides to be tested
- ✓ Minimum 500 g good quality seed to be sent in time (end of May) to every location for testing. Duration of genotypes should be similar under same trial.
- ✓ Water management trial should be modified with IOT based quantification
- ✓ Data receipt on Conservation agriculture trial is minimal. Sorghum trial may be discontinued due to non availability of the sorghum entries
- ✓ In yield maximization trial, micronutrient consortia treatment and specific micro nutrient be included.
- ✓ Entomologist and plant pathologists were made to be part of Natural farming trial.
- ✓ Drone based trial may be taken up at few locations. Fund support will be provided from IIRR in this regard.
- ✓ Varieties having suitable genetic potential and traits for that particular location/environment should be used for testing.

Dr. Brajendra proposed a new trial on assessing carbon dynamics of different rice ecologies. Mr. Mallesh Tigali from CultYvate Pvt. Ltd. Informed about the IOT based water management and showed interest of working with Agronomy group. In this regard, a new trial was formulated to validate the sensor based equipment. Mr. Srikanth from NRSC briefed about utilization of satellite based remote sensing for estimation of area under DSR.

The meeting was ended with vote of thanks by Dr. Bandeppa.

AGRONOMY

Rapporteurs : Dr. Mangal Deep Tuti and Dr. Nikhil Kumar Singh

Pre group meeting on 24-04-2024:

As a part of 59th AICRPR workshop, the Agronomy group meeting was held on 24th April 2024 (10:30 AM to 1:30 PM). The session was timely started under the chairmanship of **Dr A. Subba Rao, (Ex Director, ICAR-IISS, Bhopal & PAMC Member)** and co-chaired by **Dr. A. K. Nayak** (Director ICAR-NRRI, Cuttack) and **Dr. M.S. Sheshshayee** (Prof. Crop Physiology, UAS-B & PAMC Member) are physically present in the session. The number of participants attended were 65 in Akas conference hall of C.A.Subranianam Auditorium, NAAS complex.

Dr. Dinesh Kumar welcomed everyone on behalf of organizing institute ICAR-IARI. Further, the session was addressed by **Dr R. Mahender Kumar** (PI-Agronomy). He informed the chair about pre-group meeting and last year remarks of the experts during 58th ARGM, 2023.

In the session, Chairman **Dr A. Subba Rao** gave following remarks:

- DSR area needs to be quantified and high time to set the SOP for DSR at the country level
- Natural farming practices need to be evaluated precisely on a long term basis as well as more focus on low nitrogen and phosphorus efficient trials in terms of soil and plant uptake

The remarks of Co-Chair **Dr M. S. Sheshshayee** and **Dr A. K. Nayak** are as follows:

- They explain the importance of working together of Agronomy, Soil science and Crop physiology.
- They emphasized that varieties identifications for DSR technologies can be a game changer in resource use efficiency in the system.
- Natural resource management is dynamic and it is changing, lessons to be learned and must be conveyed to the breeders in time. Latest technologies such as sensor based water management, Drone usage in rice need to be used and get benefitted.

Furthermore, Agronomy report was presented by **Dr R. Mahender Kumar** as follows:

- Dr Mahender started his talk with the mandate of Agronomy, to test the AVT-2 entries under different nutrient management levels.
- In Agronomy total 122 no. of trials were conducted whereas, 108 IET cultures were tested. He mentioned that 50% recommended dose of fertilizer is not upto the marks for any consideration.
- In RCT trials quantification of dry and wet DSR regarding package and practices and water management is needed. Weed dynamics studies has been carried out in WMT long term trial.

In AVT-2 MH trial none of the entries found promising. In AVT-2 E(TP) trials 10 entries found promising whereas, in AVT-2 EDS trial six entries was found promising. Furthermore, in trials namely IME, IM, Late, RSL, CSTVT, AL&ISTVT, Aerobic, MS, SDW, Boro, LNT, LPT and Basmati trials promising number of entries were recorded 8, 9, 2, 3, 1, 3, 3, 4, 1, 1, 5, 3 and 3 entries respectively. Yield gap analysis studies done by 04 centers havin average yield gap of 27 %. The long-term meteorological data studies were presented and discussed in the house and experts suggests that, growth stages based data presentation is desired. New trials initiated was discussed as follows:

- DSR promotion with IOT based water management
- DSR constraints, area and input studies in different zones (Collaboration with NRSC)
- Drone based sowing, herbicide or pesticides application and standardized the SOP.

In the session general constraints in carrying the trials was discussed, based on pre-group meeting.

RCT trials was presented by Dr Mangal Deep Tuti. The suggestions were given by the experts; the cultures/varieties must be evaluated as per duration. The WMT trials data was presented by Dr B. Sreedevi.

Experts mentioned that weeds survey may bring the newer perspective in weed management. Weed dynamics in long term trial is a crucial study mentioned by the experts. The HT-NIL Trials data was presented by Dr Annie Poonam. The trial is in second year of study conducted by four centers Including NRRI, Cuttack, Nagina, Coimbatore and Bikramganj. The data of three centers rejected due to criteria framed for HT trials.

Final remarks were given by Dr R. M. Sundaram (Director, IIRR) that the crop production group is the most vibrant group in 59th ARGM. He also emphasized that this group is to bridge between breeders and final stakeholder farmers.

The group discussion was continued after lunch break for finalization of trials in technical session.

Once again Dr. Dinesh Kumar welcomed everyone on behalf of organizing institute ICAR-IARI. Thereafter, Dr. R M Kumar presented the proposed Agronomy technical program for 2024-25. The trial-wise recommendations are as follows-

1. Agronomic Evaluation Trial (AETs): Nutrient response trials of selected AVT-2 rice cultures under optimum and low input management (18-20 groups of AVT-2 entries)

Dr. R Mahender Kumar suggested to reduce the entries due to lack of experimental plots. Dr. A.K. Nayak emphasized that trials should be conducted in one place where all other disciplines scientists can take observations instead of conducting different trials.

2. Resource Conservation Technologies Trials

RCT-1: Water management for enhancing water use efficiency and productivity of mechanical transplanted rice

- It was advised to add latest technologies as treatments (IoT based water management) with revised treatments

RCT-2 Suitable package of practices for higher yield in dry and wet DSR systems

- Dr. D K. Singh suggested to include similar duration varieties

3. RBCS

- One or two trials may be closed

4. Interdisciplinary trials

- Continuity of yield maximization trial with treatment modification
- Sufficient soil parameters should be included in natural farming trial
- Nano fertilizer trial should be considered based on bio-safety perspective
- New trial on Drone should be restricted to evaluation of broadcasting of seeds, herbicide and pesticide spray

Action points:

- DSR should be taken forward by taking considerations of all needs of the farmer
- Nutrient saving experiments should be focused on soil and plant uptakes.
- Criteria for rejection trials will be formulated and informed along with technical program and followed strictly to reject the location data to draw meaningful conclusions.

The session was ended with vote of thanks proposed by Dr. B. Sreedevi.

Based on discussions the following trials along with tentative locations are finalized for the year 2024-25

Sl. No	Trial code	Name of the trial	No of Location	Location
4.1		AVT-2 NUTRIENT VARIETAL TRIAL (NVTS)		
1	NMT-1a	AVT-2 E (H)	7	Almora, Khudwani, Lamphelpat, Malan, Umiam, Upper Shillong, Wangbal
	NMT-1b	AVT-2 M (H)	7	Almora, Khudwani, Lamphelpat, Malan, Umiam, Upper Shillong, Wangbal
	NMT-1c	AVT-2 U (H)	7	Almora, Khudwani, Lamphelpat, Malan, Umiam, Upper Shillong, Wangbal
	NMT-1e	AVT 2-E-TP	17	Coimbatore, Dhangain, Faizabad, Ghaghraghat, Karjat, Hazaribagh, Jagdalpur, Mandya, Maruteru, Nagina, Nawagam, Puducherry, Ranchi, Rewa, Sabour, Vadgaon, Varanasi
	NMT-1f	AVT 2 – IME (TP)	17	Aduthurai, Chinsurah, Dhangain, Faizabad, Gangavathi, Ghaghraghat, Kanpur, Karjat, Kota, Mandya, Maruteru, Nagina, Navsari, Nawagam, Puducherry, Varanasi, Warangal
	NMT-1g	AVT 2 – IM (TP)	18	Chinsurah, Coimbatore, Dhangain, Faizabad, Jagdalpur, Karjat, Kaul, Maruteru, Nagina, Navsari, Nawagam, Pantnagar, Puducherry, Pusa, ARI-Rajendranagar, Titabar, Varanasi, Warangal
	NMT-1h	AVT 2-L	10	Aduthurai, Chinsurah, Chiplima, Dhangain, Karjat, Mandya, Maruteru, Nawagam, Pusa, ARI -Rajendranagar
	NMT-1i	AVT 2-MS	11	Chakdah, Dhangain, Faizabad, Karjat, Kaul, Mandya, Maruteru, Nagina, Nawagam, Raipur, ARI-Rajendranagar
	NMT-1j	AVT 2-Aerobic	11	Cuttack, Jagdalpur, Kaul, Kota, Ludhiana, Nawagam, Pantnagar, Raipur, Vadgaon, Varanasi, Hazaribagh
	NMT-1k	AVT 2-Boro	8	Arundhatinagar, Bankura, Chiplima, Chinsurah, Cuttack, Gerua, Pusa and Titabar
	NMT-1l	AVT 2-AL&ISTVT	7	Ghaghraghat, Kanpur, Navsari, Lucknow, Pusa, Kampasagar, Naira

	NMT-1m	AVT 2- RSL	6	Chinsurah, Bikramganj, Cuttack, Ghagrahat, Titabar, Maruteru
	NMT- 1n	AVT 2-SDW	5	Chinsurah,Cuttack, Pusa, Karimganj, Ghagrahat
	NMT- 1o	AVT 2-CSTVT	9	Chinsurah, Canning Town, Maruteru, Nagina, Navsari, Panvel, Vytilla, Gangavathi, Kaul
	NMT-1p	AVT 2-BT	5	Kaul, Ludhiana, Nagina, Pantnagar New Delhi
		Herbicide tolerant mutants	8	Cuttack Hazaribagh Chinsurah Bikramganj , Titabar , Gerua Coimbatore, Naira, New Delhi
		Nitrogen efficient cultivars (AVT-2)	11	Gangavathi, Karjat, Kaul, Mandya, Maruteru, Pusa, Raipur, Ranchi, Varanasi, Vadgaon, IIRR
		Phosphorous efficient cultivars (AVT-2)	11	Gangavathi, Karjat, Kaul, Mandya, Maruteru, Pusa, Raipur, Ranchi, Varanasi, Vadgaon, IIRR
<ul style="list-style-type: none"> IET culture evaluation under wet and dry DSR along with Plant Breeding. Further the trials will be conducted by Agronomists. 				
4.2	RESOURCE CONSERVATION TECHNOLOGIES TRIALS (RCTs)			
4.2.1	RCT-1	Water management for enhancing water use efficiency and productivity of mechanical transplanted rice (Interdisciplinary with Agricultural Engineering) IOT based water management will be tested in few centres Mention the centers who wanted to take IOT based with additional treatment	9	Aduthurai, Ranchi Warangal,Karaikal, Khudwani, Ludhiana and Mandya, Pantnagar, Coimbatore
		*Few centre will be funded by IIRR for installation of IoT devices		
4.2.2	RCT-2	Suitable package of practices for higher yield in DSR systems		
4.2.2.1 & 4.2.2.2	RCT-2.1	Dry DSR (Modification of treatment – adding	13	Chatha, Gangavathi, Jagdalpur, Ludhiana, Mandya, Nagina, Nawagam, Pantnagar, Pusa, Raipur, Rewa,

		seed treatment, growth promoters)		Vadgaon, and Varanasi
		Cultivar suitability for Dry DSR	13	Chatha, Gangavathi, Jagdalpur, Ludhiana, Mandya, Nagina, Nawagam, Pantnagar, Pusa, Raipur, Rewa, Vadgaon, and Varanasi
	RCT-2.2	Wet DSR (Modification of treatment – adding seed treatment, growth promoters)	13	Chatha, Gangavathi, Jagdalpur, Ludhiana, Mandya, Nagina, Nawagam, Pantnagar, Pusa, Raipur, Rewa, Vadgaon, and Varanasi
		Cultivar Suitability for Wet DSR	13	Chatha, Gangavathi, Jagdalpur, Ludhiana, Mandya, Nagina, Nawagam, Pantnagar, Pusa, Raipur, Rewa, Vadgaon, and Varanasi
		Seed priming in Dry DSR for proper establishment and productivity	6	Chatha, Coimbatore, Jagdalpur, ICAR-IIRR, Ludhiana and Mandya
4.3	RICE BASED CROP DIVERSIFICATION SYSTEM TRIALS (RBCDTs)			
4.3.1	RBCDS-1	Conservation Agriculture / System based Management Practices in rice and rice-based cropping systems (crop diversification) for higher profitability (Interdisciplinary with Entomology and Pathology)	2	Karjat and Vadagaon
4.3.2	RBCDS-2	Assessing the performance and yielding ability of Sorghum hybrids in Rice fallows (Interdisciplinary with IIMR)- Please indent as many as centers as this year is IYOM	3	Jagdalpur, Gangavathi, Arundhatinagar
4.3.3	RBCDS-3	Long term trial on weed dynamics in rice based cropping systems under different establishment methods (Interdisciplinary	16	Aduthurai, Chatha, Chiplima, Ghaghraghat, Jagdalpur, Karaikal, Malan, Moncompu, Nagina, Nawagam, Pantnagar, Pusa, Puducherry, ARI-Rajendranagar, Titabar and Varanasi

		trial with Entomology and Pathology)		
4.3.4	RBCDS-4	Weed Survey in different Rice systems in different zones	10	ICAR-IIRR, Karaikal, Kaul, Ludhiana, Moncompu, Navsari, Pantnagar, Raipur, Titabar, Vytilla
4.3.5	RBCDS-4	Analysis of long term meteorological data of AICRIP centres (temp and rainfall) for identifying the reasons for yield reduction (Collection of 25 years data)- Interdisciplinary with Computer Sciences and Statistics		All centres
4.4	INTER DISCIPLINARY TRIALS (IDTs)			
4.4.1	IDT-1	a) Yield maximization of rice in different zones (Interdisciplinary with Soil Science)- additional treatments will be added	21	Bankura, Gangavathi, Khudwani, Malan, Mandya, Pantnagar, Pattambi, Raipur, Ranchi, Titabar, Kota, Chinsurah, Chiplima, Faizabad, Kanpur, Kaul, Karaikal, Maruteru, Moncompu, Puducherry and Pusa
		b) Assessment of yield gap analysis- Interdisciplinary with Economics (New) Questionnaire will be modified and request for all the centers to participate)		All centres
4.4.2	IDT-2	Evaluation of Organic fertilizers and Natural farming practices for enhancing the productivity and soil health	7	Chatha, Gangavathi, Ghaghraghat, Khudwani, Pattambi, Raipur and Titabar

		(Interdisciplinary trial - Agronomy, Soil Science and Crop protection)-modified as per the suggestions		
		b) Farmer Field Trials - 8-10 Farmers field trials with Two treatment T1- Natural Farming Farmers Practice (Long term with initial and final soil data)		
4.4.3	IDT-3	Nano-fertilizers for increasing nutrient use efficiency, yield and economic returns in transplanted rice (New trial)- (Interdisciplinary with Agronomy and IFFCO)	10	Jagdarpur, Kaul, Kanpur, Coimbatore, Khudwani, NRRI and Sabour. Bankura, Khudwani and Karaikal
4.4.4	IDT-4	Integrated Pest Management - (Interdisciplinary trial with Entomology and Pathology)	15	Malan, Kaul, Ludhiana, Chiplima, Masodha Pusa, Titabar, Jagdarpur, Navasari, Nawagam, Vadagaon, Aduthurai, Gangavathi, Mandya, Puducherry

New Trial:

4.5.1	NT -1	DRONE based crop management for resource conservation (Drone available centers can indent this trial to formulate common trial)	17	Gangavathi, Khudwani, Malan, Mandya, Pantnagar, Pattambi, Raipur, Ranchi, Kota, Chinsurah, Chiplima, Masodha, Kanpur, Kaul, Maruteru, ARI- Rajendranagar, Moncompu and Pusa
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SOIL SCIENCE (Pre-Workshop)

Rapporteurs:
Dr. Gobinath, ICAR-IIRR
Dr. Ch. Sreenivas, Professor, Maruteru and
Dr. Mohammed Shahid, ICAR-NRRI

The crop production pre-group meeting was held on 24 Apr, 2024 which was chaired by Dr. A. Subba Rao, Former Director, ICAR-IISS and Co-Chaired by Dr. A.K. Nayak, Director, ICAR-NRRI and Dr. M.S. Sheshahsayee, Professor, Crop Physiology, UAS, Bangalore.

- ✓ Dr. Subba Rao stressed the need to reduce the nutrient application load and to intensify the efforts to breed varieties with high nutrient use efficiency.
- ✓ Dr. Sheshahsayee, emphasized the need to develop varieties for DSR.
- ✓ Dr. A.K. Nayak opined that convergence of entire crop production group (consisting of agronomists, soil scientists and plant physiologists) onto a single platform will give more fruitful results in providing NRM recommendations.
- ✓ Dr. R.M Sundaram, Director, ICAR-IIRR, joined the meeting in the middle and appreciated the work carried out by AICRP soil science Cooperating centers and also the active participation of the scientists. He also thanked the experts for their valuable inputs on various trials.

Dr. MBB Prasad Babu, PI, Soil Science, ICAR-IIRR presented the results of the coordinated trials conducted at various centres. Dr. Shahid, ICAR-NRRI, presented the results of the biofortification trial which were thoroughly deliberated upon and the following technical program was agreed upon.

A total of nine trials were approved including a new trial.

1. Long-term soil fertility management in rice-based cropping systems

- ✓ The long-term changes in soil fertility especially organic carbon and phosphorus, over the years are to be critically analyzed.
- ✓ **Locations: 3 (Maruteru, Mandya, Titabar)**

2. Soil quality and productivity assessment for bridging the yield gaps in farmers' fields

- ✓ This trial is concluded.

3. Management of sodic soils using nano Zn formulation

- ✓ To be continued without any treatment modifications.
- ✓ **Locations: 5 (Ayodhya, Kanpur, Pusa, Mandya, Ludhiana)**

4. Management of acid soils

- ✓ To be continued without any treatment modifications.
- ✓ **Locations: 3 (Moncompu, Titabar and Sirsi)**

5. Residue management in rice-based cropping systems

- ✓ To be continued without any treatment modifications.
- ✓ **Locations: 10 (Bankura, Ayodhya, Hazaribagh, Kanpur, Karaikal, Khudwani, Maruteru, Moncompu, Pantnagar, Pusa)**

6. Nano-fertilizers for increasing nutrient use efficiency, yield and economic returns in transplanted rice (Collaborative trial with Agronomy)

- ✓ Nano Urea with 16% N is to be used instead of 4% N.
- ✓ The treatment of Nano Urea alone to be discontinued.
- ✓ Group suggested to observe the results keenly for one more year and conclude the trial.
- ✓ **Locations: 11 (Ayodhya, Kanpur, Karaikal, Khudwani, Maruteru, Moncompu, NRRI, Chiplima, Pantnagar, Ludhiana, Varanasi)**

7. Yield maximization of rice in different zones

- ✓ Continued with the same set of treatments for another three years
- ✓ **Locations: 13 (Chinsurah, Ayodhya, Kanpur, Khudwani, Karaikal, Mandya, Moncompu, Maruteru, Pantnagar, Puducherry, Pusa, Titabar, Chiplima)**

8. Enhancing productivity of Organic Rice cultivation & Natural farming

- ✓ To be continued for the next year
- ✓ More insight is required on the superior performance of Integrated Crop management (ICM) over Natural farming.
- ✓ **Locations: 12 (Chinsurah, Karaikal, Khudwani, Mandya, Moncompu, Pantnagar, Puducherry, Pusa, Titabar, Chiplima, Khudwani, Varanasi)**

9. Zn response of fortified rice genotypes to access an agronomic biofortification potential

- ✓ To be continued for two more years without any treatment modifications
- ✓ Zinc analysis in plant samples to be done at NRRI, Cuttack.
- ✓ **Locations: 5 (Maruteru, NRRI, Pusa, Varanasi, Ludhiana)**

10. New trial Proposal: Assessment of Carbon dynamics in rice ecologies and recarbonising rice soils for sustainable production.

- ✓ The group suggested initially to develop a database of soil carbon status in irrigated rice ecology at different locations before taking up recarbonising studies.
- ✓ **Locations: 4 (Chinsurah, Pantnagar, Vyttila, Ludhiana)**

PLANT PHYSIOLOGY (Pre-Workshop)

Rapporteurs : Dr. Akshay S Sakhare, Dr K Chakravarthy

Crop Production pre-group meeting of 59th ARGM was held on 24-26th April, 2024 in main auditorium, Dr. C. Subramaniam Auditorium, NASC complex, New Delhi. The meeting was chaired by Dr. A.S. Subba Rao and Co-chaired by Dr. A.K. Nayak as well as Dr. M.S. Seshasayee, the group leader for Crop Production was Dr. R. M. Kumar, Head, Agronomy along with Dr. M.B.B. Prasad Babu, Head, Soil Science and Dr. P. Raghuvveer Rao, Head and PI, Plant Physiology. Dr. R. M. Kumar welcomed the gathering consisting of co-operators of Agronomy, Soil Science and Plant Physiology. The Plant Physiology Programme report for Kharif 2023 was presented by Dr. P. Raghuvveer Rao (ICAR-IIRR) and Dr. Kaushik Chakraborty (ICAR-NRRI). After the presentations by the group, chairman and co-chairmans remarked that emphasis should be laid on pooled analysis of remaining trials wherever data has been generated for more than five years, it was also observed that the physiological donors identified for various abiotic stresses should be given to AICRIP Rice Breeders. Dr. Subba Rao appreciated the conduct and presentation of high temperature trials and suggested to continue this trial for another three years. He also suggested to identify the high temperature regions of the country under wet season where rice cultivation is possible and present in the next (60th) ARGM. He also appreciated the five-year pooled analysis of high temperature trial and suggested to identify the critical physiological parameters that influence the grain yield. Dr. A.K. Nayak appreciated the conduct of the trials. He felt dry season is better than wet season to conduct high temperature trial. However, he indicated the present poly-house cover at the time of reproductive to grain-filling to maturity to harvest stages can be continued considering the resources at the centres. Further, indicated to use better high temperature control facility, if available, at even one or more of the centres where this trial is being conducted and to record both outside as well as inside hourly humidity values in addition to the temperatures. He also suggested to calculate heat load from temperature and humidity values and to present in terms of heat load also in the next (60th ARGM). He also emphasized to extend the poly house cover from seed to seed (all stages of the crop) or vegetative stage after transplantation or as many stages as possible depending on the facilities available at the centres. He suggested to measure root traits at maximum vegetative stage under silicon trial depending on the facilities available at the centres. He suggested to Kaushik Chakraborty to estimate alpha-amylase activity in addition to the starch content in the leaves at NRRI under submergence trial. He also suggested to use rain-out shelters if available under drought stress trial. Dr. Seshasayee also appreciated the conduct of the trials. For high temperature trial, he suggested to collect crop duration information of the material from breeding along with the seeds and this information must be used to categorize the entries with respect to their crop duration and follow staggered sowings for poly-house treatment. Further, he suggested to assess grain quality aspects of the harvested seed under high temperature and low-light trials. He also emphasized to screen a set of rice germplasm consecutively for three years under high temperature to identify donors for the breeding programmes as well as to critically

analyze the data to identify physiological parameters responsible for the superior performance of the identified donors. He also suggested to use the contrasting material of each trial or trait to undertake crossing programmes along with the breeders and to use transcriptomics or GWAS to identify the markers responsible for each trait and suggested the administration to allot funds for this study.

Technical Program of Plant Physiology (AICRIP) Kharif 2024

1: Influence of silicon on induced stress tolerance in rice genotypes

Locations: 10 centres (CBT, IIRR, KJT, KRK, MTU, PNR, PTB, RANCHI, REWA and TTB)

The experimental lay-out will be split-plot with three replications.

Water stress will be imposed after PI stage by withholding irrigation.

Silicon will be applied as 80ppm silicic acid at tillering, panicle initiation and flowering stages.

2: Screening of elite rice cultures for drought tolerance

Locations: 7 centers (PTB, REWA, TTB, RPR, RANCHI, CHN and NRRI)

The treatments consisted of two irrigation regimes

- a. Irrigated as per the recommended schedule.
 - b. Rainfed condition without any supplementary irrigation.
- a. Design : 2 Factorial RCBD with 3 replication

3: Screening for high temperature tolerance in Rice genotypes,

Locations: 8 centers (IIRR, MTU, PNR, PTB, REWA, TTB, Ranchi and Kaul)

Objective: To investigate the differences in the terminal heat stress tolerance in elite rice genotypes.

Methodology:

The genotypes will be transplanted in two blocks/strips, one for control and another block/strip for imposing terminal heat stress by covering the block/strip with polythene sheet supported by a metal frame or bamboo sticks like a “tunnel” **IMMEDIATELY AFTER PI STAGE (before onset of flowering)** stage until maturity. Control block/strip should be kept uncovered. Leave at least 10 cm space between polythene sheet for sufficient ventilation. Each entry should be sown in 3 rows of 1.5 meter length maintaining 20 cm spacing between rows and recommended plant to plant distance. Leave one blank row between the entries. Each row will be treated as a replication and all the observations needs to be recorded for each row separately. A minimum-maximum thermometer will be installed inside the tunnel and

both minimum and maximum temperatures needs to be recorded everyday inside the tunnel.

4: Physiological characterization of selected rice genotypes for multiple abiotic stress Tolerance,

Locations: 10 centers (CBT, NRRI, FZB, KJT, KRK, MTU, PNR, PTB, TTB, and KAUL)

Under this experiment, only laboratory experiments will be conducted to screen the above genotypes with the following treatments

1. Salinity stress: Sodium chloride of concentration 200mM (Water potential: -1.26, PF: 4.11) was used for germinating the seeds. In case of control situations, seedlings were grown in Hoagland's solution and the following observations were recorded in each of these stresses and control grown situations. Shoot & root length (cm) and shoot & root dry weight, leaf chlorophyll content were recorded (Gupta 1998) were recorded during experimental period.
2. Water stress (1% and 2% mannitol) stress.
3. Anaerobic germination stress.

5. Screening for submergence tolerance in Rice,

Locations: 6 centers (CHN, CBT, NRRI, KRK, PTB and TTB)

Screening using field tanks (wherever available) or in pots

1. Before sowing the seeds should be pre-heated at 50 °C for 2-3 days for breaking the seed dormancy (if any).
2. The seeds need to be directly sown inside the tanks using wet-bed direct sowing method.
3. Each genotype should be sown in 2 rows (min.) with 3 replications with a row to row spacing of 20 cm and plant to plant spacing of 15 cm.
4. Germinated seedlings should be grown normally till 20–25 days without submergence stress.
5. Plant height (average of 5 plants/genotype per replication) and number of hills per genotype per replication (total numbers) should be recorded before the imposition of submergence stress.
5. Then the plants should be subjected to the submergence stress in the form of standing water, where tanks should be filled with 80-100 cm of water and the level of water must be 20-25 cm above the top of the plant canopy.
6. The level of water should be maintained for 14 days after imposition of submergence stress inside the tanks.

7. After 14 days of submergence stress, water should be drained out from the tanks (de-submergence), and initially plant height, the number of hills will be counted from the plants.
8. Finally, the de-submerged plants should be allowed to grow 5 days in normal condition and the number of survived hills should be calculated for each genotype.
9. Same experiment may be conducted in pots of 10 cm size and small cemented tanks. In case of pot experiment, it is better to put 2-day old germinated seedlings in the pot (3 seedlings per pot) with minimum 5 replications, where 1 pot serves as 1 replication. Rest of the protocol is same.

6: Screening of elite rice germplasm for low light stress tolerance

Locations: 8 centers (CHN, NRRI, IIRR, KJT, MTU, PNR, TTB and RPR)

Light intensity is one of the most important environmental factors that determine the basic characteristics of rice development.

A trial will be conducted in 7 AICRIP centres with 21 entries taken from IVT-SDW trial. Swarnaprabha will be included as tolerant checks (Swarna Prabha and Swarna) and IR-8 will be taken as susceptible check. The trial will be conducted in factorial RCBD design with 3 replications with light regimes as main plot treatment and genotypes as subplot treatment. Low light treatments will be imposed immediately after transplanting by enclosing the plots in shade-net (50% transmittance). The shade net will be supported by metal/bamboo poles.

CROP PROTECTION (Pre-Workshop)

PLANT PATHOLOGY

Chairman : Dr. R. Jagadeeshwar
Co-Chairman : Dr. P.K. Tiwari
Rapporteurs : Drs. D. Ladhakshmi, V. Prakasam,
K Basavaraj and GS Jasudasu

The 59th ARGM Plant Pathology group meeting was held on 20th April (online mode) at ICAR-Indian Institute of Rice Research. The group again met on 24th April in Prithvi Hall of NASC auditorium. The meeting was chaired by Dr. R Jagadeeshwar (Former, Director of Research, PJTSAU, Hyderabad) and co-chaired by Dr P. K Tiwari (Principal scientist, Plant Pathology, IGKV, Raipur). The group meeting was also graced by special invitee, Dr. K. K. Mandal, Joint Director, ICAR-NIBSM, Raipur. Twenty six cooperators from different AICRPR centres participated in the meeting. The meeting started with formal self introduction by the participants. At the outset, Dr M Srinivas Prasad (PI, Plant Pathology, ICAR-IIRR), welcomed the all the co-operators and participants of Plant Pathology. Chairman of the meeting, Dr. R. Jagadeeshwar, in his introductory remarks, extended warm greetings and congratulated all the co-operators for good conduct of trials and team IIRR (Plant Pathology) for bringing about reports – Progress report-2023, Screening Nursery Book-2023 and production-oriented survey-2023. In his remarks, chairman highlighted about the rice area, production and productivity, present constraints in rice production like shortage of labour (Leading to increased area in DSR), transformation of more land under industrialization etc. Chairman insisted to incorporate the technologies identified by the members of the group into AICRP trials. He also cautioned about the importance of emerging minor diseases. He emphasized on the importance of full proof screening techniques for such diseases for identifying the resistance sources against these emerging diseases. Co-Chairman Dr PK Tiwari, in his remarks mentioned that, entries should be evaluated in hotspots with artificial inoculation with virulent races or isolates of pathogens. He urged to re-test the multiple disease resistant lines to re-confirm their resistance status. Special invitee, Dr. K. K. Mondal urged to adopt artificial screening against different diseases in all the locations and care should be taken while recording the data.

Plant Pathology Principal Investigator, Dr. Srinivas Prasad briefly presented the agenda and gist of last year's AICRP Rice Pathology results. In his presentation, he mentioned that, a total of 16 trials were conducted in 48 locations. Out of 554 different trials proposed, 518 trials were conducted with 95% data receipt. Dr. Arup Mukherjee presented the salient findings of AICRPR Plant Pathology reports of rainfed ecosystem. Under rainfed ecosystem, Plant Pathology trials were conducted at 17 coordinating centres. Dr. Bishnu Maya presented the salient findings of Plant Pathology trials on Basmati area. She mentioned that Plant Pathology trials on Basmati rice were conducted at five locations across the GI area. She mentioned that in addition to bacterial blight and

sheath blight, bakanae disease has become significant in basmati rice varieties. Dr GS Laha, PS, ICAR-IIRR, discussing about Production oriented survey mentioned that, survey was conducted in 16 states by 18 AICRPR cooperating centres covering about 108 districts. He also requested that, POS in states of Jharkhand, Odisha, and Madhya Pradesh may be conducted from next year.

During discussion all the co-operators mentioned about the diseases scenario in their location. In Raipur, BLB appeared early in the season compared to other years. Panicle mite along with sheath rot was reported at higher incidence. At Nawagam centre, sheath blight, neck blast and sheath rot incidence were found increasing year after year. At Maruteru, BLB appeared in moderate form due to low rainfall and kresak phase was more common in this area. At Patna centre, brown spot incidence increased, BLB and sheath rot also appeared in moderate form. In Pattambi and Moncompu, kresak phase of BLB has been reported. Coimbatore is hotspot for leaf blast and brown spot incidence. In Titabar, BLB and narrow brown spot incidence was reported in severe form in last year. In Navasari areas, it was expressed that, neck blast and sheath rot incidence have increased in last two years even in summer crop. In Gangavathi areas, unlike other years, BLB was reported in lower intensity due to scanty rainfall and in this area, grain discoloration and false smut were found increasing every year. It was expressed by Dr. Kiran Babu (Rajendranagar centre) that area under DSR is increasing in Telangana. However, incidence of nematode and brown spot are also increasing in DSR. At Kaul, BLB, Sheath blight and blast diseases incidence was reported. In Chatha areas, brown spot and BLB are regular observed in moderate form. Apart from this, grain discoloration along with gundhy bug incidence was reported last year. In Pantnagar centre, leaf blast occurs regularly in hilly areas and onset of BLB was delayed in these area from last two years. In Ludhiana area, false smut and sheath blight in non basmati rice & foot rot incidence in basmati rice is increasing.

During the meeting, Director, IIRR interacted with the group and congratulated all the co-operators for well conduct of trials. He expressed his concerns about evolution of hyper virulent races of Bacterial blight pathogen in some locations. In some of the locations, resistant variety Improved Samba Mahsuri recorded very high bacterial blight score indicating shift in virulence of the pathogen. He requested to the cooperators of these centres to send the leaf samples or cultures to ICAR-IIRR for reconfirmation of the virulence status of the cultures. Director, IIRR also suggested to include one positive and negative check after each 50 test entries to judge the quality of the data and to increase the reliability of the data. In his talk, mentioned that Pathology data is integral part of AICRP in development and release of varieties, hence care should be taken while recording the data. Screening protocols for emerging diseases like false smut, brown spot and neck blast may be established in all the locations. Director expressed his happiness for inclusion of biological control agents in AICRP trials,

Dr K. K. Mondal, Joint Director, ICAR-NIBSM, Raipur informed that, ICAR-NIBSM can be included as voluntary centre, as the BLB and sheath blight have become major diseases in these areas. Chairman in his final remarks, informed to keep irrigated, rainfed and basmati trials technical program and report in one place. He also suggested to re-test the multiple disease resistance lines in respective centres to reconfirm their resistance

status. The change in the virulence of pathogen may also be documented. He insisted the co-operators to give timely and quality data to strengthen the reports. The group again met after lunch for finalization of technical program. PI presented the technical program of 2024-25 and informed that all the HPR trials remains same. The special trial on brown spot will be dropped, as the trial was already done for two years. The special IPM trial along with Entomology department will be continued with minor modification. A special trial on yield loss for brown spot disease in selected hotspot locations will be proposed in next year technical program. The meeting ended with vote of thanks by Dr. D. Krishnaveni, Principal Scientist, ICAR-IIRR.

TRIAL 1: SCREENING FOR LEAF BLAST RESISTANCE

NSN 1 (33)

Arundhutinagar	Bankura	Aduthurai	Coimbatore	Cuttack
Gangavati	Gerua	Ghaghraghat	Gudalur	Hazaribagh
IIRR	Imphal (Lamphalpet)	Jagdapur	Jagtial	Karjat
Kaul	Khudwani	Lonavla	Malan	Mandya
Maruteru	Mugad	Navsari	Nawagam	Nellore
New Delhi	Pattambi	Ponnampet	Rajendranagar	Ranchi
Rewa	Wangbal	Warangal		

NSN2(21)

Aduthurai	Coimbatore	Cuttack	Gangavati	Ghaghraghat
Hazaribagh	IIRR	Jagdapur	Kaul	Malan
Mandya	Maruteru	Mugad	Nawagam	Pattambi
Ponnampet	Rajendranagar	Ranchi	Rewa	Wangbal
Nellore				

NSN Hills (13)

Almora	Gerua	Gudalur	IIRR	Imphal (Lamphalpet)
Karjat	Khudwani	Lonavla	Malan	Ponnampet
Umiam (Barapani	Upper Shillong	Wangbal		

NHSN (24)

Arundhutinagar	Aduthurai	Bankura	Coimbatore	Gangavati
Ghaghraghat	IIRR	Imphal (Lamphalpet)	Jagdapur	Karjat
Khudwani	Lonavla	Malan	Mandya	Maruteru
Mugad	Nawagam	Pattambi	Ponnampet	Rajendranagar
Ranchi	Rewa	Upper Shillong	Wangbal	

DSN (26)

Almora	Aduthurai	Arundhutinagar	Coimbatore	Cuttack
Gangavati	Ghaghraghat	Hazaribagh	IIRR	Imphal (Lamphalpet)
Jagdarpur	Karjat	Lonavla	Malan	Mandya
Maruteru	Mugad	Nawagam	Nellore	Pattambi
Ponnampet	Rajendranagar	Ranchi	Rewa	Upper Shillong
Wangbal				

TRIAL 2: SCREENING FOR NECK BLAST RESISTANCE

NSN 1 (13)

Bankura	Jagdarpur	Karaikal	Khudwani	Lonavla
Mandya	Maruteru	Mugad	Nawagam	Nellore
Ponnampet	Rajendranagar	Ranchi		

NSN 2 (7)

Jagdarpur	Mandya	Maruteru	Mugad	Ponnampet
Ranchi	Nellore			

NSNHills (8)

Almora	Gudalur	Imphal (Lamphalpet)	Khudwani	Lonavla
Malan	Ponnampet	Umiam		

NHSN(13)

Bankura	Imphal (Lamphalpet)	Jagdarpur	Khudwani	Lonavla
Malan	Mandya	Maruteru	Mugad	Nawagam
Rajendranagar	Ranchi	Umiam		

DSN(11)

Almora	Imphal (Lamphalpet)	Jagdarpur	Lonavla	Mandya
Maruteru	Mugad	Nawagam	Rajendranagar	Ranchi
Umiam				

TRIAL 3: SCREENING FOR BROWN SPOT RESISTANCE

NSN 1 (21)

Bankura	Bikramganj	Chatha	Chinsurah	Coimbatore
Cuttack	Gangavati	Ghaghraghat	Gudalur	Hazaribagh
IIRR	Jagdarpur	Khudwani	Lonavla	Ludhiana
Mugad	Ponnampet	Pusa	Rewa	Sabour
Upper Shillong				

NSN 2 (12)

Bikramganj	Coimbatore	Chatha	Gangavati	Ghaghraghat	Hazaribagh
IIRR	Jagdarpur	Ludhiana	Mugad	Ponnampet	Pusa
Rewa	Sabour				

NSN Hills (7)

Almora	Cuttack	Gudalur	IIRR	Khudwani
Lonavla	Ponnampet			

NHSN (17)

Bankura	Bikramganj	Chatha	Chinsurah	Coimbatore
Cuttack	Gangavati	Ghaghraghat	Hazaribagh	IIRR
Jagdapur	Khudwani	Lonavla	Ludhiana	Mugad
Pusa	Rewa			

DSN (16)

Almora	Bikramganj	Chatha	Coimbatore	Cuttack
Gangavati	Ghaghraghat	Hazaribagh	IIRR	Jagdapur
Lonavla	Ludhiana	Mugad	Pusa	Rewa
Sabour				

TRIAL 4: SCREENING FOR SHEATH BLIGHT RESISTANCE

NSN-1

Aduthurai	Arundhutinagar	Bankura	Bikramganj	Chinsurah
Chiplima	Gangavati	IIRR	Kaul	Ludhiana
Mandya	Maruteru	Masodha (Faizabad)	Moncompu	Navsari
New Delhi	Pantnagar	Pattambi	Raipur	Titabar
Varanasi				

NSN-2

Aduthurai	Bikramganj	Gangavati	IIRR	Kaul
Ludhiana	Mandya	Maruteru	Masodha	Moncompu
Navsari	Pantnagar	Pattambi	Raipur	Titabar
Varanasi				

NSN-Hills (3)

Cuttack	IIRR	Pantnagar
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NHSN (20)

Aduthurai	Arundhutinagar	Bankura	Bikramganj	Chinsurah
Gangavathi	IIRR	Kaul	Ludhiana	Mandya
Maruteru	Masodha	Moncompu	Navsari	New Delhi
Pantnagar	Pattambi	Raipur	Titabar	Varanasi

DSN (19)

Aduthurai	Arundhutinagar	Bikramganj	Chiplima	Gangavati
IIRR	Kaul	Ludhiana	Mandya	Maruteru
Masodha	Moncompu	Navsari	New Delhi	Pantnagar
Pattambi	Raipur	Titabar	Varanasi	

TRIAL 5: SCREENING FOR SHEATH ROT RESISTANCE

NSN 1 (11)

Aduthurai	Bankura	Chinsurah	Cuttack	Karjat
Lonavla	Navsari	Nawagam	Pusa	Raipur
Titabar				

NSN 2 (4)

Aduthurai	Pusa	Raipur	Navsari	
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NSNH (2)

Karjat	Lonavla
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NHSN (11)

Aduthurai	Bankura	Chinsurah	Cuttack	Karjat
Lonavla	Navsari	Nawagam	Pusa	Raipur
Titabar				

DSN (8)

Aduthurai	Cuttack	Karjat	Lonavla	Navsari
Nawagam	Pusa	Raipur		

TRIAL 6: SCREENING FOR BACTERIAL BLIGHT RESISTANCE

NSN 1 (28)

Aduthurai	Arundhutinagar	Bankura	Bikramganj	Chatha
Chinsurah	Chiplima	Coimbatore	Cuttack	IIRR
Karaikal	Karjat	Ludhiana	Maruteru	Masodha
Moncompu	Navsari	Nawagam	Nellore	New Delhi
Pantnagar	Pattambi	Raipur	Rajendranagar	Sabour
Titabar	Varanasi	Warangal		

NSN 2 (17)

Aduthurai	Bikramganj	Chatha	Gangavati	IIRR
Ludhiana	Maruteru	Masodha	Moncompu	Navsari
Nawagam	Pantnagar	Pattambi	Raipur	Sabour
Titabar	Varanasi			

NSN Hills(3)

IIRR	Karjat	Pantnagar
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NHSN (20)

Aduthurai	Bankura	Bikramgani	Chatha	Chinsurah
Gangavathi	IIRR	Karjat	Ludhiana	Maruteru
Masodha	Moncompu	Navsari	Nawagam	Pantnagar
Pattambi	Raipur	Titabar	Varanasi	Rajendranagar

DSN (22)

Aduthurai	Bikramgani	Chatha	Chiplima	Coimbatore
Cuttack	Gangavati	Gerua	IIRR	Karjat
Ludhiana	Maruteru	Masodha	Moncompu	Navsari
Nawagam	Pantnagar	Pattambi	Raipur	Titabar
Varanasi	Rajendranagar			

TRIAL 7: SCREENING FOR RESISTANCE TO RICE TUNGRO DISEASE

NSN 1	NSN 2	NSN-H	NHSN	DSN
Coimbatore	IIRR	IIRR	Coimbatore	Coimbatore
Cuttack			Cuttack	Cuttack
IIRR			IIRR	IIRR

TRIAL 8: MONITORING FIELD VIRULENCE IN *Pyricularia oryzae*

Almora	Bikramganj	Coimbatore	Gangavati	Gerua
Ghaghrahat	Gudalur	Hazaribagh	Imphal (Lamphalpet)	Jagdapur
Karjat	Khudwani	Lonavla	Malan	Mandya
Maruteru	Mugad	Navsari	Nawagam	Nellore
New Delhi	Pattambi	Ponnampet	Ranchi	Upper Shillong
Wangbal	Rajendranagar			

TRIAL 9: MONITORING FIELD VIRULENCE IN *Xanthomonas oryzae* pv. *oryzae*

Aduthurai	Bikramganj	Chatha	Chinsurah	Chiplima
Coimbatore	Gangavati	Gerua	Karjat	Ludhiana
Maruteru	Masodha	Moncompu	Navsari	Nawagam
Nellore	New Delhi	Pantnagar	Pattambi	Raipur
Rajendranagar	Sabour	Titabar	Warangal	

TRIAL 10: DISEASE OBSERVATION ON TRAP CROP

Each location can take up this trial separately under

1. Under transplanted condition
2. Under Wet DSR condition

Bankura	Chatha	Chinsurah	Kaul	Malan	Mandya
Maruteru	Moncompu	Nawagam	Pusa	Raipur	Nellore

Trail No. 11: EVALUATION OF FUNGICIDES AGAINST LOCATION SPECIFIC DISEASES

Aduthurai	Bankura	Chatha	Chinsurah	Chiplima
Coimbatore	Cuttack	Gangavati	Gerua	Ghaghraghat
Hazaribagh	Jagdapur	Kaul	Lonavla	Ludhiana
Malan	Mandya	Maruteru	Masodha	Moncompu
Mugad	Navsari	Nawagam	Pantnagar	Pattambi
Ponnampet	Pusa	Raipur	Rajendranagar	Ranchi
Rewa	Sabour	Titabar	Varanasi	

Trial No. 12: EVALUATION OF BIO-CONTROL FORMULATIONS AGAINST FUNGAL DISEASES

Coimbatore	Hazaribagh	IIRR	Karaikal	Maruteru
Moncompu	Navsari	Pantnagar	Rewa	Varanasi
Titabar				

Trial 13: INTEGRATED PEST MANAGEMENT (SPECIAL)

Coimbatore	Karjat	Kaul	Nawagam	Navsari
Pantnagar				

Trial No. 14: SPECIAL TRIAL ON YIELD LOSS ASSESSMENT DUE TO MAJOR RICE DISEASES

Locations: Hot spots only

Brown spot

Bikramganj	Moncompu	Ludhiana	Pusa	
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TRIAL 15: SPECIAL SCREENING TRIAL FOR FALSE SMUT RESISTANCE

Gangavathi	Gudalur	IIRR	Ludhiana	Masodha
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PRODUCTION ORIENTED SURVEY-2024

Locations (29)

Aduthurai	Bankura	Chatha	Chinsurah	Coimbatore
Cuttack	Gangavati	Gerua	Ghaghraghat	Hazaribagh
Karaikal	Karjat	Kaul *	Khudwani	Ludhiana
Malan	Mandya	Maruteru	Masodha	Moncompu
Nawagam	Pantnagar	Bikramganj	Pattambi	Raipur
Rajendranagar	Ranchi	Rewa	Varanasi	

ENTOMOLOGY

Chairman : Dr. Sanjay Sharma
Co-Chairman : Dr. P.S. Sarao
Rapporteurs : Dr. N. R. G. Varma &
Dr. Y. Sridhar

The entomology group meeting was held on 24th April 2024 at Dr. C. Subramaniam Auditorium, New Delhi. Dr. Sanjay Sharma, Principal Scientist (Entomology), IGKV, Raipur and Dr. P. S. Sarao, Principal Entomologist, PAU, Ludhiana acted as the Chairman and Co-Chairman of the meeting. At the outset, Dr. V Jhansi Lakshmi, Principal Investigator & Head (Entomology), IIRR, Hyderabad, welcomed the Chair, Co-chair and the co-operators from different AICRIP centres. She complimented the co-operators for timely reporting of the data. Overall receipt of the data was 99.10% (98.2% during *Kharif* 2023 and 100% during *Rabi* 2023-24).

The Chairman, Dr. Sanjay Sharma, congratulated the entomology group and commented that the entomology group is the most cohesive group to work. He opined that some of the emerging issues like generating information on changing insect pest scenario, hot spot maps, AI and drone technology, non-insect pests, spraying techniques etc., need to be addressed. The Co-Chairman, Dr. P. S. Sarao, emphasized to work on developing innovative methods, particularly nozzles for drones and efficacy of pesticide spraying through drones.

Deliberations started with the introduction of the participants. Twenty-five scientists participated in the meeting. This was followed by the presentation of the results of the trials conducted during *Kharif* 2023 and *Rabi* 202-24.

Dr. V. Jhansi Lakshmi, Principal Investigator & Head (Entomology), IIRR, Hyderabad, presented the results of planthopper screening trials and virulence studies that included PHS, PHSS and PHPM trials. Dr. Sarao indicated to identify new germplasm lines for BPH using MAS to enable development of varieties with durable resistance. Dr. Sharma reiterated to look for new resistant sources to BPH.

Dr. A. P. Padmakumari, Principal Scientist (Entomology), IIRR, Hyderabad, presented the results of screening trials *viz.*, gallmidge, stem borer and national screening nurseries, which included GMS, SBST, MRST, IIRR – NSN 1, NSN 2, NHSN, biotype studies like GMT, GMPM, and OPCT trials. Padmakumari requested all the centre to include TN1 as a check in addition to local checks.

Dr. Chitra Shanker, Principal Scientist (Entomology), IIRR, Hyderabad, discussed the results of EESP trials. Dr. Ch. Padmavathi, Principal Scientist (Entomology), IIRR, Hyderabad, presented the results of a screening trial against leaf folder, ecological and IPM studies which include LFST, IEMP, CSIP, EPBI and IPM (S) trials.

Dr. Y. Sridhar, Principal Scientist, IIRR, Hyderabad, presented the results of chemical control studies, pest survey reports, and assessment of insect populations through light trap catches that included EIGM, PMRH, PSR and LT trials.

Dr. R. M. Sundaram, Director, IIRR, Hyderabad, congratulated and complimented the entomology group for their excellent work and for being the most cohesive group. He emphasized on bringing out good and comprehensive joint publications, out of the coordinated work of Entomology. He said that the incidence of gall midge is increasing year after year, which is a significant concern and the group needs to look into new alternative insecticide molecules.

Dr. V. Chinna Babu Naik, Senior Scientist (Entomology), IIRR, Hyderabad presented the results of PDPNE. Dr. Guruprasanna Pandi, Principal Scientist (Entomology), NRRI, Cuttack presented the results of NSN1 and NSN2 of rainfed ecologies and deep water rice. Dr. S. Rajna, Scientist (Entomology), IARI, NewDelhi presented the results of the NSN2-Basmati trials. Dr. Jhansi Lakshmi suggested to represent the damage score for BPH and WBPH mixed population as a combined score rather than separate scores. Dr. Padmakaumari requested to nominate new germplasm for screening experiments.

Trial options were reconfirmed through discussions on new trials. Dr. Y. Sridhar proposed a new trial to study the efficacy of drone based insecticide spraying and nine centres volunteered to take up this trial

Dr. Sarao congratulated the team for planning the experiments well in advance. He suggested to adhere to the given technical programme strictly for better results and submit the data on time *i.e.* by 31st December. He also highlighted the importance of testing new insecticide molecules having novel chemistries.

Dr. Sanjay Sharma congratulated the co-ordinators for their effective participation. He requested the PIs to send germplasm for HPR trials on time latest by 10th May. He also advised the co-operators to be in constant touch with the co-ordinating unit for effective implementation of the programme.

Finally, Dr. AP Padmakumari proposed the vote of thanks.

The entomology group met in virtual mode on 22nd April 2024 to finalise the technical program and to discuss centre-wise trial allotments. Thirty-five scientists from different AICRIP centres, eight scientists from ICAR-IIRR and Mr. Amudhan Srinivasan, ACTO participated in the meeting. The following are the salient points of the deliberations:

- ✓ All the screening trials and biotype studies will continue
- ✓ Under Chemical studies, Dr Y Sridhar proposed new trials, *i.e.*, a trial on “Seed treatment
- ✓ for evaluation of pests (STEP)”.
- ✓ Dr. Chinna Babu Nayak proposed new trial on “Bioefficacy of insecticides against planthoppers (BIPH)”.

- ✓ Under biocontrol studies, Dr Chitra Shanker proposed a new trial on “Evaluation of Entomopathogens against lepidopterous pests (EELP)” and closed the trial on “Evaluation of Entomopathogens against Sucking Pests of Rice (EESP)”.
- ✓ Under Ecological studies Dr Ch Padmavathi proposed two new trials, “Pest incidence in Natural Farming (PINF)” and “IPM in DSR (IPM DSR)”. Two trials (Cropping Systems Influence on Pest Incidence (CSIP) and Integrated Pest Management special trials were closed.
- ✓ PSR, Population dynamics of pests and natural enemies (PDPNE) and light trap collections will continue.

The details of the trial allotment for *Karif 2024* and *Rabi 2024-25* are as follows.

<i>Kharif 2024</i>					
Planthopper Screening Trial (PHS)					Locations: 15
Aduthurai	Coimbatore	Cuttack	Gangavathi	Jagtial	Ludhiana
Mandya	Maruteru	Nawagam	New Delhi	Pantnagar	R. Nagar
Raipur	Sakoli	Warangal			
Gall Midge Screening Trial (GMS)					Locations: 12
Ambikapur	Brahmavar	Chiplima	Gangavathi	Jagdapur	Maruteru
Jagtial	Moncompu	Nellore	Pattambi	Ranchi	Warangal
Sakoli					
Leaf Folder Screening Trial (LFST)					Locations: 20
Aduthurai	Arundhutinagar	Bapatla	Brahmavar	Chatha	Cuttack
Chinsurah	Jagdapur	Karaikal	Karjat	Kaul	Malan
Ludhiana	Masodha	Navsari	Nawagam	Nellore	R. Nagar
Pattambi	Rewa	Titabar			
Stem Borer Screening Trial (SBST)					Locations: 17
Aduthurai	Ambikapur	Arundhutinagar	Chinsurah	Chiplima	Ghaghraghat
Ludhiana	Mandya	Moncompu	Navsari	Nawagam	Pantnagar
Nellore	Pattambi	Pusa	R. Nagar	Raipur	
Titabar					
Multiple Resistance Screening Trial (MRST)					Locations: 26
Aduthurai	Ambikapur	Brahmavar	Chatha	Chinsurah	Chiplima
Coimbatore	Gangavathi	Jagdapur	Ludhiana	Malan	Mandya
Maruteru	Masodha	Navsari	Nawagam	Nellore	Pantnagar
Pattambi	Pusa	R. Nagar	Raipur	Ranchi	Rewa
Sakoli	Warangal	Hazaribagh			
National Screening Nurseries-1(NSN-1)					Locations: 20
Ambikapur	Brahmavar	Chiplima	Coimbatore	Gangavathi	Jagdapur
Ludhiana	Mandya	Maruteru	Masodha	Moncompu	Navsari
Nawagam	Pantnagar	Pusa	R. Nagar	Raipur	Sakoli
Titabar	Warangal				

National Screening Nurseries - 2(NSN-2)					Locations: 17
Aduthurai	Chinsurah	Chiplima	Coimbatore	Gangavathi	Ghaghrahat
Jagdapur	Karjat	Kaul	Ludhiana	Malan	Mandya
Maruteru	Moncompu	Navsari	Pantnagar	Pusa	
National Screening Nurseries - Hills(NSN-H)					Locations:7
Chatha	Coimbatore	Khudwani	Ludhiana	Malan	Maruteru
Pantnagar					
National Hybrid Screening Nurseries - (NHSN)					Locations: 14
Chinsurah	Coimbatore	Ghaghrahat	Ludhiana	Mandya	Maruteru
Moncompu	Nawagam	Pantnagar	Pattambi	R. Nagar	Raipur
Ranchi	Rewa				
Gall Midge Biotype Trial (GMBT)					Locations: 17
Aduthurai	Ambikapur	Brahmavar	Chiplima	Cuttack	Gangavathi
Jagdapur	Jagtial	Maruteru	Moncompu	Nellore	Pattambi
Ragolu	Ranchi	Sakoli	Titabar	Warangal	
Planthopper Special Screening Trial (PHSS)					Locations: 12
Aduthurai	Coimbatore	Cuttack	Gangavathi	Ludhiana	Mandya
Maruteru	New Delhi	Pantnagar	Raipur	R. Nagar	Warangal
Gall Midge Population Monitoring Trial (GMPM)					Locations: 8
Brahmavar	Gangavathi	Jagtial	Moncompu	Nellore	Pattambi
Ragolu	Warangal				
Planthopper Population Monitoring Trial (PHPM)					Locations: 5
Coimbatore	Gangavathi	Ludhiana	New Delhi	Pantnagar	
Seed Treatment for Evaluation of Pests (STEP)					Locations: 13
Aduthurai	Aduthurai	Ambikapur	Chatha	Chiplima	Coimbatore
Gangavathi	Jagdapur	Maruteru	Pattambi	R. Nagar	Rewa
Warangal					
Prophylactic Management of Rice Hoppers (PMRH)					Locations: 6
Chatha	Kaul	Ludhiana	Nawagam	Pantnagar	Raipur
Bio efficacy of Insecticides against Planthoppers (BIPH)					Locations: 4
Aduthurai	Gangavathi	Ludhiana	New Delhi		
Influence of Establishment Methods on Pest Incidence (IEMP)					Locations: 15
Aduthurai	Chatha	Chinsurah	Chiplima	Gangavathi	Ghaghrahat
Jagdapur	Malan	Moncompu	Nawagam	Pantnagar	Pattambi
Pusa	R. Nagar	Titabar			
Pest Incidence in Natural Farming (PINF)					Locations:15
Chatha	Chinsurah	Chiplima	Gangavathi	Ghaghrahat	Karjat
Kaul	Khudwani	Mandya	Maruteru	Moncompu	Pantnagar
Pattambi	Raipur	Titabar			

Evaluation of Pheromone blends for Insect Pests of rice (EPBI)					Locations: 15
Aduthurai	Chinsurah	Coimbatore	Jagdapur	Jagtial	Karaikal
Ludhiana	Maruteru	Navsari	Pusa	R. Nagar	Ragolu
Raipur	Sakoli	Titabar			
Population Dynamics of Pests and Natural Enemies (PDPNE)					Locations: 33
Aduthurai	Bapatla	Chinsurah	Chiplima	Coimbatore	Gangavathi
Ghaghraghat	Jagdapur	Jagtial	Karaikal	Karjat	Kaul
Khudwani	Ludhiana	Malan	Mandya	Maruteru	Masodha
Moncompu	Navsari	Nawagam	Nellore	New Delhi	Pantnagar
Pattambi	Pusa	R. Nagar	Ragolu	Raipur	Ranchi
Rewa	Titabar	Warangal			
Evaluation of Entomopathogens against Lepidopteran Pests (EELP)					Locations: 14
Brahmavar	Chinsurah	Chiplima	Coimbatore	Cuttack	Gangavathi
Karjat	Kaul	Ludhiana	Mandya	Moncompu	Navsari
Raipur	Ranchi				
Integrated Pest Management in Direct Seeded Rice (IPMDSR)					Locations: 20
Aduthurai	Arundhutinagar	Bapatla	Coimbatore	Gangavathi	Karjat
Kaul	Mandya	Navsari	R. Nagar	Ragolu	
Light Trap Collections (LT)					Locations: 33
Aduthurai	Brahmavar	Chatha	Chinsurah	Chiplima	Coimbatore
Cuttack	Gangavathi	Ghaghraghat	Jagdapur	Jagtial	Karaikal
Karjat	Kaul	Khudwani	Ludhiana	Malan	Mandya
Maruteru	Masodha	Moncompu	Navsari	Nawagam	Nellore
Pantnagar	Pattambi	R. Nagar	Ragolu	Raipur	Rewa
Sakoli	Titabar	Warangal			
Efficacy of drone based spraying of insecticides in rice insect pest management					Locations: 6
IIRR	RNR	NVS	NWG	GNV	RPR
Rabi 2024-25					
Stem Borer Screening Trial (SBST)					Locations: 7
Bapatla	Chinsurah	Coimbatore	Gerua	Maruteru	Pattambi
Titabar					
Multiple Resistance Screening Trial (MRST)					Locations: 1
Khudwani					
National Screening Nursery (Boro)					Locations:5
Arundhutinagar	Chinsurah	Coimbatore	Gerua	Maruteru	Pattambi
Titabar					
Evaluation of Pheromone blends for Insect Pests of rice (EPBI)					Location: 3
Gangavathi	Moncompu	Pattambi			
Evaluation of Entomopathogens against Lepidopteran Pests (EELP)					Locations: 1
Pattambi					
Integrated Pest Management in Direct Seeded Rice(IPMDSR)					Locations: 1
Maruteru					

PRESENTATION BY AICRIP CENTERS

Zone VII (Southern Zone)

Rapporteurs: Dr Suneetha Kota, Sr.Scientist, IIRR
Dr. V. Prakasam, Scientist, IIRR
Dr. Ch. Suvarna Rani, Scientist, IIRR

The centre wise presentations from Zone VII were held in virtual mode on 19 April, 2023. All the centres in Zone zone VII (southern region) made the presentations about the conduct of the AICRIP trials during kharif, 2022 as a part of 59th AGRM, 2023. From Zone VII, presentations were made from Gangavati, Moncompo, Brahmavar, Pattambi, Puducherry, Aduthurai, Coimbatore, Mandya, Maruteru, Rajendranagar and Warangal centres. All the centres have presented the conduct of the AICRIP trials, performance of the entries in the respective trials, the research activities and the breeding material generated at the respective centre according to prescribed mandate, the popular prevalent varietal and production technologies and future thrust areas of research.

Gangavati: Dr Mahantashivayogayya K, presented the details of trials conducted in Kharif 2022. All the 16 trials, IVT-IM, AVT1-IM, AVT2-IM, IVT-IME, AVT1-IME, IVT-E-TP, AVT1-E-TP, AVT2-E-TP, IVT-MS, AVT1-MS, AVT1-AL & ISTVT, IVT-AL & ISTVT, IVT-Biofort, and AVT1-Biofort were conducted. He explained about Breeding trials and Dr. Pramesh told about the pathology trials and Entomology trials by respective entomologist. Research activities include about 37 crosses and generated F2: 17 Population, F3: 168 Lines, F4 & F5: 345 Lines, molecular breeding for BPB and Gall midge resistance, breeder seed production of recent releases of this centre were taken up. DRR Dhan 60 is found promising in farmer's field which is on par with BPT 5204 at lesser cost of cultivation. Several multiple disease resistant lines were identified from different AICRIP trials of pathology. Focused on the development of MS, SS grain type, Zn and protein rich varieties. Molecular characterization of gall midge biotypes is being taken up.

Moncompu: Total nine trials were conducted. Pre-breeding activities for screening of existing germplasm for grain discolouration, submergence tolerance, salinity tolerance are being carried out with the focus on development of varieties with salinity, flood and acid tolerant varieties. Development of suitable package of practices for high yield under direct seeded conditions and weed dynamics are being addressed at this centre. High rainfall and floods are major constraints of the centre for rice cultivation.

Brahmavar: Dr Sreedevi A.J. discussed the details on the trials conducted on AICRIP Breeding (14 +1) and Entomology (8+2). Saline trials conducted at Farmer's field. Mutants of coloured rice varieties are also developed in this centre. Gulvadi sanna germplasms were registred in Farmer name Mr. Chaitanya Rai, Gulwadi Gram, Kundapura under PPV & FRA in 2023. 10 crosses generated and about F6-11, F4-13, F3-12, F2-57, F1-27 and 40 Red rice Mutant lines(M 6), one promising line were identified are being evaluated in station trials for nominations in AICRIP. About 139 germplasm

lines are being maintained with recent collections are being characterized. The promising lines from AICRIP trials are being utilized in hybridization programme. Evaluation of 297 advanced mutant lines of 4 red rices varieties and segregating populations for high yield, disease and pest resistance is being carried out.

Pattambi: Dr Biji, presented the results of this year AICRIP trials from the centre. All the allotted 16 breeding trials were conducted for ETP, IME, IM MS, Bio-fortification, NIL and ASG. 110 crosses generated, 5450 breeding material in different segregating generations are evaluated and about 440 promising lines identified, 14 lines in station trial evaluated, 5 entries were nominated in AICRIP trials. Donors for abiotic and biotic stresses were identified. About 1316 germplasm collections are being maintained. Evaluated wild rice derivatives from *O.nivara* and *O.glaberrima* introgression lines and promising lines are being utilized in their breeding programmes. Also presented the AICRIP pathology, entomology, Agronomy, physiology trials conducted.

Puducherry: Dr. Narasimhan, presented the observations on trials conducted. Total 9 trials were allotted and all were conducted. Many entries in AICRIP trials were susceptible to BLB and blast. All the allotted 8 Agronomy and 5 soil science trials were conducted. MS grain type cultivars with, salinity tolerance are being focussed at this centre. About 24 promising lines are in station trial were evaluated. Popularization for traditional rices and development of package of practices for changing climate scenario are being focussed.

Aduthurai: Dr. Suresh, TRRI, Aduthurai presented the observations on trials conducted at this institute. A total of 19 breeding trials (AVT1-IME, IVT-IME, AVT1-IM, IVT-IM, AVT2-L, AVT1-L, IVT-L, IVT-E-TP, AVT1-E-TP, AVT2-E-TP, AVT1-AEROB, IVT-AEROB, AVT2-BIOFORT, AVT1-BIOFORT, and IVT-BIOFORT) were conducted. All the trials were conducted as per recommendations. 6 Agronomy and 15 Pathology trials were conducted. Salinity stress and terminal drought is the reoccurring constraint at this centre. Heavy rains occurred continuously for 3 month during Kharif, 2021. Several crosses in early, medium and late duration were generated. Trait based breeding with emphasis on BPH wherein 8 land races were identified with resistance to BPH, 4 donors for false smut in the hot spot region of Gudalur were identified. Advanced lines with 3 or 4 gene combination of BLB resistance genes developed. Promising donors for false smut, submergence, anaerobic germination and in situ germination were identified. Advanced lines with drought QTLs *qDTY1.1*, *qDTY 3.1* and *qDTY 12.1* were developed. Advanced lines with more than 10 ppm Fe and 25 ppm of Zn in polished rice were identified and are being evaluated.

Coimbatore: Dr. Manonmani presented the trial status. 21 breeding trials allotted (AVT1-AL & ISTVT, IVT-AL & ISTVT, IVT-IME, IVT-IM, AVT1-IM, IVT-MS, IVT-BIOFORT, AVT1-BIOFORT, AVTII-BIOFORT, IVT-NPT, IVT-IM, IVT-MS, AVT1-MS, AVT1-ASG, IVT-ASG, AVT1-NIL trials) and the trials were conducted as per recommendations. 7 Agronomy, 14 entomology and 9 pathology trials, 3 physiology trials were conducted and presented. Focus on development of varieties and hybrids for yield, quality, drought and salinity with different durations. Identified donors for drought and salinity and breeding material generated are in BC1F4 generation stage. Donors for nutrient quality identified.

Two and three line hybrids developed are being evaluated. About 136 germplasm, 3218 accessions in gene bank including wild rice accessions are being maintained. Molecular breeding for biotic stress tolerance through pyramiding blast, BLB, false smut and other biotic stresses being focussed.

Mandya: Dr. G.R. Denesh explained about the trials conducted at this centre. About 23 AICRIP trials were conducted at this centre including IVT E-TP, AVT -1-E-TP, AVT -2-E-TP, IVT -IME, AVT -1-IME, AVT -2-IME, IVT-IM, AVT-1-IM, AVT-2-IM, IVT- AEROB, AVT-1-AEROB, AVT -2-AEROB, IVT-MS, AVT -1-MS, AVT -2-MS, AVT & IVT-BIOFORT, IVT-LNT(N=0), IVT-LNT(N=50), AVT-1-LNT(N=0), AVT-1-LNT(N=50), AVT-2-LNT(N=0), AVT-1-LNT(N=50), IVT-LPT(P=0), IVT-LPT(P=50), AVT -1 -LPT(P=0), AVT -1 -LPT(P=50), AVT -2-LPT(P=0), AVT -2-LPT(P=50). The crop stand across trials was reported to be good. 17 Agronomy, 19 Pathology, 11 Entomology, 3 soil science trials were also conducted. Several segregating populations are being evaluated, donors for leaf blast and neck blast identified. About 5917 germplasm accessions are being maintained. Breeding material for salinity tolerance, sheath blight was developed and is being evaluated.

RARS, Maruteru: The AICRIP trials results were presented for 30 trials which were received and conducted ETP (3), IME (3), IM (3), L (2), MS (3), SDW (2), IHRT (5), Nil Trials (1), Biofort (1), LNT(3), LPT(3), ERA. Several segregating lines were noticed in different trails. Pre breeding for BPH and BLB, Biofortification of Zn and Protein, crosses for BPH, Blast, BLB with high yield and quality is being focussed with 55 new crosses generated, several populations being evaluated, F2 – 2941, F3 – 635, F4 – 780, F5 – 280, F6 – 12595 uniform bulks identified to be tested in station trials. Two genetic stocks were identified MTU 1184, BM 71. MTU 1275 (IET 27908) 140 days duration, Moderately resistant to leaf blast, neck blast, brownspot and BLB was released under CVRC, 140 donors lines for biotic, abiotic and other stresses identified are being maintained in resistance block. Marker Assisted Pyramiding of Swarnasub1 with SCM2, Saltol and qAG3. 11 Agronomy trails, 10 soil science trials, 4 physiology trials and 17 entomology trials were conducted.

Rajendranagar: Dr Damodara Raju presented all trials conducted at ARI Rajendranagar during Kharif 2022. 11 Plant breeding, 6 Agronomy, 12 entomology and 11 Pathology trials were conducted. In plant breeding IVT and AVT trials of MS, IM and NIL trials were conducted. Four entries are in minikit testing. About 471 germplasm, several donors, Blast, BLB and BPH are available. Several diverse crosses are being generated as well as new CMS lines are being developed. Breeding material is being screened for presence of SNPs linked to traits viz., blast, BLB, gall midge, BPH through outsourcing at Ms. Intertek Pvt. Ltd.

Warangal: The details of AICRIP trials allotted 21 varietal trails including breeding and hybrid trials, 12 entomology, 4 Agronomy trials were conducted at this centre. Crop was in good condition for the trials under late, medium, mid early, early transplanted, bio fortification and NIL trials. It was suggested to focus on developing varieties for beaten rice and puffed rice. 22 lines in station trials, 351 new lines were identified and 28 new hybrids developed are being evaluated. About 464 land races, with 30 new collections are

being maintained. Promising lines with high yield are in minikit trials. Promising lines for blast, sheath rot, gall midge, BPH identified. Germplasm accession INRC 3021 for gall midge resistance identified. Molecular breeding for introgression of blast and BPH is being carried out.

Dr. R. P. Kaushik, Chairman, PAMC, Dr. Deepak Sharma professor and Head, Plant breeding IGKV Raipur, Dr. R. Jagadeeshwar, former director of research, PJTSAU, Hyderabad Dr. M. S. Sheshshayee, prof., crop physiology, UAS-B & PAMC member acted as chairman and Co-chairmen for the session, valuable remarks and delebrations were given in regard of organizing the interactive session with all the co-operators in Zone-VII and for their excellent research activities. The major constraints of fund and manpower are expressed, suggested to fill the vacant positions available at different centres. Appreciated efforts made in different disciplines in their research activities as witnessed in their presentations. Dr. AVSR Swamy, PI AICRIP, Varietal Improvement thanked all the presenters. The session ended with formal vote of thanks by Dr. R. M. Kumar, PS and Head, Agronomy from IIRR.

Zone V (Central Zone)

Rapporteurs:

**Dr. B. Sreedevi, Pr. Scientist, IIRR
and Dr. P. Senguttuvel, Sr. Scientist, IIRR**

Raipur: The centre was established 1968 with focus on rain fed ecosystem of Zone V (Chhattisgarh) and the research in improvement of rice varieties and pre-breeding for aromatic, drought with biotic and abiotic stresses. All the AICRPR plant breeding/hybrid rice trials were conducted as per the guidelines. More than 1800 germplasm lines were registered as genetic stock. In Crop Production program, Agronomy trials on NMT-Aerobic, NMT-Biofortified, IVT/AVT-1 LPT, development of suitable package of practices for dry Direct Seeded Rice CMT on yield maximization, enhancing productivity of organic rice cultivation were conducted and results presented. In Plant Physiology program, two trials on drought and low-light stress were reported. In Entomology and plant pathology pest and disease screening under natural & artificial screening program and new novel fungicide/pesticide molecules screening nurseries were conducted and reported.

Jagdapur: The center was established in 1993 in Bastar to cater the research needs of tribal farmers. All the AICRIP breeding/hybrid rice trials were allotted from ICAR-IIRR were conducted as per the AICRPR guidelines. Bastardhan1 was released and BSP indented. All the three ecologies are distinct in the research farm. In Crop Production program, all the allotted, Agronomy, entomology and pathology trials were conducted. Three non varietal technologies viz., assessment of lines based on weed competitiveness, evaluation of sorghum hybrids in rice fallows and use of nano fertilizers in research were presented.

Sakoli: The major thrust area of the center is development of rice varieties for super fine grain varieties with Hopper resistance, gall midge resistance (biotype 4) and bio-fortified colored grain varieties. All the plant breeding trials allotted were conducted. The major research area is development of cultivars for earliness, DSR adopted, Super grain varieties and for pigmented biofortified rice varieties. PDKV Sadhana (SKL-3-1-41-8-33-15) was identified for Vidarbha region of Maharashtra is SVRC release. Breeder seed productions of PDKV Sadhana, PKV Ganesh PDKV Kisan, Sakoli-9, PDKV Sakoli red rice, PKV HMT were taken up. In Crop Protection Program, all the trials (entomology) were conducted as per the programme.

Rewa: All the plant breeding trials were allotted and conducted as per AICRPR guidelines. The popular varieties where BSP targeted are JR 767 and JR 206. In Crop Production Program, 4 Agronomy trials were conducted on AVT2-E, AVT-1-BT, developing a suitable package for wet Direct Sown Rice, long term trial on weed dynamics in different establishment methods, sustainable weed management in aerobic rice system were conducted and reported. In Plant Physiology program, three trials on influence of Silicon on improving abiotic stress tolerance in rice genotypes, screening of rice varieties for tolerance to heat stress. In Plant Protection program, ten Plant Pathology trials were reported.

Proceedings of the Varietal Identification Committee Meeting-2024

Varietal Identification Committee (VIC) Meeting was held on 25th April 2024 during the 59th ARGM at ICAR-NASC Complex, New Delhi under the chairmanship of Dr. TR Sharma, DDG (Crop Science), ICAR. The members of the Committee are listed in the Annexure "A". The following general recommendations were made for recommendation of the proposals.

- In the examination of proposals, for varietal entries, more than 5% yield advantage over the best varietal check (BVC); and for hybrid entries, both 5 and 10% yield advantage over the BVC and hybrid checks respectively were considered for identification in the state. In such cases, when the entry has merit only in a single state, they were suggested for SVRC.
- For stress prone ecologies like aerobic, salinity, early direct seeded trials etc, considering the limitation in the number of locations, entries were considered for identification even in single state across the zones.
- Entries with special attributes like gene introgressions were considered for identification based on yield advantage or on par yield advantage.
- The promotion of the entries should be strictly based on zonal basis. For revisiting the VIC guidelines, chairman directed Dr DK Yadava, ADG (Seeds) and Dr SK Pradhan, ADG (FFC) to constitute special committee for suggesting the process of promotion at various levels of evaluation based on pests and disease data, grain quality data along with significant yield advantage on zonal basis.

A total of 75 proposals including 54 varietal entries and 21 hybrid entries discussed during the meeting are given below.

List of VIC Proposals (Varietal entries) received for 59th ARGM 2024

S. No	Proposal No	IET No.	Designation	Submitted by
Irrigated Early Transplanted				
1.	1.1	IET 29947	NLR 3684	ANGRAU, Nellore
2.	1.2	IET 29939	CR 4060-1318-5-2-2-2-1-5-3-4	NRRI, Cuttack
3.	1.3	IET 29142	JGL 35085	PJTSAU, Jagtial Re-submission
4.	1.4	IET 29975	KPS 6251	PJTSAU, Kampasagar,
Irrigated Mid-Early				
5.	2.1	IET 29188	WGL-1355	PJTSAU, Warangal,
6.	2.2	IET 29808	DRR Dhan 76	IIRR, Hyderabad
7.	2.3	IET 29822	ORJ 1342	OUAT, Jeypore
Irrigated Medium				
8.	3.1	IET 29833	JGL 34560	PJTSAU, Jagtial

S. No	Proposal No	IET No.	Designation	Submitted by
9.	3.2	IET 29257	RNR 28399	PJTSAU (IRR), Rajendranagar
10.	3.3	IET 29859	DRR Dhan 79	IIRR, Hyderabad
11.	3.4	IET 29301	AD 16124	Aduthurai
Irrigated Late				
12.	4.1	IET 28524	RP 6330-179-3-9-1	IIRR, Hyderabad
Aerobic				
13.	5.1	IET 30023	TRC 184-B-B-76-1-1	ICAR-NEH, Lembucherra
14.	5.2	IET 30034	TRC 185-B-B-82-2-11	ICAR-NEH, Lembucherra
15.	5.3	IET 30004	CSR 105	CSSRI, Karnal
16.	5.4	IET 29405	RCPR 70- IR 84899-B-184-16-1-1-1	ICAR RCER, Patna
17.	5.5	IET 30029	BRR 2183	BAU- Dhangain, Bikramganj
18.	5.6	IET 30041	BRR 2184	BAU- Dhangain, Bikramganj
19.	5.7	IET 28636	DRR Dhan 77	IIRR, Hyderabad
Medium Slender Grain				
20.	6.1	IET 30078	MTU Rice 1382	RARS, Maruteru, ANGRAU
21.	6.2	IET 30083	BRR 2152	BAU-Dhangain, Bikramganj
22.	6.3	IET 30107	DRR Dhan 75	IIRR, Hyderabad
Biofortification				
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Saline Alkaline				
23.	8.1	IET 30178	NVSR 6361	NAU, Navsari,
24.	8.2	IET 29354	CSR 104	CSSRI, Karnal
25.	8.3	IET 30164	CSR 103	CSSRI, Karnal
Coastal saline				
26.	9.1	IET 30201	CR 4283-274-6-2-1-3	NRRI, Cuttack
Low Phosphorus Tolerant				
27.	10.1	IET 30252	DRR Dhan 74	IIRR, Hyderabad
28.	10.2	IET 30242	DRR Dhan 73	IIRR, Hyderabad
29.	10.3	IET 30235	RP 6522-MSA-16-24-16-1550	IIRR, Hyderabad
30.	10.4	IET 30240	DRR Dhan 78	IIRR, Hyderabad
Low Nitrogen Tolerant				
31.	11.1	IET 30261	RP 6317-RMS-S35-BC2F4-49-25-12-18	PJTSAU, RARS, Warangal & IIRR, Hyderabad
32.	11.2	IET 29577	RP 5594-71-14-2-1 (PSV 2008)	IIRR, Hyderabad
33.	11.3	IET 29581	RP 6255-BV / RIL / BPT / Varadhan / 1696	IIRR, Hyderabad

S. No	Proposal No	IET No.	Designation	Submitted by
34.	11.4	IET 28084	CR 3549-6-1-1-3-1-1	NRRI, Cuttack
35.	11.5	IET 29578	CR 3756-2-4-2-1-1-1	NRRI, Cuttack
36.	11.6	IET 30273	CR 3516 -1-1-1-1-1-1	NRRI, Cuttack
Boro				
Irrigated Early Hills				
37.	12.1	IET 28883	VL Dhan 90	ICAR-VPKAS, Almora
38.	12.2	IET 28204	SKUA 540	SKUAST-Kashmir
39.	12.3	IET 25829	SKUA-493 (K 08-63)	SKUAST-Kashmir
40.	12.4	IET 27477	SKUA 522 (K 10-29-2-2)	SKUAST-Kashmir
Near Isogenic Lines				
41.	13.1	IET 30830	CSR 389-16-6	CSSRI, Karnal
42.	13.2	IET 30827	CSR 101	CSSRI-Karnal
43.	13.3	IET 30282	CR Dhan 809	NRRI, Cuttack
44.	13.4	IET 30697	KR 19011	PAJANCOA & RI, Karaikal
45.	13.5	IET 30757	DRR Dhan 80	IIRR, Hyderabad
46.	13.6	IET 30409	CR Dhan 810	NRRI, Cuttack
47.	13.7	IET 30410	CR Dhan 811	NRRI, Cuttack
48.	13.8	IET 28018	Pusa 1823-12-82	IARI, New Delhi
49.	13.9	IET 30828	Pusa 3039-16-4-2-5-1-1-1	IARI, New Delhi
Early Direct Seed				
50.	14.1	IET 29036	RCPR 68-IR83929-B-B-291-2-1-1-2	ICAR RCER, Patna
51.	14.2	IET 30328	CR 4059-1312-1-1-4	NRRI, Cuttack
52.	14.3	IET 29052	CR-2889-208-1	NRRI, Cuttack
Rainfed Shallow Lowland				
53.	15.1	IET 30367	BRR-2010	BAU-Dhangain, Bikramganj
Basmati				
54.	16.1	IET 30553	Pusa 3057-9-69-37-160-9-185-1	IARI, New Delhi

List of VIC Proposals (Hybrid entries) received for 59th ARGM, 2024

S. No.	Proposal No.	IET No.	Designation	Submitted by
Irrigated Early Transplanted				
1	1	28123	IIRRH 130	ICAR-IIRR Hyderabad
2	2	29700	JKRH 1004	JK Seeds, Hyderabad
3	3	29696	PAN 2150	PAN Seeds, Hyderabad
4	4	29691	VNR-228	VNR Seeds, Raipur
5	5	29694	UPLRH 181325	UPL, Hyderabad
6	6	29690	UPLRH 180842	UPL, Hyderabad
7	7	29692	ULRH 162087	UPL, Hyderabad
8	8	29689	HRI 214	Bayer Bioscience, Hyderabad
9	9	28965	Pusa RH 60	ICAR-IARI, New Delhi

S. No.	Proposal No.	IET No.	Designation	Submitted by
Irrigated Mid-Early				
10	10	29708	MALI 348	Mali Agri Tech, Ranaghat
11	11	29726	PHI 21103	Pioneer Hi-Bred, Hyderabad
12	12	29734	PHI 21104	Pioneer Hi-Bred, Hyderabad
13	13	29738	RNC 0457	Syngenta Ind. Ltd, Hyderabad
Irrigated Medium				
14	14	29002	PHI 20106	Pioneer Hi-Bred, Hyderabad
15	15	29014	MEPH 159	MAHYCO, Hyderabad
16	16	29743	HRI 211	Bayer Bioscience, Hyderabad
17	17	29000	HRI 205	Bayer Bioscience, Hyderabad
18	18	29741	HRI 209	Bayer Bioscience, Hyderabad
19	19	29742	RRX 338	Rasi Seeds, Hyderabad
Basmati Hybrid				
20	20	28579	TAJ	Shakti Seeds Pvt Ltd, Hyderabad
Saline (AL&ISTVT)				
21	21	30165	DRRH7	ICAR-IIRR, Hyderabad

All the 75 proposals were critically examined for their overall, zonal and state yield performance over the years, reaction to biotic/abiotic stresses, performance in agronomic trials and grain quality parameters. Specific comments and decision of the committee are given below for all the proposals.

Recommendations of the Hybrid entries in VIC, 2024

Irrigated Early Transplanted

Proposal No. 1 IET 28123 (IIRRH 130)

The hybrid IET 28123 was submitted for irrigated early transplanted ecology and the proposal was examined. It is moderately resistant to leaf blast. IET 28123 with medium slender; HRR (%): 58.87; AC (%): 26.31; GC (mm): 41.33 and is recommended for states like **Bihar, Odisha and Uttar Pradesh (Zone III)**.

Proposal No. 2 IET 29700 (JKRH 1004)

The hybrid IET 29700 was submitted for irrigated early transplanted ecology and the proposal was examined. As it showed inconsistent performance in the states like Punjab and Rajasthan (less testing locations). It is recommended for **retesting in Zone II**.

Proposal No. 3 IET 29696 (PAN 2150)

The hybrid IET 29696 was submitted for irrigated early transplanted ecology and the proposal was examined. As it showed inconsistent performance over states and zones; along with high amylose content with hard GC. Therefore, **it was rejected**.

Proposal No. 4 IET 29691 (VNR 228)

The hybrid IET 29691 was submitted for irrigated early transplanted ecology and the proposal was examined. **The data is selectively presented (excluding certain locations in the proposed zones / states and hence it's deviating from the data reported in AICRPR reports). Hence, it was rejected.**

Proposal No. 5 IET 29694 (UPLRH 181325)

The hybrid IET 29694 was submitted for irrigated early transplanted ecology and the proposal was examined. As it showed inconsistent performance over states and zones, and examined for Zone II, whereas, due to less number of testing locations in the states like Haryana and Rajasthan, It is recommended for **retesting in Zone II.**

Proposal No. 6 IET 29690 (UPLRH 180842)

The hybrid IET 29690 was submitted for irrigated early transplanted ecology and the proposal was examined. It is moderately resistant to leaf blast and neck blast. IET 29690 with long bold; HRR (%): 61.4; AC (%): 23.2; GC (mm): 65.7 is recommended for states like **Bihar and Uttar Pradesh (Zone III); and Chhattisgarh, Maharashtra and Madhya Pradesh (Zone V).**

Proposal No. 7 IET 29692 (UPLRH 162087)

The hybrid IET 29692 was submitted for irrigated early transplanted ecology and the proposal was examined. It is moderately resistant to leaf blast, neck blast and brown spot. IET 29692 with long slender; HRR (%): 56.3; AC (%): 23.4; GC (mm): 37 is recommended for states like **Chhattisgarh and Maharashtra (Zone V).**

Proposal No. 8 IET 29689 (HRI 214)

The hybrid IET 29689 was submitted for irrigated early transplanted ecology and the proposal was examined. **The data in the proposal was incomplete without the state wise comparison tables. Hence, it is recommended for resubmission.**

Proposal No. 9 IET 28965 (PUSA RH 60)

The hybrid IET 28965 was submitted for irrigated early transplanted ecology and the proposal was examined. Since, the data is incomplete and recommended for **re-submission.**

Irrigated Mid-Early

Proposal No. 10 IET 29708 (MALI 348)

The hybrid IET 29708 was submitted for irrigated mid-early transplanted ecology and the proposal was examined. As it showed inferior performance to checks in respective states and zones, Therefore, **it was rejected.**

Proposal No. 11 IET 29726 (PHI 21103)

The hybrid IET 29726 was submitted for irrigated mid-early transplanted ecology and the proposal was examined. It is moderately resistance to leaf blast and neck blast. IET

29726 with long slender; HRR (%): 56.5; AC (%): 25.4; GC (mm): 23.3; and is recommended for states like **Odisha and Uttar Pradesh (Zone III); and Andhra Pradesh, Tamil Nadu and Karnataka, Puducherry (Zone VII).**

Proposal No. 12 IET 29734 (PHI 21104)

The hybrid IET 29734 was submitted for irrigated mid-early transplanted ecology and the proposal was examined. It is moderately resistant to leaf blast. IET 29734 with long bold; HRR (%): 55.5; AC (%): 24.7; GC (mm): 22; and is recommended for states like **Jharkhand and Uttar Pradesh (Zone III); and Maharashtra and Madhya Pradesh (Zone V) and Andhra Pradesh and Kerala (Zone VII).**

Proposal No. 13 IET 29738 (RNC 0457)

The hybrid IET 29738 was submitted for irrigated mid-early transplanted ecology and the proposal was examined. It is moderately resistant to leaf blast and neck blast. IET 29738 with long slender, HRR (%): 59.3; AC (%): 22.5; GC (mm): 49; and is recommended for states like **Odisha, Bihar, Jharkhand and Uttar Pradesh (Zone III); and Andhra Pradesh and Kerala (Zone VII).**

Irrigated Medium

Proposal No. 14 IET 29002 (PHI 20106)

The hybrid IET 29002 was submitted for irrigated medium transplanted ecology and the proposal was examined. As it recorded low HRR (43.5%), high amylose (26.8%) with hard GC (23). Therefore, **it was rejected.**

Proposal No. 15 IET 29014 (MEPH 159)

The hybrid IET 29014 was submitted for irrigated medium transplanted ecology and the proposal was examined. It is moderately resistant to leaf blast and bacterial blight. IET 29014 with long slender; HRR (%): 58.1; AC (%): 24.92; GC (mm): 41.5; and is recommended for states like **J&K, Haryana (Zone II), and Assam and Tripura (Zone IV).**

Proposal No. 16 IET 29743 (HRI 211)

The hybrid IET 29743 was submitted for irrigated medium transplanted ecology and the proposal was examined. **The data in the proposal was incomplete without the state wise comparison tables. Hence, it is recommended for resubmission.**

Proposal No. 17 IET 29000 (HRI 205)

The hybrid IET 29000 was re-submitted for irrigated medium transplanted ecology and the proposal was examined. It is moderately resistant of BLB and BPH. IET 29000 with long bold; HRR (%): 65.1; AC (%): 26.44; GC (mm): 44; and is recommended for states like **Uttar Pradesh and West Bengal (Zone III), and Tamil Nadu and Karnataka (Zone VII).**

Proposal No. 18 IET 29741 (HRI 209)

The hybrid IET 29741 was submitted for irrigated medium transplanted ecology and the proposal was examined. **The data in the proposal was incomplete without the state wise comparison tables. Hence, it is recommended for resubmission.**

Proposal No. 19 IET 29742 (RRX 338)

The hybrid IET 29742 was submitted for irrigated medium transplanted ecology and the proposal was examined. Since it has performed better in single state Bihar (Zone III). Therefore, it was **recommended for submission through SVRC in that particular state.**

Basmati Hybrid

Proposal No. 20 IET 28579 (TAJ)

The hybrid IET 28579 was re-submitted for Basmati ecology and the proposal was examined. The committee has decided that the proposal was rejected due to poor quality (last year) and proposed from non-GI area of Basmati. Therefore, **it was rejected**

Saline (AL&ISTVT) Ecology

Proposal No. 21 IET 30165 (DRRH 7)

The hybrid IET 30165 was submitted for AL&ISTVT ecology and the proposal was examined. As the data was furnished for less number of testing locations. Therefore, it is recommended for **retesting in the particular ecology.**

Recommendations of the varietal entries in VIC, 2024

Irrigated Early Transplanted

Proposal No. 1.1 IET 29947

The entry IET 29947 was submitted for irrigated early transplanted ecology and the proposal was examined. IET 29947 with medium slender grains and high HRR of 62% is recommended for **Odisha, Bihar, West Bengal and Uttar Pradesh (Zone III).**

Proposal No. 1.2 IET 29939

The entry IET 29939 was submitted for irrigated early transplanted ecology and the proposal was examined. It is moderately resistant to leaf blast and neck blast. IET 29939 with long slender grains and HRR of 55.45% is recommended for **Odisha, Bihar, West Bengal and Jharkhand (Zone IV)**

Proposal No. 1.3 IET 29142

The entry IET **29142** was submitted for irrigated early transplanted ecology and the proposal was examined. IET **29142** recorded promising yield performance with early duration and moderate resistance to leaf blast and neck blast and has long bold grain

type, HRR-58.4%; intermediate AC-26.2%; soft GC-63.6 mm and is recommended for **Bihar and West Bengal (Zone III)**

Proposal No. 1.4 IET 29975

The entry IET 29975 was submitted for irrigated early transplanted ecology and the proposal was not examined due to low HRR %.

Irrigated Mid Early

Proposal No. 2.1 IET 29918

This proposal was submitted to irrigated mid early duration ecology and the proposal was examined. IET 29918 has desirable grain quality traits like high HRR-63.8% and intermediate AC-22.80% with long slender grain type. IET 29918 is recommended for **Odisha, West Bengal and Bihar (Zone III) and Telangana and Kerala (Zone VII)**.

Proposal No. 2.2 IET 29808

This proposal was submitted to irrigated mid early duration ecology and the proposal was examined. IET 29808 has desirable grain quality traits like high HRR-64.2% and intermediate AC-20.14% with medium slender grain type and has moderate resistance to leaf blast and neck blast and resistance to brown plant hoppers. IET 29808 is recommended for **Odisha and West Bengal (Zone III) and Kerala, Pondicherry & Andhra Pradesh (Zone VII)**.

Proposal No. 2.3 IET 29822

This proposal was submitted to irrigated mid early duration ecology and the proposal was examined. IET 29822 has desirable grain quality traits like high HRR-66.5% and intermediate AC-26.48% with medium slender grain type and has moderate resistance to leaf blast. IET 29822 is recommended for **Odisha, Bihar and West Bengal (Zone III)**.

Irrigated Medium

Proposal No. 3.1 IET 29833

IET 29833 is proposed for irrigated medium duration ecology. It has moderate resistance to leaf blast and neck blast with desirable grain quality traits of high HRR-57.35%; intermediate AC-25.57%; GC-42.5mm and long bold (LB) grains. Hence, the entry is recommended for **Telangana and Karnataka**.

Proposal No. 3.2 IET 29257

IET 29257 is proposed for irrigated medium duration ecology. As it showed inferior performance to checks in the proposed states **it was rejected**.

Proposal No. 3.3 IET 29859

This proposal was submitted to irrigated medium duration ecology and the proposal was examined. IET 29859 is a MAS derived variety in the background of Krishna Hamsa with introgression of *Pi54* for blast resistance and *Bph20+Bph21* for BPH resistance. It has

desirable grain quality traits like high HRR-55.4% and intermediate AC-24.58% with long slender grain type and has resistance to leaf blast, neck blast, moderate resistance to BPH and gallmidge. IET 29859 is recommended for **Odisha and Bihar (Zone III), Chhattisgarh, Madhya Pradesh & Maharashtra (Zone V) and Karnataka & Tamil Nadu (Zone VII)**.

Proposal No. 3.4 IET 29301

This proposal was submitted to irrigated medium duration ecology and the proposal was examined. As IET 29301 has low HRR and showed inferior performance to checks in the proposed states, **it was rejected**.

Irrigated Late

Proposal No. 4.1 IET 28524

IET 28524 was submitted under irrigated late duration ecology. As, IET 28524 showed inferior performance to checks in the proposed states, **it was rejected**.

Aerobic

Proposal No. 5.1 IET 30023

The proposal was submitted under aerobic ecology of rice. AICRPR-Agronomy data was not submitted hence deferred.

Proposal No. 5.2 IET 30034

The proposal was submitted under aerobic ecology of rice. As it has very low HRR, IET 30034 **was rejected**.

Proposal No. 5.3 IET 30004

The proposal was examined under aerobic ecology of rice. It has moderate resistance to leaf blast and acceptable quality traits of HRR-55.20%; intermediate AC-25.58% with long slender grain type. Hence, the entry is recommended for **Haryana (Zone II) and Gujarat (Zone VI)**.

Proposal No. 5.4 IET 29405

The proposal was examined under aerobic ecology of rice. It has moderate resistance to leaf blast, neck blast and stem borer. It has desirable quality traits of HRR-61.9%; intermediate AC-23.2% with long bold grain type. Hence, the entry is recommended for **Haryana (Zone II), Zone III – Bihar and Jharkhand and Gujarat (Zone VI)**.

Proposal No. 5.5 IET 30029

The proposal was examined under aerobic ecology of rice. It has moderate resistance to leaf blast, tolerance to plant hoppers. It has desirable quality traits of HRR-63%; intermediate AC-26.7% with medium slender grain type. Hence, the entry is recommended for **Zone III – Bihar and Jharkhand, Chhattisgarh (Zone V), Karnataka (Zone VII)**.

Proposal No. 5.6 IET 30041

The proposal was examined under aerobic ecology of rice. It has moderate resistance to leaf blast. It has desirable quality traits of HRR-61.3%; intermediate AC-20.1% with long

slender grain type. Hence, the entry is recommended for **Bihar and Uttar Pradesh (Zone III) and Chhattisgarh (Zone V).**

Proposal No. 5.7 IET 28636

The proposal was examined under aerobic ecology of rice. It has resistance to leaf blast, neck blast, moderate resistance to brown spot. It has desirable quality traits of HRR-55%; intermediate AC-24.4% with long slender grain type. Hence, the entry is recommended for **Bihar (Zone III), Gujarat (Zone VI) and Tamil Nadu (Zone VII).**

Medium Slender Grain

Proposal No. 6.1 IET 30078

IET 30078 showed inferior performance to checks in the proposed states, **it was rejected.**

Proposal No. 6.2 IET 30083

IET 30083 is proposed for medium slender grain trial. It has moderate resistance to leaf blast and plant hoppers. It has desirable quality traits of HRR of 65% and intermediate AC of 25.5% and medium slender grains. It has IET 30083 is recommended for **Jharkhand, UP and Bihar (Zone III), Chhattisgarh, Maharashtra and Gujarat (Zones V & VI), Telangana and Andhra Pradesh (Zone VII).**

Proposal No. 6.3 IET 30107

IET 30107 is proposed for medium slender grain trial. It has resistance to neck blast and moderate resistance to leaf blast. It has acceptable quality traits of HRR of 61.4% and intermediate AC of 24.2% and medium slender grains. It has IET 30107 is recommended for **Bihar, Jharkhand, Odisha and Uttar Pradesh (Zone III), Maharashtra and Gujarat (Zone VI), Andhra Pradesh, Telangana, and Tamil Nadu (Zone VII).**

Saline Alkaline

Proposal No. 8.1 IET 30178

This proposal is submitted under saline/alkaline ecology. It has showed inferior performance in Haryana (Zone II). It was not examined and was suggested to submit for SVRC based on its performance in Uttar Pradesh.

Proposal No. 8.2 IET 29354

This proposal is submitted under saline/alkaline ecology. The proposal is examined. It has HRR of 55%, AC of 25% with long slender grains. IET 29354 is recommended for **Haryana and Uttar Pradesh (Zone II).**

Proposal No. 8.3 IET 30164

This proposal submitted under saline/alkaline ecology was rejected due to low HRR%

Coastal Saline.

Proposal No. 9.1 IET 30252

IET 30201 is proposed for coastal saline trial. It has moderate resistance to neck blast. It has HRR of 55.6% and AC of 27% and long bold grains. IET 30201 is recommended for **West Bengal (Zone III) and Maharashtra and Gujarat (Zone V)**.

Low Phosphorus Tolerance

Proposal No. 10.1 IET 30252

The proposal was submitted for low phosphorous tolerance and it was examined. It has high HRR (67.9%), intermediate AC (23.81%) and moderately resistant to leaf blast, neck blast and plant hoppers. IET 30252 was recommended for **Jharkhand (Zone III), Karnataka and Telangana (Zone VII)**.

Proposal No. 10.2 IET 30242

The proposal was submitted for low phosphorous tolerance and it was examined. It has moderate resistance to leaf blast, long slender grains and HRR of 62.05%. IET 30242 was recommended for **Odisha (Zone III) and Karnataka and Telangana (Zone VII)**.

Proposal No. 10.3 IET 30235

The proposal was submitted for low phosphorous tolerance. It has moderate resistance to leaf blast, medium slender grains and HRR of 62. IET 30235 **was rejected** and another entry, IET 30240 from the cross involving the same parents was examined

Proposal No. 10.4 IET 30240

The proposal was submitted for low phosphorous tolerance and it was examined. It has moderate resistance to leaf blast and plant hoppers, long slender grains and high HRR of 67.55%. IET 30240 was recommended for **Karnataka and Telangana (Zone VII)**.

Low Nitrogen Tolerance

Proposal Nos. 11.1 to 11.6

A total of six proposals were submitted for low nitrogen tolerance. The committee deliberated on all the six proposals and noted that number of locations is low for different levels of Nitrogen. To generate more data points, all the six proposals (**IETs 30261, 29577, 29581, 28084, 29578 and 30273**) were recommended for an additional year of retesting.

Irrigated Early Hills

Proposal No. 12.1 IET 28883

The proposal was submitted for irrigated early hill ecology and it was examined. It had acceptable grain quality of HRR 64.1%; AC 23.53% and long bold (LB) grain type. IET 28883 is recommended for **Uttarakhand, Himachal Pradesh and Jammu & Kashmir (Zone I)**.

Proposal No. 12.2 to 12.4

The proposals of IETs 28204, 25829 and 27477 were submitted for a single state, hence not examined and suggested for submission to SVRC.

Near Isogenic Lines

Proposal Nos. 13.1 & 13.2 IETs 30830 and 30827

The two proposals IETs 30830 and 30827 are MAS derived NIL entries from the cross of Pusa 44*3/FL 478// Pusa 44*3/IRBB 60 introgressed with bacterial leaf blight resistance (*Xa13 and Xa21*) and salt (*Salto*). Of the two NIL entries, IET 30827, with better performance than 30830 is significantly superior to RP under salt stress and enhanced resistance to BB over RP. Hence, IET 30830 was not examined. Only one NIL entry 30827 was examined and recommended for the gazette notified and adaptable states of recurrent parent, **Kerala, Karnataka and Tamil Nadu**.

Proposal No. 13.3 IET 30282

IET 30282 is a MAS derived NIL entry of Naveen*3 / CR 3006-8-2 introgressed with QTLs for BPH resistance *qBph4.3 and qBPH4.4*. It has shown enhanced resistance to BPH over the recurrent parent, Naveen. IET 30282 is recommended for the **Gazette notified states and adapted areas of RP, Odisha and Tripura, West Bengal, Bihar, Jharkhand and Assam**.

Proposal No. 13.4 IET 30697

IET 30697 is a MAS derived NIL of ADT 39*4 / Swarna Sub1 introgressed with QTL, *Sub1* for submergence tolerance. It has significant yield advantage over the recurrent parent under submergence stress situations, hence, IET 30697 is recommended for the **Gazette notified states and adapted areas of RP, Tamil Nadu, Andhra Pradesh, Telangana and Puducherry**.

Proposal No. 13.5 IET 30757

IET **30757** is a derived NIL entry of Gangavathi Sona introgressed with Bacterial leaf blight resistance (*xa5+xa13+Xa21*). It has shown enhanced resistance to BLB over the RP. It is recommended for the **Gazette notified states and adapted areas of RP, Karnataka and Telangana**.

Proposal No. 13.6 IET 30409

IET 30409 is a derived NIL of Gayatri*3/ IR49830-7 for submergence stress. It has significant yield advantage over the recurrent parent under submergence stress situations, hence, IET 30409 is recommended for the **Gazette notified states and adapted areas of RP, Odisha, West Bengal and Assam**.

Proposal No. 13.7 IET 30410

IET 30410 is a derived NIL entry of Sarala (Sarala *3/ IR49830-7) for submergence stress. It has significant yield advantage over the recurrent parent under submergence

stress situations, hence, IET 30410 is recommended for the **Gazette notified states and adapted areas of RP, Odisha and West Bengal.**

Proposal No. 13.8 IET 28018

IET 28018 is a MAS derived NIL entry from the cross of Pusa 44*3/IR81896-B-B-142 introgressed with *qDTY2.1+qDTY3.1* for yield under reproductive stage drought stress. It has shown significant yield advantage under drought stress conditions over the RP, hence IET 28018 is recommended for the gazette notified and adaptable states of recurrent parent, **Kerala, Karnataka and Tamil Nadu.**

Proposal No. 13.9 IET 30828

IET 30828 is a derived NIL of Pusa 44*2/ Pusa 1790 for Bacterial blight and blast (*xa13+Pi2*). Based on its enhanced resistance to BLB and blast over the RP, IET 30828 is recommended for the gazette notified and adaptable states of recurrent parent, **Kerala, Karnataka and Tamil Nadu.**

Early Direct Seed

Proposal No. 14.1 IET 29036

The proposal was submitted for early direct seed ecology and it was examined. It has moderate resistance to leaf blast. It has acceptable grain quality of HRR 59.7%; AC 21.7% and short slender grain type. Considering its yield advantage over the checks under severe drought stress and moderate drought stress conditions IET 29036 is recommended for Jharkhand, Bihar and West Bengal (Zone III).

Proposal No. 14.2 IET 30328

The proposal was submitted for early direct seed ecology and it was examined. It has inferior performance to checks under severe drought stress (-34.8%). Further, there is a need to relook in to the data pertaining to yield advantage which has been given in the proposal as yield advantage of 3649% under severe stress in zone V.

Proposal No. 14.3 IET 29052

The proposal was submitted for early direct seed ecology and it was examined. It has acceptable grain quality of HRR 62.5%; AC 25.5% and medium slender grain type. It was recommended for **Bihar and Odisha (Zone III).**

Rainfed Shallow Lowland

Proposal No. 15.1 IET 30367

The proposal was submitted for rainfed shallow lowland ecology and it was examined. It has moderate resistance to leaf blast and acceptable grain quality of HRR 64.2%; AC 22.6% and medium slender grain type. It was recommended for **Bihar and Uttar Pradesh (Zone III).**

Basmati

Proposal No. 16.1 IET 30553

The proposal was submitted for basmati ecology and it was examined. IET 30553 is a derived NIL of Pusa Basmati 1509*4/Pusa 1342 for Bakanae (*qBK1.1+qBK1.2*). It has similarity with **RP of 97.05%**. It was recommended for gazette notified states of Pusa Basmati 1509 (**Delhi, Punjab and Western Uttar Pradesh**).

List of members participated in the VIC Committee Meeting on hybrid mode during 59th ARGM, 2024 at ICAR-IARI, New Delhi

1	Dr. T. R. Sharma, DDG (CS), ICAR, New Delhi	Chairman
2	Dr S.K. Pradhan, Assistant Director General (FFC), ICAR, New Delhi	Member
3	Dr. D. K. Yadava, Assistant Director General (Seeds), ICAR, New Delhi	Member
4	Mr. Pankaj Tyagi, General Manager (Production), NSC Bheej Bhawan, Pusa Campus, New Delhi – 110 012. Phone: 9356425494	Member
5	Dr. Viswanathan Chinnusamy, Joint Director (Research), ICAR- Indian Agricultural Research Institute, Pusa Campus, New Delhi – 110 012. viswa.chinnusamy@gmail.com, jd_research@iari.res.in	Member
6	Dr. Ritesh Sharma, Principal Scientist, BEDF (APEDA), SVPUA&T Campus, Meerut	Member
7	Dr Jagadeesha Gouda, Director (Research), Yaganti Agro Tech Private Ltd, Hyderabad	Member
8	Dr AK Nayak, Director, ICAR-NRRI, Cuttack, Odisha	Member
9	Dr Sanjay Kumar, Director, ICAR-Indian Institute of Seed Science, MAU (Attended Online)	Member
10	Dr. B.C. Viraktamath, Former Director, ICAR-IIRR, Hyderabad. (Attended Online)	Member
11	Dr R. M. Sundaram, Director (A), ICAR- Indian Institute of Rice Research, Hyderabad-500030	Member Secretary
12	Dr. R. Mahender Kumar, PS & PI, Agronomy, ICAR-IIRR, Hyderabad	Member
13	Dr. Jhansi Lakshmi, PS & PI, Entomology, ICAR-IIRR, Hyderabad	Member
14	Dr. M. Srinivas Prasad, PS & PI, Pathology, ICAR-IIRR, Hyderabad	Member
15	Dr. A.S.Hariprasad PS & PI Hybrid Rice, ICAR-IIRR, Hyderabad	Member
16	Dr. AVSR Swamy, PS, Plant Breeding, ICAR-IIRR, Hyderabad	Member
17	Dr SV Sai Prasad, PS, Plant Breeding, ICAR-IIRR, Hyderabad	Special invitee
18	Dr. Jyothi Badri, Senior Scientist, ICAR-IIRR, Hyderabad	Rapporteur
19	Dr. R. Abdul Fiyaz, Senior Scientist, ICAR-IIRR, Hyderabad	Rapporteur

Proceedings of 11th Rice Research group meeting for Hill region

(23rd February, 2024)

Proceedings of the 11th Rice Research Group Meeting for Hill Region

The 11th Rice Research Group Meeting for Hill Region was conducted by Dr R M Sundaram, Director ICAR IIRR online on 23rd February 2024 under the chairmanship of Dr. T.R. Sharma, DDG (Crop Science), ICAR, Co-chaired by Dr. S.K. Pradhan, ADG (FFC), ICAR. The meeting was attended by Dr. A.K. Naik, Director ICAR-NRRI, and Dr. R.P. Kaushik, Chairman PAMC. Dr. AVSR Swamy and Dr. R. Mahender Kumar were the conveners, and Drs. G.S. Laha, J. Aravind Kumar, and A.P. Padma Kumari were Co-conveners for the session. The rapporteurs of the session were Dr. M.S. Anantha, Dr. Jesudasu, and Dr. Satish N. Chavan. Scientists from ICAR-IIRR, ICAR-NRRI, and from different AICRIP cooperating centers participated in the workshop.

The meeting was organized and coordinated by Dr. R.M. Sundaram, Director, ICAR-IIRR Hyderabad, who welcomed the participants and gave brief introductory remarks on Hill workshop. Dr. Sundaram praised all the co-operators for timely submitting their reports and data and emphasized that the Hill ecosystem is one of the best-performing rice ecosystems, and co-operators conduct their trials with great enthusiasm.

Dr. A.K. Nayak, in his remarks, emphasized that the hill ecosystem is the most important ecosystem in the context of climate change. However, this rice ecosystem is facing numerous challenges such as drought, Fe and Al toxicity, blast, BLB, cold stress, and low yield. Hence, more attention should be given to these aspects.

Dr. AVSR Swamy, PI, AICRIPR, presented the Progress report of AICRPR trials and their Highlights of the Hill region for the current year along with the action taken report.

Dr. R.P. Kaushik shared his rich experience on Hill rice ecology for the last 30 years and felt that there is a need for making crosses between rice genotypes of Jammu & Kashmir, Uttarakhand, Himachal Pradesh with genotypes of North Eastern states. He opined that the national germplasm collection focusing on wild rice and local germplasm can play a significant role in enhancing the yield of rice in addition to utilizing them for addressing the problems of biotic and abiotic stress.

Dr. S.K. Pradhan, ADG (FFC), ICAR, appreciated the results presented along with the yield data of 7-8 tonnes/ha of sticky rice. He suggested focusing on developing location-specific varieties due to the adverse environmental conditions and biotic stresses. Specialty rices including sticky, aromatic, red, nutrient-rich rice should also be focused on by following a location-specific approach.

Dr. T.R. Sharma, DDG (Crop Science), ICAR, emphasized the need for pre-breeding for bringing new genes from wild relatives for Hill ecology and suggested broadening the genetic base using diverse lines from different sources for better yield and stability. He suggested that the yield should be considered as the main trait in any breeding program. Other traits such as cold tolerance, resistance to blast, Fe and Zn biofortification, pigments, drought tolerance, and early maturity should also be incorporated into the breeding program. He also suggested evaluating the effectiveness of 'R' genes and

employing them in the breeding program. Host differentials or monogenic lines for blast resistance should be made use of for improving disease resistance of Hill ecology. He suggested identifying Japonica variety suitable for export quality. He also reiterated that the well-focused program is progressing in a positive direction under the great leadership of Dr. Sundaram, the Director of ICAR-IIRR.

Director IIRR mentioned that genotyping of entries in AVT 2 and AVT1 trials is in progress using 1 K RiCA, and results will be shared with co-operators. He assured to help Hill ecology centers for taking up off-season nursery at ICAR IIRR and ICAR NRRI and also for genotyping some of the important genotypes.

The inaugural session ended with a vote of thanks by Dr. M.B.B. Prasad Babu, Head, Soil Science, ICAR-IIRR.

The inaugural session was followed by the technical session, where the progress report of each cooperating center was presented by one of the representatives from respective center. After deliberations, the meeting ended with the following action points:

- Cooperators can use facilities at ICAR-IIRR, ICAR-NRRI, ICAR-IARI for estimation of iron, zinc, protein, and other biofortification-related traits.
- Emphasis should be given to physically monitor trials for strict monitoring and for quality conduct of trials to obtain good quality data.
- More emphasis should be given to genome-assisted breeding to speed up the work related to developing high yield and other traits related to breeding.
- Identifying genes conferring to specific race at particular region should be identified and introgressed to popular varieties of those regions.
- Hill Research centres should have specific programmes designed and monitored by IIRR/NRRI and frequently monitored with special breeding pipe lines for Hill ecology.
- Short training programs on molecular breeding can be conducted at IIRR/NRRI for the benefit of scientists at different cooperating centers.
- The trait-specific rice lines/elite lines/resistant genotypes/lines should be registered with the NBPGR (specially red rice genotypes of Himachal Pradesh)
- Dr. Sundaram offered to use the facilities at IIRR to advance the seed material during the winter season.
- Dr. Sundaram expressed his concerns over the frequent transfer of scientists from cooperating centers and emphasized that the transfer of staff from the cooperating centers should not affect the conduct of the trials at least at the funded centers.
- Dr. Sundaram offered support for 1K RiCA genotyping for the promising material that can be sent to IIRR.
- Emphasis should be given to developing location-specific rice varieties.
- More crossings should be attempted at cooperating centers and the number of entries nominated for trials should also be increased.

- It was suggested to work on a multidisciplinary team mode comprising ICAR-IIRR, ICAR-NRRI, ICAR-IARI, and all cooperating centers of Hill ecology to address various problems of this rice ecology.
- Emphasis should be given to identifying a Japonica variety suitable for export quality.
- More efforts are needed to develop high-yielding rice lines of specialty rices because of their high economic value and export potential.

The program ended with a vote of thanks by Dr. S.V. Sai Prasad, PS, Plant Breeding, ICAR-IIRR, Hyderabad.

RESULTS AND CONCLUSIONS

Agronomy

- ❖ Promising dry DSR varieties: IRRI-1, IRRI-1, LC 2, Varalu, IRRI-1, Sahbhagidhan, DRR Dhan 44 and LC 1
- ❖ Promising wet DSR varieties: Sahbhagidhan, IRRI-1, Sahbhagidhan, DRR Dhan 42, Dhiren and Uma.
- ❖ Long term weed dynamics studies revealed that *Echinochloa colona* was dominant rather than usual *Echinochloa crusgalli*; *Leptochloa chinensis* was reported as difficult to control. *Cyperus iria* and *Cyperus rotundus* have increased than usual *Cyperus difformis*.
- ❖ Mechanical transplanting recorded significantly high grain yields. Chemical weed control was found superior over mechanical weed control.

Soil Science

- ✓ Significant build-up of soil organic carbon and phosphorus was observed with the long term application (~ 34 years) of organics alone (FYM @ 10 t/ha) as well as in the integrated nutrient management treatment (100% NPK + Zn + S + FYM) over RDF.
- ✓ Application of dolomite (500 Kg/ha), along with either rice husk ash (250 Kg/ha), potassium silicate or silixol in addition to RDF significantly increased the pH of acid soils indicating their ameliorative potential. Application dolomite and potassium silicate in addition to RDF increased yields by 20 - 48% over control in acid soils.

Plant Physiology

- Water stress resulted in decreased grain yield by 21.88% over control. While the application of 0.08% ortho silicic acid (Silicon) under water stress has ameliorated the adverse effects of drought on plants and resulted in reduced grain yield only by 7.51% over the control. Silicon application has resulted in 2.99% increase in grain yield over the control.
- Based on drought tolerance indices IET 29834, IET 29859, IL-19083, IL-19079 and IL-19194 could be identified as drought tolerant and are suitable for cultivation under rainfed conditions. Multiple correlation analysis between yield obtained under rainfed condition and the computed yield indices revealed a strong positive association between for DTI, GMP, MP, YI, DI, HM, K2STI. In contrary, strong negative relation was observed for DSI and SDI. These indices are useful for the identification of drought tolerant genotypes.
- In high temperature studies significant variation was observed amongst the genotypes for most of the heat indices. Based on the overall rank IL19026, IL 19485, IL 19246, IL 19241 and IL 19451 were identified as relatively heat tolerant genotypes.

- In multiple abiotic stress tolerance trial, four entries *viz.* Binnaful, NICRA-16, IC-516149, CR-3439-4-E-17-2-1-B-1-S-1 were found tolerant to all the three abiotic stresses (AG, salinity and osmotic), four other entries (CR-4215-2-5-2-M-4-SUB-2-5-1, NICRA-17, Morishal, AUS-301) were found tolerant to salinity and AG stresses and one entry (Ravana) was tolerant to salinity and osmotic stresses.
- In submergence studies, most of the tolerant genotypes showed lower internode elongation and possessed higher post-submergence leaf starch content. However, one genotype, IC-516366, noted both higher elongation ability (58%) and higher survival rate (78%). This genotype may be used as a potential donor for improving submergence tolerance trait in high yielding rice cultivars.
- In low light stress, 25 to 47% reduction in grain yield (g/m²) was observed when compared with control conditions. Nine varieties noted lesser reduction in grain yield over control than low light stress tolerant check (Swarna Prabha). Further, least reduction in grain yield was observed at Maruteru and highest reduction in grain yield was observed at Pantnagar.

Plant Pathology

- The new combi-product, azoxystrobin 5.1% + tebuconazole 9.1% + prochloraz 18.2% EC (3.5 ml/l) showed broad spectrum activity against leaf blast, neck blast, sheath blight, brown spot and sheath rot.
- Six genotypes were identified with moderate to high level of resistance to 4 or more diseases *viz.*, NLRBL-5 (MR to NB,SHB,BS&SHR), NLRBL-7 (MR to SHB,BS,BB&SHR), NLRBL-8 (MR to NB, SHB, BB &SHR), NLRBL-5 (MR to NB,SHB,BS&SHR), NLRBL-7 (MR to SHB,BS,BB &SHR) and NLRBL-8 (MR to NB,SHB, BB &SHR).

ACTION POINTS

Soil Science

- ✓ The long-term changes in soil fertility especially organic carbon and phosphorus, over the years are to be critically analyzed.
- ✓ Nano urea of 16% N instead of 4% N to be used in the trial on nano urea.
- ✓ More insight is required on the superior performance of Integrated Crop management (ICM) over Natural farming.

Physiology

- ✓ Use of germplasm line and landraces in evaluation trial for different abiotic stresses to widen the genetic base. It will also help to identify good donor lines for different abiotic stresses.
- ✓ Genotypes/accessions coming out promising from 1st year of evaluation may be evaluated one more season for trait verification and subsequent detailed studies.

- ✓ Physiological factors responsible for drought/heat tolerance may be analysed and suggested.
- ✓ The cooperator from Kaul station informed the house that imposition of stress in heat tolerance trial is problematic due to variability of duration in the tested entries. The house suggested that the duration of the genotype may be informed while dispatching the seeds and accordingly sowing/transplanting may be staggered to synchronize the time of flowering and stress imposition.
- ✓ In heat stress trial while imposing the heat treatment stress, level of stress and duration of the treatment and stage at which stress will be imposed should be standardized uniformly across locations.
- ✓ In drought trials, soil moisture content and RWC should be recorded. The soil type and the critical soil matric potential at which targeted drought level needs to be worked out for different testing locations for effective stress imposition.

Particulars of Zones, States and test Locations

Region / State	Locations	
	Funded	Voluntary
ZONE I – HILLY AREAS		
North Western Hills		
Jammu&Kashmir	Khudwani (1)	Rajouri, Wadura, Pombay, Larnoo, Bandipore, Badarvah (6)
Himachal Pradesh	Malan (1)	Palampur, Dhaulakhan, Sundernagar, Bajaura, Bherin (5)
Uttarakhand		ICAR-Almora, Bageshwar, (2)
North Eastern Hills		
Manipur	Wangbal (1)	Imphal-CAU (1)
Nagaland	Kohima (1)	ICAR- Mezdiphema, (1)
Sikkim		ICAR-Gangtok (1)
Meghalaya	Upper Shillong (1)	ICAR-Umiam, CAU-Umiam (2)
Southern Hills		
Karnataka	Ponnampet (1)	Sirsi (1)
Tamil Nadu		Gudaluru (1)
ZONE II – NORTHERN		
New Delhi		IARI- New Delhi (1)
Uttarakhand	Pantnagar (1)	
Punjab	Ludhiana (1)	Gurdaspur, Kapurthala, Rauni (3)
Haryana	Kaul (1)	Karnal (CSSRI), Jind, Rohtak, Anjanitel, Kurukshetra, Panipat (6)
Uttar Pradesh	Nagina, Kanpur (2)	
Jammu & Kashmir	Chatha (R.S. Pura) (1)	
Rajasthan	Kota (1)	
ZONE III – EASTERN		
Orissa	Jeypore, Chiplima (2)	Bhubaneswar, NRRI (Cuttack), Ranital (3)
Bihar	Bikramganj (Dhangain), Pusa (2)	Patna- ICAR, Sabour(2)
Jharkhand	Ranchi (1)	Hazaribagh, (1)
West Bengal	Bankura, Chinsurah (2)	ICAR-Canning, Gosaba, Pundibari, Chakdha, Hathwara , Malda (6)
Uttar Pradesh	Masodha ,Ghaghraghat, Varanasi (3)	ICAR-Lucknow, BEDF-Modipuram, Gautam Budha Nagar, Gorakhpur, SVPUAT, Meerut(5)
ZONE IV – NORTH EASTERN		
Assam	Titabar (1)	ICAR-Gerua, Karimganj, Shillongani (3)
Manipur	Wangbal (1)	ICAR-Lamphalpat, (1)
Tripura	Arundhutinagar (1)	ICAR-Lembucherra (1)
Nagaland		Nagaland Univ-Mezdiphema
ZONE V – CENTRAL		
Madhya Pradesh	Rewa (1)	Waraseoni, Jabalpur (2)
Chhattisgarh	Raipur, Jagadapur (2)	Bilaspur, Ambikapur (2)
Maharashtra	Sakoli (1)	Sindewahi (1)
ZONE VI - WESTERN		
Maharashtra	Karjat, Tuljapur (2)	Panvel, Radhanagari, Shirgaon, Phondaghat, Vadagaon, Parbhani, (6),
Gujarat	Nawagam, Navsari (2)	Derol, Vyra, Danti, Dabhoi, Baruch (5)
Goa		ICAR-Goa (1)
ZONE VII - SOUTHERN		
Andaman&Nicobar		ICAR-Port Blair (1)
Andhra Pradesh	Maruteru (1)	Ragolu, Bapatla, Machilipatnam, Nellore, (4)
Telangana	Rajendranagar, Warangal (2)	ICAR-IIRR, Jagtial, Kunaram, Rudrur, Kampasagar (5)
Tamil Nadu	Aduthurai, Coimbatore (2)	Trichy, Annamalainagar, Tirur, (3)
Kerala	Moncompu, Pattambi (2)	Vyttila (1)
Karnataka	Mandya,Mugad,Ponnampet,Brahmavar,Gangavati(5)	Sirsi, Malagi, Kumta, Kathalgere (4)
Puducherry	Kurumbapet (1)	Karaikal (1)
Total locations	45	88

Underline:ICAR Institutions

List of Coordinated Trials, Kharif, 2024

Ecosystem	AVT 2	AVT 1	IVT	IHRT
Upland- DS	AVT 2- E DS	AVT 1-E DS	IVT-E-DS	
Rainfed shallow	AVT 2-RSL	AVT 1-RSL	IVT-RSL	
Semi-deep water	AVT 2-SDW	AVT 1-SDW	IVT-SDW	
Deep water		AVT 1-DW	IVT-DW	
Early - TP	AVT2-E TP	AVT1-E TP	IVT-E TP	IHRT-E
Irrigated Mid Early	AVT 2-IME	AVT 1-IME	IVT-IME	IHRT-ME
Medium	AVT2-IM	AVT1-IM	IVT-IM	IHRT-IM
Late	AVT2-Late	AVT1-Late	IVT-Late	
Basmati		AVT1-BT	IVT-BT	
Aerobic	AVT2-Aerobic	AVT1-Aerobic	IVT-Aerobic	
Medium Slender	AVT 2-MS	AVT 1-MS	IVT-MS	IHRT-MS
Bio-fortification		AVT 1-Biofort	IVT-Biofort.	
Saline alkaline	AVT 2-AL & ISTVT	AVT1-AL & ISTVT	IVT-AL & ISTVT	
	AVT 2-CSTVT	AVT 1-CSTVT	IVT-CSTVT	
Low Phosphorous	AVT 2- LPT	AVT 1- LPT	IVT - LPT	
Low Nitrogen	AVT 2- LNT	AVT 1- LNT	IVT - LNT	
Coloured Rice			IVT-Coloured Rice	
Hills			IVT-E(H)	
		AVT1-M (H)	IVT-M(H)	
			IVT-U(H)	
			IVT-J	
Boro		AVT 1-Boro	IVT-Boro	
Early Rabi			IVT-Early Rabi	
Near Isogenic lines (Sub)		AVT 1-NIL		
Near Isogenic Lines (Drt).		AVT 1-NIL		
Near Isogenic Lines (Blast, BLB, BPH)	AVT 2-NIL	AVT 1-NIL		
Near Isogenic Lines (CS)		AVT 1-NIL		
Near Isogenic Lines (Herbicide)				

Seed Requirement for New Nominations, Kharif,2024

Trials		Quantity
Early, Mid-early, Medium, Late, Biofortification, MS Grain,	:	12 Kg
Aerobic, Biofortification, Aromatic Short Grain, Shallow Water, Saline/Alkaline, Basmati, Near Isogenic Lines, Semi-deep water	:	10 kg
Boro, Phosphorus, Nitrogen		6kg

Note:

- 1. Please specify clearly on the label, whether the seed is a new nomination OR a repeat entry.**
- 2. For repeat entry please give the IET No. along with trial name and pedigree.**
- 3. When supplying the seed of check varieties, please label the name of the checks clearly in CAPITAL LETTERS**

Nominations for AICRIP Trials, Kharif, 2024*

Please provide the **mandatory details** of the nominations such as cross combination, duration, performance against check varieties, additional information viz., pest/disease reaction, quality etc., for all the new nominations in the following proforma;

Trial	Designation/ Pedigree	Cross Combination [#]	Days to 50% flow.		Grain type	Local trial yield (kg/ha)**		Quality Characters	Pest/disease reaction [@]		Remarks (any other special character)
			I year	II year		I year	II year		I year	II year	
	(Name of National Check)										
	(Name of Regional Check)										
	(Name of Local Check)										
	CD (0.05)										
	CV%										

* :Without the details especially cross combination and source of material the entries will not be included in IVT trials;

** : Yield as compared to check varieties. It is mandatory to give the yield of check varieties along with the nominations from local (station) trials.

: Source of material (IRRI-INGER, IRRI Collaboration; any other within country programme;

@ : Artificial / natural screening please specify (use more sheets if required to fill the details)

Name of the Centre:

Signature of the Breeder:

Name & Designation:

Complete Address:

Date:

(Signature of Breeder)

Appendix 4

Submission of Variety Identification proposal to VIC meeting to be held in Annual Rice Research Group Meetings – 2024

1.	For entries which have been tested for 3 years	:	Last date of receipt: 31st December, 2024
2.	For entries which are in 3 rd year (final) of testing.	:	Last date of receipt: 10th March, 2025
3.	No. of copies for submission	:	30
4.	The proposal should be duly signed and forwarded through proper channel		
5.	Weighted average of yield data to be computed against the checks and qualifying varieties for Table 1 and the guidelines and the format for preparation of the proposal should be adhered to.		
6.	The proforma for submission of VIC proposal is available in IIRR Web site in the draft proceedings. (www.drricar.org)		

Appendix 5

Submission of CVRC variety proposal for Central Sub Committee on Crop Standards, Notification & Release of Varieties (CSC on CSN&RV) for Meeting during 2023

1.	For those which are identified by VIC	:	Latest by 15 th July, 2024
2.	Number of copies for submission	:	40 Copies
	35 copies of the proposal should be sent to:		Deputy Commissioner (QC)-cum Member Secretary of CSC on CSN&RV Ministry of Agriculture & Cooperation F212, Shastry Bhavan NEW DELHI-110002
	5 copies of the proposal should be sent to:		The Director ICAR-Indian Institute of Rice Research Rajendranagar HYDERABAD-500030
3.	Weighted average of yield data to be computed against the checks and qualifying checks for Table 1 and the guidelines and the format for preparation of the proposal should be adhered to.		
4.	Seed material should be deposited with NBPGR and acknowledgement to be furnished duly with the proposal, by giving the IC Number in the column.		
5.	Complete morphological description of the proposed variety given in VIC proposal must be included in the CVRC proposal.		
6.	The proforma for submission of CVRC proposal is available in IIRR Web site		

Proceedings of the meeting of the committee constituted to deliberate on formulation of criteria for nomination of entries under Advanced Variety Trial 1- Near Isogenic Lines (AVT1-NIL) of AICRIP

As per the directions of Dr. S.N. Shukla, Assistant Director General (FFC), ICAR, a committee was constituted for the above mentioned purpose during the 44th Annual Rice Research Group Meeting held at ANGRAU, Hyderabad during May 2009. The members of the committee met on 11th May 2009 at Seminar Hall I of ANGRAU Auditorium, Hyderabad with Dr. M.P. Pandey, Vice Chancellor, IGAU, Raipur as Chairman and Dr. N. Shobha Rani, PI, Varietal Improvement programme, AICRIP for discussion and finalization of criteria for nomination of entries under AVT1-NIL trial of AICRIP.

The following members attended the meeting. Dr. J.L. Dwivedi, Dr. K.V. Prabhu, Dr. A.K. Singh, Dr. G.J.N. Rao, Dr. J.N. Reddy, Dr. P.K. Agarwal, Dr. N. Sarla, Dr. S.M. Balachandran, Dr. C.N. Neeraja, Dr. R.M. Sundaram, Dr. P. V. Satyanarayana, Dr. S. Manonmani.

Dr. M.P. Pandey welcomed the participants and informed that a set of guidelines for nomination and testing of NILs have been framed by a committee constituted by Ministry of Agriculture in the year 2007 and approved by DDG (CS), ICAR. The present meeting has been convened to mainly discuss issues related to operationalizing the guidelines.

The committee examined the guidelines and gave the following recommendations to facilitate the implementation of the guidelines in a practical manner.

- 1. Choice of recurrent parent:** The recurrent parent selected for the marker-assisted breeding programs should be a notified variety/parental line of a hybrid which is widely cultivated and accepted by farmers which has been suffering some production bottlenecks or lacking some traits that can be improved to add value to it. For this purpose, the selection of the recurrent parent for development of NILs under AICRIP is to be decided by a committee identified by Project Director for which approval of DDG (CS), ICAR is to be obtained. Further the recurrent parent needs to be selected with appropriate concurrence of the concerned breeder/organization/institution wherever applicable.
- 2. Conformity of the NILs to the recurrent parent:** The breeder has to substantiate the proposed near isogenic lines (NILs) for its conformity to the parental variety with appropriate phenotypic data such as morphological and DUS data and molecular marker data before nomination for trial. In order to ensure this, the breeder has to provide details in terms of list of all the morphological/DUS characteristics for which the NILs are similar to and different from the recurrent parent at the time of nomination of the NILs. The NILs should definitely not be inferior to the recurrent parent in terms of yield related traits.

The NIL should have minimum two phenotypic characters (which can be easily assessed in the field) for the purpose of its identification and distinction from the parental variety. This will facilitate seed certification agency/seed law enforcement authority in the certification process.

The breeder nominating entries under AVT1-NIL should enclose the list of molecular markers used for marker-assisted breeding including those used for both foreground and background selection. The NILs should have a minimum of 80% introgression as estimated from parental polymorphic SSR markers through background selection. A minimum of 6 parental polymorphic markers per chromosome should be used for this estimation (i.e. a minimum of 96 parental polymorphic markers covering the entire genome).

The breeder nominating entries under AVT1-NIL trial should furnish details in a prescribed proforma at the time of nominating the entries. A committee constituted by the Project Director will examine the proposal and approve/reject the nominations.

3. **Testing/evaluation of NILs:** Under AICRIP, the NILs would be tested along with the recurrent parent as check for two years to verify the traits that are introgressed. For yield purposes, the NILs has to be compared with the recurrent parent variety to establish its performance vis-à-vis parent variety. For validation of the introgressed trait, the NILs have to be tested along with donor parent, recurrent parent and appropriate checks. The NIL testing has to be carried out under natural and artificial conditions (where pest/disease/stress resistance is targeted) and other traits following standard experimental procedures and techniques along with the recurrent parent. The test centres and the experimental layout should be decided by the Project Directorate on a case to case basis based on the nominations.
4. **Monitoring of AVT1-NIL trial:** The final trait verification would be based on the recommendation of the monitoring team constituted by the Project Director for such trials. The monitoring of the trials is mandatory. the monitoring committee should involve at least one specialist associated with the target trait. Monitoring needs to be stringently carried out by the monitoring team both for the trait introgressed in the NILs and for equivalence to the recurrent parent.
5. **Identification, notification and release of NILs:** The NILs which have successfully completed two years of testing under AVT1-NIL as per the guidelines/criteria mentioned above should be identified, released and notified as a new variety.

Proceedings of the meeting of the Committee constituted to deliberate on revision of criteria for nomination and evaluation of entries under Advanced Variety Trial -Near-Isogenic Lines (AVT-NIL) of AICRIP during 52nd ARGM held at AAU, Jorhat.

As per the directions of Dr. J.S. Sandhu, Deputy Director General (Crop Sciences), ICAR, a committee was constituted for the above mentioned purpose during the 52nd Annual Rice Research Group Meeting held at Assam Agricultural University, Jorhat, Assam during 8-11, April 2017. The members of the committee met on 10th April 2017 at Board Room of AAU under the chairmanship of Dr. M.P. Pandey, Former Vice Chancellor, IGKV, Raipur and BAU, Ranchi for discussion on revision of criteria for nomination of entries under AVT1-NIL trial of AICRIP. It is to be mentioned that the criteria were formulated earlier by a committee constituted by ICAR under the chairmanship of Dr. M.P. Pandey during May 2009 in the 44th Annual Rice Research Group Meeting held at ANGRAU, Hyderabad.

The following dignitaries attended the meeting.

1. Dr. M. P. Pandey (Chairperson)
2. Dr. I.S. Solanki, ADG (FFC), ICAR, New Delhi (Member)
3. Dr. P. K. Agarwal, ADG (NASF), ICAR, New Delhi (Member)
4. Dr. Kuldeep Singh, Director, ICAR-NBPGR, New Delhi (Member)
5. Dr. A.K. Singh, Head, Division of Genetics, ICAR-IARI, New Delhi (Member)
6. Dr. P.V. Satyanarayana, Director, APRRI, Maruteru, AP (Member)
7. Dr. S. Robin, Dean (PGS), TNAU, Coimbatore (Member)
8. Dr. Ish Kumar, President (R & D), Rasi Seeds, Hyderabad (Member)
9. Dr. S.K. Pradhan, Principal Scientist (Plant Breeding), ICAR-NRRI, Cuttack (Member)
10. Dr. T. Ram, Principal Scientist (Plant Breeding), ICAR-IIRR, Hyderabad (Member)
11. Dr. R.M. Sundaram, Principal Scientist (Biotechnology), ICAR-IIRR, Hyderabad (Member Secretary)

Dr. Jyothi Badri, Scientist (SS, Plant Breeding), ICAR-IIRR, Hyderabad and Dr. R. Abdul Fiyaz, Scientist (SS, Plant Breeding), ICAR-IIRR, Hyderabad assisted in recording of the proceedings.

Dr. M. P. Pandey welcomed the participants and informed them that the meeting has been constituted specifically by ICAR to examine and revise the criteria for nomination of entries under AVT1-NIL trials, which was earlier set by a committee in 2009.

The committee examined the existing guidelines and criteria and gave the following recommendations to facilitate the evaluation of NILs in AICRIP trials in a pragmatic manner broadly under the following five categories.

- 1) Choice of the recurrent parent: The recurrent parent selected for the marker-assisted breeding programs should be a notified popular variety/parental line of a hybrid, which has been suffering from some production bottlenecks or lacking some traits (particularly biotic and abiotic stress resistance/tolerance) that can be improved to add value to it. In case of biotic stress resistance, the choice of gene combinations selected for deployment in the recurrent parent should be based on

the pest population/biotypes and/or pathogen population/race composition prevalent in the States/Zones for which the recurrent parent was originally released. The recurrent parent needs to be selected with appropriate concurrence of the concerned parent Organization/Institute.

- 2) Conformity of the NILs to the recurrent parent: The breeder has to substantiate the proposed NILs for their conformity to the parental variety/genotype (i.e. the recurrent parent) with appropriate phenotypic data such as morphological trait data/DUS trait data and molecular marker data before nomination for trial. In order to ensure this, breeder has to provide details, in terms of list of all the morphological/DUS characteristics for which the NILs are similar/ different from the recurrent parent at the time of nomination of the NILs. The NILs must be statistically at par or superior to the recurrent parent in terms of grain yield. The breeder nominating the entries under AVT1-NIL should enclose the list of molecular markers used for marker-assisted breeding including those used for foreground, recombinant and/or background selection. The NILs should have a minimum of 90% recovery of the recurrent parent genome with respect to the parental polymorphic co-dominant markers (like SSRs/SNPs) analyzed. A minimum of 400 co-dominant markers (i.e. ~ 1 marker per Mb), which are distributed uniformly across the rice genome should be used for parental polymorphism analysis. The breeder nominating the entries under AVT1-NIL trial should furnish details in a prescribed proforma at the time of nominating the entries. A committee constituted by Director, ICAR-IIRR will examine the proposal and approve/reject the nominations.
- 3) Testing/evaluation of NILs: Under AICRIP, the NILs would be tested along with the recurrent parent as check for two years (i.e. AVT1-NIL and AVT2-NIL) to verify the traits that are introgressed. For yield purposes, the NILs have to be compared with the recurrent parent variety to establish its performance vis-à-vis parent variety/genotype (i.e. the recurrent parent). For validation of the introgressed trait, the NILs have to be tested along with donor parent, recurrent parent and appropriate checks. The testing of NILs has to be carried out under natural condition in the target locations/hot-spots and under artificial conditions (in case of pest/disease/stress resistance or tolerance) and other target traits including agronomic and quality traits following standard experimental procedures and techniques along with the recurrent parent. The test centres and the experimental layout should be decided by the Director, ICAR-IIRR on a case to case basis, depending on the lines nominated.
- 4) Monitoring of AVT1-NIL trial: The final trait verification would be based on the recommendations of the monitoring team constituted by Director, ICAR-IIRR for such trials. The monitoring of the trials is mandatory and the monitoring committee should involve at least one specialist associated with the target trait. Monitoring needs to be stringently carried out by the monitoring team both for the trait introgressed in the NILs and for equivalence to the recurrent parent.
- 5) Identification, notification and release of NILs: The NILs, which have successfully completed two years of testing under AVT1-NIL as per the guidelines/criteria mentioned above should be identified, released and notified as a new variety only for the States/Zones in which the recurrent parent has been notified and released. These criteria will be applicable for entries nominated from *Kharif* 2017 onwards.

Proforma for nominating entries under AVT1-NIL trial of AICRIP

Trial	Designation	Cross combination	Target trait introgressed	Days to 50% flowering		Grain type and quality characteristics		Local yield trial (kg/ha)#		Reaction for target trait introgressed		No. of markers used for background selection and No. of markers which have become homozygous for recurrent parent genome	Percent age recurrent parent genome recovery	No. of traits for which the recurrent parent and NIL are similar*	No. of traits for which the recurrent parent and NIL are different*
				Recurrent parent	NIL	Recurrent parent	NIL	Recurrent parent	NIL	Donor parent	Recurrent parent				

#average of two seasons yield data

*a separate table showing a comparison between the recurrent parent and NIL with respect to morphological traits/DUS traits needs to be enclosed

Proforma for Submission of Proposal for Identification of Crop Varieties/ Hybrids at workshops/State Varietal Identification Committee meetings

Content

S. No.	Item
1.	Summary of the Proposal
2.	Proforma for Submission of Proposal for Identification of Crop Varieties/hybrids by Workshops
3.	Summarized Yield Data of the Coordinated Varietal Trials
4.	Adaptability to Agronomic Variables
5.	Reaction to Major Diseases
6.	Reaction to Insect-pests
7.	Data on Quality Characteristics
8.	Data on Other Important Characters
9.	Any other
10.	Guidelines for Filling-up the Proforma

Summary of the Proposal (in bullets only)

Proforma for Submission of Proposal for Identification of Crop Varieties/ Hybrids at Workshops

1	Name of the crop and species			
2	a) Name of the variety under which tested in the AICRIP trials			
	b) Proposed name of the variety			
3	Sponsoring institute			
4	a) Institution or agency responsible for developing variety (with full Address)			
	b) Person name, who helped developing variety			
	Developers			
	Collaborators			
5	a) Parentage (with details of pedigree, including the source from which variety/inbred/A,B and R lines of hybrid have been developed)			
	b) Source of the material in case of introduction			
	c) DNA profile of variety/hybrid/inbred/A,B,R lines of the hybrid vis-a vis check variety/line			
	d) Breeding method used			
	e) Breeding objective			
6	State varieties which most closely resemble the proposed variety in general characters			
7	Recommended production ecology (rainfed/irrigated; high/low fertility; season)			
8	Specific area of its adaptation (zones and states for which variety is proposed) and the recommended production ecology			
9	Description of hybrid/variety			
	a) Plant height			
	b) Distinguishing morphological characters			
	c) Maturity (range in number of days) (from seedling/transplanting to flowering, seed-to-seed)			

	d)Maturity group (early, medium and late, wherever such classification exists)			
	e)Reaction to major diseases under field and controlled conditions (reaction to physiological strains/races/pathotypes/bio-types is to be indicated, wherever possible)			
	f)Reaction to major pests (under field and controlled conditions, including storage pests)			
	g)Agronomic features (e.g., resistance to lodging, shattering, fertilizer responsiveness, suitability to early or late sown conditions, seed rate, etc.			
	h)Quality of produce a)Grain quality b)Fodder quality i) Reaction to Stresses			
10	Description of parents of hybrid	A line/ inbred 1	B line/ inbred 2	R line
	a)Plant height (cm)			
	b) Distinguishing morphological characters			
	c)Days to flowering			
	d) Days to maturity (range in number of days-from seed-to-seed)			
	e) Is there any problem of synchronization? If yes, its method to overcome			
	f)Reaction to major diseases (under field and controlled conditions, reaction to physiological strains/races/bio-types/pathotypes to be indicated wherever possible)			
	g) Reaction to major pests (uder field and controlled conditions, including storage pests)			
	h)Agronomic features (e.g., resistance to lodging, shattering fertilizer responsiveness, suitability to early or late-sown conditions, seed rate, etc.)			
	i)Reaction to stresses			
11	a)Yield data in the coordinated trials (breeding, agronomy, pathology entomology, quality etc) and regional/inter regional district trials year-wise (level of fertilizer application, density of plant population and superiority over local control/standard variety) to be indicated (to be attached)			
	b)Yield data from national demonstration/large-scale demonstrations(to be attached)			
12	a)Agency responsible for maintaining the breeder seed			
	b)Quantity of breeder seed in stock (kg) Variety/A line/B line/R line/Hybrid			
13	Specific recommendations, if any, for seed production (e.g., staggered sowing, planting ratio of parental lines of hybrids in foundation and certified seeds production, probable areas of seed production)			
14	Vivid presentation (field view, close-up of a single plant and seeds/economic parts)			
15	Package of practices along with attainable yield levels			
16	Any other pertinent information			

Signature of All Contributors

Signature of the Head of the Institution

Checklist for Proforma for Submission of Proposal for Identification of Crop Varieties/ Hybrids at Workshops

Details/documents	Attached	
Parentage with details on pedigree, including the source from which variety/inbred/A,B and R lines of the hybrid has been developed	YES	NO
Source of the material in case of introduction (IC/EC numbers provided by the NBPGR)	YES	NO
Flow chart of details of development of variety/parental lines of hybrids	YES	NO
Molecular/DNA profile of variety/hybrid/A,B,R lines of the hybrid vis-à-vis check variety/line (details of unique amplicons that distinguish markers) with photographs	YES	NO
Detailed description of the parental lines of the hybrid	YES	NO
Yield data & other data on diseases, insect-pests, quality,etc. from the coordinated trials	YES	NO
Yield data from the national demonstration/large-scale demonstrations	YES	NO
Specific recommendations, if any, for seed production (eg., staggered sowing, planting ratio of parental lines of hybrids in foundation and certified seeds production, probable areas of seed production etc.)	YES	NO
Vivid presentations (field view, close-up of a single plant and seeds) with photographs of the Variety)	YES	NO
Package of practices	YES	NO
Proforma signed by all co-authors and Head of Organization	YES	NO
Any other pertinent information	YES	NO

Signature of the Head of the Institution

Table 1: Summarized yield data of the coordinated varietal trials

Name of the proposed variety/hybrid:

Adaptability Zone:

Production Conditions:

Item	Year of testing	No. of trials/ Locations	Proposed variety	National check 1	Zonal check 2	Local check 3	Latest released check 4	Qualifying variety*		
								Var.1	Var.2	Var.3
Mean yield (q/ha) a) Zonal b) Across zones (if applicable)	1 st year									
	2 nd year									
	3 rd year									
	Weighted mean									
Percentage increase or decrease over checks & qualifying varieties Frequency in the top three groups (pooled for three years)	1 st year									
	2 nd year									
	3 rd year									
	Weighted mean									

Note: Qualifying variety is one which has completed three years of testing in the coordinated trials; Centre-wise and year-wise data must be appended, otherwise proposal will not be considered

Table 2. Adaptability to agronomic variables

Name of the proposed variety/hybrid:

Adaptability Zone:

Production Conditions:

Nature of experiments	No. of trials/locations	Proposed variety	National check 1	Zonal check 2	Local check 3	Latest released check 4	Qualifying variety*		
							Var.1	Var. 2	Var. 3
Sowing date experiments	Yield (q/ha) under recommended sowing date, Percentage gain or loss when sown	(i)Early (ii)Normal (iii)Late							
Fertilizer experiments	Yield (q/ha) under recommended dose Percentage gain or loss under other doses	(i)F0 (ii)F1 (iii)F2							
Irrigation experiments (wherever applicable)	Yield (q/ha) with adequate irrigation Percentage gain or loss with irrigation level	(i)Level 1 (ii)Level 2 (iii)level 3							

Note: specify each date of sowing, fertilizer level and number of irrigations at i, ii, iii

Table 3. Reaction to major diseases

Name of the proposed variety/hybrid:

Adaptability Zone:

Production Conditions:

Disease name		Item	Proposed variety	National check 1	Zonal check 2	Local Check3	Latest released check 4	Qualifying variety*		
								Var. 1	Var.2	Var. 3
Disease 1	Natural	1 st year 2 nd year 3 rd year								
	Artificial	1 st year 2 nd year 3 rd year								
Disease 2	Natural	1 st year 2 nd year 3 rd year								
	Artificial	1 st year 2 nd year 3 rd year								
Disease 3	Natural	1 st year 2 nd year 3 rd year								
	Artificial	1 st year 2 nd year 3 rd year								
Disease 4	Natural	1 st year 2 nd year 3 rd year								
	Artificial	1 st year 2 nd year 3 rd year								

Table 4. Reaction to insect-pests

Name of the proposed variety/hybrid

Adaptability Zone:

Production Conditions:

Pest name	Item	Proposed variety	National check 1	Zonal check 2	Local Check 3	Latest released check 4	Qualifying variety*		
							Var. 1	Var.2	Var. 3
Pest 1	Natural	1 st year 2 nd year 3 rd year							
	Artificial	1 st year 2 nd year 3 rd year							
Pest 2	Natural	1 st year 2 nd year 3 rd year							
	Artificial	1 st year 2 nd year 3 rd year							
Pest 3	Natural	1 st year 2 nd year 3 rd year							
	Artificial	1 st year 2 nd year 3 rd year							

Table 5. Data on the quality characteristics

Quality characteristics	Item	National check 1	Zonal check 2	Local Check 3	Latest released check 4	Qualifying variety*		
						Var. 1	Var.2	Var. 3
Parameter-1								
Parameter-2								
Parameter-3								
Parameter-4								

Note: First Specify parameters at 1 to 4 under first column

Table 6. Data on the other important characters

Name of the proposed variety/hybrid:

Adaptability zone:

Production conditions:

S.No	Item	Proposed variety	National check 1	Zonal check 2	Local Check 3	Latest released check 4	Qual. Var. 1	Qual. Var.2	Qual. Var. 3
1	Plant height	1 st year 2 nd year 3 rd year							
2	Days to flowering	1 st year 2 nd year 3 rd year							
3	Days to maturity	1 st year 2 nd year 3 rd year							
4	1000-grain weight	1 st year 2 nd year 3 rd year							
5	Lodging	1 st year 2 nd year 3 rd year							
6	Others	1 st year 2 nd year 3 rd year							

Guidelines for Filling-up Proforma for Submission of Proposal for Identification of Crop Varieties/Hybrids during Workshops

1. Name of the crop and the species: The name given to the variety may be indicative of crop name, institute name/code, and number, if any.
2. Name of the variety under which tested: This should include the name under which the variety was tested in the coordinated trials.
3. Proposed name of the variety: This should include the name of the variety that is proposed for its commercial use as per the existing guidelines.
4. Sponsoring institute : This should include the name of the institute/organization that sponsoring the variety
5. Institution or agency responsible for developing variety (with full address) : This should give name of the Institute or organization where the variety has been developed along with the full address
6. Name of the person who helped in the development of the variety: Only those workers should be included who have contributed in the development of the variety/hybrid. The Co-workers can be grouped in 2 categories as the 'Developer' and as the 'Collaborator'.
The co-worker should be associated with the project (from which cultivar has been developed) for a period of minimum of 2 years. The proposal should be signed by each of the co-worker and validated by the Head of the Organization.
7. Parentage (with details of pedigree including the source from which variety/inbred/A, B and R lines of the hybrid lines has been developed). This should essential ly include details of the base population/source of material used for developing variety/parental lines of the hybrid.
Pedigree and parentage have to be furnished in details as to how the parents have been developed with flow charts, instead of just giving code numbers. Flow chart should depict clearly development of the proposal culture with year-wise details of attempting initial cross, followed by handling of segregating generation.
Details, whether collection is indigenous (IC) or exotic (EC), accession no provided by the NBPGR if used, in the development of the variety or parental lines of hybrids, must be provided, Please note that this IC number should be different from the one provided by the NBPGR, upon submission of the seed sample of the line/hybrid/variety, the once variety/hybrid is recommended by the Variety Identification Committee (VIC).
8. Source of material in case of introduction: Details of the EC (Exotic collection) number, may be given provided by the NBPGR, for the imported material used in the variety development.
9. DNA profile of variety/hybrid/inbred/ A,B,R lines of the hybrid vis-à-vis check variety/line
Detailed information on the molecular discrimination should be provided. Such information can be developed at crop-based institutes/NBPGR/Other labs. The information should include details of amplicons (name, sequence number, primer sequence) with reference to polymorphic markers.
The relevant photographs should also be attached.
10. Breeding method used : The method used in developing the variety/parental line may be given
11. Breeding objective : The breeding objective for developing the variety
12. State varieties which most closely resemble the proposed variety in general characters.
The information should include name of the varieties resembling most closely to the proposed variety with reference to different phenotypic traits.
13. Specific area of its adaptation (zones and states for which variety is proposed) and recommended productions ecology
The information on zones (name of the states), season and production conditions, whether Rainfed or irrigated, should be mentioned.
14. Description of the hybrid/variety: The average and expected normal range with respect to various characters may be mentioned.
15. Description of parents of the hybrid: The average and expected normal range with respect to characters may be mentioned with reference to inbred/A line/B line/R line.
16. Yield data in coordinated trials (breeding, agronomy, pathology, entomology, quality etc) and regional/inter-regional district trials year-wise (level of fertilizer application, density of plant population and superiority over local control/standard variety) are to be indicated (to be attached) The yield data and other data of coordinated trials and other details as per the format

of tables should be appended. Please note that mean is 'weighted mean' and not the 'arithmetic mean'.

17. Yield data from the national demonstration/large-scale demonstrations (to be attached) : The yield and other details as per the format of the tables should be appended.
18. Agency responsible for maintaining breeder seed : Name of the institute/organization/agency responsible to maintain the breeder seed of variety/parental line of hybrid should be given
19. Quantity of the breeder seed n stock (kg): Quantity (kg) of available seeds with reference to variety, hybrid, inbred A/B/R lines of the hybrid are to be clearly indicated.
20. Information on acceptability of the variety by farmers/ consumers/ industry: Any information on such aspects can be given.
21. Specific recommendations, if any, for seed production (e.g. staggered sowing, planting ratio of parental lines of hybrids in foundation and certified seed production, probable areas of seed production)
The seed production technology and specific requirements should be mentioned clearly along with the proposal. With respect to seed production of hybrid, the staggered sowing of parental lines, if required, should be clearly indicated. The planting ration of male and female parents in the seed production plots should be indicated. In addition, if there are some other precautions to be taken they are to be mentioned clearly. The probable areas of seed production need to be given.
22. Vivid presentation (field view, close-up of a single plant and a seed/economic parts) : The proposal should invariably have colored pictures with a clear field view of the variety, a close-up of a single plant and a seeds/economic parts. Photograph of other plant parts which may help in identification of varieties can also be given. The cover page of the proposal should also have a colored photograph of the variety and should be designed well.
23. Package of practices along with attainable yield levels: A note on the package of practices of the crop with respect of the variety needs to be provided, highlighting particularly specific requirements of the variety to realize its attainable yield levels.
24. Any other pertinent information: Any relevant information, which is seemingly important with reference to variety, hybrid or parental lines of the hybrids, should also be given.
25. Others
One-page 'executive summary' of the proposal may be provided in the beginning, highlighting specific features of the variety/hybrid. Excessive presentation in executive summary should be avoided.
Each page of the proposal should be numbered.
Checklist needs to be part of the proposal.

Proforma for Submission of Proposal for Release of Crop Varieties/Hybrids to the Central Sub-Committee on Crop Standards, Notification and Release of Varieties

S No	Item	Content
1	Summary of the Proposal (in bullets only)	
2	Proforma for Submission of Proposal for Release of Crop Varieties/Hybrids to the Central Sub-Committee on Crop Standards Notification and Release of Varieties	
3	Summarized Yield Data of the Coordinated Varietal Trials	
4	Adaptability to Agronomic Variables	
5	Reaction to Major Diseases	
6	Reaction to Insect-pests	
7	Data on the Quality Characteristics	
8	Data on the Other Important Characters	
9	Guidelines for Filling-up Proforma	

Summary of the Proposal (in bullets only)

Proforma for Submission of Proposal for Release of Crop Varieties/ Hybrids to the Central Sub-Committee on Crop Standards Notification and Release of Varieties

1	Name	
2	Name of the Crop and the species	
	a)Name of the variety under which tested in the AICRIP trials	
	B) Proposed name of the variety	
3	Sponsoring institute	
4	a)Institution or agency responsible for developing variety (with full Address)	
	b)Name of the person, who helped development of the variety	
	Developers	
	Collaborators	
5	A)Parentage (with details of pedigree, including the source from which variety/inbred/A,B and R lines of the hybrid has been developed)	
	b)Source of the material in case of introduction	
	c)DNA profile of variety/hybrid/inbred/A,B,R lines of the hybrid vis-a vis check variety/line	
	d)Breeding method used	
	E)Breeding objective	
6	State varieties which most closely resemble the proposed variety in general characters	
7	Recommended production ecology (rainfed/irrigated; high/low fertility; season)	
8	Specific area of its adaptation (zones and states for which variety has been proposed) and the recommended production ecology	
9	Description of hybrid/variety	
	a)Plant height	
	b)Distinguishing morphological characters	
	c)Maturity (range in number of days) (from seedling/transplanting to flowering, seed-to-seed)	
	d)Maturity group (early, medium & late, wherever such classification exists)	
	e)Reaction to major diseases under field and controlled conditions (reaction to physiological strains/races/pathotypes/bio-types is to be	

	indicated, wherever possible)			
	f)Reaction to major pests (under field and controlled conditions, including storage pests)			
	g)Agronomic features (e.g.,resistance to lodging, shattering, fertilizer responsiveness, suitability to early/ late sown conditions, seed rate, etc.			
	h)Quality of produce a)Grain quality b)Fodder quality			
10	Description of the parents of the hybrid	A line/ inbred 1	B line/ inbred 2	R line
	a)Plant height (cm)			
	b) Distinguishing morphological characters			
	c)Days to flowering			
	d) Days to maturity (range in number of days-from seed-to-seed)			
	e) Is there any problem of synchronization? If yes, its method to overcome			
	f)Reaction to major diseases (under field and controlled conditions, reaction to physiological strains/races/bio-types/pathotypes needs to be indicated wherever possible)			
	g) Reaction to major pests (uder field and controlled conditions, including storage pests)			
	h)Agronomic features (e.g., resistance to lodging, shattering fertilizer responsiveness, suitability to early or late-sown conditions, seed rate, etc.)			
	i)Reaction to stresses			
11	a)Yield data in the coordinated trials (breeding, agronomy, pathology entomology, quality etc) and regional/inter regional district trials year-wise (level of fertilizer application, density of plant population and superiority over local control/standard variety) are to be indicated (to be attached)			
	b)Yield data from national demonstration/large-scale demonstrations(to be attached)			
12	a)Agency responsible for maintaining the breeder seed			
	b)Quantity of breeder seed in stock (kg) Variety/A line/B line/R line/Hybrid			
13	Specific recommendations, if any, for seed production (e.g., staggered sowing, planting ratio of parental lines of hybrids in foundation and certified seeds production, probable areas of seed production)			
14	Vivid presentation (field view, close-up of a single plant and seeds/economic parts)			
15	a)Whether recommended by any workshop, seminar, conference, state seed committee etc.			
	b)If so, the recommendations with specific justifications for release of the proposed variety			
16	Specific area of its adaptation			
17	Acknowledgement of the submission of seed samples of variety/hybrid/inbred/ A, B and R lines of the hybrid from the NBPGR and IC numbers			
18	Package of practices along with attainable yield levels			
19	Information on the acceptability of the variety by farmers/consumers/industry			
20	Any other pertinent information			

Signature of all Contributors

Signature of the Head of the Institution

Checklist for Proforma for Submission of Proposal for Release of Crop Varieties/Hybrids to the Central Sub-Committee on Crop Standards Notification and Release of Varieties

Details/documents	Attached	
	YES	NO
Parentage with details of pedigree, including the source from which variety/inbred/A,B and R lines of the hybrid has been developed	YES	NO
Source of the material in case of introduction (IC/EC numbers provided by the NBPGR)	YES	NO
Flow chart of details of development of variety/parental lines of hybrids	YES	NO
Molecular/DNA profile of variety/hybrid/A,B,R lines of the hybrid vis-à-vis check variety/line (details of unique amplicons that distinguish markers) with photographs	YES	NO
Detailed description of the hybrid/variety		
Detailed description of the parental lines of the hybrid	YES	NO
Yield data and other data on diseases, insect-pests, quality,etc. from the coordinated trials	YES	NO
Yield data from the national demonstration/large-scale demonstrations	YES	NO
Specific recommendations, if any, for seed production (eg., staggered sowing, planting ratio of parental lines of hybrids in foundation and certified seeds production, probable areas of seed production etc.)	YES	NO
Vivid presentations (field view, close-up of a single plant and seeds) with the help of photographs)	YES	NO
Recommendations of the workshop, conference	YES	NO
Acknowledgement of the submission of seed sample of variety/hybrid/A,B and R lines of the hybrid submitted to the NBPGR	YES	NO
Package of practices	YES	NO
Proforma signed by all co-authors and head of organization	YES	NO
Any other pertinent information	YES	NO

Signature of the Head of the Institution

Table 1. Summarized yield data of the coordinated varietal trials

Name of the proposed variety/hybrid:

Adaptability zone :

Production conditions :

Item	Year of testing	No. of trials/ locations	Proposed variety	National check 1	Zonal check 2	Local check 3	Latest released check 4	Qual. Var.1	Qual. Var.2	Qual. Var.3
Mean yield (q/ha) a) Zonal b) Across zones (if applicable)	1 st year									
	2 nd year									
	3 rd year									
Percentage increase or decrease over the checks and qualifying varieties	Weighted mean 2 nd year 3 rd year weighted mean									
Frequency in the top three groups (pooled for three years)										

Note: Qualifying variety is one which has completed three years of testing in the coordinated trials; Centre-wise data must be appended, otherwise proposal will not be considered

Table 2. Adaptability to agronomic variables

Name of the proposed variety/hybrid: _____ Adaptability zone : _____
 Production conditions : _____

Nature of experiments	Item	Proposed variety	National check 1	Zonal check 2	Local check 3	Latest released check 4	Qual. Var.1	Qual. Var.2	Qual. Var.3
Sowing date experiments	Yield (q/ha) under recommended sowing date Percentage gain or loss when sown	(i)Early (ii)Normal (iii)Late							
Fertilizer experiments	Yield (q/ha) under recommended dose percentage gain or loss under other doses								
Irrigation experiments (wherever applicable)	Yield(q/ha) with adequate irrigation Percentage gain or loss with irrigation level	(i)Level1 (ii)Level2 (iii)Level3							

Note: specify each date of sowing, fertilizer level and number of irrigations at I, ii, iii

Table 3. Reaction to major diseases

Name of the proposed variety/hybrid: _____ Adaptability zone : _____
 Production conditions : _____

Disease Name		Item	Proposed variety	National check 1	Zonal check 2	Local check 3	Latest released check 4	Qual. Var.1	Qual. Var.2	Qual. Var.3
Disease 1	Natural	1 st year								
		2 nd year								
		3 rd year								
	Artificial	1 st year								
		2 nd year								
		3 rd year								
Disease 2	Natural	1 st year								
		2 nd year								
		3 rd year								
	Artificial	1 st year								
		2 nd year								
		3 rd year								
Disease 3	Natural	1 st year								
		2 nd year								
		3 rd year								
	Artificial	1 st year								
		2 nd year								
		3 rd year								
Disease 4	Natural	1 st year								
		2 nd year								
		3 rd year								
	Artificial	1 st year								
		2 nd year								
		3 rd year								

Table 4. Reaction to insect-pests

Name of the proposed variety/hybrid

Adaptability zone :

Production conditions :

Pest		Item	Proposed variety	National check 1	Zonal check 2	Local check 3	Latest released check 4	Qual. Var.1	Qual. Var.2	Qual. Var.3
Pest 1	Natural	1 st year								
		2 nd year								
		3 rd year								
	Artificial	1 st year								
		2 nd year								
		3 rd year								
Pest 2	Natural	1 st year								
		2 nd year								
		3 rd year								
	Artificial	1 st year								
		2 nd year								
		3 rd year								
Pest 3	Natural	1 st year								
		2 nd year								
		3 rd year								
	Artificial	1 st year								
		2 nd year								
		3 rd year								

Table 5. Data on the quality characteristics

Quality Characteristics	Item	Proposed variety	National check 1	Zonal check 2	Local check 3	Latest released check 4	Qual. Var.1	Qual. Var.2	Qual. Var.3
Parameter-1									
Parameter-2									
Parameter-3									
Parameter-4									

Note: Specify the parameters under first column at 1-14

Table 6. Data on the other important characters

Name of the proposed variety/hybrid

Adaptability zone :

Production conditions :

		Item	Proposed variety	National check 1	Zonal check 2	Local check 3	Latest released check 4	Qual. Var.1	Qual. Var.2	Qual. Var.3
1.	Plant height	1 st year								
		2 nd year								
		3 rd year								
2	Days of flowering	1 st year								
		2 nd year								
		3 rd year								
3	Days to maturity	1 st year								
		2 nd year								
		3 rd year								
4	1,000-grain weight	1 st year								
		2 nd year								
		3 rd year								

		Item	Proposed variety	National check 1	Zonal check 2	Local check 3	Latest released check 4	Qual. Var.1	Qual. Var.2	Qual. Var.3
5	Lodging	1 st year								
		2 nd year								
		3 rd year								
6	Others	1 st year								
		2 nd year								
		3 rd year								

Guidelines for Filling-up Proforma for Submission of the Proposal for Release of Crop Varieties/Hybrids to the Central Sub-Committee on Crop Standards Notification and Release of Varieties

1. Name of the crop and the species: The name given to the variety may be indicative of crop name, institute name/code, and number, if any.
2. Name of the variety under which tested: This should include the name under which the variety was tested in the coordinated trials.
3. Proposed name of the variety: This should include the name of the variety that is proposed for its commercial use as per the existing guidelines.
4. Sponsoring institute : This should include the name of the institute/organization that sponsors the variety
5. Institution or agency responsible for developing variety (with full address) : Institute or organization where the variety has been developed along with the full address
6. Name of the person who helped in the development of the variety: Only those workers should be included who have contributed in the development of the variety/hybrid. The Co-workers can be grouped in 2 categories as the 'Developer' and as the 'Collaborator'.

The co-worker should be associated with the project (from which cultivar has been developed) for a period of minimum of 2 years. The proposal should be signed by each of the co-worker and validated by the Head of the Organization.

7. Parentage (with details of pedigree including the source from which variety/inbred/A,B and R lines of the hybrid has been developed).

This should essentially include the details of the base population/source of the material used for developing the variety/parental lines of the hybrid. Pedigree and parentage have to be furnished in details as to how the parents have been developed with flow charts, instead of just code numbers. Flow chart should clearly present the development of the proposed culture with year-wise details of attempting initial cross, followed by handling of segregating generation.

Details, indigenous (IC) or exotic (EC) collections and the number of accessions (Provided by the NBPGR) if used, in the development of the variety or parental lines of hybrids, are to be provided, Please note that this IC number should be different from the one provided by the NBPGR at the submission of the seed sample of the line/hybrid/variety, the once variety/hybrid is recommended by the Variety Identification Committee (VIC).

8. Source of material in case of introduction: Details of the EC (Exotic collection) number, provided by the NBPGR, for the imported material used in the variety development, are to be given.
9. DNA profile of variety/hybrid/inbred/ A,B,R lines of the hybrid vis-à-vis check variety/line Detailed information on the molecular discrimination should be provided. Such information can be developed at crop-based institutes/NBPGR/Other labs. The information should include details of amplicons (name, sequence number, primer sequence) with reference to polymorphic markers.

The relevant good quality high resolution photographs should also be attached.

10. Breeding method used : The method used in developing the variety/parental line
11. Breeding objective : The breeding objective for developing the variety

12. State varieties which most closely resemble the proposed variety in general characters. The information should include name of the varieties resembling most closely to the proposed variety with reference to different phenotypic traits.
13. Recommended production ecology: The information on zones (name of the states), season and production conditions, whether Rainfed or irrigated, should be mentioned.
14. Description of the hybrid/variety: The average and expected normal range with respect to various characters may be mentioned.
15. Description of parents of the hybrid: The average and expected normal range with respect to characters may be mentioned with reference to inbred/A line/B line/R line.
16. Yield data in coordinated trials (breeding, agronomy, pathology, entomology, quality etc) and regional/inter-regional district trials year-wise (level of fertilizer application, density of plant population and superiority over local control/standard variety) are to be indicated (to be attached) The yield data and other data of coordinated trials and other details as per the format of tables should be appended. Please not that mean is 'weighted mean' and not the 'arithmetic mean'.
17. Yield data from the national demonstration/large-scale demonstrations (to be attached) : The yield and other details as per the format of the tables should be appended.
18. Agency responsible for maintaining breeder seed : Name of the institute/organization/agency responsible for maintenance of the breeder seed of variety/parental line of hybrid
19. Quantity of the breeder seed in stock (kg) : Quantity (kg) of available seeds with reference to variety, hybrid, inbred/AB/R lines of the hybrid are to be indicated clearly.
20. Information on acceptability of the variety by farmers/ consumers/ industry : Any information on such aspects can be given.
21. Specific recommendations, if any, for seed production (e.g. staggered sowing, planting ratio of parental lines of hybrids in foundation and certified seeds production, probable areas of seed production)
The seed production technology and specific requirements should be mentioned clearly along with the proposal. With respect to seed production of hybrid, the staggered sowing of parental lines, if required, should also be clearly indicated. The planting ration of male and female parents in the seed production plots should be indicated. In addition, if there are some other precautions needed, they are to be mentioned clearly. The probable areas of seed production need to be give.
22. Vivid presentation (field view, close-up of a single plant and a seed/economic parts) : The proposal should invariably have coloured pictures with a clear field view of the variety, a close-up of a single plant and seeds/economic parts. Photograph of other plant parts which may help in identification of varieties can also be given. The cover page of the proposal should also have a colored photograph of the variety and should be well-designed.
23. whether recommended by any workshop, seminar, conference, state seed committee etc., Details of workshop/ conference/ seminar/ or state variety release committee be given, which recommended the variety for release.
24. If so, its recommendations with specific justifications for release of the proposed variety: The specific recommendations of the workshop/conference/state variety release committee along with the documents should be attached.
25. Specific area of its adaptation. The zone and states for which variety is proposed.
26. Acknowledgement of the submission of the seed sample of variety/hybrid/inbred/ A,B and R lines of the hybrid from the NBPGR and IC numbers : The acknowledgement certificate issued by the NBPGR providing details of the IC number with respect to variety, hybrid and parental lines of hybrids should be part of the proposal
27. Package of practices along with the attainable yield levels: A note on the package of practices of crop with respect to the variety needs to be provided, highlighting particularly specific requirements of the variety to realize its attainable yield levels.
28. Others

One-page 'executive summary' of the proposal may be provided in the beginning, highlighting specific features of the variety/hybrid. Exaggerated presentation in executive summary needs to be avoided.

Each page of the proposal should be numbered.

Checklist needs to be part of the proposal.

The CVRC proposal should be scrutinized at the level of the Project Coordinator/Project Director before submission to the CVRC. PCs/PDs will give their opinion on the proposal to member-secretary (CVRC).

29. Any other pertinent information: Any other relevant information which is important in reference to the variety, hybrid or parental lines of the hybrids is also required.

Appendix 9

Monitoring of AICRIP Trials with list of observations to be recorded by the cooperators during *kharif*, 2024

Trial name	:	
Date of sowing	:	
Date of planting	:	
Plot size (Gross) m ²	:	
Plot size (Net)m ²	:	
Spacing cm	:	
No of entries	:	
Name of the checks (including local check)	:	
Cultures flowered earlier than the check	:	
Cultures flowered later than checks	:	
Highly promising entries	:	
Poor performing entries	:	
Shift based on duration	:	
Rejection based on (a) mixtures or off types (b) non-uniformity/or segregation and high degree of susceptibility to biotic/abiotic stress.	:	
Any other comments	:	
Note:		Please use additional copies for taking observations in each of the AICRIP trials allotted to the centre & return the same positively to the PI in December month.

Date:

Signature of the Breeder (with seal)

**CENTRE WISE BREEDER SEED PRODUCTION DURING KHARIF, 2023
(AS PER DAC INDENT)**

(Quantity in Quintals)

Sl. No.	Centre Name	Variety	Actual allocation as per BSP-I	Actual Prod.	Surplus (+)/ Deficit (-)
1	TNAU, Coimbatore	ADT-37	0.65	1.00	0.35
		ADT-39	1.20	2.00	0.80
		ADT-45	0.10	0.50	0.40
		ADT 52 (IET 25521) (AD 13121)	0.30	0.50	0.20
		ADT 53 (IET23955)-AD 07073	0.12	0.20	0.08
		ADT 54 (AD 09493) (IET 24249)	0.40	0.50	0.10
		ADT 55	0.10	0.50	0.40
		ADT 56 (IET27920)	0.10	0.10	0.00
		CO 51	7.99	8.50	0.51
		ASD-16	0.20	0.50	0.30
		CO 54 (CB 12588)	0.10	0.10	0.00
		TKM 13	0.02	0.10	0.08
		TM 07278	3.22	3.50	0.28
		Rice CR 1009 Sub 1	2.00	2.00	0.00
		Rice VGD 1	0.10	0.50	0.40
		MDU-6 (IET 23994)	0.02	0.02	0.00
	Total	16.62	20.52	3.90	
2	VPKAS, Almora	VL DHAN 157 (VL31611) (IET 22292)	0.60	0.00	-0.60
		VL 88	3.60	3.60	0.00
		Total	4.20	3.60	-0.60
3	CIARI, Port Blair	CARI Dhan-5	0.02	0.80	0.78
		Total	0.02	0.80	0.78
4	ANGRAU, Guntur	Amara (MTU-1064)	6.10	66.75	60.65
		BPT 5204	40.94	620.00	579.06
		BPT 2411 (Sasya)	0.30	10.00	9.70
		BPT 2595 (Teja)	0.10	46.00	45.90
		Bhavathi (BPT 2782)	0.20	70.00	69.80
		Bapatla Mahsuri (BPT 2295)	0.10	36.00	35.90
		Sona Mahsuri (BPT 3291)	4.65	26.00	21.35
		Chandra (IET 23409)(MTU 1153)	90.07	202.00	111.93
		Cottdondora Sannalu (MTU1010)	152.37	400.00	247.63
		Vijetha (MTU 1001)	81.70	100.00	18.30
		MTU 1075 (IET 18482)	18.70	65.00	46.30
		Varam (MTU 1190)	3.22	3.00	-0.22
		MTU 1223	2.10	2.70	0.60
		MTU 1281	3.32	13.25	9.93
		MTU 1140 (Bheema)	5.64	17.50	11.86
		MTU 1156	140.27	305.00	164.73
		MTU 1061	8.30	120.00	111.70
		MTU 1121 (Sri Dhruthi)	14.98	120.00	105.02
		MTU 1172 (Ksheera)	1.00	16.50	15.50
		MTU 1210 (Sujatha)	0.72	29.25	28.53
		MTU 1224	8.20	97.50	89.30
		MTU Rice 1239 (IET 26263)	3.50	70.50	67.00
		MTU 1318	7.15	136.00	128.85
MTU 1262	1.22	63.75	62.53		

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Sl. No.	Centre Name	Variety	Actual allocation as per BSP-I	Actual Prod.	Surplus (+)/ Deficit (-)
		MTU 7029	229.00	500.00	271.00
		MTU 7025#	1.50		
		MTU 1264#	0.30		
		MTU 1212	0.52	14.25	13.73
		MTU 1159#	0.10		
		MTU 1280	0.10	19.25	19.15
		MTU 1123#	0.25		
		Nellore Dhanyarasi (NLR 3354)	0.12	5.00	4.88
		NLR 4001 (Nellore Siri)	0.10	5.00	4.90
		Nellore Sugandha(NLR40054)	0.22	5.00	4.78
		NLR 3041	0.10	1.00	0.90
		NDLR 7	0.44	40.00	39.56
		Nellore Mahsuri (NLR 34449)	12.10	100.00	87.90
		Pardhhiva (NLR 33892)	0.60	10.00	9.40
		RGL 2537	6.00	69.00	63.00
		Vasundhara (RGL 2538)	0.10	1.10	1.00
		BPT 2812#	0.32		
			Total	846.72	3406.30
5	Rice Research Station, Bankura, W. B.	Dhruba (BNKR-2)	1.15	1.15	0.00
		Pushpa (IET 17509)	2.50	1.40	-1.10
		BNKR-1 (DHIREN) (IET 20760)	3.42	3.42	0.00
		BNKR-3(SAMPRITI) IET-21987	0.42	0.42	0.00
		Total	7.49	6.39	-1.10
6	BEDF, Meerut	Pusa Basmati-1(IET 10364)	8.01	5.60	-2.41
		PUSA-1121 (PUSA SUGANDH-4)	61.24	42.00	-19.24
		PUSA BASMATI 1637 (IET 24570)	3.90	0.00	-3.90
		PUSA BASMATI-6 (PUSA 1401) (IET18005)	15.04	16.00	0.96
		Total	88.19	63.60	-24.59
7	OUAT, Bhubaneswar	Hasanta	1.50	8.00	6.50
		Kalachampa	32.82	85.00	52.18
		Lalat (IET 9947)	18.90	32.00	13.10
		Parijat (IET 2684)	2.30	4.20	1.90
		PRATIBHA (OR 2172-7) IET 21582	0.30	1.10	0.80
		Pratikshya (ORS 201-5) (IET 15191)	10.35	26.00	15.65
		Rani Dhan (IET 19148)	2.30	2.20	-0.10
		Sebati (IET 11786)*	2.00	3.60	1.60
		Kalinga Dhan 1204	1.00	2.20	1.20
		Kalinga Dhan 1205	1.00	1.10	0.10
		Kalinga Dhan 1401	1.30	2.20	0.90
		Kalinga Dhan 1502	1.00	2.20	1.20
		Kalinga Dhan 1501	1.00	4.80	3.80
		Kalinga Dhan 1301	3.20	6.00	2.80
		Upahar(OR 1234-12-1) (IET 17318)	0.30	3.00	2.70
		HIRANYAMAYEE OR 2329-44 (IET 20601)	0.02	0.50	0.48
		Tanmayee (OR2329-44) (20262)	0.02	0.20	0.18
		Nua Acharamati (IET 19713)	0.30	0.20	-0.10
		KHANDAGIRI	2.10	8.20	6.10
		Nabanna**		10.42	10.42
Udayagiri**		3.40	3.40		
Mrunalini**		2.40	2.40		

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Sl. No.	Centre Name	Variety	Actual allocation as per BSP-I	Actual Prod.	Surplus (+)/ Deficit (-)
		Kalinga Dhan 1201**		1.10	1.10
		Kalinga Dhan 1202**		1.10	1.10
		Kalinga Dhan 1203**		1.10	1.10
		Pathara		2.20	2.20
		Total	81.71	214.42	132.71
8	SKUAST, Jammu	GIZA-14	6.00	8.00	2.00
		Jammu Basmati 11/8 (SJBR 118) (IET 27733)	2.00	2.50	0.50
		Total	8.00	10.50	2.50
9	Rice Research Station, Chinsurah (Government of West Bengal)	Ajit	4.00	5.00	1.00
		Bhupesh (CN 1752-18-1- 9-MLD-19)	0.60	1.00	0.40
		Chinsurah Nona - 2 (GOSABA-6)(IET-21943)	0.60	1.00	0.40
		CN1272-55-105 (IET- 19886)	0.02	0.50	0.48
		Khitish (IET-4094)	9.05	10.00	0.95
		Manisha (IET 23770)	0.20	0.50	0.30
		Muktashree (IET 21845)	0.65	1.00	0.35
		Rajdeep (CN 1039-9)	0.02	0.50	0.48
		Sabita (IET 8970)	0.35	1.00	0.65
		Sukumar (IET 21261)	2.10	2.50	0.40
		SATABADI (IET-4786)	32.10	35.00	2.90
		Gosaba-5 (Chinsurah Nona-1) (IET-23403)	0.12	0.50	0.38
		Total	49.81	58.50	8.69
10	CSSRI, Karnal	CSR 76	0.90	5.00	4.10
		CSR-30	1.08	12.00	10.92
		CSR-43	0.50	5.00	4.50
		Total	2.48	22.00	19.52
11	NDUAT, Ayodhya	NDR 9930111	5.00	7.50	2.50
		NDR-359	1.70	20.50	18.80
		Narendra Dhan 97	0.20	12.50	12.30
		NDR 2064	2.50	31.50	29.00
		NDR 2065	0.50	73.50	73.00
		Sarjoo 52	1.00	72.00	71.00
		IR 64- Sub 1 (IET21247)	3.00	13.20	10.20
		NDGR 702		48.00	48.00
		Total	13.90	278.70	264.80
12	UAS, Raichur	Gangavati Sona (GGV-05-01)	0.32	1.00	0.68
		Gangavati Ageti (IET-19251)	0.02	0.25	0.23
		Total	0.34	1.25	0.91
13	PRDF, Gorakhpur	Bauna Kalanamak-102	0.90	0.90	0.00
		Bauna Kalanamak-101	0.92	1.00	0.08
		Kalanamak Kiran (PRDF-2-14-10)	1.60	1.60	0.00
		Total	3.42	3.50	0.08
14	ICAR-NRRI, Cuttack	SAHBHAGI (SAHBHAGI DHAN IET-19576)	20.30	21.00	0.70
		Ankit	5.00	4.00	-1.00
		Annada	4.65	4.64	-0.01
		CR 1017	0.70	4.80	4.10
		CR Dhan 101 (ANKD (CR 2702) (IET 21627)	0.10	0.64	0.54
		CR Dhan 102 (IET 25121)	5.00	6.40	1.40
		CR Dhan 103 (Pramod) IET 22020	1.00	1.20	0.20

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Sl. No.	Centre Name	Variety	Actual allocation as per BSP-I	Actual Prod.	Surplus (+)/ Deficit (-)
		CR Dhan 203 (Sachala IET-2717-10-IR 84899-B-185)(IET 22731)	4.10	4.72	0.62
		CR Dhan 204 (IET 21692)	1.70	3.20	1.50
		CR Dhan 205 (IET 22737)	3.30	3.30	0.00
		CR Dhan 206 (Gopinath) (CR 2996-1-14-29-3-1) (IET 22731)	2.00	3.20	1.20
		CR Dhan 210 (IET 23449)	3.10	3.20	0.10
		CR Dhan 300 (CR2301-5) (IET 19816)	0.20	1.20	1.00
		CR Dhan 304 (IET 22117)	0.22	1.60	1.38
		CR Dhan 305 (IET 21287)	0.30	1.20	0.90
		CR Dhan 306 (IET 22084)	0.10	1.20	1.10
		CR Dhan 307 (Maudamani)	1.45	2.40	0.95
		CR Dhan 308 (IET 25523)	3.10	3.10	0.00
		CR Dhan 309 (IET25345) (IR95797-CR3847-2-1-1-1-1)	0.10	1.20	1.10
		CR Dhan 310	15.52	40.00	24.48
		CR Dhan 311 (MuKul)	16.52	17.84	1.32
		CR Dhan 312 (CR 3808-13) (IET 25997)	5.12	17.40	12.28
		CR Dhan 314 (IET 27263)	2.20	3.60	1.40
		CR Dhan 315 (IET 27179)	5.10	4.64	-0.46
		CR Dhan 316 (CRRRI Gaurav-1)	5.12	6.00	0.88
		CR Dhan 317 (Roshan)	5.10	4.96	-0.14
		CR DHAN 320 (IET 27914)	0.97	1.50	0.53
		CR Dhan 321 (IET 28354)	3.20	4.50	1.30
		CR Dhan 401(Reeta)(IET 19969)	0.50	4.80	4.30
		CR Dhan 407 (IET 21974)	0.32	1.20	0.88
		CR Dhan 408 (Chakaakhi) (IET 20265) (CR491-1590- 330-2-1)	0.32	1.20	0.88
		CR DHAN 409	0.60	0.60	0.00
		CR Dhan 410 (IET 24471)	1.10	0.00	-1.10
		CR Dhan 411 (Swaranjali, IET 27852)	3.10	5.60	2.50
		CR Dhan 412 (NICRA Dhan, Luna Ambika)	3.10	4.80	1.70
		CR Dhan 413 (Reeta-Panidhan)	3.10	6.40	3.30
		CR Dhan 414 (IET 27051)	1.20	3.60	2.40
		CR Dhan 505 (IET 21719)	0.10	0.96	0.86
		CR Dhan 506 (IET 23053) (CR2687-2-3-1-1-1)	0.22	0.96	0.74
		CR Dhan 510 (IET 23895) (CR 2593-1-1-1-1)	0.40	0.96	0.56
		CR DHAN 511 (IET 23906) (CR 2789-9-2)	0.10	0.96	0.86
		CR Dhan 512 (Satrugan)	3.00	4.80	1.80
		CR Dhan 602 (IET 26692)	0.10	1.20	1.10
		CR DHAN 702 (IET 25231)	0.12	0.12	0.00
		CR Dhan 703 (IET 25278)	0.12	0.12	0.00
		CR Dhan 800 (Swarna – MAS) (CRMAS 2232- 85 (IET 20672)	13.30	16.90	3.60
		CR Dhan 801 (IET 25667) (IR96322-34-223-B-1-1-1-CR3955-2)	2.50	8.00	5.50
		CR Dhan 802 (Subhar)	1.25	3.60	2.35
		CR Dhan 803 (Trilochan, IET 26398)	10.00	6.40	-3.60
		CR Dhan 909 (IET 23193) (CRL74-89-2-4-1)	0.32	4.80	4.48
		CR Dhan107 (Unnat Vandana) IET 26337	1.50	1.70	0.20

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		CR DHAN-201(Aerobic) (DRR DHAN-44)	0.27	1.20	0.93
		CR DHAN-318 (IET 27803)	0.30	1.20	0.90
		CR DHAN-319	1.42	1.42	0.00
		CR Sugandh Dhan 908 (IET 23189) (CR 2713-35)	0.02	4.80	4.78
		CR Sugandh Dhan 910 (IET 22649) (CR 2713- 180)	1.00	0.00	-1.00
		CR SWARNA DHAN 800	0.60	0.60	0.00
		CR-1009 Sub-1	17.90	32.00	14.10
		CR-1014	0.30	0.80	0.50
		Gayatri	0.60	9.60	9.00
		Geeanjali	0.50	6.40	5.90
		Khitish	9.05	6.40	-2.65
		Luna Sankhi (IET 21237)	1.00	1.60	0.60
		LUNASUWARNA (IET 18697)	1.00	1.60	0.60
		LUNISREE	0.50	0.00	-0.50
		POOJA (IET-12241)	11.95	71.20	59.25
		Pradhan Dhan (CR 409) IET 23110 (CR 2690-2- 2-1-1-1)	1.50	9.00	7.50
		Prasant (CR Dhan 507)	1.00	3.20	2.20
		Varshadhan (CRLC-899)(IET- 16481)	2.30	9.60	7.30
		SARALA CR-260-77 (IET-10279)	2.70	22.70	20.00
		SWARANA-SUB 1 (CR 2539-1) IET-20266	81.35	83.20	1.85
		Sambha Sub - 1 (IET 21248)	14.30	12.80	-1.50
		Improved Lalat (CRMAS 2621-7-1) (IET 21066)*	2.00	4.80	2.80
		Ciherang Sub-1*	4.00	3.20	-0.80
		Total	317.20	539.64	222.44
15	IARI, New Delhi	Pusa 1592	1.02	2.50	1.48
		Pusa Basmati 1692	60.50	19.00	-41.50
		Pusa Basmati 1847	47.97	12.00	-35.97
		Pusa Basmati 1985	11.45	6.00	-5.45
		Pusa Basmati 1885	23.90	2.00	-21.90
		Pusa Basmati 1886	15.59	3.50	-12.09
		Pusa Basmati 1979	4.28	1.00	-3.28
		Pusa 1557	1.00	0.00	-1.00
		Pusa 2511	0.10	0.00	-0.10
		Total	165.81	46.00	-119.81
16	IARI-RS, Karnal	Pusa Basmati-1609	0.02	0.02	0.00
		Pusa Basmati 1728	10.00	11.00	1.00
		Pusa Basmati-1718 (IET 24565)	58.10	13.00	-45.10
		Pusa Basmati-1509 (IET 21960) (PUSA 1509-03-3-9-5)	45.92	5.00	-40.92
		Pusa Basmati 1637 (IET24570)	0.10	4.00	3.90
		Pusa Sugandh-2 (IET- 16310,PUSA-204-1-126)	0.10	0.40	0.30
		Pusa SUGANDHA-5	4.45	6.00	1.55
		Pusa-44	13.54	0.00	-13.54
		Total	132.23	39.42	-92.81
17	IIRR, Hyderabad	Kasturi (IET-8580)*	5.00	5.00	0.00
		Masuri*	1.30	1.30	0.00
		BARI Dhan 75	0.10	0.30	0.20
		IET 5656	0.15	0.30	0.15

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		BINA DHAN - 11	16.70	12.00	-4.70
		BINA DHAN - 17	7.32	34.15	26.83
		DRR DHAN - 50 (IET 25671)	0.20	14.00	13.80
		DRR DHAN - 45 (IET 23832)*	9.12	9.50	0.38
		DRR DHAN - 53	20.50	113.00	92.50
		DRR DHAN - 39*	5.00	5.00	0.00
		DRR DHAN - 42*	54.22	55.00	0.78
		DRR DHAN - 43*	7.02	7.10	0.08
		DRR DHAN - 44*	6.00	6.00	0.00
		DRR DHAN - 46	1.50	4.00	2.50
		DRR DHAN - 47*	0.02	0.10	0.08
		DRR DHAN - 48	0.02	75.00	74.98
		DRR DHAN - 49*	0.02	0.10	0.08
		DRR DHAN - 51	5.02	16.00	10.98
		DRR DHAN - 52	0.02	1.00	0.98
		DRR DHAN - 54	15.40	16.00	0.60
		DRR DHAN - 55	20.00	21.00	1.00
		IMPROVED SAMBA MAHSURI	1.10	35.00	33.90
		JAYA*	10.45	10.50	0.05
		DRH-2 (A Line)	0.10	0.10	0.00
		DRH-2 (B Line)	0.10	0.10	0.00
		DRH-2 (R Line)	0.10	0.10	0.00
		DRR DHAN -58*	3.80	3.90	0.10
		DRR DHAN -62	1.70	25.90	24.20
		DRR DHAN -63	0.10	124.80	124.70
		DRR DHAN -64	0.20	0.30	0.10
		DRR DHAN -65*	0.10	0.10	0.00
		DRR DHAN -67	0.20	0.30	0.10
		DRR DHAN -68*	0.20	0.20	0.00
		DRR DHAN -69	0.30	0.30	0.00
		DRR DHAN -60	3.30	0.30	-3.00
		DRR DHAN -59*	2.00	2.00	0.00
		DRR DHAN -56	0.10	55.00	54.90
DRR DHAN -57*	0.10	0.10	0.00		
Sampada (IET 19424)*	3.00	3.00	0.00		
Total			201.58	657.85	456.27
18	JNKVV, Jabalpur	Improved Chinnor	1.00	9.52	8.52
		Improved Jeera Shankar	3.50	9.32	5.82
		JR 10	2.50	17.82	15.32
		JR 206 (IET 26079)	67.50	151.80	84.30
		JR 767	25.00	25.12	0.12
		JR-81	53.02	119.06	66.04
		KRANTI (R-2022)	1.00	150.46	149.46
		PURVA (JR-16-15-1-1)	0.32	0.00	-0.32
Total			153.84	483.10	329.26
19	IGKV, Raipur	Baster Dhan 1	7.00	15.00	8.00
		CG Madhuraj Dhan-55	10.00	22.00	12.00
		Chhattisgarh Devbhog	30.02	63.00	32.98
		Chhattisgarh Zinc Rice -1	10.00	14.00	4.00
		Chhattisgarh Zinc Rice-2	10.00	16.80	6.80
		Dubraj Selection-1	15.00	19.60	4.60
		IGKVR-1 (IET 19569)	20.00	40.20	20.20
IGKVR-2 (IET 19795)	5.00	14.50	9.50		

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		Indira Aerobic- 1 (R1570-2649-1- 1546-1) (IET 21686)	15.30	35.20	19.90
		IR-64	34.17	51.00	16.83
		IR-20	2.20	0.00	-2.20
		Mahamaya (IET-10749)	70.00	175.00	105.00
		Maheswari (IGRKVR-1244) (R 12244-1246-1-605-1) (IET 19796)	10.00	16.00	6.00
		Tarun Bhog Selection-1	20.30	27.00	6.70
		Bhadshabhog Selection-1	20.35	21.00	0.65
		Vikram TCR	45.05	100.00	54.95
		Protezin (IET 25470) (R-RHZ-R-56)	10.00	21.90	11.90
		Trombey Chattisgarh Dubraj Mutent-1	25.00	44.20	19.20
		Vishnubhog Selection-1	20.42	46.30	25.88
		ZINCO RICE MS	5.00	12.00	7.00
		CG Jawaphool Turobey	12.00	14.70	2.70
		CG Tejaswi Dhan (IGKV DH Rice-1)	2.00	8.00	6.00
		Chhatisgarh Dhan 1919	3.00	7.70	4.70
		Indira barani dhan 1	1.00	3.90	2.90
		Indira barani dhan 2	1.00	2.10	1.10
		IR-36	4.70	23.50	18.80
		Trombey Chattisgarh sonagathi Mutent (TCSM)	1.00	3.70	2.70
		Trombey Chattisgarh Vishnubhog Mutent (TCVM)	21.00	39.70	18.70
		Total	430.51	858.00	427.49
20	BSKKV, Dapoli	AMBE MOHAN@	0.30		
		Karjat 8	0.24	2.86	2.62
		Karjat 9	0.22	10.95	10.73
		KARJAT-2	0.40	13.15	12.75
		KARJAT-3	3.30	23.94	20.64
		Karjat-5	0.60	5.54	4.94
		Karjat-7	1.00	18.09	17.09
		Trombay karjat kolam (BARCKKV 13) (IET27000)	0.20	2.14	1.94
		Ratnagiri-1	0.60	7.82	7.22
		Ratnagiri-5	0.02	3.20	3.18
		Ratnagiri-6	0.20	4.76	4.56
		Ratnagiri-7	0.40	1.80	1.40
		Ratnagiri-8	0.40	12.75	12.35
		Total	7.88	107.00	99.42
21	CCS HAU, Hisar	BASMATI-370	12.00	8.00	-4.00
		HKR 48 (HKR 99-60)	0.02	0.50	0.48
		HKR-127 (HKR-95-222)	1.60	3.00	1.40
		HKR-147&	0.00	0.00	0.00
		HKR-47	4.61	7.00	2.39
		Total	18.23	18.50	0.27
22	SKUAST K, Srinagar	K-332	1.00	1.50	0.50
		K-39	3.00	4.00	1.00
		Shalimar Rice-2	3.12	2.00	-1.12
		Shalimar Rice-3	0.32	3.00	2.68
		Shalimar Rice-4 (SKUA-408)	9.32	18.00	8.68
		SR-V	1.00	2.00	1.00
		Mushkbadgi	0.03	0.03	0.00

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		Shalimar Rice -6	0.02	0.02	0.00
		Red Rice	0.06	0.06	0.00
		Shalimar Sungdh-1	0.00	4.00	4.00
		Chenab	0.00	2.00	2.00
		Total	17.87	36.61	18.74
23	ICAR-NEH, Tripura	Gomati Dhan TRC-2005-1 (TRC-05-8-4-42-8-3-7) IET 21512	0.02	0.02	0.00
		TRC 216-14 (IET 26435)/ICAR NEH NICRA-Boro Dhan 1	0.15	0.15	0.00
		Tripura Aush	0.02	0.02	0.00
		Tripura Chikan Dhan	0.02	0.02	0.00
		Tripura Sarat	0.02	0.02	0.00
		Total	0.23	0.23	0.00
24	PAU, Ludhiana	PR 118	2.46	20.00	17.54
		PR 121 (RYT 3240)	9.04	20.00	10.96
		PR 122	2.50	20.00	17.50
		PR 126	41.28	60.00	18.72
		PR 127	0.30	20.00	19.70
		PR 128	12.50	30.00	17.50
		PR 129	2.34	20.00	17.66
		PR-111	0.78	0.00	-0.78
		PR-113	12.33	30.00	17.67
		PR-114	13.94	20.00	6.06
		PR-123	0.02	0.00	-0.02
		PR-124 (IET 22767)	3.42	9.60	6.18
		PR-126 (RYT 3379)(IET-24721)	0.10	0.00	-0.10
		PR-130	14.00	25.00	11.00
		PR-131\$	12.18	13.00	0.82
		PR-132@	2.02		0.00
		PR-133@	0.32		0.00
		PUNJAB BASMATI - 7	4.38	7.00	2.62
		PUNJAB BASMATI-2	0.02		
		PAU-201	0.32		
		Total	134.25	294.60	163.03
25	CSKHPKV, Palampur	HPR-1068	10.00	10.68	0.68
		HPR-2612 (Palam Basmati-1)	10.00	10.20	0.20
		Him Palam Dhan 1 (HPR 2656)	8.00	8.18	0.18
		Him Palam Dhan 2 (HPR 2880)	5.00	5.40	0.40
		Total	33.00	34.46	1.46
26	UAS, Bangalore	THANU	1.17	4.99	3.82
		KMP-220	0.32	5.88	5.56
		BR-2655	1.01	5.00	3.99
		KRH 2 (A Line)	0.10	2.85	2.75
		KRH 2 (B Line)	0.10	0.34	0.24
		KRH 2 (R Line)	0.10	1.12	1.02
		MSN-36	0.32	2.23	1.91
		KMP 175		5.92	5.92
		Total	3.12	28.33	25.21
27	KAU, Trissur	Bhadra (MO-4)	3.28	3.30	0.02
		UMA (MO-16)	15.89	16.00	0.11
		KAU Pournami (MO 23)	0.42	0.50	0.08
		Kau Manu Rathna (HS-16)	0.50	0.50	0.00
		Pankaj	0.10	0.10	0.00

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		Athira (PBT-51)	0.25	0.45	0.20
		Jyothi	7.15	30.30	23.15
		KAU Akshya (PTB 62)	0.30	1.40	1.10
		KAU Supriya (PTB 61)	0.30	1.90	1.60
		Swetha (IET 14735)	0.10	0.20	0.10
		KAU VTL-10 (Lavanya) KAUVTL 51-5 (IET 25083)	0.30	0.30	0.00
		Total	28.59	54.95	26.36
28	UAS, Dharwad	Intan	0.75	2.50	1.75
		Abhilash (KMD-2)	1.11	3.00	1.89
		Total	1.86	5.50	3.64
29	BCKV, Nadia	Gontra Bidhan-1 (IET 17430)	23.81	24.00	0.19
		Gontra Bidhan-3 (IET 22752)	14.33	16.00	1.67
		Gontra Bidhan-4\$	0.20		
		Bidhan Surchi (IET 25701)	8.55	11.00	2.45
		Total	46.89	51.00	4.31
30	NAU, Navsari	GNV 10-89 (IET 24716)@	0.02	0.00	-0.02
		GNR-3	0.02	15.00	14.98
		GR-18	0.30	2.00	1.70
		Total	0.34	17.00	16.66
31	AAU, Anand	GAR-13	0.70	1.00	0.30
		Gujarat Anand Rice-3 (GAR-3)	0.32	0.75	0.43
		Mahisagar	0.72	1.00	0.28
		Total	1.74	2.75	1.01
32	GBPUAT, Pantnagar	PANT DHAN-18 (IET 17920) (UPRI 99-1)	1.00	14.00	13.00
		Pant Basmati-1	0.18	0.00	-0.18
		PANT DHAN-24	6.02	21.50	15.48
		PANT DHAN-26	3.30	6.50	3.20
		PB-1785%	0.50	0.00	0.00
		PB-1854%	2.00	0.00	0.00
		Total	13.00	42.00	31.50
33	ICAR-RCER, Patna	Swarna Shakti Dhan (IET 25640)	20.12	21.00	0.88
		Swarna Shreya	35.00	41.00	6.00
		Swarna Samridhhi Dhan (IET 24306)	16.75	46.70	29.95
		Swarna unnat Dhan (IET 27892)	0.10	6.00	5.90
		Swarna shusk dhan	0.90	1.20	0.30
		Total	72.87	115.90	43.03
34	PJ TSAU, Hyderabad	Erra Mallelu (WGL-20471)	2.95	3.00	0.05
		JGL-1798	2.79	2.80	0.01
		JGL-18047 (Bathukamma)	1.44	1.50	0.06
		JGL-24423 (Jagityal Rice-1)	5.22	5.50	0.28
		JGL 11118 (Anjana)	0.10	0.10	0.00
		JGL 11727 (Pranahitha)	0.10	0.10	0.00
		JGL 17004 (Prathyumna)	0.12	0.15	0.03
		Kampasagar vari 1 (IET 27816)	0.10	15.00	14.90
		Kunaram Sannalu (KNM 118)(IET No.23748)	12.10	12.10	0.00
		RNR-15048 (Telangana Sona)	50.95	60.00	9.05
		Krishna (RNR-2458)	0.12	0.15	0.03
		Shobhini (RNR-2354) (IET- 21260)	0.72	1.00	0.28
		Telangana Vari-5 (RNR28362)	0.10	4.00	3.90
		Telangana Vari-6 (KNM7048)	0.20	0.20	0.00
		Tellahamsa	0.33	0.50	0.17

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		Telangana Vari-1(IET 25330)	3.70	4.00	0.30
		Telangana Vari-3 (JGL 21078)	0.12	0.12	0.00
		WGL-697 (IET 26027)	3.32	4.00	0.68
		WGL-915 (Warangal rice 1)	0.22	1.00	0.78
		Kavya (WGL-48684)	0.60	1.00	0.40
		Kunaram Vari 2 (KNM 1638)	2.12	2.12	0.00
		Kunaram Rice 1 (KNM 733)	0.22	0.22	0.00
		Rajendra nagar vari-2 (IET 26143)	0.10	0.40	0.30
		Rajendra nagar vari-1 (IET 27077)	0.10	0.50	0.40
		RNR-15038	0.50	0.00	-0.50
		Telangana Vari-4	0.10	0.10	0.00
		Warangal vari 2 (IET 26094)	0.10	0.50	0.40
		Shriram^	1.00		
		Total		89.54	120.06
35	SHUATS, Prayagraj	SHIATS DHAN 5	3.02	10.00	6.98
		SHIATS DHAN-4	6.02	25.00	18.98
		Total	9.04	35.00	25.96
36	UBKV, Pundibari	Uttar Lakshmi (IET 24173) UBKVR-15	1.42	1.50	0.08
		Uttar Samir (PUR-B-36(IET 26453)	0.15	0.20	0.05
		Uttar Sona (UBKVR -1) (IET 24171)	2.32	2.50	0.18
		Uttar Sugandhi (UBKVRA-2 (IET 24616)	0.10	0.50	0.40
		Total	3.99	4.70	0.71
37	RPCAU, Pusa	Rajendra Bhagvati	0.65	2.30	1.65
		Rajshree (TCA-80-4) (IET 7970)	0.40	11.60	11.20
		Rajendra Mahsuri-1	12.60	24.50	11.90
		Rajendra Sweta	1.40	5.80	4.40
		R Neelam	30.00	45.80	15.80
		Total	45.05	90.00	44.95
38	MPKV, Rahuri	Bhogavati	0.60	5.00	4.40
		Indrayani	15.30	110.00	94.70
		Phule Samruddhi (VDN -99-29)	0.30	5.00	4.70
		Total	16.20	120.00	103.80
39	BAU, Ranchi	Birsa Vikas Dhan - 111 (IET 19848) (PY - 84)	1.00	1.50	0.50
		Birsa Vikas Dhan - 203	4.00	4.50	0.50
		Birsa Vikas Sugandha - 1 (IET 18941)	5.00	10.40	5.40
		Total	10.00	16.40	6.40
40	BAU, Sabour	Sabour Ardhjal (BRR 0007)	15.10	27.50	12.40
		Sabour Deep (RAU 3055)	15.00	29.00	14.00
		Sabour Heera Dhan (IET-27538) (BRR 2110)	0.10	10.10	10.00
		Sabour Sampanna Dhan (IET 25960)	45.10	116.64	71.54
		Sabour Shree (RAU 724-48-33) (IET 18878)	75.00	123.50	48.50
		Sabour Surbhit RAU 3036)	15.00	15.00	0.00
		Sabour Harshit Dhan**		43.00	43.00
		Rajendra Mahsuri-1**		10.24	10.24
		Rajendra Sweta**		12.00	12.00
		Reajendra Suwasini**		37.50	37.50
		Rajendra Kasturi**		35.00	35.00
		Swarna Sub 1**		47.50	47.50
		Total	165.30	506.98	341.68
41	PDKV, Akola	SAKOLI-9	0.20	45.50	45.30

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		PDKV TILAK	4.10	205.30	201.20
		PKV KISAN	0.20	15.52	15.32
		PKV HMT	33.50	65.10	31.60
		PDKV Sadhana	0.20	185.05	184.85
		Total	38.20	516.47	478.27
42	UAHS, Shivamoga	Sahyadri Megha	0.52	1.00	0.48
		Sahyadri Panchmukhi	0.32	0.60	0.28
		Sahyadrikempumukthi (IET-29855)	1.16	2.50	1.34
		TUNGA (IET-13901)	5.16	13.00	7.84
		KHP-13 (Bharath) (IET 21479)	0.02	2.00	1.98
		KKP-5	0.10	2.00	1.90
		Total	7.28	21.10	13.82
43	AAU, Jorhat	RANJEET (IET - 12554)	8.10	20.40	12.30
		RANJIT SUB -1	10.10	20.90	10.80
		Bahadur Sub-1	3.00	5.00	2.00
		Bahadur	1.00	12.60	11.60
		Jalashri (TTB 202-3)	0.12	0.00	-0.12
		Ketakijoha	1.00	1.10	0.10
		Numali	0.10	1.00	0.90
		Labanya	0.50	0.00	-0.50
		Total	23.92	61.00	37.08
44	BHU, Varanasi	HUR-917	5.30	5.30	0.00
		Total	5.30	5.30	0.00
45	ICAR RCNEH, Manipur	RC Maniphou-13	0.02	15.00	14.98
		Total	0.02	15.00	14.98
46	CAU, Imphal	CAU - R4 (Eenotphou) (IET 22469)	0.02	2.35	2.33
		CAU-R1 (Tampaphou)**		8.97	8.97
		CAU-R2 (Tomthinphou)**		2.72	2.72
		CAU-R3 (Mangalphou)**		1.96	1.96
		Total	0.02	16.00	15.98
		Grand Total	3317.80	9050.93	5742.28

*: indicates expected yield to be produced during Rabi 2023-24; #: No such variety available; @ Variety is not released; & Not a rice variety; \$ This variety is not notified yet; % Not a variety of GBPUAT; ^ Not the PJTSAU variety; ** Not indented by DAC.

**VARIETY WISE BREEDER SEED PRODUCTION DURING KHARIF, 2023
(AS PER DAC INDENT)**

(Quantity in Quintals)

SN	Variety	Actual allocation as per BSP-I	Actual Prod.	Surplus (+)/ Deficit (-)	Centre Name
1	Abhilash (KMD-2)	1.11	3.00	1.89	UAS, Dharwad
2	ADT 52 (IET 25521) (AD 13121)	0.30	0.50	0.20	TNAU, Coimbatore
3	ADT 53 (IET23955)-AD 07073	0.12	0.20	0.08	TNAU, Coimbatore
4	ADT 54 (AD 09493) (IET 24249)	0.40	0.50	0.10	TNAU, Coimbatore
5	ADT 55	0.10	0.50	0.40	TNAU, Coimbatore
6	ADT 56 (IET27920)	0.10	0.10	0.00	TNAU, Coimbatore
7	ADT-37	0.65	1.00	0.35	TNAU, Coimbatore
8	ADT-39	1.20	2.00	0.80	TNAU, Coimbatore
9	ADT-45	0.10	0.50	0.40	TNAU, Coimbatore
10	Ajit	4.00	5.00	1.00	Rice Research Station, Chinsurah (Government of West Bengal)
11	Amara (MTU-1064)	6.10	66.75	60.65	ANGRAU, Guntur
12	AMBE MOHAN@	0.30			BSKVV, Dapoli
13	Ankit	5.00	4.00	-1.00	ICAR-NRRI, Cuttack
14	Annada	4.65	4.64	-0.01	ICAR-NRRI, Cuttack
15	ASD-16	0.20	0.50	0.30	TNAU, Coimbatore
16	Athira (PBT-51)	0.25	0.45	0.20	KAU, Trissur
17	Bahadur	1.00	12.60	11.60	AAU, Jorhat
18	Bahadur Sub-1	3.00	5.00	2.00	AAU, Jorhat
19	Bapatla Mahsuri (BPT 2295)	0.10	36.00	35.90	ANGRAU, Guntur
20	BARI Dhan 75	0.10	0.30	0.20	IIRR, Hyderabad
21	BASMATI-370	12.00	8.00	-4.00	CCS HAU, Hisar
22	Baster Dhan 1	7.00	15.00	8.00	IGKV, Raipur
23	Bauna Kalanamak-101	0.92	1.00	0.08	PRDF, Gorakhpur
24	Bauna Kalanamak-102	0.90	0.90	0.00	PRDF, Gorakhpur
25	Bhadra (MO-4)	3.28	3.30	0.02	KAU, Trissur
26	Bhadshabhhog Selection-1	20.35	21.00	0.65	IGKV, Raipur
27	Bhavathi (BPT 2782)	0.20	70.00	69.80	ANGRAU, Guntur
28	Bhogavati	0.60	5.00	4.40	MPKV, Rahuri
29	Bhupesh (CN 1752-18-1- 9-MLD-19)	0.60	1.00	0.40	Rice Research Station, Chinsurah (Government of West Bengal)
30	Bidhan Surchi (IET 25701)	8.55	11.00	2.45	BCKV, Nadia
31	BINA DHAN - 11	16.70	12.00	-4.70	IIRR, Hyderabad
32	BINA DHAN - 17	7.32	34.15	26.83	IIRR, Hyderabad
33	Birsa Vikas Dhan - 111 (IET 19848) (PY - 84)	1.00	1.50	0.50	BAU, Ranchi
34	Birsa Vikas Dhan - 203	4.00	4.50	0.50	BAU, Ranchi
35	Birsa Vikas Sugandha - 1 (IET 18941)	5.00	10.40	5.40	BAU, Ranchi
36	BNKR-1 (DHIREN) (IET 20760)	3.42	3.42	0.00	Rice Research Station, Bankura, W. B.
37	BNKR-3(SAMPRITI) IET-21987	0.42	0.42	0.00	Rice Research

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SN	Variety	Actual allocation as per BSP-I	Actual Prod.	Surplus (+)/ Deficit (-)	Centre Name
					Station, Bankura, W. B.
38	BPT 2411 (Sasya)	0.30	10.00	9.70	ANGRAU, Guntur
39	BPT 2595 (Teja)	0.10	46.00	45.90	ANGRAU, Guntur
40	BPT 2812#	0.32			ANGRAU, Guntur
41	BPT 5204	40.94	620.00	579.06	ANGRAU, Guntur
42	BR-2655	1.01	5.00	3.99	UAS, Bangalore
43	CARI Dhan-5	0.02	0.80	0.78	CIARI, Port Blair
44	CAU - R4 (Eenotphou) (IET 22469)	0.02	2.35	2.33	CAU, Imphal
45	CAU-R1 (Tamphaphou)		8.97	8.97	CAU, Imphal
46	CAU-R2 (Tomthinphou)		2.72	2.72	CAU, Imphal
47	CAU-R3 (Mangalphou)		1.96	1.96	CAU, Imphal
48	CG Jawaphool Turobey	12.00	14.70	2.70	IGKV, Raipur
49	CG Madhuraj Dhan-55	10.00	22.00	12.00	IGKV, Raipur
50	CG Tejaswi Dhan (IGKV DH Rice-1)	2.00	8.00	6.00	IGKV, Raipur
51	Chandra (IET 23409)(MTU 1153)	90.07	202.00	111.93	ANGRAU, Guntur
52	Chenab	0.00	2.00	2.00	SKUAST K, Srinagar
53	Chhatisgarh Dhan 1919	3.00	7.70	4.70	IGKV, Raipur
54	Chhatisgarh Devbhog	30.02	63.00	32.98	IGKV, Raipur
55	Chhatisgarh Zinc Rice -1	10.00	14.00	4.00	IGKV, Raipur
56	Chhatisgarh Zinc Rice-2	10.00	16.80	6.80	IGKV, Raipur
57	Chinsurah Nona - 2 (GOSABA-6)(IET-21943)	0.60	1.00	0.40	Rice Research Station, Chinsurah (Government of West Bengal)
58	Ciherang Sub-1*	4.00	3.20	-0.80	ICAR-NRRI, Cuttack
59	CN1272-55-105 (IET- 19886)	0.02	0.50	0.48	Rice Research Station, Chinsurah (Government of West Bengal)
60	CO 51	7.99	8.50	0.51	TNAU, Coimbatore
61	CO 54 (CB 12588)	0.10	0.10	0.00	TNAU, Coimbatore
62	Cotondora Sannalu (MTU1010)	152.37	400.00	247.63	ANGRAU, Guntur
63	CR 1017	0.70	4.80	4.10	ICAR-NRRI, Cuttack
64	CR Dhan 101 (ANKD (CR 2702) (IET 21627)	0.10	0.64	0.54	ICAR-NRRI, Cuttack
65	CR Dhan 102 (IET 25121)	5.00	6.40	1.40	ICAR-NRRI, Cuttack
66	CR Dhan 103 (Prmod) IET 22020	1.00	1.20	0.20	ICAR-NRRI, Cuttack
67	CR Dhan 203 (Sachala IET-2717-10-IR 84899-B-185)(IET 22731)	4.10	4.72	0.62	ICAR-NRRI, Cuttack
68	CR Dhan 204 (IET 21692)	1.70	3.20	1.50	ICAR-NRRI, Cuttack
69	CR Dhan 205 (IET 22737)	3.30	3.30	0.00	ICAR-NRRI, Cuttack
70	CR Dhan 206 (Gopinath) (CR 2996-1-14-29-3-1) (IET 22731)	2.00	3.20	1.20	ICAR-NRRI, Cuttack
71	CR Dhan 210 (IET 23449)	3.10	3.20	0.10	ICAR-NRRI, Cuttack
72	CR Dhan 300 (CR2301-5) (IET 19816)	0.20	1.20	1.00	ICAR-NRRI, Cuttack
73	CR Dhan 304 (IET 22117)	0.22	1.60	1.38	ICAR-NRRI, Cuttack
74	CR Dhan 305 (IET 21287)	0.30	1.20	0.90	ICAR-NRRI, Cuttack
75	CR Dhan 306 (IET 22084)	0.10	1.20	1.10	ICAR-NRRI, Cuttack
76	CR Dhan 307 (Maudamani)	1.45	2.40	0.95	ICAR-NRRI, Cuttack
77	CR Dhan 308 (IET 25523)	3.10	3.10	0.00	ICAR-NRRI, Cuttack
78	CR Dhan 309 (IET25345) (IR95797-CR3847-2-1-1-1-1)	0.10	1.20	1.10	ICAR-NRRI, Cuttack

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SN	Variety	Actual allocation as per BSP-I	Actual Prod.	Surplus (+)/ Deficit (-)	Centre Name
79	CR Dhan 310	15.52	40.00	24.48	ICAR-NRRI, Cuttack
80	CR Dhan 311 (MuKul)	16.52	17.84	1.32	ICAR-NRRI, Cuttack
81	CR Dhan 312 (CR 3808-13) (IET 25997)	5.12	17.40	12.28	ICAR-NRRI, Cuttack
82	CR Dhan 314 (IET 27263)	2.20	3.60	1.40	ICAR-NRRI, Cuttack
83	CR Dhan 315 (IET 27179)	5.10	4.64	-0.46	ICAR-NRRI, Cuttack
84	CR Dhan 316 (CRRI Gaurav-1)	5.12	6.00	0.88	ICAR-NRRI, Cuttack
85	CR Dhan 317 (Roshan)	5.10	4.96	-0.14	ICAR-NRRI, Cuttack
86	CR DHAN 320 (IET 27914)	0.97	1.50	0.53	ICAR-NRRI, Cuttack
87	CR Dhan 321 (IET 28354)	3.20	4.50	1.30	ICAR-NRRI, Cuttack
88	CR Dhan 401(Reeta)(IET 19969)	0.50	4.80	4.30	ICAR-NRRI, Cuttack
89	CR Dhan 407 (IET 21974)	0.32	1.20	0.88	ICAR-NRRI, Cuttack
90	CR Dhan 408 (Chakaakhi) (IET 20265) (CR491-1590- 330-2-1)	0.32	1.20	0.88	ICAR-NRRI, Cuttack
91	CR DHAN 409	0.60	0.60	0.00	ICAR-NRRI, Cuttack
92	CR Dhan 410 (IET 24471)	1.10	0.00	-1.10	ICAR-NRRI, Cuttack
93	CR Dhan 411 (Swaranjali, IET 27852)	3.10	5.60	2.50	ICAR-NRRI, Cuttack
94	CR Dhan 412 (NICRA Dhan, Luna Ambika)	3.10	4.80	1.70	ICAR-NRRI, Cuttack
95	CR Dhan 413 (Reeta-Panidhan)	3.10	6.40	3.30	ICAR-NRRI, Cuttack
96	CR Dhan 414 (IET 27051)	1.20	3.60	2.40	ICAR-NRRI, Cuttack
97	CR Dhan 505 (IET 21719)	0.10	0.96	0.86	ICAR-NRRI, Cuttack
98	CR Dhan 506 (IET 23053) (CR2687-2-3-1-1-1)	0.22	0.96	0.74	ICAR-NRRI, Cuttack
99	CR Dhan 510 (IET 23895) (CR 2593-1-1-1-1)	0.40	0.96	0.56	ICAR-NRRI, Cuttack
100	CR DHAN 511 (IET 23906) (CR 2789-9-2)	0.10	0.96	0.86	ICAR-NRRI, Cuttack
101	CR Dhan 512 (Satrugan)	3.00	4.80	1.80	ICAR-NRRI, Cuttack
102	CR Dhan 602 (IET 26692)	0.10	1.20	1.10	ICAR-NRRI, Cuttack
103	CR DHAN 702 (IET 25231)	0.12	0.12	0.00	ICAR-NRRI, Cuttack
104	CR Dhan 703 (IET 25278)	0.12	0.12	0.00	ICAR-NRRI, Cuttack
105	CR Dhan 800 (Swarna - MAS) (CRMAS 2232- 85 (IET 20672)	13.30	16.90	3.60	ICAR-NRRI, Cuttack
106	CR Dhan 801 (IET 25667) (IR96322-34-223-B-1-1-1-CR3955-2)	2.50	8.00	5.50	ICAR-NRRI, Cuttack
107	CR Dhan 802 (Subhar)	1.25	3.60	2.35	ICAR-NRRI, Cuttack
108	CR Dhan 803 (Trilochan, IET 26398)	10.00	6.40	-3.60	ICAR-NRRI, Cuttack
109	CR Dhan 909 (IET 23193) (CRL74-89-2-4-1)	0.32	4.80	4.48	ICAR-NRRI, Cuttack
110	CR Dhan107 (Unnat Vandana) IET 26337	1.50	1.70	0.20	ICAR-NRRI, Cuttack
111	CR DHAN-201(Aerobic) (DRR DHAN-44)	0.27	1.20	0.93	ICAR-NRRI, Cuttack
112	CR DHAN-318 (IET 27803)	0.30	1.20	0.90	ICAR-NRRI, Cuttack
113	CR DHAN-319	1.42	1.42	0.00	ICAR-NRRI, Cuttack
114	CR Sugandh Dhan 908 (IET 23189) (CR 2713-35)	0.02	4.80	4.78	ICAR-NRRI, Cuttack
115	CR Sugandh Dhan 910 (IET 22649) (CR 2713- 180)	1.00	0.00	-1.00	ICAR-NRRI, Cuttack
116	CR SWARNA DHAN 800	0.60	0.60	0.00	ICAR-NRRI, Cuttack
117	CR-1009 Sub-1	17.90	32.00	14.10	ICAR-NRRI, Cuttack
118	CR-1014	0.30	0.80	0.50	ICAR-NRRI, Cuttack
119	CSR 76	0.90	5.00	4.10	CSSRI, Karnal
120	CSR-30	1.08	12.00	10.92	CSSRI, Karnal
121	CSR-43	0.50	5.00	4.50	CSSRI, Karnal
122	Dhruba (BNKR-2)	1.15	1.15	0.00	Rice Research Station, Bankura, W.

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SN	Variety	Actual allocation as per BSP-I	Actual Prod.	Surplus (+)/ Deficit (-)	Centre Name
					B.
123	DRH-2 (A Line)	0.10	0.10	0.00	IIRR, Hyderabad
124	DRH-2 (B Line)	0.10	0.10	0.00	IIRR, Hyderabad
125	DRH-2 (R Line)	0.10	0.10	0.00	IIRR, Hyderabad
126	DRR DHAN - 39*	5.00	5.00	0.00	IIRR, Hyderabad
127	DRR DHAN - 42*	54.22	55.00	0.78	IIRR, Hyderabad
128	DRR DHAN - 43*	7.02	7.10	0.08	IIRR, Hyderabad
129	DRR DHAN - 44*	6.00	6.00	0.00	IIRR, Hyderabad
130	DRR DHAN - 45 (IET 23832)*	9.12	9.50	0.38	IIRR, Hyderabad
131	DRR DHAN - 46	1.50	4.00	2.50	IIRR, Hyderabad
132	DRR DHAN - 47*	0.02	0.10	0.08	IIRR, Hyderabad
133	DRR DHAN - 48	0.02	75.00	74.98	IIRR, Hyderabad
134	DRR DHAN - 49*	0.02	0.10	0.08	IIRR, Hyderabad
135	DRR DHAN - 50 (IET 25671)	0.20	14.00	13.80	IIRR, Hyderabad
136	DRR DHAN - 51	5.02	16.00	10.98	IIRR, Hyderabad
137	DRR DHAN - 52	0.02	1.00	0.98	IIRR, Hyderabad
138	DRR DHAN - 53	20.50	113.00	92.50	IIRR, Hyderabad
139	DRR DHAN - 54	15.40	16.00	0.60	IIRR, Hyderabad
140	DRR DHAN - 55	20.00	21.00	1.00	IIRR, Hyderabad
141	DRR DHAN -56	0.10	55.00	54.90	IIRR, Hyderabad
142	DRR DHAN -57*	0.10	0.10	0.00	IIRR, Hyderabad
143	DRR DHAN -58*	3.80	3.90	0.10	IIRR, Hyderabad
144	DRR DHAN -59*	2.00	2.00	0.00	IIRR, Hyderabad
145	DRR DHAN -60	3.30	0.30	-3.00	IIRR, Hyderabad
146	DRR DHAN -62	1.70	25.90	24.20	IIRR, Hyderabad
147	DRR DHAN -63	0.10	124.80	124.70	IIRR, Hyderabad
148	DRR DHAN -64	0.20	0.30	0.10	IIRR, Hyderabad
149	DRR DHAN -65*	0.10	0.10	0.00	IIRR, Hyderabad
150	DRR DHAN -67	0.20	0.30	0.10	IIRR, Hyderabad
151	DRR DHAN -68*	0.20	0.20	0.00	IIRR, Hyderabad
152	DRR DHAN -69	0.30	0.30	0.00	IIRR, Hyderabad
153	Dubraj Selection-1	15.00	19.60	4.60	IGKV, Raipur
154	Erra Mallelu (WGL-20471)	2.95	3.00	0.05	PJTSAU, Hyderabad
155	Gangavati Ageti (IET-19251)	0.02	0.25	0.23	UAS, Raichur
156	Gangavati Sona (GGV-05-01)	0.32	1.00	0.68	UAS, Raichur
157	GAR-13	0.70	1.00	0.30	AAU, Anand
158	Gayatri	0.60	9.60	9.00	ICAR-NRRI, Cuttack
159	Geeanjali	0.50	6.40	5.90	ICAR-NRRI, Cuttack
160	GIZA-14	6.00	8.00	2.00	SKUAST, Jammu
161	GNR-3	0.02	15.00	14.98	NAU, Navsari
162	GNV 10-89 (IET 24716)@	0.02	0.00	-0.02	NAU, Navsari
163	Gomati Dhan TRC-2005-1 (TRC-05-8-4-42-8-3-7) IET 21512	0.02	0.02	0.00	ICAR-NEH, Tripura
164	Gontra Bidhan-1 (IET 17430)	23.81	24.00	0.19	BCKV, Nadia
165	Gontra Bidhan-3 (IET 22752)	14.33	16.00	1.67	BCKV, Nadia
166	Gontra Bidhan-4\$	0.20			BCKV, Nadia
167	Gosaba-5 (Chinsurah Nona-1) (IET-23403)	0.12	0.50	0.38	Rice Research Station, Chinsurah (Government of West Bengal)
168	GR-18	0.30	2.00	1.70	NAU, Navsari
169	Gujarat Anand Rice-3 (GAR-3)	0.32	0.75	0.43	AAU, Anand
170	Hasanta	1.50	8.00	6.50	OUAT, Bhubaneswar

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SN	Variety	Actual allocation as per BSP-I	Actual Prod.	Surplus (+)/ Deficit (-)	Centre Name
171	Him Palam Dhan 1 (HPR 2656)	8.00	8.18	0.18	CSKHPKV, Palampur
172	Him Palam Dhan 2 (HPR 2880)	5.00	5.40	0.40	CSKHPKV, Palampur
173	HIRANYAMAYEE OR 2329-44 (IET 20601)	0.02	0.50	0.48	OUAT, Bhubaneswar
174	HKR 48 (HKR 99-60)	0.02	0.50	0.48	CCS HAU, Hisar
175	HKR-127 (HKR-95-222)	1.60	3.00	1.40	CCS HAU, Hisar
176	HKR-147&	0.00	0.00	0.00	CCS HAU, Hisar
177	HKR-47	4.61	7.00	2.39	CCS HAU, Hisar
178	HPR-1068	10.00	10.68	0.68	CSKHPKV, Palampur
179	HPR-2612 (Palam Basmati-1)	10.00	10.20	0.20	CSKHPKV, Palampur
180	HUR-917	5.30	5.30	0.00	BHU, Varanasi
181	IET 5656	0.15	0.30	0.15	IIRR, Hyderabad
182	IGKVR-1 (IET 19569)	20.00	40.20	20.20	IGKV, Raipur
183	IGKVR-2 (IET 19795)	5.00	14.50	9.50	IGKV, Raipur
184	Improved Chinnor	1.00	9.52	8.52	JNKVV, Jabalpur
185	Improved Jeera Shankar	3.50	9.32	5.82	JNKVV, Jabalpur
186	Improved Lalat (CRMAS 2621-7-1) (IET 21066)*	2.00	4.80	2.80	ICAR-NRRI, Cuttack
187	IMPROVED SAMBA MAHSURI	1.10	35.00	33.90	IIRR, Hyderabad
188	Indira Aerobic- 1 (R1570-2649-1- 1546-1) (IET 21686)	15.30	35.20	19.90	IGKV, Raipur
189	Indira barani dhan 1	1.00	3.90	2.90	IGKV, Raipur
190	Indira barani dhan 2	1.00	2.10	1.10	IGKV, Raipur
191	Indrayani	15.30	110.00	94.70	MPKV, Rahuri
192	Intan	0.75	2.50	1.75	UAS, Dharwad
193	IR 64- Sub 1 (IET21247)	3.00	13.20	10.20	NDUAT, Ayodhya
194	IR-20	2.20	0.00	-2.20	IGKV, Raipur
195	IR-36	4.70	23.50	18.80	IGKV, Raipur
196	IR-64	34.17	51.00	16.83	IGKV, Raipur
197	Jalashri (TTB 202-3)	0.12	0.00	-0.12	AAU, Jorhat
198	Jammu Basmati 11/8 (SJBR 118) (IET 27733)	2.00	2.50	0.50	SKUAST, Jammu
199	JAYA*	10.45	10.50	0.05	IIRR, Hyderabad
200	JGL 11118 (Anjana)	0.10	0.10	0.00	PJTSAU, Hyderabad
201	JGL 11727 (Pranahitha)	0.10	0.10	0.00	PJTSAU, Hyderabad
202	JGL 17004 (Prathyumna)	0.12	0.15	0.03	PJTSAU, Hyderabad
203	JGL-1798	2.79	2.80	0.01	PJTSAU, Hyderabad
204	JGL-18047 (Bathukamma)	1.44	1.50	0.06	PJTSAU, Hyderabad
205	JGL-24423 (Jagityal Rice-1)	5.22	5.50	0.28	PJTSAU, Hyderabad
206	JR 10	2.50	17.82	15.32	JNKVV, Jabalpur
207	JR 206 (IET 26079)	67.50	151.80	84.30	JNKVV, Jabalpur
208	JR 767	25.00	25.12	0.12	JNKVV, Jabalpur
209	JR-81	53.02	119.06	66.04	JNKVV, Jabalpur
210	Jyothi	7.15	30.30	23.15	KAU, Trissur
211	K-332	1.00	1.50	0.50	SKUAST K, Srinagar
212	K-39	3.00	4.00	1.00	SKUAST K, Srinagar
213	Kalachampa	32.82	85.00	52.18	OUAT, Bhubaneswar
214	Kalanamak Kiran (PRDF-2-14-10)	1.60	1.60	0.00	PRDF, Gorakhpur
215	Kalinga Dhan 1201		1.10	1.10	OUAT, Bhubaneswar
216	Kalinga Dhan 1202		1.10	1.10	OUAT, Bhubaneswar
217	Kalinga Dhan 1203		1.10	1.10	OUAT, Bhubaneswar
218	Kalinga Dhan 1204	1.00	2.20	1.20	OUAT, Bhubaneswar
219	Kalinga Dhan 1205	1.00	1.10	0.10	OUAT, Bhubaneswar
220	Kalinga Dhan 1301	3.20	6.00	2.80	OUAT, Bhubaneswar

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221	Kalinga Dhan 1401	1.30	2.20	0.90	OUAT, Bhubaneswar
222	Kalinga Dhan 1501	1.00	4.80	3.80	OUAT, Bhubaneswar
223	Kalinga Dhan 1502	1.00	2.20	1.20	OUAT, Bhubaneswar
224	Kampasagar vari 1 (IET 27816)	0.10	15.00	14.90	PJTSAU, Hyderabad
225	Karjat 8	0.24	2.86	2.62	BSKKV, Dapoli
226	Karjat 9	0.22	10.95	10.73	BSKKV, Dapoli
227	KARJAT-2	0.40	13.15	12.75	BSKKV, Dapoli
228	KARJAT-3	3.30	23.94	20.64	BSKKV, Dapoli
229	Karjat-5	0.60	5.54	4.94	BSKKV, Dapoli
230	Karjat-7	1.00	18.09	17.09	BSKKV, Dapoli
231	Kasturi (IET-8580)*	5.00	5.00	0.00	IIRR, Hyderabad
232	KAU Akshya (PTB 62)	0.30	1.40	1.10	KAU, Trissur
233	Kau Manu Rathna (HS-16)	0.50	0.50	0.00	KAU, Trissur
234	KAU Pournami (MO 23)	0.42	0.50	0.08	KAU, Trissur
235	KAU Supriya (PTB 61)	0.30	1.90	1.60	KAU, Trissur
236	KAU VTL-10 (Lavanya) KAU VTL 51-5 (IET 25083)	0.30	0.30	0.00	KAU, Trissur
237	Kavya (WGL-48684)	0.60	1.00	0.40	PJTSAU, Hyderabad
238	Ketakijoha	1.00	1.10	0.10	AAU, Jorhat
239	KHANDAGIRI	2.10	8.20	6.10	OUAT, Bhubaneswar
240	Khitish	9.05	6.40	-2.65	ICAR-NRRI, Cuttack
241	Khitish (IET-4094)	9.05	10.00	0.95	Rice Research Station, Chinsurah (Government of West Bengal)
242	KHP-13 (Bharath) (IET 21479)	0.02	2.00	1.98	UAHS, Shivamoga
243	KKP-5	0.10	2.00	1.90	UAHS, Shivamoga
244	KMP 175		5.92	5.92	UAS, Bangalore
245	KMP-220	0.32	5.88	5.56	UAS, Bangalore
246	KRANTI (R-2022)	1.00	150.46	149.46	JNKVV, Jabalpur
247	KRH 2 (A Line)	0.10	2.85	2.75	UAS, Bangalore
248	KRH 2 (B Line)	0.10	0.34	0.24	UAS, Bangalore
249	KRH 2 (R Line)	0.10	1.12	1.02	UAS, Bangalore
250	Krishna (RNR-2458)	0.12	0.15	0.03	PJTSAU, Hyderabad
251	Kunaram Rice 1 (KNM 733)	0.22	0.22	0.00	PJTSAU, Hyderabad
252	Kunaram Sannalu (KNM 118)(IET No.23748)	12.10	12.10	0.00	PJTSAU, Hyderabad
253	Kunaram Vari 2 (KNM 1638)	2.12	2.12	0.00	PJTSAU, Hyderabad
254	Labanya	0.50	0.00	-0.50	AAU, Jorhat
255	Lalat (IET 9947)	18.90	32.00	13.10	OUAT, Bhubaneswar
256	Luna Sankhi (IET 21237)	1.00	1.60	0.60	ICAR-NRRI, Cuttack
257	LUNASUWARNA (IET 18697)	1.00	1.60	0.60	ICAR-NRRI, Cuttack
258	LUNISREE	0.50	0.00	-0.50	ICAR-NRRI, Cuttack
259	Mahamaya (IET-10749)	70.00	175.00	105.00	IGKV, Raipur
260	Maheswari (IGRKVR-1244) (R 12244-1246-1-605-1) (IET 19796)	10.00	16.00	6.00	IGKV, Raipur
261	Mahisagar	0.72	1.00	0.28	AAU, Anand
262	Manisha (IET 23770)	0.20	0.50	0.30	Rice Research Station, Chinsurah (Government of West Bengal)
263	Masuri*	1.30	1.30	0.00	IIRR, Hyderabad
264	MDU-6 (IET 23994)	0.02	0.02	0.00	TNAU, Coimbatore

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265	Mrunalini		2.40	2.40	OUAT, Bhubaneswar
266	MSN-36	0.32	2.23	1.91	UAS, Bangalore
267	MTU 1061	8.30	120.00	111.70	ANGRAU, Guntur
268	MTU 1075 (IET 18482)	18.70	65.00	46.30	ANGRAU, Guntur
269	MTU 1121 (Sri Dhruthi)	14.98	120.00	105.02	ANGRAU, Guntur
270	MTU 1123#	0.25			ANGRAU, Guntur
271	MTU 1140 (Bheema)	5.64	17.50	11.86	ANGRAU, Guntur
272	MTU 1156	140.27	305.00	164.73	ANGRAU, Guntur
273	MTU 1159#	0.10			ANGRAU, Guntur
274	MTU 1172 (Ksheera)	1.00	16.50	15.50	ANGRAU, Guntur
275	MTU 1210 (Sujatha)	0.72	29.25	28.53	ANGRAU, Guntur
276	MTU 1212	0.52	14.25	13.73	ANGRAU, Guntur
277	MTU 1223	2.10	2.70	0.60	ANGRAU, Guntur
278	MTU 1224	8.20	97.50	89.30	ANGRAU, Guntur
279	MTU 1262	1.22	63.75	62.53	ANGRAU, Guntur
280	MTU 1264#	0.30			ANGRAU, Guntur
281	MTU 1280	0.10	19.25	19.15	ANGRAU, Guntur
282	MTU 1281	3.32	13.25	9.93	ANGRAU, Guntur
283	MTU 1318	7.15	136.00	128.85	ANGRAU, Guntur
284	MTU 7025#	1.50			ANGRAU, Guntur
285	MTU 7029	229.00	500.00	271.00	ANGRAU, Guntur
286	MTU Rice 1239 (IET 26263)	3.50	70.50	67.00	ANGRAU, Guntur
287	Muktashree (IET 21845)	0.65	1.00	0.35	Rice Research Station, Chinsurah (Government of West Bengal)
288	Mushkbudgi	0.03	0.03	0.00	SKUAST K, Srinagar
289	Nabanna		10.42	10.42	OUAT, Bhubaneswar
290	Narendra Dhan 97	0.20	12.50	12.30	NDUAT, Ayodhya
291	NDGR 702		48.00	48.00	NDUAT, Ayodhya
292	NDLR 7	0.44	40.00	39.56	ANGRAU, Guntur
293	NDR 2064	2.50	31.50	29.00	NDUAT, Ayodhya
294	NDR 2065	0.50	73.50	73.00	NDUAT, Ayodhya
295	NDR 9930111	5.00	7.50	2.50	NDUAT, Ayodhya
296	NDR-359	1.70	20.50	18.80	NDUAT, Ayodhya
297	Nellore Dhanyarasi (NLR 3354)	0.12	5.00	4.88	ANGRAU, Guntur
298	Nellore Mahsuri (NLR 34449)	12.10	100.00	87.90	ANGRAU, Guntur
299	Nellore Sugandha(NLR40054)	0.22	5.00	4.78	ANGRAU, Guntur
300	NLR 3041	0.10	1.00	0.90	ANGRAU, Guntur
301	NLR 4001 (Nellore Siri)	0.10	5.00	4.90	ANGRAU, Guntur
302	Nua Acharamati (IET 19713)	0.30	0.20	-0.10	OUAT, Bhubaneswar
303	Numali	0.10	1.00	0.90	AAU, Jorhat
304	Pankaj	0.10	0.10	0.00	KAU, Trissur
305	Pant Basmati-1	0.18	0.00	-0.18	GBPUAT, Pantnagar
306	PANT DHAN-18 (IET 17920) (UPRI 99-1)	1.00	14.00	13.00	GBPUAT, Pantnagar
307	PANT DHAN-24	6.02	21.50	15.48	GBPUAT, Pantnagar
308	PANT DHAN-26	3.30	6.50	3.20	GBPUAT, Pantnagar
309	Pardhhiva (NLR 33892)	0.60	10.00	9.40	ANGRAU, Guntur
310	Parijat (IET 2684)	2.30	4.20	1.90	OUAT, Bhubaneswar
311	Pathara		2.20	2.20	OUAT, Bhubaneswar
312	PAU-201	0.32			PAU, Ludhiana
313	PB-1785%	0.50	0.00	0.00	GBPUAT, Pantnagar
314	PB-1854%	2.00	0.00	0.00	GBPUAT, Pantnagar

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315	PKV Sadhana	0.20	185.05	184.85	PKV, Akola
316	PKV TILAK	4.10	205.30	201.20	PKV, Akola
317	Phule Samruddhi (VDN -99-29)	0.30	5.00	4.70	MPKV, Rahuri
318	PKV HMT	33.50	65.10	31.60	PKV, Akola
319	PKV KISAN	0.20	15.52	15.32	PKV, Akola
320	POOJA (IET-12241)	11.95	71.20	59.25	ICAR-NRRI, Cuttack
321	PR 118	2.46	20.00	17.54	PAU, Ludhiana
322	PR 121 (RYT 3240)	9.04	20.00	10.96	PAU, Ludhiana
323	PR 122	2.50	20.00	17.50	PAU, Ludhiana
324	PR 126	41.28	60.00	18.72	PAU, Ludhiana
325	PR 127	0.30	20.00	19.70	PAU, Ludhiana
326	PR 128	12.50	30.00	17.50	PAU, Ludhiana
327	PR 129	2.34	20.00	17.66	PAU, Ludhiana
328	PR-111	0.78	0.00	-0.78	PAU, Ludhiana
329	PR-113	12.33	30.00	17.67	PAU, Ludhiana
330	PR-114	13.94	20.00	6.06	PAU, Ludhiana
331	PR-123	0.02	0.00	-0.02	PAU, Ludhiana
332	PR-124 (IET 22767)	3.42	9.60	6.18	PAU, Ludhiana
333	PR-126 (RYT 3379)(IET-24721)	0.10	0.00	-0.10	PAU, Ludhiana
334	PR-130	14.00	25.00	11.00	PAU, Ludhiana
335	PR-131\$	12.18	13.00	0.82	PAU, Ludhiana
336	PR-132@	2.02		0.00	PAU, Ludhiana
337	PR-133@	0.32		0.00	PAU, Ludhiana
338	Pradhan Dhan (CR 409) IET 23110 (CR 2690-2- 2-1-1-1)	1.50	9.00	7.50	ICAR-NRRI, Cuttack
339	Prasant (CR Dhan 507)	1.00	3.20	2.20	ICAR-NRRI, Cuttack
340	PRATIBHA (OR 2172-7) IET 21582	0.30	1.10	0.80	OUAT, Bhubaneswar
341	Pratikshya (ORS 201-5) (IET 15191)	10.35	26.00	15.65	OUAT, Bhubaneswar
342	Protezin (IET 25470) (R-RHZ-R-56)	10.00	21.90	11.90	IGKV, Raipur
343	PUNJAB BASMATI - 7	4.38	7.00	2.62	PAU, Ludhiana
344	PUNJAB BASMATI-2	0.02			PAU, Ludhiana
345	PURVA (JR-16-15-1-1)	0.32	0.00	-0.32	JNKVV, Jabalpur
346	Pusa 1557	1.00	0.00	-1.00	IARI, New Delhi
347	Pusa 1592	1.02	2.50	1.48	IARI, New Delhi
348	Pusa 2511	0.10	0.00	-0.10	IARI, New Delhi
349	PUSA BASMATI 1637 (IET 24570)	3.90	0.00	-3.90	BEDF, Meerut
350	Pusa Basmati 1637 (IET24570)	0.10	4.00	3.90	IARI-RS, Karnal
351	Pusa Basmati 1692	60.50	19.00	-41.50	IARI, New Delhi
352	Pusa Basmati 1728	10.00	11.00	1.00	IARI-RS, Karnal
353	Pusa Basmati 1847	47.97	12.00	-35.97	IARI, New Delhi
354	Pusa Basmati 1885	23.90	2.00	-21.90	IARI, New Delhi
355	Pusa Basmati 1886	15.59	3.50	-12.09	IARI, New Delhi
356	Pusa Basmati 1979	4.28	1.00	-3.28	IARI, New Delhi
357	Pusa Basmati 1985	11.45	6.00	-5.45	IARI, New Delhi
358	Pusa Basmati-1(IET 10364)	8.01	5.60	-2.41	BEDF, Meerut
359	Pusa Basmati-1509 (IET 21960) (PUSA 1509-03-3-9-5)	45.92	5.00	-40.92	IARI-RS, Karnal
360	Pusa Basmati-1609	0.02	0.02	0.00	IARI-RS, Karnal
361	Pusa Basmati-1718 (IET 24565)	58.10	13.00	-45.10	IARI-RS, Karnal
362	PUSA BASMATI-6 (PUSA 1401) (IET18005)	15.04	16.00	0.96	BEDF, Meerut
363	Pusa Sugandh-2 (IET- 16310,PUSA-204-1-126)	0.10	0.40	0.30	IARI-RS, Karnal

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364	Pusa SUGANDHA-5	4.45	6.00	1.55	IARI-RS, Karnal
365	PUSA-1121 (PUSA SUGANDH-4)	61.24	42.00	-19.24	BEDF, Meerut
366	Pusa-44	13.54	0.00	-13.54	IARI-RS, Karnal
367	Pushpa (IET 17509)	2.50	1.40	-1.10	Rice Research Station, Bankura, W. B.
368	R Neelam	30.00	45.80	15.80	RPCAU, Pusa
369	Rajdeep (CN 1039-9)	0.02	0.50	0.48	Rice Research Station, Chinsurah (Government of West Bengal)
370	Rajendra Bhagvati	0.65	2.30	1.65	RPCAU, Pusa
371	Rajendra Kasturi		35.00	35.00	BAU, Sabour
372	Rajendra Mahsuri-1	12.60	24.50	11.90	RPCAU, Pusa
373	Rajendra Mahsuri-1		10.24	10.24	BAU, Sabour
374	Rajendra nagar vari-1 (IET 27077)	0.10	0.50	0.40	PJTSAU, Hyderabad
375	Rajendra nagar vari-2 (IET 26143)	0.10	0.40	0.30	PJTSAU, Hyderabad
376	Rajendra Sweta	1.40	5.80	4.40	RPCAU, Pusa
377	Rajendra Sweta		12.00	12.00	BAU, Sabour
378	Rajshree (TCA-80-4) (IET 7970)	0.40	11.60	11.20	RPCAU, Pusa
379	Rani Dhan (IET 19148)	2.30	2.20	-0.10	OUAT, Bhubaneswar
380	RANJEET (IET - 12554)	8.10	20.40	12.30	AAU, Jorhat
381	RANJIT SUB -1	10.10	20.90	10.80	AAU, Jorhat
382	Ratnagiri-1	0.60	7.82	7.22	BSKKV, Dapoli
383	Ratnagiri-5	0.02	3.20	3.18	BSKKV, Dapoli
384	Ratnagiri-6	0.20	4.76	4.56	BSKKV, Dapoli
385	Ratnagiri-7	0.40	1.80	1.40	BSKKV, Dapoli
386	Ratnagiri-8	0.40	12.75	12.35	BSKKV, Dapoli
387	RC Maniphou-13	0.02	15.00	14.98	ICAR RCNEH, Manipur
388	Reajendra Suwasini		37.50	37.50	BAU, Sabour
389	Red Rice	0.06	0.06	0.00	SKUAST K, Srinagar
390	RGL 2537	6.00	69.00	63.00	ANGRAU, Guntur
391	Rice CR 1009 Sub 1	2.00	2.00	0.00	TNAU, Coimbatore
392	Rice VGD 1	0.10	0.50	0.40	TNAU, Coimbatore
393	RNR-15038	0.50	0.00	-0.50	PJTSAU, Hyderabad
394	RNR-15048 (Telangana Sona)	50.95	60.00	9.05	PJTSAU, Hyderabad
395	Sabita (IET 8970)	0.35	1.00	0.65	Rice Research Station, Chinsurah (Government of West Bengal)
396	Sabour Ardhjal (BRR 0007)	15.10	27.50	12.40	BAU, Sabour
397	Sabour Deep (RAU 3055)	15.00	29.00	14.00	BAU, Sabour
398	Sabour Harshit Dhan		43.00	43.00	BAU, Sabour
399	Sabour Heera Dhan (IET-27538) (BRR 2110)	0.10	10.10	10.00	BAU, Sabour
400	Sabour Sampanna Dhan (IET 25960)	45.10	116.64	71.54	BAU, Sabour
401	Sabour Shree (RAU 724-48-33) (IET 18878)	75.00	123.50	48.50	BAU, Sabour
402	Sabour Surbhit RAU 3036)	15.00	15.00	0.00	BAU, Sabour
403	SAHBHAGI (SAHBHAGI DHAN IET-19576)	20.30	21.00	0.70	ICAR-NRRI, Cuttack
404	Sahyadri Megha	0.52	1.00	0.48	UAHS, Shivamoga
405	Sahyadri Panchmukhi	0.32	0.60	0.28	UAHS, Shivamoga

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406	Sahyadrikempumukthi (IET-29855)	1.16	2.50	1.34	UAHS, Shivamoga
407	SAKOLI-9	0.20	45.50	45.30	PDKV, Akola
408	Sambha Sub - 1 (IET 21248)	14.30	12.80	-1.50	ICAR-NRRI, Cuttack
409	Sampada (IET 19424)*	3.00	3.00	0.00	IIRR, Hyderabad
410	SARALA CR-260-77 (IET-10279)	2.70	22.70	20.00	ICAR-NRRI, Cuttack
411	Sarjoo 52	1.00	72.00	71.00	NDUAT, Ayodhya
412	SATABADI (IET-4786)	32.10	35.00	2.90	Rice Research Station, Chinsurah (Government of West Bengal)
413	Sebati (IET 11786)*	2.00	3.60	1.60	OUAT, Bhubaneswar
414	Shalimar Rice -6	0.02	0.02	0.00	SKUAST K, Srinagar
415	Shalimar Rice-2	3.12	2.00	-1.12	SKUAST K, Srinagar
416	Shalimar Rice-3	0.32	3.00	2.68	SKUAST K, Srinagar
417	Shalimar Rice-4 (SKUA-408)	9.32	18.00	8.68	SKUAST K, Srinagar
418	Shalimar Sungdh-1	0.00	4.00	4.00	SKUAST K, Srinagar
419	SHIATS DHAN 5	3.02	10.00	6.98	SHUATS, Prayagraj
420	SHIATS DHAN-4	6.02	25.00	18.98	SHUATS, Prayagraj
421	Shobhini (RNR-2354) (IET- 21260)	0.72	1.00	0.28	PJTSAU, Hyderabad
422	Shriram^	1.00			PJTSAU, Hyderabad
423	Sona Mahsuri (BPT 3291)	4.65	26.00	21.35	ANGRAU, Guntur
424	SR-V	1.00	2.00	1.00	SKUAST K, Srinagar
425	Sukumar (IET 21261)	2.10	2.50	0.40	Rice Research Station, Chinsurah (Government of West Bengal)
426	SWARANA-SUB 1 (CR 2539-1) IET-20266	81.35	83.20	1.85	ICAR-NRRI, Cuttack
427	Swarna Samridhhi Dhan (IET 24306)	16.75	46.70	29.95	ICAR-RCER, Patna
428	Swarna Shakti Dhan (IET 25640)	20.12	21.00	0.88	ICAR-RCER, Patna
429	Swarna Shreya	35.00	41.00	6.00	ICAR-RCER, Patna
430	Swarna shusk dhan	0.90	1.20	0.30	ICAR-RCER, Patna
431	Swarna Sub 1		47.50	47.50	BAU, Sabour
432	Swarna unnat Dhan (IET 27892)	0.10	6.00	5.90	ICAR-RCER, Patna
433	Swetha (IET 14735)	0.10	0.20	0.10	KAU, Trissur
434	Tanmayee (OR2329-44) (20262)	0.02	0.20	0.18	OUAT, Bhubaneswar
435	Tarun Bhog Selection-1	20.30	27.00	6.70	IGKV, Raipur
436	Telangana Vari-1(IET 25330)	3.70	4.00	0.30	PJTSAU, Hyderabad
437	Telangana Vari-3 (JGL 21078)	0.12	0.12	0.00	PJTSAU, Hyderabad
438	Telangana Vari-4	0.10	0.10	0.00	PJTSAU, Hyderabad
439	Telangana Vari-5 (RNR28362)	0.10	4.00	3.90	PJTSAU, Hyderabad
440	Telangana Vari-6 (KNM7048)	0.20	0.20	0.00	PJTSAU, Hyderabad
441	Tellahamsa	0.33	0.50	0.17	PJTSAU, Hyderabad
442	THANU	1.17	4.99	3.82	UAS, Bangalore
443	TKM 13	0.02	0.10	0.08	TNAU, Coimbatore
444	TM 07278	3.22	3.50	0.28	TNAU, Coimbatore
445	TRC 216-14 (IET 26435)/ICAR NEH NICRA-Boro Dhan 1	0.15	0.15	0.00	ICAR-NEH, Tripura
446	Tripura Aush	0.02	0.02	0.00	ICAR-NEH, Tripura
447	Tripura Chikan Dhan	0.02	0.02	0.00	ICAR-NEH, Tripura
448	Tripura Sarat	0.02	0.02	0.00	ICAR-NEH, Tripura
449	Trombay karjat kolam (BARCKKV 13) (IET27000)	0.20	2.14	1.94	BSKVV, Dapoli
450	Trombey Chattisgarh Dubraj Mutent-1	25.00	44.20	19.20	IGKV, Raipur

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SN	Variety	Actual allocation as per BSP-I	Actual Prod.	Surplus (+)/ Deficit (-)	Centre Name
451	Trombey Chattisgarh sonagathi Mutent (TCSM)	1.00	3.70	2.70	IGKV, Raipur
452	Trombey Chattisgarh Vishnubhog Mutent (TCVM)	21.00	39.70	18.70	IGKV, Raipur
453	TUNGA (IET-13901)	5.16	13.00	7.84	UAHS, Shivamoga
454	Udayagiri		3.40	3.40	OUAT, Bhubaneswar
455	UMA (MO-16)	15.89	16.00	0.11	KAU, Trissur
456	Upahar(OR 1234-12-1) (IET 17318)	0.30	3.00	2.70	OUAT, Bhubaneswar
457	Uttar Lakshmi (IET 24173) UBKVR-15	1.42	1.50	0.08	UBKV, Pundibari
458	Uttar Samir (PUR-B-36(IET 26453)	0.15	0.20	0.05	UBKV, Pundibari
459	Uttar Sona (UBKVR -1) (IET 24171)	2.32	2.50	0.18	UBKV, Pundibari
460	Uttar Sugandhi (UBKVRA-2 (IET 24616)	0.10	0.50	0.40	UBKV, Pundibari
461	Varam (MTU 1190)	3.22	3.00	-0.22	ANGRAU, Guntur
462	Varshadhan (CRLC-899)(IET- 16481)	2.30	9.60	7.30	ICAR-NRRI, Cuttack
463	Vasundhara (RGL 2538)	0.10	1.10	1.00	ANGRAU, Guntur
464	Vijetha (MTU 1001)	81.70	100.00	18.30	ANGRAU, Guntur
465	Vikram TCR	45.05	100.00	54.95	IGKV, Raipur
466	Vishnubhog Selection-1	20.42	46.30	25.88	IGKV, Raipur
467	VL 88	3.60	3.60	0.00	VPKAS, Almora
468	VL DHAN 157 (VL31611) (IET 22292)	0.60	0.00	-0.60	VPKAS, Almora
469	Warangal vari 2 (IET 26094)	0.10	0.50	0.40	PJTSAU, Hyderabad
470	WGL-697 (IET 26027)	3.32	4.00	0.68	PJTSAU, Hyderabad
471	WGL-915 (Warangal rice 1)	0.22	1.00	0.78	PJTSAU, Hyderabad
472	ZINCO RICE MS	5.00	12.00	7.00	IGKV, Raipur
	Grand Total	3317.80	9050.93	5742.28	

Breeder Seed Production Proformae

The Calendar of events for breeder seed production are as under : Co-operators are requested to please comply with the schedule

Proforma BSP I : Allocation of Breeder Seed Production of Varieties/ Parental lines of Rice hybrids

S. No	Variety	Name of the producing Breeder/ Institution	Quantity allotted (Qtls)	Members of monitoring team

Action:

- **BSP I will be sent to respective centres in the last week of April by IIRR after rice workshop.**

Proforma BSP II: Time of production and availability of Breeder Seed

S. No	Variety/ Parental lines	Quantity targeted (Qtls)	Area sown (ha)	D/S	D/P	Field location	Expected fortnight for monitoring	Expected date of Harvest	Expected Production (Qtls)	Expected date of availability

Action:

- **BSP II should positively reach IIRR in the last week of September**

Proforma BSP III: Inspection Report of the Monitoring Team

Sl. No	Variety	Area under variety (ha)	Field Location	Authority under which grown		Report of Monitoring Team	Expected Production (Qtls)
				Date of Proforma BSP-I	Date of Proforma BSP-II		

Action:

- **BSP III should positively reach IIRR in the second fortnight of November**

Proforma BSP IV : Report on Breeder Seed Production actually produced

(a) Breeder Seed Produced as per DAC indent

Variety/ Parental lines	Quantity of B.S. allotted as per BSP I	Quantity of B.S. actually produced (Qtls)	Comments of the Monitoring Team (Satisfactory/ Unsatisfactory)

b) Breeder Seed Produced in addition to above allocation, if any

Variety/ Parental lines	Quantity of B.S. produced (Qtls)	Comments of the Monitoring Team (Satisfactory/ unsatisfactory)

(c) Carry over seed, if any

Variety/ Parental lines	Year of Production	Quantity	Germination Percentage	
			Previous year	Current year

Action:

- **BSP IV should positively reach IIRR in the second fortnight of December (If BSP data is submitted timely, we can minimize the problems of non lifting.)**

Proforma BSP V : Report of Grow Out Test

Proforma BSP VI : Report on the Status of Lifting/Non-lifting /Supply position for the previous season.

- **Status of breeder seed produced in the previous season / year and supplied to various seed agencies / state dept. of Agriculture as per the DAC allotment in other words lifting / non-lifting / supply position may kindly be sent to DRR positively in the second fortnight of September.**

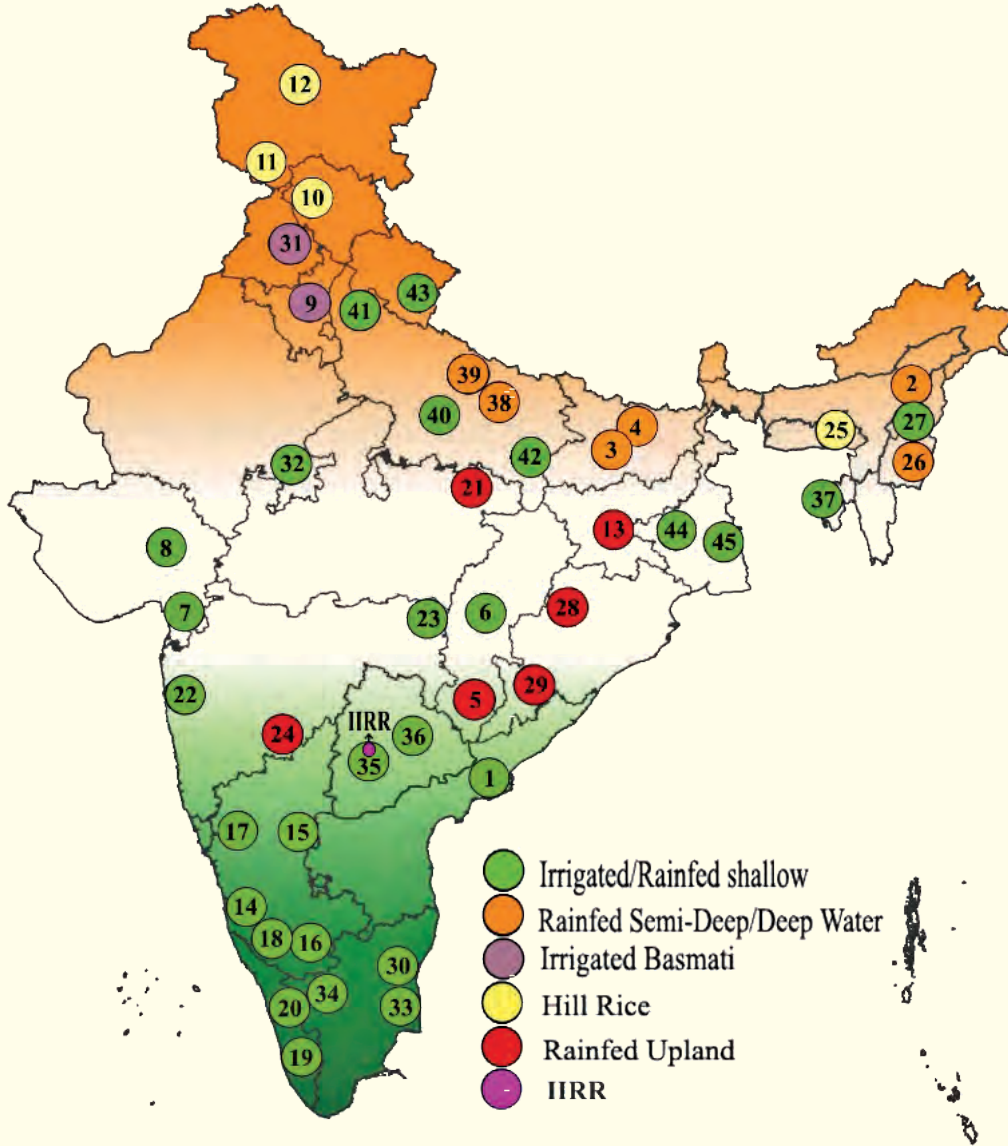
Name of the producing centre	Variety	Target set	Actual production	Allocation (Agency wise)	Lifting (Agency wise)	Balance if, any	Remarks

Action:

- **BSP VI should positively reach DRR in the second fortnight of September**

All the proforma should be distributed to:

1. Asst. Director General (Seeds), ICAR, Krishi Bhavan, New Delhi – 110 001.
2. Deputy Commissioner (Seeds), Department of Agriculture and Co-operation, Ministry of Agriculture, Shastri Bhavan, New Delhi – 110 001
3. Director, ICAR-Indian Institute of Rice Research, Rajendranagar, Hyderabad – 500 030.
4. Director, ICAR-Indian Institute of Seed Science, Village: Kusmaur (P.O.Kaithili), Mau Nath Bhanjan, Uttar Pradesh.
5. General Manager (Production), National Seed Corporation, Beej Bhawan, Pusa Campus, New Delhi – 110 012.



भाकृअनुप - भारतीय चावल अनुसंधान संस्थान
भारतीय कृषि अनुसंधान परिषद

ICAR-Indian Institute of Rice Research

Indian Council of Agricultural Research
Rajendranagar, Hyderabad - 500 030