

चावल अनुसंधान समूह बैठकों की प्रारूप कार्यवाही

**Draft Proceedings of 58<sup>th</sup> Annual Rice Group Meetings**

अखिल भारतीय समन्वित चावल सुधार परियोजना

**All India Co-ordinated Rice Improvement Project**

**Assam Agricultural University, Jorhat, 4-5<sup>th</sup> May, 2023**

***(Conducted in Hybrid mode)***



**भाकृअनुप-भारतीय चावल अनुसंधान संस्थान**

**भारतीय कृषि अनुसंधान परिषद**

**ICAR-Indian Institute of Rice Research**

**Indian Council of Agricultural Research**

**Rajendranagar, Hyderabad - 500 030**



# **DRAFT PROCEEDINGS**

**58<sup>th</sup> Annual Rice Research Group Meetings**  
**10-11<sup>th</sup> April & 4-5<sup>th</sup> May, 2023**  
(Hybrid Mode)

## **All India Coordinated Rice Improvement Project (AICRIP)**



**ICAR–Indian Institute of Rice Research**

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## **SESSION I : INAUGURAL SESSION**

**Chief Guest** : Dr. T. R. Sharma, DDG (CS), ICAR, New Delhi  
**Guest of Honor** : Dr. Bidyut Chandan Deka, VC, AAU, Jorhat  
**Guest of Honor** : Dr S R Das, Honorary Professor, OUAT  
**Guest of Honor** : Dr. S K Pradhan, ADG (FFC), ICAR, New Delhi  
**Rapporteurs** : Drs. J. Aravind Kumar and D. Krishnaveni

The inaugural session of the 58<sup>th</sup> Annual Rice Research Group Meeting was held at Assam Agricultural University, Jorhat in hybrid mode on 4<sup>th</sup> May 2023 in the university auditorium. The Chief Guest of the inaugural session was Dr TR Sharma, DDG (Crop Science), ICAR, New Delhi. The other dignitaries on the dias were: Dr BC Deke, Vice Chancellor, AAU, Jorhat; Dr SK Pradhan, ADG (FFC), ICAR, New Delhi; Dr RM Sundaram, Director, ICAR-IIRR, Hyderabad; Dr AK Nayak, Director, ICAR-NRRI, Cuttack; Dr SR Das, Hon. Professor, OUAT and Dr A Bhattacharya, Director of Research (Agri), AAU, Jorhat. After the felicitation of the dignitaries, the welcome address was given by Dr A Bhattacharya. He welcomed and introduced all the dignitaries on the dias. He stressed upon the rice based cropping systems and intensification of direct seeded rice (DSR). Popular specialty submergence varieties like Ranjit Sub 1 and Bahadur Sub 1 were developed by AAU, Jorhat.

Dr RM Sundaram, Director, ICAR-IIRR presented the progress made by AICRIP on rice and research highlights of AICRIP and IIRR for 2022-23. He presented the action taken report (ATR) for 2022-23 that included the progress achieved in pre-breeding activities; comprehensive analysis of performance AICRIP cooperating centers; natural farming trial was initiated; and development of automated soil testing device i.e., KRISHI-RASTAA. He also presented the new initiatives taken at ICAR-IIRR during 2022-23: guidelines were developed for the release of non-varietal technologies; new trial for genome edited lines (GEL) was initiated; benchmarking trial of bio-fortification trials along with uniformity trials (8-10 centers) were initiated; Production oriented survey (POS) was completed and it was observed that researchable areas varied from region to region. Several promising sorghum hybrids were identified suitable for rice-based intercropping systems. The importance of need based pesticide application in natural farming for achieving high yield. It was also highlighted that initial leaf starch concentration is important for submergence tolerance. Under special IPM, the grain yield increased in comparison to conventional farmer's practices. Entries with multiple resistances to major diseases have been identified and artificial screening facilities for false smut and brown spot were developed. Eight (8) training programs were conducted that benefited more than 200 stakeholders/farmers.

Dr Nayak, Director, ICAR-NRRI, Cuttack stressed on the importance of DSR and carbon credit to the farmers. He also emphasized the importance of maintaining a registry for carbon credit. Dr Nayak urged the researchers to orient their research towards

implementation and intensification of DSR. Also, he stressed that the testing conditions should be tuned towards DSR. Due to the low volume of availability of biofortified varieties, they are not being accommodated in the public distribution systems. The data received from lowland/stress prone ecologies is not being considered often, therefore, the centers should be increased and also the conditions of the centers need improvement. The centers required for testing of non-varietal technologies need to be deliberated.

Dr SK Chetia, Chief Scientist, ARRI, Titabar presented the 100 years glorious journey of Assam Rice Research Institute since its inception in 1923. He presented the role of ARRI in rice breeding in Assam which included: generation of technological packages through interdisciplinary research; dissemination of production technologies to the farmer's field to increase productivity and sustainability by adopting applied, basic, and location specific need based research; conservation of genetic resources of rice and production of quality seed. The most popular varieties developed are Ranjit, Ranjit Sub 1, Bahadur, Bahadur Sub 1 and Labanya (purple rice).

Dr SK Pradhan, ADG (FFC) informed the audience and appreciated the cooperators for their work in the largest crop network i.e., AICRPR. He emphasized the importance of developing nutritionally-enriched varieties in the superior background which could be adopted by the farmers. Dr Pradhan also stressed the need for integration of QTL/genes for water-related issues in the elite background. Development of low cost machines could contribute to increase in the profitability from rice production. He mentioned that value chain addition including rice bran oil, beverage making, and ethanol production from straw should also be targeted in breeding programs. Varieties suitable for dual purpose (grain yield and straw yield) can be explored.

Dr SR Das, Honorary Professor, OUAT informed the audience about the contribution of Eastern India to rice cultivation in India. Dr Das urged the breeders to develop varieties with submergence tolerance, tolerance to stagnant flooding and with anaerobic respiration especially for Eastern India. He underscored the importance of stay green traits and its deployment in breeding also, the development of heterogeneous populations. He also spoke about the establishment of "Aroma Villages" in Odisha.

Dr BC Deke, Vice Chancellor, AAU, Jorhat underscored the importance of rice production in the economy of eastern India. Further, he urged the rice scientists to develop varieties suitable for Eastern India. Development of new varieties should be accompanied by development of suitable package of practices for successful adoption and increased yield realization. He emphasized the need to shift from 'Green Revolution' to 'Green Commerce'. He urged the researchers to study the economics of released varieties in terms of their profitability and extent of adoption for better finding opportunities.

Dr TR Sharma, DDG (Crop Sciences), ICAR, New Delhi congratulated the AAU staff for completion of 100 years of AAU- ARRI, Titabar. The future projection of rice production in 2050 is expected to be ~160 MT which needs to be achieved through increase productivity. He said that AICRPR should play a crucial role in achieving the target of 160 MT. He underscored the importance of developing varieties for the diverse conditions

and different ecosystems present across India. Multi-disciplinary mode of research should be adopted for breeding programs. Dr Sharma emphasized the minimum micronutrient levels to be considered for varietal release purpose. Development of speciality rices including low/ultra-low glycaemic index and high grain protein varieties needs to be prioritized. Development of high yielding (>6 t/ha) hybrids in partnership with private sectors should be considered. Varieties with multiple stress tolerance and high micronutrient levels need to be developed. Speed breeding and other genome technologies to be utilized for development of NUE and WUE varieties. Mechanization techniques for transplanting, harvesting and value chain addition need to be developed. Dr Sharma appreciated the efforts made by ICAR-IIRR led by Dr Sundaram.

The session ended with presentation of vote of thanks by Dr MS Prasad, Convener, 58<sup>th</sup> ARGM.



## **TECHNICAL SESSION II - Review of Results and Progress Report**

**Chairman** : Dr. T. R. Sharma, DDG (CS), ICAR, New Delhi  
**Co-Chairman** : Dr. Deepak Sharma, Prof. & Head, Plant Breeding, IGKV, Raipur  
**Rapporteurs** : Drs. Jyothi Badri and C Gireesh.

### **CROP IMPROVEMENT**

Dr. T.R. Sharma, the chairman of the session welcomed Dr. Deepak Sharma, the Co-chairman and delegates for crop improvement session. Dr. LV Subba Rao, PI AICRIP crop improvement presented the progress of breeding trials conducted during kharif 2022. He has presented the overview of the trials conducted in irrigated trials coordinated by ICAR-IIRR, rainfed trials coordinated by ICAR-NRRI and also Basmati trial coordinated by ICAR-IARI. A total of 28 varieties in CVRC (26 varieties and two hybrids) and 62 varieties (51 varieties and 11 hybrids) in SVRC were released in the previous year. A total of 43 funded centres and 81 voluntary centres participated in conduct of breeding trials during kharif 2022. He also briefed about location wise trials conducted, data provided, trial considered for analysis. Around 57% centres data were considered for analysis of trials and 24% locations data was not received from the centres, while remaining 19% location's data was not considered due to either low CV or low experimental yield. He also briefed the number of test entries promoted in each breeding trials conducted during kharif 2022-23. IET 30757 in AVT1 IM (NIL) was promoted to second year of testing based reanalysis of HRR. It was emphasized to conduct uniformity trial for optimization of plot size. 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. He also underlined the importance of increasing the number centres for salinity and alkalinity trials in problematic soils. Dr. Subba Rao informed the following new initiatives to be taken up during upcoming kharif 2023-24,

1. Genomic Edited Lines (GEL) Trial
2. Direct Seeded Rice (DSR) trial
3. Coloured Rice Trial (started on pilot basis in 2022 and full-fledged initial varietal trial (IVT-Coloured) from 2023.
4. Uniformity trials for standardization of experimental plot size and
5. Benchmarking trials for biofortification entries.

Dr. Subba Rao also presented the progress made in breeder seed production in rice. He informed that new varieties are replacing mega varieties which are evident from reduction in percent share of the mega varieties in the value of BSP. Breeder seed production in most of centers was encouraging as they produced the sufficient quantity of breeder seeds as per the DAC indent except at few centres.

Dr. Subba Rao also briefed about various prebreeding activities and breeding program being undertaken during kharif 2022-23. He also presented monitoring tour program of AICRIP conducted during 2022-23.

Dr. A.S. Hariprasad, Principal Scientist and Head, (Hybrid rice section) ICAR-IIRR, presented the progress report of hybrid rice trials conducted during kharif 2022-23. A total of 137 rice hybrids are released so far, of which 91 hybrids through CVRC and 46 through SVRC. During kharif 2022-23, four rice hybrids were released which include world's first aerobic rice hybrid (DRRH 4) through CVRC and first two line rice hybrid (Pusa JRH 56) through SVRC for the state of Madhya Pradesh. Approximately 3 to 3.5 million ha area is under hybrid rice cultivation and there is need to put effort to enhance the hybrid rice cultivation particularly in zone II. During kharif 2022-23, six out of 36 trials conducted in various locations were not considered for analysis due to low CV or low experimental yield. During kharif 2022-23, a total of 23 hybrids were promoted from IVT, AVT1 to AVT2. In the initial hybrid rice trials, 33 hybrids were identified as promising and promoted to AVT1. In addition to the four IHRT trials, MLT comprising the released hybrids will also be resumed during kharif 2023.

During discussion, Dr. A.K. Naik Director, ICAR-NRRI suggested for nutrient profiling of trial locations and to estimate N and P in rice grain and straw. While Dr. B.N. Singh suggested to conduct separate hybrid rice trials.

Dr. Deepak Sharma suggested to include more number of voluntary centres for proper representation of states; the performance based incentivization/penalization of centers in order to address the issue of low CV, low experimental yield; Trial allocation based trial indent submitted by the centres considering the facilities available with centres; Uniformity trial for deciding the plot size; Consideration of two years data of station trials for nomination of entries; Soil testing of locations and benchmarking of biofortification trials; consideration of therapeutic values of nominating entries in coloured rice trials; consideration of non-basmati long slender grains with good aroma in ASG trial; constitution of premium rice trials, strengthening of public derived hybrid rice program and also emphasized the significance of culm strength in lodging resistance breeding program.

Dr. T.R. Sharma, DDG (Crop science) advised Director ICAR-IIRR to assess the performance of the centres. If repeated failure of the centers to provide quality data, such centres to be discontinued in AICRIP. He also advocated the proper conduct of station trials for identification of promising entries to further nominate in AICRIP and identification of false smut resistance genes for further utilization in the breeding. He highlighted the importance of prebreeding to broaden the genetic base of parental lines utilized in breeding and also appreciated the ongoing prebreeding and trait focus at IIRR. In new ICAR IIRRI work pan, the hybrid rice consortium should contribute to national program and materials from IRRI are to be utilized in development of public sector hybrids.

## 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 Brajendra, Mangal Deep Tuti, Akshay S Sakhare.

## AGRONOMY

Dr R. Mahender Kumar has presented the results of Agronomy Program of *kharif* 2022. All nutrient management trials were in collaboration with Plant Breeding to develop superior and cost effective, resource efficient cultivars and technologies in rice and rice based cropping systems. He also presented ATR of 57<sup>th</sup> ARGM. Soil data should be included during reporting of data. ADG, Dr. S. K. Pradhan asked about non-inclusion of agronomy boro rice trial results in previous years. Protocol and set of procedures under natural farming, organic farming and integrated crop management ICM need to be standardized. Chairman, Dr. A. Subba Rao stated that, for getting stable yield under these farming systems, data of 3-4 years required to reach to a valid conclusion. Further, questions were asked about severity of BPH and weed diversity studies in DSR. Suggestions were made for bio-priming of *Azotobacter* in seed and emphasis was given for root and shoot parameter studies. In this regard, Dr. R. Mahender Kumar informed that a brainstorming session was conducted to address DSR emerging issues. Co-Chairman Dr. A. K. Nayak, Director, ICAR-NRRI suggested that under DSR studies data on GHGs emissions, carbon status, labor reduction, water use efficiency and cost of cultivation should be generated. Weedy rice problem, energy dynamics to be established as there is large number of variants of DSR are prevalent under different rice ecologies such as rainfed-DSR and irrigated-DSR. Chairman suggested to create a centralized data base, so that pooled analysis of data, soil health trends, use of IOT device can be developed.

## SOIL SCIENCE

Dr MBB Prasad Babu, presented the results of AICRPR Soil Science. Emphasis was given to provide soil data along with yield. Set of protocol to be established and followed for natural farming. Soil fertility data, soil quality index and soil health status have to be generated under different farming systems. Salinity studies, sodium potassium ratios, exclusion data, tissue tolerance information to be explored. No conclusion should be drawn on momentarily trials immediately as long-term results required to validate the benefits. Chairman, emphasized more on protocol, homogeneity of treatments for comparing results at multiple centers, soil carbon status, micronutrient status, sampling protocol, for all same protocol to be repeated at all centers. In DSR, GHGs studies should

be explored, carbon trading status to be ascertained. Chairman also emphasized that data on soil parameters needs to be generated and trends to be developed in yield gap analysis.

## **PLANT PHYSIOLOGY**

Dr. P. R. Rao elaborately presented the results of the Plant Physiology trials for year 2022 consisting of 6 trials conducted at 15 locations across the country. Co-Chair Dr. A. K. Nayak suggested in drought stress tolerance trials, it is important to identify the mechanisms responsible tolerance in the germplasm. Further data on stomatal density, leaf water potential, root length density, epicuticular wax content and activity of antioxidant enzymes needs to be generated. For High temperature stress tolerance trial, the experimental design should be made to assess the effect of day and night temperature. The temperature at various stages should be imposed in such a way to compare with the cardinal temperature of rice. If high temperature stress tolerance trial is at anthesis stage, the spikelet fertility, pollen viability should be measured. If high temperature stress tolerance trial is at vegetative stage, electrolyte leakage and RGR traits should be recorded. Regarding multiple abiotic stresses (MAS) there is no standard protocol for screening MAS. So, he has suggested to develop a suitable protocol for screening MAS trials. For salinity stress tolerance trials, data needs to be generated regarding the salt exclusion mechanism, compartmentalization mechanism of salt tolerance. Further he suggested, studying tissue salinity tolerance and Na/K ratio.

## 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.

## 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 2022 at different hot spot locations in India. A total of 16 trials were conducted during 2022 at 51 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 1,364 entries of Initial and advanced breeding lines and new rice hybrids were evaluated at 51 centers for their reactions to major rice diseases. Among the tested entries, 91 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# 29411 and 30020 (MR to LB, ShR and RTD), 30233 (MR to LB, NB & BS) and 30037 (MR to LB, BB & Resistant to NB). In NSN-2, IET 30772 showed resistant reaction to four major rice diseases (R to NB and MR to BS, ShR and BB). In NSN-H, IET# 30531 (Resistant to RTD & MR to LB, NB & ShBl) showed resistance or moderate resistance to four diseases. In NHSN entry IET # 30603 (MR to ShBl, ShR, RTD & BB) showed moderate resistant reaction to four diseases. In DSN, five donors exhibited resistant or moderate reaction to three diseases (19273 -MR to ShBl, ShR and RTD; CB MSP9 006 - MR to LB, BS and ShR, KNM 12346 - R to NB & MR to SHB&BS; UB 1066- MR to LB, ShBl and ShR; VP-R36-ShB – R to NB, MR to ShBl and ShR; RP-Bio Patho-3 - R to NB, MR-LB, BB). He also presented the results of monitoring of field virulence of blast pathogen (*Magnaporthe oryzae*) and bacterial blight pathogen (*Xanthomonas oryzae* pv. *oryzae*). He mentioned that there was a shift in the virulence profile of blast pathogen in some of the hot spot locations. The reaction pattern at Cuttack, Gudalur, Lonovala, Ghaghraghat, Navasari and Karjat were distinct. Regarding monitoring of field virulence of bacterial blight pathogen, most of the differentials possessing single bacterial blight resistance genes like *Xa1*, *Xa3*, *Xa4*, *xa5*, *Xa7*, *xa8*, *Xa10*, *Xa11* and *Xa14* were susceptible at most of the locations. BB resistance gene *xa13* was susceptible in 8 locations while *Xa21* was susceptible in 11 locations. Based on their virulence, the isolates were grouped into high, moderate and low virulence groups. The data from the disease observation nursery revealed that leaf blast and sheath rot incidence was more in the late sown crop; sheath blight and bakanae was high in early sown crop. Data on chemical control trial experiments revealed that isoprothiolane 40% EC (1.5 ml/L) and kitazin 48% EC (1.0 ml/L) was effective against blast. Tebuconazole 25.9% EC (1.5 ml/L) showed broad spectrum activity against blast, sheath blight, sheath rot and brown spot and difenoconazole 25% EC (0.5 ml/L) showed broad spectrum activity sheath blight, sheath rot and brown spot and glume discoloration. To know the

changes in the virulence pattern of blast and bacterial blight pathogen, last 5 year's virulence monitoring data were analyzed and he mentioned that in case of blast, single R genes are still effective in majority of the locations while in case of bacterial blight, only gene combinations are effective. He mentioned that in the trial on the evaluation of bio-control formulations against fungal diseases, *Trichoderma asperillum* (TAIK1) as seed treatment followed by seedling dip @ 5g/l with liquid formulation followed by hexaconazole @ 2ml/l at tillering stage provided the higher percent disease control against sheath blight and increased plant yield. In special IPM trial, he mentioned that IPM practices performed better compared to farmer practices against leaf blast, neck blast, brown spot and sheath blight at most of the locations. He mentioned that with increase in disease intensity of leaf blast, sheath blight and bacterial blight, there was corresponding decrease in yield.

Dr G.S. Laha, Principal Scientist, Plant Pathology, ICAR-IIRR, presented the results of Production Oriented Survey-2022. He informed that the survey was conducted in 16 states by 18 AICRIP centres. He informed that, the Southwest monsoon seasonal rainfall during June to September for the country as a whole had been above normal. However, in the eastern and north eastern India, rainfall was delayed and below average resulting in delayed planting. Hybrid rice varieties occupied a significant area in states like Uttar Pradesh, Haryana, Chhattishgarh and Gujarat. He mentioned that most of the farmers all over India preferred fine grained and polished rice. Coarse grain rice varieties were preferred only in Kerala and eastern India where the farmers prefer parboiled rice. He mentioned that yield of HYVs was highest in Punjab and Haryana followed by Andhra Pradesh while it was very less in Konkan region of Maharashtra. Among the basmati varieties, highest yield was reported from Haryana followed by Punjab and Jammu. He mentioned that use of herbicides has increased significantly due to labour shortage. Direct Seeded Rice is getting popular in the states of Punjab, Haryana and Andhra Pradesh. Among the diseases, leaf and neck blast, brown spot, sheath blight, false smut, grain discoloration and bacterial blight were widespread. High intensity of neck blast was noticed in some parts of Kerala and Telangana. High intensity of false smut was recorded in parts of Chhattisgarh and Jammu while bacterial blight was severe in parts of coastal Andhra Pradesh, Chhattisgarh, Kerala and Konkan region of Maharashtra. Moderate to high intensity of a new virus disease called Southern rice black-streaked dwarf virus (SRBSDV) was recorded in some parts in Jammu, Punjab and Himachal Pradesh. Among the insect pests, stem borer, leaf folder and BPH were very wide spread. Intensity of stem borer was more in Parts of Chhattisgarh, Jammu, Telangana and West Bengal. High incidence of BPH was noticed in parts of Chhattisgarh and West Bengal. Farmers expressed the necessity of short duration varieties and DSR specific varieties.

## ENTOMOLOGY

Dr. V Jhansilakshmi, Head and PI of Entomology Coordinated Programme presented the results of the trials conducted during *kharif* 2022 in the afternoon of 4<sup>th</sup> April 2023. The entomology programme was focussed on various aspects like host plant resistance studies, chemical control, biocontrol studies, ecological studies, IPM trials, and population monitoring through light traps and conducted at 39 locations (29 funded & 9 voluntary centres including IIRR) in 23 states and one Union Territory. She apprised the house that 1581 trials were conducted comprising of 1521 pre-breeding lines and varieties, 98 hybrids, 13 germplasm lines and 136 checks. These entries were evaluated against 15 insect pests in 209 valid tests (47 greenhouse tests and 162 field tests). She presented the most promising cultures identified in pest specific screening trials viz., Planthoppers, gall midge, leaf folder and stem borer and the National Screening nurseries of IIRR and NRRI. In all the trials, 92 entries (5.81% of the tested) were promising against various insect pests.

She presented the results of insect biotype and population monitoring studies of plant hoppers and revealed PTB 33 (with *bph2+Bph3+ Bph32*+unknown factors) and RP 2068-18-3-5 (with *Bph33t* gene) were promising. Aganni (*Gm8*), INRC 3021 (*Gm8*) and INRC17470 were promising for gall midge. Brown planthopper population of Ludhiana was more virulent than the other five BPH populations.

She stated that the seed treatment with thiamethoxam followed by application of fipronil 3% GR at 20-25 DAT in the main field was most effective against gall midge with significantly lower silver shoots (8.27%) as compared to other treatments. In case of yellow stem borer, seed treatment with thiamethoxam followed by chlorantraniliprole 0.4 GR in the main field was most effective in preventing dead heart formation with 62.18 per cent reduction over control. In the Insecticide Botanical Evaluation trial (IBET), all insecticides treatment recorded highest mean yield of 4991.0 kg/ha followed by treatment consisting of neemazal, neem oil and triflumezopyrim giving yield of 4554.2 kg/ha. She presented that the performance of the identified multiple pest resistant rice cultures under protected and unprotected conditions against the pest damage revealed the gall midge damage was significantly lower (1.7-3.03%SS) in W1263 (*Gm1*), CUL M9, Suraksha (*Gm11*), Akshyadhan PYL, RP2068- 18- 3-5 (*gm3*) as compared to other varieties. CUL M9, RP2068, RP5587-273-1-B-B-B and Suraksha recorded lower dead heart damage across locations though statistically not significant.

In Influence of crop establishment methods (IEMP) trial, the incidence of insect pests was significantly high in puddled direct-seeded rice followed by the normal transplanting method while the incidence was low in direct-seeded rice, semi-dry rice, mechanical transplanting, and aerobic rice. 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. *Lecanicillium saksenae* was found most effective against sucking pests especially the ear head bug in rice as compared to *Beauveria bassiana* and *Metarhizium anisopliae*.

She highlighted the results of the Integrated Pest Management Special (IPMs) trial that was conducted with zone-wise practices at 20 locations in 42 farmers' fields during Kharif 2022 in collaboration with plant pathologists, and weed specialists in a farmer participatory mode. 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.

During discussion, Dr. M. P. Pandey, former Vice chancellor, BAU, Ranchi suggested for identification of false smut donors through artificial screening. Dr. C. K. Bhunia, Joint Director, RRS, Bankura suggested that due to changes in climatic conditions, the virulence pattern of rice pathogens is changing and IIRR can analyze the samples for further study. During discussion on production oriented survey, Dr. B. N. Singh, former Director, ICAR-NRRI, Cuttack asked whether hybrids are more susceptible to false smut. In response, Laha clarified that infection percentage of false smut is similar both in the hybrids and high yielding varieties like Samba Mahsuri.

Dr MP Pandey asked clarification regarding the yield of RP 2068, whether it is significant between protected and unprotected for which Dr AP Padmakumari replied that it was not significant. Dr BN Singh informed the house that there is a lot of mortality of earthworms due to the application of granules and hence requested to look for safer chemicals. Dr AP Padmakumari replied that the granular application is essential for gall midge management and informed that we will look for safer alternatives.

In the concluding session, Dr. Sanjay Sharma, Principal Scientist, Entomology 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 emphasized on the development and testing of non-varietal technologies for the benefit of the farmers. He expressed his concern over the increased incidence of sheath mite/ rice panicle mite due to excessive use of selected insecticides. Dr. R. Jagadeeshwar, Ex-Director of Research, PJTSAU appreciated and congratulated the AICRPR Plant Pathology team for the successful conduct of the trials. He insisted to create the artificial disease pressure to get perfect results in host plant resistance studies. He also recommended that, the identified donors under donor screening nursery can be registered in NBPGR. He insisted that the score of the resistant check in the different screening nurseries should be taken care of. He also insisted to find the alternate for granular application to save the ecosystem.



## **PRE WORKSHOP INAUGURAL SESSION**

**Chairman** : Dr. SK Pradhan, ADG (FFC), ICAR, New Delhi  
**Co-Chairman** : Dr. A.K. Singh, Director, ICAR-IARI, New Delhi  
**Rapporteurs** : Drs. C. Kannan, P.Senguttuvel and MD Tuti

The inaugural session of Pre-Group Meeting of 58<sup>th</sup> ARGM was held at Indian Institute of Rice Research, Hyderabad on 10<sup>th</sup> April, 2023 at 10.00 AM in virtual mode. Dr. R.M. Sundaram, Director, ICAR-IIRR, welcomed the dignitaries and delegates of the All India Coordinated Research Project on rice (AICRPR), seed industry and all other stakeholders. AK Singh, Director, ICAR-IARI welcomed the participants and mentioned that AICRPR pre-group meeting is an important event to discuss promotion/deletion of entries. He insisted that use of modern genomic tools for genetic gain, researchers should focus on important areas like genome editing for important traits. He mentioned govt of India has allotted 500 crores for genome editing and few edited lines from ICAR-IIRR, ICAR-IARI are available for AICRPR evaluation, ICAR-IARI in perusing govt of India for field trials and deregulation. He stressed on the importance of DSR in saving water and labour. He impressed upon the scientist to explore obtaining carbon credits for the farmers who are practicing DSR. With respect to importance of herbicide tolerance in rice, specially the DSR system wherein weeds pose extreme challenge in successful outcome, IARI has developed HT basmati and awaiting label claim for the same. Dr AK Singh explained the importance of biofortified rice in the nutritional security and several govt schemes related to the same. In his concluding remarks, to explain the importance of rice especially in terms of income generation to India, he mentioned Basmati export alone is earning about 34,000 crores of forex revenue which can greatly negate the expenditure the GOI is incurring on fuel imports into the country.

Dr RM Sundaram, Director, ICAR-IIRR in his introductory remarks, gave a brief introduction of AICRPR, its genesis and development of rice improvement programme. AICRIP was started in 1965 with 22 centers (19 main and 3 testing centers) with 7 zonal centers and 12 regional centers. Currently there are 45 funded centers and more than 100 voluntary centers. AICRIP was later elevated to the status of Directorate of Rice Research (DRR) from April 1983 and recently to ICAR-Indian Institute of Rice Research in 2014 with additional responsibilities. During 2020, for better monitoring of AICRIP and as per the mandate of the institutes it was decided that the rainfed trials and basmati trials shall be monitored by NRRI, Cuttack and IARI, New Delhi respectively. However, Director, IIRR shall remain the overall Principal Coordinator.

He narrated that current levels of production may not be sufficient to feed the ever-increasing population of our country. In order to meet the food demands for the future, it is projected that India should produce about 165 million tons by 2050 i.e., it needs to produce about 1.5 million tonnes additional rice every year. This increased production has to necessarily come from increased productivity rather than increase in area under rice and that too under declining soil, water and other natural resources.

Till date more than 30,000 elite lines developed by different cooperating centres were tested in multi-location trials under AICRPR and as a result release of 1572 rice varieties including 137 hybrids till 2022. With efforts of ICAR-IIRR, ICAR-NRRI and ICAR-IARI the country's first bacterial blight resistant varieties, Improved Pusa Basmati 1 and Improved Samba Mahsuri, first submergence tolerance variety, Sub1-Swarna, first drought tolerant variety DRR Dhan 42, first high Zinc rice variety DRR Dhan 45, first high protein rice variety, CR Dhan-310, first drought and submergence tolerant variety DRR Dhan 50, first heat tolerant variety DRR Dhan 52, first herbicide tolerant varieties, Pusa Basmati 1979 and Pusa Basmati 1985 and first low soil P tolerance variety, DRR Dhan 60, were released for cultivation. He congratulated the joint efforts of cooperating centers (funded, voluntary and private sectors) for conduct of a total of 2305 trials covering all the major disciplines representing all the rice growing situations/ecosystems and states with satisfactory receipt (~87 %) of trials. He expressed great pleasure that for the first time in any crop, under AICRIP guidelines have been finalized for evaluation, identification and release of Crop production and crop protection technologies (CPPTs) and it is expected that few such technologies that were validated through AICRIP network will be identified and released this year for different rice growing ecosystem. He mentioned that last two decades India has steadily increased its export potential and exporting more than 18 million tonnes (Bas=3.66 MT + non-Bas= 14.56MT) of rice (April 2022 to Jan 2023) earning more than 71,000 crores as foreign exchange. However, despite these achievements, we should not be complacent as we need to produce an additional 1.5 million tonnes of rice every year to meet the target of producing 165 million tonnes by 2050 with increasing biotic and abiotic stresses. He insisted rice scientists that key areas of rice research should include identification and utilization of novel gene sources for breeding multiple biotic and abiotic stress tolerant rice varieties, biofortification of rice to enhance its nutritional profile, studies on improving rice grain quality, addressing climate change related issues. He informed the one-day brainstorming session with National and International experts participating in the event and contributing towards development of testing and evaluation protocols for DSR in India. These challenges can be addressed in the right perspective through the application of science and technology in partnership with National and International rice research center's both government and private.

Dr AK Naik, Director, ICAR-NRRI expressed great privilege to address the AICRPR, which is the largest network in the world for a single crop. According to Dr Naik, the major challenges in rice production are water and labour shortage, and in order to mitigate these challenges, research on development and impact assessment of aerobic, drought tolerant and DSR varieties needs to be taken on priority. Similarly he stressed the importance of impact assessment on the biofortified varieties especially in the govt schemes like PDS. The profitability of small and marginal farmers engaged in rice cultivation needs to be borne in mind by all the researchers and all the efforts have to be strengthened in this direction. Coherent strategy is needed in terms of trait introgression in varieties and hybrids and a road map need to be prioritized. Finally Dr Naik stressed

that VIC proposals of rainfed varieties should be sent to NRRI for comments and remarks before reaching the final committee.

Dr SK Pradhan, ADG (FFC), ICAR, New Delhi congratulated all the rice workers for increasing the rice yield from 30MT to 130MT in the face of decreasing cultivated area. He expressed his joy in announcing that we have achieved the rice grain production of 130MT a decade before the actual target of 2030. He stressed that rice is the most important crop when it comes to nutritional security for majority of population in India and Asia, in addition rice is also an important foreign exchange earner for the government. Thus there should be no complacency in the minds of the researchers about the achievement of the target as the population increases steadily and the food requirement also increases proportionately. He stressed upon the value addition to the rice grains which will improve the profitability of farmers engaged in rice cultivation. He gave an example of ethanol blending in fuel, where targeted varieties can be bred for more ethanol production. Similarly rice straw can be used for mushroom production and other mulching purposes. He stressed upon the synergistic use of yield QTLs/genes and advance technologies like genome editing to improve plant architecture, culm strength, BPH incidence, input use efficiency and biofortification. He insisted rice cooperators for proper conduct of trials and coordinating centers should ensure proper monitoring of experiments, so that their data can be included by the breeders.

The programme ended with vote of thanks by Dr M S Prasad, ICAR-IIRR, Convenor 58<sup>th</sup> ARGM.

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## **CROP IMPROVEMENT (Pre-Workshop)**

**Chairman** : Dr Deepak Sharma, Prof. & Head, Plant Breeding, IGKV, Raipur  
**Rapporteurs** : Dr. Suneetha Kota, Dr. Senguttuvel, Dr. Jyothi Badri, Dr. M.S. Anantha, Dr. R Abdul Fiyaz, Dr. Divya Balakrishnan, Dr. Suvarna Rani NRRI, Dr. K. Chattopadhyay, Dr. Mridul Chakraborti, Dr. Sutapa Sarkar IARI, Dr. P.K. Bhowmik, Dr. B. Haritha

### **IRRIGATED TRIALS**

The inaugural session was followed by parallel sessions of Crop Improvement, Crop Production and Crop Protection. Breeder's group meet with more than 150 breeders was held in virtual mode on 10<sup>th</sup> April 2023. Dr. Deepak Sharma, Head, Plant Breeding IGKV Raipur chaired the session. A total of 44 trials (40 varietal trials and 4 hybrid rice trials) were conducted in 1068 experiments (929 varietal and 139 hybrid rice) at 123 locations (43 funded, 81 voluntary centres) in 26 states and 4 union Territories across seven zones of the country during 2022. Dr. L.V. Subba Rao, Head, CIS & PI- AICRIP- Varietal Improvement presented the overview of the conduct of the AICRIP trials across locations. Ecology wise presented were made by IIRR, NRRI and IARI breeders and discussions. Results of irrigated experiments are presented by Dr. AVSR Swamy, Dr S.V Sai Prasad, Dr G. Padmavathi, Dr. J. Aravind Kumar, Dr. Senguttuvel, Dr. C. Gireesh, Dr. Suneetha Kota, Dr. M.S. Anantha and Dr. Abdul Fiyaz. Trial wise discussions and deliberations made are presented below.

- From ensuing years, complete set of all three of a trial (IVT, AVT1 & AVT2) will be sent to cooperating centres. Beyond the cut-off date April 30<sup>th</sup>, seed receipt will not be accepted for trial constitution.
- Non-performing centres over consecutive years will be revived based on QRT recommendations and further action on the centres inclusion in AICRPR will be arrived.
- 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.
- Non-included entries in AICRPR will be documented and uploaded in ICAR-IIRR website, the co-operators has to decide with a request for take back of seed material.
- In case of Biofortification trials, soil sampling at two stages (before and after planting) and analysis will be done at ICAR-IARI and ICAR-IIRR.
- Every 10 years once, uniformity trial will be conducted for optimising the plot size, CV and experimental mean in selected funded centres.
- The house insisted to follow the simple lattice design for uniform conduct of trial

- CV > 4.5 will be considered as 5 and maximum CV up to 20 will be considered for analysis.
- Entry has merit for promotion if it is on par or exceeds yield of the best varietal check with added CD value
- The number of replications can be reduced to three instead of four when entries are more than 15.
- Dr BN Singh insisted to concentrate more on DSR, Aerobic varieties/hybrid breeding with non-lodging genotypes.
- Strategy has to be chalked out for adaption of DSR technology and its popularisation.
- A pilot trial with released varieties and hybrids will be conducted for DSR and from next year 2024 regular DSR bred entries will be included and also for genome edited lines.
- Dr. Deepak Sharma opined that appropriate plot size should be followed and suggested for uniformity trial at funded centres.
- He requested cooperating centres to submit data in time and also proper conduct with appropriate plot size, replication, timely planting and harvesting.
- IIRR should ensure trial allotment based on the request of indent of cooperating centre.
- Breeders should ensure DFF of their entry before nominating for respective trial.
- IIRR should take a lead in submission of network project for strengthening of hybrid rice programme.
- NIL's in the background of ADT 39 (IET 30695, 30696 & 30697) for submergence suggested revisit the results after inclusion of data from Karaikal centre.
- IET 29822 (IRM300) promising in AVT 1-IME, pedigree details to be furnished by the concerned breeder
- The suitability of the local check in the respective trial should be verified by the monitoring team.
- IET 30741, the data to be revisited for consideration for promotion
- In AVT1-IM, those entries which are superior in performance on overall basis but could not be identified in states and suggested for repeats. Such hybrid entries to be considered without additional testing fee.
- IET 28860 which is dropped based on quality, suggested to revisit the quality data
- Coloured rices related quality analysis including antioxidant, anthocyanin, total phenols and any other traits was discussed. Bapatla centre volunteered for analysis. Only promoted entries suggested to be evaluated. IARI and other centers are requested to volunteer the quality analysis of entries of colored trials.

- A group of scientists from NRRI, IIRR, IARI and related others should finalize the criteria to be considered for quality parameters for colored rices.
- For IET 28544, IET 29351 and IET 29354 the quality to be reanalyzed to finalize the result.
- IET 30827 and IET 30829, the quality data to be revisited after reanalysis.
- IET 30828, a NIL in the background of Pusa 44 with Bacterial Blight and blast resistance is considered for promotion. IET 30825 is discontinued.
- IET 30871 in IVT-L with more than 120 days DFF and more than 120 cm plant height is shifted to IVT-RSL
- IET 30844 is promoted in late trial. IET 30877 is considered for shift.
- In aerobic trial, DRRH 4 to be included as an observational check.
- Based on the promising performance of the DRRDhan 54 as observational check, it should be included as National check in Aerobic trials
- IET 30020 and IET 30041 is considered for promotion to AVT-1 Aerobic trial.
- IET 30000 entry which is dropped is requested for quality repeat was considered
- IET 29410 suggested for repeat
- IET 28636 suggested for repeat for HRR.
- Inclusion of Chiplima and Jeypore centres in the boro trials suggested.
- IET 29523 & IET 29536 suggested for repeat in MS grain trial
- IET 29492 revisit the data and repeat suggested
- Fine grain non-aromatic entries can be included with the appropriate check in MS trial
- IET 30968 data need to be revisited and reconsider the results
- IET 30877 in IVT-L is promoted to second year of testing
- MRP 5222, a hybrid from Mahyco with late duration and submergence tolerance will be included as observational hybrid check in IVT-L trial
- Data from coloured pilot trial may be included in VIC, however actual coloured rice trial as IVT will be initiated from kharif 2023
- AZ 8433 DT will be included as OHC in IM-IHRT.
- Replacement of check in IVT Late trial: In the IVT-Late trial, based on the superior performance of Observational hybrid check CR Dhan 702, over the existing check PA6444 (both in terms of yield and duration),

### **RAINFED ECOSYSTEM: ICAR NRRI CUTTACK**

The Nodal Officer, AICRIP Rainfed trials, Dr. S. Samantaray addressed the house and presented the results of rainfed trials coordinated by ICAR-NRRI.

A total of nine trials viz. AVT 1 EDS, IVT EDS, AVT 1 RSL, IVT RSL, AVT 1 SDW, IVT SDW, IVT DW, AVT NIL-SUB and AVT 1 NIL DRT was coordinated by ICAR-NRRI during 2022.

A total of 44 entries were found promising hence, promoted either to AVT1, AVT 2 or recommended as promising in AVT2, in the trials conducted during 2022.

Three suggestions were proposed before the house and were approved by the Chairman.

- AVT-NIL-DRT and NIL-SUB trials should be conducted by plant Physiologists in collaboration with the plant breeders.
- VIC proposals for rainfed entries should be first submitted to the AICRIP-Rainfed Trials coordinating unit of ICAR-NRRI. After scrutiny at NRRI, the same will be forwarded to IIRR with comments/remarks for finalization from next year.
- Considering that substantial number of farmers follow direct seeding in rainfed shallow lowlands, pilot trail for RSL-direct seeded rice needs to be initiated.

The house suggested inclusion of data from Karaikal for AVT1-NIL-SUB trial and need for reanalysis of the entire trial.

IET 31204 was repeated due to early flowering (82 days) in the zone where it showed yield superiority. House decided to promote it as entry recorded flowering date of 109 days on overall basis

IET 29121 outperformed best check, but due to low HRR it was dropped. Thus the entry is suggested for repeat.

Data for deep water situation is not being received from the required number of centers. There is need for investment for infrastructure development and maintenance /repair especially in testing centers of Zone-III, Zone-IV, and Zone-VII. The Mugad centre of Karnataka also voluntarily agreed to provide support for semi-deep water, deep water, and submergence trials.

In NIL-DRT IET 28834 and IET 28835 (R), were promising for the states of Jharkhand and Bihar; in NIL HT, IET 30437 and IET 30438 were found promising in Jharkhand, however, over the years IET 30438 is found promising for Odisha.

### **NATIONAL BASMATI TRIALS: ICAR IARI NEW DELHI**

- Based on both yield and Basmati grain quality, two varietal entries viz., IET 30533 and IET30535 (benefit of doubt as the entry has high AAC of 25.8% and hard GC of 39.83) qualified for promotion from IVT-BT to AVT1-BT.

- Due to poor yield in the notified region compared to recurrent parent, two blast resistance NILs, IET30550 (RPL-1075-2) and IET30551 (RPL-1075-1), in the background of Ranbir Basmati, have been dropped.
- Among two near-isogenic lines (NILs) of Pusa Basmati 1509 namely, IET30552 (Pusa 3057-9-69-37-160-9-185-2) and IET30553 (Pusa 3057-9-69-37-160-9-185-1) possessing QTLs, qBK1.1 and qBK1.2 governing bakanae resistance, hence IET30553 is promoted.
- Three hybrid entries were also tested but none of them found promising.
- New basmati hybrid INDAM100-012 which is notified during 2021 can be used as observational check in hybrid basmati trials.

*Following suggestions/issues were made during the meetings.*

- About the nomination of Basmati lines from breeders from non-GI area and emphasized that GI is only for commercialization, GI area is not applicable for research purpose. GI Act itself provides the exception. It was suggested to collaborate with GI area institutes for commercialization. Chairman and Director, IIRR informed that Basmati materials can be used for research in anywhere in India, but may be nominated or commercialized through centres in GI area.
- Director, IIRR suggested the hybrids nominated from non-GI area centres can be nominated if it is collaborated with another institute having testing centres under basmati GI area.

## **Day 2**

Dr. L.V. Subba Rao presents the constraints/ issues related to the conduct of the trials.

- More than 50% data in across the different trials due either data not received or not considered is matter of serious concern was discussed. Trial to be conducted in the best possible manner. The best performed centre will be incentivized.
- Promotion of entries based on single location data is another constraint for the identification for release. More number of voluntary centres will address the constraints of test locations
- Plot size being followed in the respective AVT and IVT as serious concern was discussed and suggested to follow appropriate plot size in all the trials.
- Karimganj and Shillongani centres to be included in the conduct of the irrigated trials.
- Receipt of the seed for trial constitution is 30<sup>th</sup> April in every year. Any nomination received after 30<sup>th</sup> April will not be considered.
- Ragolu centre of the north coastal AP, volunteered to associate with EDS trials and in the conduct of the rainfed trials.



- Information about the entries not included to be informed to concerned center and the received seed may be resent back. The information may be uploaded in AICRIP website

Dr.Santosh, Scientist, Agricultral Statistician, IIRR presented the statistical relevance for the conducting the trials as presented below:

**Optimization of plot size:** uniformity trial to be concluded for one year. Each centre should conduct uniformity trials to optimize the plot size. All the funded and voluntary centres suggested conducting the uniformity trial in 50 m<sup>2</sup> for 2 years by using one popular variety of the region.

**Bio-fortification trials location selection:** 10 years data was analyzed, centres were shortlisted for the conduct of the biofortification trials. About 17 centers were shortlisted for conducting the trails.

**Level of significance for testing in stress trials:** No significance difference was observed between the number of promotions by CD at 5 & 10% level of significance.

**Design of experiment:** Lattice design to be followed for IVT trails and it is suggested to follow suitable lattice designs for the trails having number of entries > 25.

It is observed that most of the centers are not following prescribed design / lattice layout sent by IIRR.

## **CROP PRODUCTION (Pre-Workshop)**

### **AGRONOMY**

**Chairman** : Dr. A. Subba Rao, Ex. Director, ICAR-IISS  
**Co-Chairman** : Dr. S. Sheshshayee, Head, Plant Physiology, UAS, Bengaluru  
**Rapporteurs** : Drs. Mastana Reddy, Mangal Deep Tuti and P. Spandana Bhat

The pre-group meetings were held in virtual mode on 10<sup>th</sup> and 11<sup>th</sup> April under the Chairmanship of Dr. A. Subba Rao and Dr. Sheshshayee, PAMC members to discuss the results of the current year and to finalize the technical programme for the 2023-2024. Dr. R. Mahender Kumar, PI (Agronomy) presented the Agronomy report and the details of the different trials and sought suggestions from the experts. Dr. R.M. Sundaram, Director, ICAR-IIRR appreciated the team for their good work and thanked the experts for their inputs.

- Zonal Leaders presented the respective zonal trial results. Zone-I: Dr. Tasneem; Zone-II: Dr. D.K. Singh; Zone-III: Dr. Raghavendra Goud; Zone-IV: Dr. M.J. Konwar; Zone-V: Dr. H. L. Sonboir; Zone-VI: Dr. Darpana Patel and Zone-VII: Dr.B.G.Masthana Reddy
- Chairman, Dr. A. Subba Rao, suggested pooled data to be used for statistical analysis in long-term trials. With respect to split-plot design trials, more emphasis to be given to the interaction table to bring out the appropriate findings.
- Dr. Sheshshayee suggested to include plant physiologists in nano-fertilizer trials to study the nutrient translocation (N) and metabolism in rice plants and to follow uniform protocol across various locations.
- The Cooperators were asked to justify any abnormal gain/reduction, if any, in yield from the next year onwards. An in-depth /critical analysis (from crop management point of view) is to be done for identifying the reasons.

Finally, the session ended up with proposal of vote of thanks by Dr B. Sreedevi, Principal Scientist (Agronomy), ICAR-IIRR.

The group again met on the next day i.e. on 11<sup>th</sup> and after thorough deliberations and suggestions of the experts the Agronomy technical program for the year 2023-24, was finalized, which is as follows:

Dr. R. Mahender Kumar PI and Head, Agronomy, ICAR-IIRR presented glimpses of new technical programme including latest aspects like i.e. total mechanization in rice, IoT based irrigation management in rice; use of drones for micronutrient/nano urea /post-emergence herbicide sprays, DLCC testing, biochar application as a climate resilient mechanism and nutrient use efficiency of silica coated products. Later he said that new experiments will be formulated at Jorhat meeting.

- Dr. Brajendra Soil Scientist explained the importance of rapid soil testing/analysis KRISHIRASTAA programme including 12 parameters within a span of 20 minutes and to adopt by various cooperating centers for rapid analysis of soil samples.
- Dr. M. M. Azam explained about slow-release urea products including anti urease, insoluble and silica coated urea products.
- The chairman suggested that before implementing total mechanization in rice the scientists at ICAR-IIRR should test it in a nearby village, confirm it and finally demonstration in farmers' field.
- The Chairman felt that in the case of soil sensors, LCC digitalization, spectroscopy calibration of the instruments is needed to suit to our local conditions.
- The chairman asked for the economic feasibility of Biochar application and to take up on pilot project basis to standardize the methods of its production at local level.
- The chairman suggested that in the case of urea coated products cost of cultivation need to be considered.
- The Co-Chairman told to adopt Artificial Intelligence (AI) as a fore seeing technology for precision farming and suggested for crop co-efficient based irrigation.
- Mr. Mallesh from CultYvate presented a success story video including water level sensors for scheduling irrigation to rice. Dr. D.K. Singh suggested for insitu preparation and application of Biochar rather than costly externally produced biochar.
- The Chairman suggested giving more importance to conservation agriculture trials as it is one of sustainable agriculture practice to save energy, soil erosion and environment by reducing carbon foot print.

**Finally, the group decided to conduct the following trials for ensuing *kharif* 2023 and *rabi* 2023-24.**

**Finalization of Technical Programme 2022-23, Agronomy**

S. NO	AVT-2 NUTRIENT TRIAL (NVTs)	VARIETAL	Locations/Centres
1a	AVT-2 E (H)		Khudwani, Malan
1b	AVT-2 M (H)		Khudwani, Malan
1c	AVT-2 U (H)		Malan

<b>S. NO</b>	<b>AVT-2 NUTRIENT TRIAL (NVTs)</b>	<b>VARIETAL</b>	<b>Locations/Centres</b>
1d	AVT 2-E-DS		Ghaghraghat, Karjat, Mandya, Maruteru, Nawagam
1e	AVT 2-E-TP		Coimbatore, Ghaghraghat, Karjat, Mandya, Maruteru, Nawagam, Puducherry
1f	AVT 2 – IME (TP)		Aduthurai, Chinsurah, Gangavathi, Ghaghraghat, Kanpur, Karjat, Kota, Mandya, Maruteru, Navsari, Nawagam, Puducherry
1g	AVT 2 – IM (TP)		Chinsurah, Dhangain, Karjat, Kaul, Maruteru, Navsari, Nawagam, Pusa, Titabar
1h	AVT 2-L		Aduthurai, Chinsurah, Karjat, Maruteru, Nawagam
1i	AVT 2-MS		Dhangain, Karjat, Mandya, Maruteru, Nawagam, Raipur
1j	AVT 2-Aerobic		ARI-Rajendranagar, Dhangain, Kaul, Kota, Nawagam, Raipur
1k	AVT 2-Boro		Chinsurah
1l	AVT 2-AL&ISTVT		Kanpur, Navsari
1m	AVT 2- RSL		Chinsurah, Dhangain, Ghaghraghat, Pusa
1n	AVT 2-SDW		Chinsurah, Ghaghraghat
1o	AVT 2-CSTVT		Maruteru, Navsari, Vytilla
1p	AVT 2-BT		Chatha, Kaul
1q	AVT 2-Biofort		Nawagam, Puducherry, Raipur
<b>2</b>	<b>NIL</b>		
i.	ii. AVT-2 NIL Blast and BLB		Dhangain, Karjat, Mandya, Maruteru, Nawagam, Raipur
iii.	iv. AVT-2 NIL DRT		Chinsurah, Dhangain, Ghaghraghat, Pusa
v.	vi. AVT-2 Sub		Aduthurai, Chinsurah, Gangavathi, Ghaghraghat, Kanpur, Karjat, Kota, Mandya, Maruteru
vii.	viii. AVT-2 CS		Dhangain, Karjat, Mandya, Maruteru, Nawagam, Raipur
ix.	x. BAS - Herbicide-resistant mutants		ARI-Rajendranagar
xi.	xii. Herbicide tolerant mutants		ARI-Rajendranagar, Coimbatore, Dhangain, Kota
xiii.	xiv. Nitrogen efficient cultivars (AVT-2)		Karjat, IIRR
xv.	xvi. Phosphorous efficient cultivars (AVT-2)		Raipur, IIRR

<b>3</b>	<b>RESOURCE CONSERVATION TECHNOLOGIES TRIALS (RCTs)</b>	<b>Locations/Centres</b>
	RCT-1 Water management for enhancing water use efficiency and productivity of mechanical transplanted rice	Aduthurai, Gangavathi, Khudwani, Mandya, Puducherry (R), Raipur

		(Interdisciplinary with Agricultural Engineering)	
	RCT-1.1	IOT based water management will be tested in few centres Mention the centers who wanted to take IOT based with additional treatment	Gangavathi, Khudwani, Mandya, Puducherry (R), Raipur
	RCT-2	Suitable package of practices for higher yield in DSR systems	Gangavathi, Khudwani, Mandya, Puducherry (R), Raipur
	RCT-2.1	Dry DSR (Modification of treatment – adding seed treatment, growth promoters )	ARI-Rajendranagar, Bankura (K+R), Chatha, Dhangain, Gangavathi, Kota, Mandya, Nawagam, Pusa, Raipur
	RCT-2.2	Cultivar suitability for Dry DSR	ARI-Rajendranagar, Bankura (K+R), Chatha, Dhangain, Gangavathi, Kota, Mandya, Nawagam, Pusa, Raipur
	RCT-3	Wet DSR (Modification of treatment – adding seed treatment, growth promoters )	Aduthurai, ARI-Rajendranagar, Coimbatore, Dhangain, Karjat, Kota, Mandya, Maruteru(R), Moncompu (K+R), Navsari, Nawagam, Pattambi (K+R), Puducherry (K+R), Pusa, Titabar
		Cultivar Suitability for Wet DSR	
<b>4</b>	<b>RICE BASED CROP DIVERSIFICATION SYSTEM TRIALS (RBCDTs)</b>		
	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)	Ghaghrahat (K+R), Karjat, Titabar
	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	Mandya (R), Puducherry (R)
	RBCDS-3	Long term trial on weed dynamics in rice based cropping systems under different establishment methods	Aduthurai (K+R), ARI-Rajendranagar, Chatha, Chinsurah, Coimbatore, Ghaghrahat, Malan,

		(Interdisciplinary trial with Entomology and Pathology)	Moncompu (K+R), Nawagam, Pattambi (K+R), Puducherry, Pusa
	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	Aduthurai, Chinsurah, Dhangain, Gangavathi, Kanpur, Karjat, Kaul, Malan, Mandya, Moncompu, Navsari, Nawagam, Pattambi, Puducherry, Raipur, Titabar
<b>5</b>	<b>INTER DISCIPLINARY TRIALS (IDTs)</b>		
	IDT-1	a) Yield maximization of rice in different zones (Interdisciplinary with Soil Science)- additional treatments will be added Krishi Rasthra equipments will be procured for data generation ( periodical data collection )	Bankura (K+R), Chinsurah (K+R), Gangavathi, Kanpur, Khudwani, Kota (K+R), Malan, Mandya, Maruteru (K+R), Moncompu (K+R), Pattambi (K+R), Raipur, Titabar
		b) Assessment of yield gap analysis- Interdisciplinary with Economics (New) Questionnaire will be modified and request for all the centers to participate )	Aduthurai, Dhangain, Gangavathi, Mandya, Moncompu (K+R), Navsari, Pattambi (R)
	IDT-2	Evaluation of Organic fertilizers and Natural farming practices for enhancing the productivity and soil health (Interdisciplinary trial – Agronomy, Soil Science and Crop protection)- modified as per the suggestions.	Chatha, Chinsurah (K+R), Gangavathi, Khudwani, Moncompu (K+R), Pattambi (K+R), Pusa, Raipur, Titabar
		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)	Chatha, Chinsurah (K+R), Gangavathi, Khudwani, Moncompu (K+R), Pattambi (K+R), Pusa, Raipur, Titabar
	IDT-3	Nano-fertilizers for increasing nutrient use efficiency, yield and economic returns in transplanted rice (New trial)- (Interdisciplinary with Agronomy and IFFCO)	ARI-Rajendranagar (K+R), Bankura (K+R), Chatha, Coimbatore, Gangavathi, Kanpur, Kaul, Khudwani, Mandya, Maruteru (K+R), Moncompu(K+R), Navsari, Pattambi (K+R), Puducherry (K+R), Pusa

	IDT-4	Integrated Pest Management – (Interdisciplinary trial with Entomology and Pathology)	Chinsurah, Coimbatore, Gangavathi, Kaul, Malan, Mandya, Navsari, Puducherry, Raipur, Titabar
	NT -1	DRONE based crop management for resource conservation (Drone available centers)	Aduthurai, ARI-Rajendranagar (R), Maruteru (K+R), Moncompu (K+R),

### **Final remarks by the Chairman and Co-chairman**

The co-chairman complimented the scientists from ICAR-IIRR and other cooperating centres for generating valuable information and nice presentation. The Chairman once again suggested for pooled analysis of longterm experiments to arrive at conclusive results. In the case of split-plot design experiments more emphasis should be given to interaction effects. Analysis of initial soil nutrient status in natural farming experiments to be taken up.

Finally Dr Raghuveer Rao Head, Physiology, ICAR-IIRR proposed the vote of thanks.

### **SOIL SCIENCE (Pre-Workshop)**

**PAMC Experts** : Dr. A. Subba Rao, Ex. Director, ICAR-IISS.

Dr. S. Sheshshayee, Head, Plant Physiology, UAS, Bangalore,

**Rapporteurs** : Drs. R. Gobinath, V. Manasa, Ch. Sreenivas (Maruteru)

The pre-group meetings were held in virtual mode on 10<sup>th</sup> and 11<sup>th</sup> April under the Chairmanship of Dr. A. Subba Rao and Dr. Sheshshayee, PAMC members to discuss the results of the current year and to finalize the technical programme for the 2023-2024. Dr. Surekha, PI (Soil Science) presented the Soil Science report and the details of the different trials and sought suggestions from the experts.

- Dr. R.M. Sundaram, Director in his address appreciated the team for their good work and thanked the experts for their participation and inputs.
- Chairman, Dr. Subba Rao, suggested pooled data to be used for statistical analysis in long-term trials. With respect to split-plot design trials, more emphasis to be given to the interaction table to bring out the appropriate findings.
- Dr. Sheshshayee suggested to include plant physiologists in nano-fertilizer trials to study the nutrient translocation (N) and metabolism in rice plants and to follow uniform protocol across various locations.

- The Cooperators were asked to justify any abnormal gain/reduction in yield. An in-depth /critical analysis (from crop management point of view) is to be done for identifying the reasons.

The group again met on the next day i.e. on 11<sup>th</sup> April 2023 and after thorough deliberations and suggestions of the experts, the Technical Program for Soil Science for the year 2023-24, was finalized. On 4<sup>th</sup> May 2023, during the 58 ARGM at AAU, Jorhat, the results of the Soil Science coordinated program were presented by Dr. M.B.B. Prasad Babu which were deliberated in detail.

A total of Nine trials including a new trial in addition to the ongoing eight were finalized.

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

- Trend analysis of mean data for every 3-5 years to be worked out to understand the treatment effects and crop sustainability over the years.
- Possibility of saving in fertilizer in the treatment with FYM addition to be explored.
- Critical analysis of the buildup of nutrients over the years.

***Locations: 3 (Maruteru, Mandya, Titabar)***

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

- Soil health indices to be calculated from this trial and related to yield/yield gaps
- Potential yield of the location to be recorded

***Locations: 4 (Chinsurah, Kanpur, NRRI, Pant Nagar)***

**3. Management of sodic soils using nano Zn formulation**

- Calculation of nutrient supplementation from the source (nano Zn)
- Zinc analysis in plant samples to be done at one laboratory only

***Locations: 3 (Faizabad, Kanpur, Pusa)***

**4. Management of acid soils**

- Addition of RDF + Dolomite + Silicate solution treatment will be included in this trial
- This trial will be conducted for the next three years

***Locations: 4 (Mizoram, Moncompu, Titabar, Ranchi)***

**5. Residue management in rice-based cropping systems**

- Uniform protocol for Pusa Decomposer to be followed at all locations
- A new treatment with 75% RDF + 25% residue + Pusa Decomposer is to be studied in addition to the existing treatments.

***Locations: 10 (Bankura, Faizabad, Hazaribagh, Kanpur, Karaikal, Khudwani, Maruteru, Moncompu, Pantnagar, Pusa)***



**6. Nano-fertilizers for increasing nutrient use efficiency, yield and economic returns in transplanted rice**

- Only nano urea spray (4 sprays @ 4ml/litre) treatment to be included
- Plant Physiologists to be associated with this trial wherever available
- To be continued for the next two years

**Locations: 7 (Faizabad, Kanpur, Karaikal, Khudwani, Maruteru, Moncompu, NRRI)**

**7. Yield maximization of rice in different zones**

- Continued with the same set of treatments for another three years

**Locations: 12 (Chinsurah, Faizabad, Kanpur, Khudwani, Karaikal, Mandya, Moncompu, Maruteru, Pantnagar, Puducherry, Pusa, Titabar)**

**8. Enhancing productivity of Organic Rice cultivation & Natural farming**

- To be continued for the next two years
- Initial and post-harvest soil nutrient status to be recorded
- Nutrient uptake and utilization efficiency from added input to be documented
- Common protocol to be followed for natural farming across locations.

**Locations: 9 (Chinsurah, Karaikal, Khudwani, Mandya, Moncompu, Pantnagar, Puducherry, Pusa, Titabar)**

**9. Zn response of fortified rice genotypes to access an agronomic biofortification potential (New trial)**

- Approved for three years
- Suggested to include one standard check variety, low zinc and bio-fortified line.
- Four treatments viz., Control, Soil test based Zn application, Foliar spray of 0.5% ZnSO<sub>4</sub> and Soil test-based Zn application + 0.2% ZnSO<sub>4</sub> spray @ Max tillering and PI stages

**Locations: 3 (Maruteru, NRRI, Pusa)**

**PLANT PHYSIOLOGY (Pre-Workshop)**

**Chairman** : Dr. A. Subba Rao, Ex. Director, ICAR-IISS  
**Co-Chairman** : Dr. S. Sheshshayee, Head, Plant Physiology, UAS, Bengaluru  
**Rapporteurs** : Drs. Akshay S Sakhare & Kaushik Chakraborty

Results of Plant Physiology experiments were presented by Dr. P. Raghuveer Rao Head and PS, Plant Physiology Section ICAR-IIRR. The following are some of the deliberations made.

- Dr. P. Raghuveer Rao elaborately presented the results of the Plant Physiology trials for year 2022.
- Dr. Rao presented 6 trials conducted at 13 locations across the country viz; role of silicon in inducing abiotic stress tolerance in rice, screening of elite rice cultures for drought tolerance, screening for high temperature tolerance in rice genotypes, physiological characterization of selected rice genotypes for multiple abiotic stress tolerance, screening of rice genotypes for submergence tolerance and screening of rice varieties for tolerance to low light stress
- It was and elaborate and exhaustive discussions on plant physiology trials.
- Chair Dr. A. Subba Rao suggested that trials of nutrient stress such as low P or low Zn should also be taken up.
- At the end of the presentation, Co-Chair Dr. M. Sheshashayee suggested that instead of N22 as tolerant check some other suitable genotypes should be used in screening for high temperature tolerance trial. He also commented that the trials were fantastic and there is so much of data generated through trials.
- The meeting was ended with a vote of thanks by Dr. Sreedevi.
- On second day, 11<sup>th</sup> April 2023 there was a technical programme presentation.
- Dr. P. Raghuveer Rao elaborately presented technical programme for 3 plant physiology trials (role of silicon in inducing abiotic stress tolerance, drought tolerance and high temperature) and Dr. Koushik Chakrabarty NRRI Cuttack virtually presented 3 trials (Multiple abiotic stress tolerance, Submergence stress tolerance and low light stress trial).
- Chair Dr. A. Subba Rao suggested
  - continuing the Silicon trial for one more year
  - pooled analysis for drought stress tolerance trial
  - to plan further study in identified high temperature stress tolerance trial and to include latest released varieties
  - varieties identified in multiple abiotic stress tolerance trail can be sent to national testing
  - to summarize and conclude the submergence tolerance trial as it has completed 4 years
  - take new varieties in low light stress trial
  - involve physiologist in trial No. 6 Nano Urea trail of Soil Science and in Biofortification trial of Agronomy
- The meeting was ended with a vote of thanks by Dr. P. Raghuveer Rao.

## **CROP PROTECTION (Pre-Workshop)**

### **PLANT PATHOLOGY**

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

The Plant Pathology Pre-workshop group meeting was held virtually on 10<sup>th</sup> April 2023 at ICAR-IIRR, Department of Plant Pathology, Hyderabad. Dr. M. Srinivas Prasad, PI, Plant Pathology welcomed the participants and introduced the Chairman Dr. R. Jagadeeshwar, Ex-Director of Research, PJTSAU and Co-chairman Dr. P.K. Tiwari, Principal Scientist, IGKV, Raipur to the House.

The Chairman of the session Dr. Jagadeeshwar welcomed the participants and thanked the Director of IIRR and Dr. M.S. Prasad, PI, AICRPR on Rice for giving him the opportunity to act as a chairman of the meeting. He appreciated the commendable work done by AICRP on rice for the release of 1500 cultivars including Bio-fortified varieties to the farming community. He was very much pleased regarding the research work related to herbicide and heat tolerant varieties. In his remarks, he discussed the rice production status and target to be achieved in the future. With these introductory remarks, Chairman requested the PI for the brief presentation of AICRPR trials 2022. He also requested the participants to give their suggestions and to discuss the disease status of the respective location.

Dr. M. S. Prasad, PI given the brief presentation about AICRPR trials (2022). He informed the house that total of 585 experiments of 16 trials were conducted at 51 locations (33 funded centres and 18 voluntary centres) including IIRR. He discussed in detail the disease pressure at different locations and pointed out the variations in the disease reaction data with respect to checks. PI insisted on the timely submission of the trial data and expressed that the quality of the data should be improved. He requested the cooperators to give more importance while conducting the AICRPR trials. He also instructed that the transfer of the cooperators should be updated to the headquarters immediately for the smooth conduct of the trials. He informed the house that only a few centers are screening the boro entries and advised the cooperators to take up the boro screening and these data were essential for the release of the boro variety.

Dr. Arup Mukharjee presented the report of AICRPR upland trials and Dr Kalyan K Mandal, presented the results of basmati rice trials. Observations of production-oriented survey report was presented by Dr. GS Laha and he insisted Pusa and Coimbatore locations to submit the POS filled proforma. He appreciated Dr. Raji, Pattambi for the excellent conduct of the POS survey.

Cooperators viz., Dr. V.B. Singh (Chatha), Dr D.K. Patra (Chinsurah), Dr. Rini Pal (Chiplima), Dr. C. Gopalakrishnan (Coimbatore), Dr. D Pramesh (Gangavathi), Dr.N. Balram (Jagtiyal), Dr. Pushpa Patil (Karjat), Dr. M. Singh (Kaul), Dr. J.S. Lore (Ludhiana), Dr. V.B Sanath Kumar (Mandya), Dr. Bhuvaneshwari (Maruteru), Dr. V. Prasad (Faizabad), Dr. M. Surendran (Moncompu), Dr. Vijay A. Patil (Navsari), Dr. R.K. Gangwar (Nawagam), Dr. Madhusudhan (Nellore), Dr. P.K Tiwari (Raipur) presented the trial results.

During the meeting Dr. R. M. Sundaram, Director, IIRR interacted with the participants and congratulated the Plant Pathology group for the excellent conduct of the trials. He informed the house that the disease reactions of resistant check across the screening nurseries are different and need attention. However, if the resistant check recorded the susceptible reaction, that particular isolate needs to be characterized and the resistant check should be replaced in the screening nurseries. He instructed the cooperators to record the data with integrity. Dr. M. S. Prasad thanked Director for sparing his valuable time and suggestions.

The Pathology group again met virtually on 11<sup>th</sup> April, 2023. PI, Chairman and Cochairman welcomed the group, and presentations were continued with Dr. F.A. Mohiddin (Khudwani), Dr. Bijendra Kumar (Pantnagar), Dr. P. Raji (Pattambi), Dr. G.N. Hosagoudar (Ponnampet), Dr. R.K. Ranjan (Pusa), Dr. T.Kiran Babu, Dr. Popy Bora (Titabar), Smt. Ibadakhankor War (Upper Shillong), Dr. R.K.Singh (Varanasi) and Dr. Padmaja (Warangal).

In the closing remarks, Chairman Dr. R. Jagadeeshwar complemented the AICRPR Plant Pathology team for the good conduct of the trials and presentations. He expressed that all the cooperators should attend the group meeting and active involvement is necessary to resolve the issues related to trials. He informed the house that due to low disease pressure, many locations data were not considered for the selection of promising entries. Hence, insisted for augment the disease pressure with artificial inoculation. While discussing, he insisted that land and labor issues should not be the reason for the non-conduct of the trials and it has to be resolved at their end. The hotspot locations should carefully record the disease data which is necessary for the variety release. He congratulated the group for the well conduct of POS survey and suggested to add the GPS coordinates to help in mapping of hotspot locations. He suggested the cooperators to conduct the experiments under ambient conditions for proper expression of the disease and expressed his concern for maintaining the purity of the seeds. He appreciated the trials on virulence monitoring of blast and bacterial blight pathogen and suggested to bring out the publication to understand the shift in the pathogen population structure. With respect to management trials, he informed that non-significant data can be omitted and recommendations can be made from the salient findings. Co-Chairman Dr. P.K. Tiwari congratulated the group for the successful conduct of the trials and presentations. He expressed his concern for the artificial screening for the major diseases and also suggested to reevaluate the multiple disease-resistant entries identified in the previous years. He also recommended to develop sick plots for effective screening at hotspot locations.

In the afternoon session, PI presented and discussed the technical program and requested the house for further modifications. Dr.D. Krishnaveni, requested Dr. Arup Mukharjee to take up artificial screening for Rice Tungro Disease. As per the request of PI, the Chairman suggested modifications in the Disease observation trial. He also recommended to use 2 to 3 susceptible varieties based on the historical data to correlate with weather factors. The house discussed the conduct of a new trial on disease dynamics on Direct seeded rice ecosystem. The PI insisted Dr. Dr. Arup Mukharjee and Dr Kalyan K Mandal to send their technical program, data recording excel sheet, report and screening data of Upland and Basmati trials respectively to include it in the IIRR main technical program and reports. PI requested Dr. Bhuvaneshwari (Maruteru) to invite the Bacterial blight team during the crop season to observe the severity of bacterial blight disease. Dr. C. Kannan informed the house about the continuation of Trial 12 for the evaluation of biocontrol agents for another two years. Dr. D Ladhalakshmi discussed about the special IPM trial and PI insisted that the proposed locations to take up the trial, for zone wise compilation of data and the data can be sent to PI, Pathology. With respect to the special screening trial on false smut, Dr. G.S. Laha suggested screening the AVT-2 entries instead of NSN-1 entries under artificial inoculation. Dr. V Prakasam, informed the house that the Trial 11 will be taken up with new fungicide molecules. Dr. Basavaraj and Dr. G.S. Jasudasu discussed the special screening trial on brown spot and trial on sheath rot respectively.

At the outset, the overall meeting went well and Chairman in his concluding the remarks, requested the cooperators to take at most care while conducting the trial. Group meeting ended with vote of thanks by Dr. D. Krishnaveni (PS, IIRR).

The group has finalized the trials for the year 2023-24 as follows

### **Trial 1: Screening for Leaf Blast**

#### **NSN-1 (33)**

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

#### **NSN-2 (21)**

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

### NSN-Hills (13)

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

### NHSN (26)

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

### DSN (26)

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

### Trial 2: Screening for Neck Blast

#### NSN-1 (13)

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

#### NSN-2 (7)

Bankura	Jagdalpur	Mandya	Maruteru	Mugad
Ponnampet	Ranchi			

#### NSN-Hills (8)

Almora	Gudalur	Imphal (Lamphalpet)	Khudwani	Lonavla
Malan	Ponnampet	Umiam (Barapani)		

#### NHSN (12)

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

### DSN (11)

Almora	Bankura	Imphal (Lamphalpet)	Jagdalpur	Lonavla
Mandya	Maruteru	Mugad	Nawagam	Rajendranagar
Ranchi				

### Trial 3: Screening for Brown Spot

#### NSN-1 (20)

Bankura	Chatha	Chinsurah	Coimbatore	Cuttack
Gangavati	Ghaghrahat	Gudalur	Hazaribagh	IIRR
Jagdalpur	Khudwani	Lonavla	Ludhiana	Mugad
Ponnampet	Pusa	Rewa	Sabour	Upper Shillong

#### NSN-2 (13)

Bankura	Chatha	Gangavati	Ghaghrahat	Hazaribagh
IIRR	Jagdalpur	Ludhiana	Mugad	Ponnampet
Pusa	Rewa	Sabour		

#### NSN-Hills (6)

Almora	Cuttack	IIRR	Khudwani	Lonavla
Ponnampet				

#### NHSN (15)

Bankura	Chatha	Chinsurah	Cuttack	Gangavati
Ghaghrahat	Hazaribagh	IIRR	Jagdalpur	Khudwani
Lonavla	Ludhiana	Mugad	Pusa	Rewa

### DSN (15)

Almora	Bankura	Chatha	Cuttack	Gangavati
Ghaghrahat	Hazaribagh	IIRR	Jagdalpur	Lonavla
Ludhiana	Mugad	Pusa	Rewa	Sabour

### Trial 4: Screening for Sheath blight

#### NSN-1 (22)

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

### **NSN-2 (18)**

Aduthurai	Bankura	Coimbatore	Gangavati	IIRR
Kaul	Ludhiana	Mandya	Maruteru	Masodha (Faizabad)
Moncompu	Navsari	Pantnagar	Patna	Pattambi
Raipur	Titabar	Varanasi		

### **NSN-Hills (3)**

Cuttack	IIRR	Pantnagar
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### **NHSN (21)**

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

### **DSN (21)**

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

### **Trial 5: Screening for Sheath rot**

#### **NSN-1 (13)**

Aduthurai	Bankura	Chinsurah	Coimbatore	Cuttack
Karjat	Lonavla	Navsari	Nawagam	Pusa
Raipur	Rajendranagar	Titabar		

#### **NSN-2 (5)**

Aduthurai	Bankura	Coimbatore	Pusa	Raipur
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#### **NSN-Hills (2)**

Karjat	Lonavla
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#### **NHSN (13)**

Aduthurai	Bankura	Chinsurah	Coimbatore	Cuttack
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Karjat	Lonavla	Navsari	Nawagam	Pusa
Raipur	Rajendranagar	Titabar		

### **DSN (11)**

Aduthurai	Bankura	Coimbatore	Cuttack	Karjat
Lonavla	Navsari	Nawagam	Pusa	Raipur
Rajendranagar				

### **Trial 6: Screening for Bacterial blight**

#### **NSN-1 (29)**

Aduthurai	Arundhutinagar	Bankura	Chatha	Chinsurah
Chiplima	Coimbatore	Gangavati	Gerua	IIRR
Jagtial	Karaikal	Karjat	Ludhiana	Maruteru
Masodha (Faizabad)	Moncompu	Navsari	Nawagam	Nellore
New Delhi	Pantnagar	Patna	Pattambi	Raipur
Sabour	Titabar	Varanasi	Warangal	

#### **NSN-2 (18)**

Aduthurai	Chatha	Coimbatore	Gangavati	IIRR
Ludhiana	Maruteru	Masodha (Faizabad)	Moncompu	Navsari
Nawagam	Pantnagar	Patna	Pattambi	Raipur
Sabour	Titabar	Varanasi		

#### **NSN-Hills (3)**

IIRR	Karjat	Pantnagar
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#### **NHSN (21)**

Aduthurai	Bankura	Chatha	Chinsurah	Coimbatore
Gangavati	IIRR	Karjat	Ludhiana	Maruteru
Masodha (Faizabad)	Moncompu	Navsari	Nawagam	New Delhi
Pantnagar	Patna	Pattambi	Raipur	Titabar
Varanasi				

#### **DSN (21)**

Aduthurai	Chatha	Chiplima	Coimbatore	Gangavati
Gerua	IIRR	Karjat	Ludhiana	Maruteru
Masodha (Faizabad)	Moncompu	Navsari	Nawagam	New Delhi

Pantnagar	Patna	Pattambi	Raipur	Titabar
Varanasi				

### **Trial 7: Screening for Rice Tungro Disease**

#### **NSN-1 (2)**

Coimbatore	IIRR
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#### **NSN-2 (1)**

IIRR
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#### **NSN-Hills (1)**

IIRR
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#### **NHSN (2)**

Coimbatore	IIRR
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#### **DSN (2)**

Coimbatore	IIRR
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### **Trial 8: Monitoring field virulence Leaf Blast - *P. oryzae* (28)**

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

### **Trial 9: Monitoring field virulence – *X. oryzae pv oryzae* (25)**

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

### **Trial 10: Disease observation nursery (10)**

Bankura	Chinsurah	Kaul	Malan	Mandya
Maruteru	Moncompu	Nawagam	Pusa	Raipur

### **New Trial on Disease Dynamics in DSR (4)**

Chatha	Gangavathi	Moncompu	IIRR
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**Trial 11: Evaluation of fungicide molecules against fungal diseases of rice (34)**

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

**Trial 12: Bio-control formulation testing trial (10)**

Gudalur	Hazaribagh	IIRR	Karaikal	Maruteru
Moncompu	Navsari	Pantnagar	Rewa	Varanasi

**Trial 13: Special IPM (18)**

Arundhutinagar	Chiplima	Coimbatore	Cuttack	Ghaghraghat
Hazaribagh	Jagdarpur	Karjat	Kaul	Malan
Mandya	Maruteru	Navsari	Nawagam	Pantnagar
Rajendranagar	Titabar	Umiam (Barapani)		

**Trial 14: Yield Loss trial- Disease will be finalized later (11)**

Cuttack	Gangavati	Jagdarpur	Ludhiana	Malan
Mandya	Maruteru	Moncompu	Nellore	Pantnagar
Pattambi				

**Trial 15: Special screening trial on False smut (5)**

Gangavathi	Gudalur	IIRR	Ludhiana	Masodha (Faizabad)
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**Trial 16: Special screening trial on brown spot (5)**

IIRR	Gangavathi	Ludhiana	Pusa	Rewa
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**Production Oriented Survey (29)**

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

## ENTOMOLOGY

**Chairman** : Dr. K Karthikeyan  
**Co-Chairman** : Dr. N. R. G. Varma  
**Rapporteurs** : Dr. Ch. Padmavathi &  
Dr. Y. Sridhar

The entomology pre-group meeting was held on 10<sup>th</sup> and 11<sup>th</sup> April 2023 in the virtual mode under the Chairmanship of Dr. K Karthikeyan, Professor, RARS, Pattambi. It was co-chaired by Dr. N. R. G. Varma, Principal Scientist (Ento), Institute of Rice Research, PJTSAU, ARI, Rajendranagar. At the outset, Dr. V Jhansi Lakshmi, Principal Investigator & Head (Entomology), IIRR, Hyderabad, welcomed the Chair, Co-chair, all the dignitaries and co-operators from different AICRIP centres. She complimented all the co-operators for the timely reporting of the data. The overall receipt of the data was 89.5% (96.8% during *Kharif* 2022 and 82.1% during *Rabi* 2021-2022).

The Chair, Dr. K Karthikeyan, congratulated the entomology group and informed the house that this is a perfect system to work. He said that though the receipt of the data was good at 90%, we should try to make it 100%. He also requested all the co-operators to submit data on time and follow the guidelines. The Co-chair, Dr. N. R. G. Varma, congratulated and complimented the scientists of this mammoth entomology program under AICRP on Rice.

Deliberations started with the introduction of all the cooperating scientists. About 45 scientists participated in the meeting. This was followed by the presentation of the results of entomology trials conducted during *Kharif* 2022 and *Rabi* 2021-22.

Dr. V Jhansi Lakshmi, Principal Investigator & Head (Entomology), IIRR, Hyderabad, presented the results of planthopper screening trials and biotype studies that include PHS, PHSS and PHPM trials. Dr. A. P. Padmakumari, Principal Scientist (Ento), IIRR, Hyderabad, presented the results of screening trials and biotype studies of gall midge, stem borer and national screening nurseries, which include GMS, SBST, MRST, IIRR – NSN, GMBT, GMPM, and OPCT trials.

Dr. Chitra Shanker, Principal Scientist (Ento), IIRR, Hyderabad, discussed the results of biocontrol and biodiversity studies that include EESP and EEPM trials. Dr. Ch. Padmavathi, Principal Scientist (Ento), IIRR, Hyderabad, presented the results of a screening trial against leaf folder, ecological and IPM studies which include LFST, IEMP, CSIP, EPBI and IPM trials. Dr. Y. Sridhar, Principal Scientist (Ento), IIRR, Hyderabad, presented the results of chemical control studies, pest survey reports, and assessment of insect populations through light trap catches that include EIGM, IBET, PSR and LT trials.

In the afternoon, the co-chair, Dr. N.R.G. Varma, delivered a talk on “Use of Drones in Pest Management”. He gave details of the Standard Operating Protocols (SOPs) for drone-based pesticide application in rice” developed at PJTSAU. He elaborated on the experiments conducted on various parameters like efficacy studies, droplet parameter studies, phytotoxicity and other related studies for developing the SOPs for drone spraying in rice. He informed about the Drone Policy in India, which was approved on 27<sup>th</sup> August 2018, and drone rules 2021 which were amended in 2022.

This was followed by a discussion on the trials conducted and the entomology report presented. Dr. V Jhansi Lakshmi informed the house that two centres, Puducherry and Rewa, were not included, as they did not conduct any trial as no entomologists were posted. She also requested to screen the PHS entries for WBPH in the glasshouse at PNT, MTU, NWG and SKL centres as mixed populations are present at those centres and glasshouse facilities are available. Dr Anand Kumar of Maruteru asked to reduce the number of treatments in the EIGM trial based on the results of two years. Dr. Sridhar responded by informing the house that this year he will include only 2-3 treatments that were found effective and will restrict the trial to a few hotspot locations. Dr. P.S. Sarao of Ludhiana suggested planning of a study on the Southern Rice Black-Streaked Dwarf Virus (SRBSDV) that appeared last year in Punjab and Haryana States. He also proposed having a new trial on prophylactic measures to be taken to manage WBPH, which is considered as a vector for SRBSDV.

Dr. RM Sundaram, Director, IIRR, Hyderabad, congratulated and complimented the entomology group for their excellent work. He said that the incidence of BPH is increasing year after year, which is a significant concern. Similarly, gall midge incidence is also increasing. He suggested the entomology group to identify the gene(s) for the major insect pests that will work across all the locations. He advised to determine the best popular variety so that all the resistant genes could be deployed in that variety. He also urged for the development of NILs containing resistant genes in the common background for major insect pests like planthoppers and gall midge. He requested all the co-operators to register the material identified as promising for a pest in the screening trials with NBPGR, which can also be commercialised later. He also suggested giving equal importance to ecological engineering-based pest management studies handled by Dr Chitra Shanker. He informed the group about the testing of pheromone formulations by ATGC and indicated that such testing should happen in AICRIP entomology, also.

Dr. Revanna of Brahmavar informed the group that the gall midge population had decreased in their location due to the cultivation of the MO4 variety. He requested systematic studies on this variety, genetics of resistance and interaction with the gall midge to identify the mechanisms responsible for the reduction. Dr AP Padmakumari suggested that Dr Revanna take GMPM study to get a clear picture of gall midge status at their location. Finally, Dr. AP Padmakumari proposed the vote of thanks.

The entomology group met again on 11<sup>th</sup> April 2022 at 10:00 am to finalise the technical program and to discuss centre-wise trial allotments. Some of the suggestions given include the following:

- As per the suggestion given by Dr PS Sarao, a new trial on prophylactic measures to control whitebacked planthopper (WBPH) to prevent SRBSDV will be formulated with 6 centres (LDN, KUL, New Delhi, CHT, MLN & PNT).
- Many centres would like to send nominations for various screening trials - NWG for LFST, NLR for GMS, GNV- Local lines/landraces for GMS & SBST.
- Co-chair Dr NRG Varma suggested recording the yield of the top 5 promising entries in screening trials and collecting the seed, especially in PHS and LFST.
- Dr Sitesh Chatterjee of Chinsurah suggested testing Agni Astra, brahma astra and other Astras, for which Dr NRG Varma informed that they had been already tested at different locations of Telangana and will provide information next year.
- Dr NRG Varma also suggested going for non-chemical approaches in IPMs trial as a treatment, including solar light trap, alternate wetting and drying etc.
- Dr Sujay Hurali from Gangavathi suggested having a trial on storage pest management, especially rice moth management
- Dr NRG Varma also suggested a publication on light trap data as a vast database from 1991 is available and he proposed to consider RNR and PTB data initially.
- Dr NRG Varma also suggested that one of the critical areas to work on is the pheromones of rice gall midge.
- A new trial was proposed by Dr Ch Padmavathi on Survival strategies of major insect pests of rice that include a survey and documentation along with confirmation studies on alternate hosts, leftover nurseries, stubbles etc.

In his concluding remarks, Co-chair Dr NRG Varma said that all the co-operators participated actively and enthusiastically in the discussions and suggested the receipt of data should be 100% in the future. He put forward the following issues:

- i) To ensure the purity of the seed in nominations for screening trials
- ii) Timely submission of the data
- iii) Urged young scientists to think innovatively and develop projects
- iv) To study the mechanisms of resistance in the promising entries, and to register them as genetic stock.

In his closing remarks, the Chair Dr K Karthikeyan expressed his happiness and said that two days were spent very productively with useful and meaningful deliberations. He said that last year's results were good and EIGM can go as a technology.

He appreciated the presentation by the Co-chair, Dr NRG Varma, on Drones. He also appreciated the PI & Head, Dr V Jhansi Lakshmi and her team for meticulously planning and conducting the entomology group meeting.

Finally, Dr Chitra Shanker proposed the vote of thanks, wherein the efforts of all co-operators and scientists of IIRR, technical staff of IIRR were acknowledged. Especially the efforts of Sri. Amudan Srinivasan, Asst. Chief Technical Officer, IIRR, was appreciated for his help in compiling data from the centres and formatting reports.

The following trials were allotted to various centres for conduct during *kharif* 2023 and Rabi 2023-24

### ***Kharif* 2023**

#### **Planthopper Screening Trial (PHS)**

Aduthurai	Coimbatore	Cuttack	Gangavathi	Jagtial	<b>Locations: 16</b>
Ludhiana	Mandya	Maruteru	Nawagam	New Delhi	Kaul
R. Nagar	Raipur	Sakoli	Warangal		Pantnagar

#### **Gall Midge Screening Trial (GMS)**

Ambikapur	Brahmavar	Chiplima	Jagdapur	Jagtial	<b>Locations: 12</b>
Moncompu	Nellore	Pattambi	Ranchi	Sakoli	Maruteru
					Warangal

#### **Leaf Folder Screening Trial (LFST)**

Aduthurai	Arundhutinagar	Bapatla	Chatha	Chinsurah	<b>Locations: 19</b>
Jagdapur	Karaikal	Karjat	Kaul	Ludhiana	Cuttack
Masodha	Navsari	Nawagam	Nellore	Pattambi	Malan
Titabar					R. Nagar

#### **Stem Borer Screening Trial (SBST)**

Aduthurai	Ambikapur	Arundhutinagar	Chinsurah	Ghaghrahat	<b>Locations: 16</b>
Mandya	Moncompu	Navsari	Nellore	Pantnagar	Ludhiana
Pusa	R. Nagar	Raipur	Titabar		Pattambi

#### **Multiple Resistance Screening Trial (MRST)**

Aduthurai	Ambikapur	Brahmavar	Chatha	Chinsurah	<b>Locations: 26</b>
Coimbatore		Gangavathi	Jagdapur	Ludhiana	Chiplima
	Mandya				Malan
Maruteru	Masodha	Navsari	Nawagam	Nellore	Pantnagar
Pattambi	Pusa	R. Nagar	Raipur	Ranchi	Sakoli
Titabar	Warangal				

#### **National Screening Nurseries-1(NSN-1)**

Ambikapur	Brahmavar	Chiplima	Coimbatore	Gangavathi	<b>Locations: 20</b>
Ludhiana	Mandya	Maruteru	Masodha	Moncompu	Jagdapur
Nawagam	Pantnagar	Pusa	R. Nagar	Raipur	Navsari
Titabar	Warangal				Sakoli

**National Screening Nurseries – 2 (NSN-2)**

Aduthurai	Chinsurah	Chiplima	Coimbatore	Gangavathi
Jagdalpur	Karjat	Kaul	Ludhiana	Malan
Maruteru	Moncompu	Navsari	Pantnagar	Pusa

**Locations: 17**

Ghaghraghat  
Mandya

**National Screening Nurseries – Hills (NSN-H)**

Chatha	Coimbatore	Khudwani	Ludhiana	Malan
Pantnagar				

**Locations: 7**

Maruteru

**National Hybrid Screening Nurseries – (NHSN)**

Chinsurah	Coimbatore	Ghaghraghat	Ludhiana	Mandya
Moncompu	Nawagam	Pantnagar	Pattambi	R. Nagar
Ranchi				

**Locations: 13**

Maruteru  
Raipur

**Gall Midge Biotype Trial (GMBT)**

Aduthurai	Ambikapur	Brahmavar	Chiplima	Cuttack
Jagdalpur	Jagtial	Maruteru	Moncompu	Nellore
Ragolu	Ranchi	Sakoli	Titabar	Warangal

**Locations: 17**

Gangavathi  
Pattambi

**Planthopper Special Screening Trial (PHSS)**

Aduthurai	Coimbatore	Cuttack	Gangavathi	Ludhiana
Maruteru	New Delhi	Pantnagar	Raipur	R. Nagar

**Locations: 12**

Mandya  
Warangal

**Gall Midge Population Monitoring Trial (GMPPM)**

Brahmavar	Gangavathi	Jagtial	Moncompu	Nellore
Ragolu	Warangal			

**Locations: 8**

Pattambi

**Planthopper Population Monitoring Trial (PHPM)**

Coimbatore	Gangavathi	Ludhiana	New Delhi
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**Locations: 5**

Pantnagar

**Optimum Pest Control Trial (OPCT)**

Ambikapur	Chinsurah	Cuttack	Gangavathi
Pattambi	Raipur	Titabar	Warangal

**Locations: 10**

Kaul Ludhiana

**Evaluation of Insecticides for Gall Midge Management (EIGM)**

Aduthurai	Ambikapur	Chiplima	Gangavathi	Jagdalpur
Pattambi	Sakoli	Warangal		

**Locations: 9**

Maruteru

**Influence of Establishment Methods on Pest Incidence (IEMP)**

Aduthurai	Chatha	Chinsurah	Chiplima	Gangavathi
Jagdalpur	Malan	Moncompu	Nawagam	Pantnagar
Pusa	R. Nagar	Titabar		

**Locations: 15**

Ghaghraghat  
Pattambi

**Cropping systems influence on Pest Incidence (CSIP)**

Gangavathi	Ghaghraghat	Karjat	Titabar
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**Locations: 4**

**Evaluation of Pheromone blends for Insect Pests of rice (EPBI)**

Aduthurai	Chinsurah	Coimbatore	Jagdalpur	Jagtial
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**Locations: 15**

Karaikal



Ludhiana	Maruteru	Navsari	Pusa	R. Nagar	Ragolu
Raipur	Sakoli	Titabar			

<b>Evaluation of Entomopathogens against Sucking Pests of Rice (EESP)</b>					<b>Locations: 11</b>
Brahmavar		Chatha	Coimbatore	Gangavathi	Karjat
	Ludhiana				
Mandya	Moncompu	Navsari	Raipur	Ranchi	

<b>Integrated Pest Management Special Trial (IPMS)</b>					<b>Locations: 20</b>
Aduthurai	Arundhutinagar	Bapatla	Chiplima	Gangavathi	Jagdapur
Karjat	Kaul	Khudwani	Ludhiana	Malan	Mandya
Masodha	Navsari	Nawagam	Pantnagar	Pusa	R. Nagar
Sakoli	Titabar				

<b>Light Trap Collections (LT)</b>					<b>Locations: 32</b>
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	Sakoli
Titabar	Warangal				

#### **Rabi 2023-24**

<b>Stem Borer Screening Trial (SBST)</b>					<b>Locations: 7</b>
Bapatla	Chinsurah	Coimbatore	Gerua	Maruteru	Pattambi
Titabar					

<b>Multiple Resistance Screening Trial (MRST)</b>					<b>Locations: 4</b>
Bapatla	Chinsurah	Khudwani	Maruteru		

<b>National Screening Nursery (Boro)</b>					<b>Locations: 5</b>
Chinsurah	Coimbatore	Maruteru	Pattambi	Titabar	

<b>Evaluation of Pheromone blends for Insect Pests of rice (EPBI)</b>					<b>Locations: 3</b>
Gangavathi		Moncompu	Pattambi		

<b>Integrated Pest Management Special Trial (IPMS)</b>					<b>Locations: 3</b>
Chinsurah	Maruteru	Pattambi			

## **SPECIAL SESSION I**

**Chairman** : Dr B N Singh, Former Director, CRR  
**Co-Chairman** : Dr Sanjay Sharma, Professor, IGKV, Raipur.  
**Rapporteurs** : Dr. Kalyani Kulkarni

Three presentations were made during this session by Drs B Shailaja, Principal Scientist, Agricultural Computer Applications, ICAR-IIRR, Dr Santosha Rathod, Scientist, Agricultural statistics ICAR-IIRR and Dr Nirmala B, Senior Scientist, Agricultural Economics ICAR-IIRR. The rapporteur of the session was Dr Kalyani M Barbadikar, Scientist, Biotechnology ICAR-IIRR.

Dr B Shailaja, Principal Scientist, Agricultural Computer Applications, ICAR-IIRR presented the information on AICRIP intranet. She explained various aspects pertaining to data retrieval, data submission, privilege data base access given to PI etc. She briefed regarding the procedure of online data submission to the intranet and appealed all the cooperators to submit the data online through AICRP intranet.

Dr Santosha Rathod, Scientist, Agricultural statistics ICAR-IIRR presented the statistical requirements for revisiting the conductance of trails across the country. He emphasized on executing the uniformity trials for optimizing appropriate plot size for each location. He recommended conduct uniformity trail in 50-meter\*50-meter plot using popular local variety. The minimum CV of 4% can be considered for including centers into the analysis along with the existing criteria's. He also requested the cooperators to follow the layout of experiment to conduct the experiments.

Dr Nirmala B, Senior Scientist, Agricultural Economics ICAR-IIRR presented the report on SCSP and stressed on the significance and implication of SCSP to popularize the varieties. She explained the procedure for execution of SCSP and urged the cooperators to take up the SCSP program at their centers across the country.

Dr B N Singh suggested that other experimental designs like randomized augmented design can also be explored for conducting experiments when number of genotypes are more.

## **Proceedings of Crop Production & Protection Technologies Identification Committee (CPPTIC) Meeting**

The crop production and protection technologies identification committee meeting was held on 4<sup>th</sup> May 2023 at AAU, Jorhat. The meeting was chaired by the Dr. T R. Sharma, DDG(CS), ICAR. In his opening remarks he congratulated the Scientists for submitting the proposals. The member secretary, Dr. R.M. Sundaram welcomed the chairman and all the members of the CPPT committee who joined offline as well as online. All together 13 PROPOSALS were received, Two technologies were dropped as they were not tested under AICRP system.

The committee discussed the proposals and made specific comments and suggestions to improve the technologies to be submitted in the coming years.

<b>Proposal No</b>	<b>Proposal</b>	<b>Remarks</b>
1	Enhancing the productivity of direct seeded rice with iron coating under different rice ecologies	Details of prior art search, literature, methodology, standardization of production with no objection certificate and MOU from the collaborator/company who has sponsored the trials, etc. to be included in the proposal. The revised application should submitted for scrutiny by a committee of experts before it can be considered by CPPTIC.
2	Bio stimulant (EcoAgra) product under Yield maximization trial in AICRIP under different rice ecologies (Bio stimulant)	Details of prior art search, literature, methodology, standardization of production with no objection certificate and MOU from the collaborator/company who has sponsored the trials, etc. to be included in the proposal. The revised application should submitted for scrutiny by a committee of experts before it can be considered by CPPTIC.
3	Boron on improving spikelet fertility in rice genotypes	Details of prior art search, literature, methodology, standardization of production etc. to be included in the proposal. The revised application should submitted for scrutiny by a committee of

<b>Proposal No</b>	<b>Proposal</b>	<b>Remarks</b>
		experts before it can be considered by CPPTIC.
4	Paddy processing process to avoid contamination in iron and zinc estimation	As the technology does not come under the purview of CPPTIC, the committee suggested that it can be submitted for identification as Institutional technology under the new guidelines proposed by ICAR for examination of the SMD.
5	Economic and effective weed management practice for Dry DSR system in Zones II, III, VI & VII	If the weedicide or combination weedicide did not get label claim, the application will not be considered. Details of literate review, methodology, etc. to be included in the proposal. The revised application should submitted for scrutiny by a committee of experts before it can be considered by CPPTIC.
6	Effective application dose of post-emergence herbicide - Thiobencarb 80 EC for Wet DSR system in Zone I, V and VI	If the weedicide or combination weedicide did not get label claim, the application will not be considered. Details of literate review, methodology, etc. to be included in the proposal. The revised application should submitted for scrutiny by a committee of experts before it can be considered by CPPTIC.
7	AICRIP Experimental Database Portal ( <a href="http://www.aicrip.intranet.in">http://www.aicrip.intranet.in</a> )	As the technology does not come under the purview of CPPTIC, the committee suggested that it can be submitted for identification as Institutional technology under the new guidelines proposed by ICAR for examination of the SMD.
8	Yield maximization of mechanical transplanted rice by standardizing nursery seedling stage	The committee opined that, use of 15-20 days old seedling is a common methodology. However, in case if this method not reported anywhere/any person, then it can be re-examined.  Details of literate review, methodology, etc. to be included in the proposal. The revised application should submitted for

Proposal No	Proposal	Remarks
		scrutiny by a committee of experts before it can be considered by CPPTIC.
9	Green manure, phosphorus, zinc and lime management to enhance the productivity of rainfed upland rice	<p>Lime is used for low land and not for upland. If the pH of the soil below 4, then only we apply lime. Hence we have to specify the zone and pH of the soil for adopting this technology.</p> <p>Details of literature review, methodology, etc. to be included in the proposal. The revised application should be submitted for scrutiny by a committee of experts before it can be considered by CPPTIC.</p>
10	<i>Trichoderma atroviride</i> formulation for seed treatment and foliar application	<p>The inventor claimed it as Bio stimulant, but in AICRIP system, they tested as bio control agent to control the diseases.</p> <p>The committee has suggested to do toxicological studies for the micro-organism and register as biopesticide in CIB and then submit the application to CPPTIC</p>
11	Rice Pest Management Package for Southern Zone (Zone VII)	The committee observed that the proposal is comprehensive and has merit for consideration. However, it suggested complete verification of the data and facts, with clear technological recommendations, literature search etc. and also to include the detailed management practices and resubmit the application for scrutiny by an expert committee, after which it can be submitted to CPPTIC.

The chairman suggested that an expert committee should scrutinize all the revised applications submitted, and the proposals cleared by the committee should only be submitted to CPPTIC for consideration.

Subsequently the Competent authority nominated the expert committee under the Chairmanship of Dr. A. Subba Rao, Ex-Director (Retd), ICAR-IISS, Bhopal with the following members to screen the Crop Production and Protection proposals.

1	Dr. A Subba Rao, former Director, ICAR-Indian Institute of Soil Science, Bhopal	:	Chairman
2	Dr. R M Sundaram, Director, IIRR	:	Member
3	Dr. A K Nayak, Director, NRRI	:	Member
4	Dr. R M Kumar, Head, Crop Production, IIRR	:	Member
5	Dr. M S Prasad, Head, Plant Protection, IIRR	:	Member

The following members attended the meeting.

<b>1</b>	<b>Dr. T. R. Sharma, DDG (CS), ICAR, New Delhi</b>	<b>Chairman</b>
2	Dr. S. K. Pradhan, Assistant Director General (FFC), ICAR, New Delhi	Member
3	Dr. S.C. Dubey, Assistant Director General (PP), ICAR, New Delhi	Member
4	Dr. P.K.Singh, Commissioner of Agriculture, Assam State	Member
5	Dr. Ashok Bhattacharyya, Director of Research, AAU	Member
6	Dr. A. Subba Rao, Ex-Director (Retd), ICAR-IISS, Bhopal	Member
7	Dr. A.K. Nayak, Director, ICAR-NRRI, Cuttack	Member
10	Dr. Ritesh Sharma, Principal Scientist, BEDF (APEDA), SVPUA&T Campus, Meerut	Member
11	Dr. A.K. Nayak, Director, ICAR-NRRI, Cuttack	Member
12	Dr. Sanjay Kumar, Director, ICAR-Indian Institute of Seed Science, MAU	Member
13	Dr. R. M. Sundaram, Director, ICAR- Indian Institute of Rice Research, Hyderabad-500030	<b>Member Secretary</b>
16	Dr. R. Mahender Kumar, PS & PI, Agronomy, ICAR-IIRR, Hyderabad	Member
19	Dr. M. Srinivas Prasad, PS & PI, Pathology, ICAR-IIRR, Hyderabad	Member
21	Dr. K. Surekha, PS & PI, Soil Science, ICAR-IIRR, Hyderabad	Member

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## Proceedings of the Varietal Identification Committee Meeting-2023

Varietal Identification Committee (VIC) Meeting was held on 4<sup>th</sup> May 2023 during the 58<sup>th</sup> ARGM at Assam Agricultural University, Jorhat under the chairmanship of Dr TR Sharma, DDG (Crop Science), ICAR. The members of the Committee are listed in the Annexure "A". A total of 60 proposals including 42 varietal entries and 18 hybrid entries discussed during the meeting are given below.

### List of VIC Proposals (Varietal entries) received for 58<sup>th</sup> ARGM 2023

S. No.	Proposal No.	IET No.	Designation	Submitted by	Variety/ Hybrid
<b>Irrigated Early Transplanted</b>					
1	6	29140	BRR 2176 (Sabour Kunwar Dhan)	BRU, Dhangain (BAU, Sabour)	Variety
2	7	29142	JGL 35085 (Telangana Vari 10)	PJTSAU, Jagitial	Variety
3	8	28356	KNM 7037 (Telangana Rice 9)	PJTSAU, Kunaram	Variety
4	9	26898	HURS 17-7-IR95786-9-2- 1-2 (Malviya Manila Sinchit Dhan-1)	Banaras Hindu University, Varanasi.	Variety <b>Re-submission</b>
5	50	27866	HKR 16-1-IR14L521 (HKR-49)	RRS, Kaul (CCSHAU)	Variety
6	58	29177	ORJ 1317	OUAT, Jeypore centre	Variety
7	57	27880	ORJ 1346	OUAT, Jeypore centre	Variety
<b>Irrigated Mid-Early</b>					
8	13	29236	CR 3580-3-1-1-1-1-2 (CR Dhan 329)	ICAR-NRRI, Cuttack	Variety
9	49	28506	CR 3849-2-1-2-1-2 (CR Dhan 332)	ICAR-NRRI, Cuttack	Variety
10	55	29217	Pusa 2090-17-20 (Pusa 2090)	ICAR-IARI, New Delhi	Variety
<b>Irrigated Medium</b>					
11	18	29256	BPT 3050	ANGRAU, Bapatla	Variety
12	19	27908	MTU 1275 (MTU Rice 1275)	ANGRAU, Maruteru	Variety
13	20	27900	MTU 1276 (MTU Rice 1276)	ANGRAU, Maruteru	Variety
14	21	28489	BRR 2141	BRU, Dhangain (BAU, Sabour)	Variety
<b>Irrigated Late</b>					
15	22	28508	CR 2830-48-1 (CR Dhan 331)	ICAR-NRRI, Cuttack	Variety
16	23	28544	CR 3969-17-2-2-1-1-1-1 (CR Dhan 322)	ICAR-NRRI, Cuttack	Variety <b>Re-Submission</b>
17	24	29351	WGL-1289 (Telangana Rice 11)	PJTSAU, Warangal	Variety

S. No.	Proposal No.	IET No.	Designation	Submitted by	Variety/ Hybrid
<b>Aerobic</b>					
18	25	29396	CRR 822-20-1-2-2	CRURRS (ICAR-NRRI), Hazaribagh	Variety
19	26	29436	CRR 821-21-2-1-3	CRURRS (ICAR-NRRI), Hazaribagh	Variety
20	27	29411	CR 4161-5-6-IR 14L572 (CR Dhan 211)	ICAR-NRRI, Cuttack	Variety
21	28	29424	CR 4317-2-IR 97034-21-2-1-3 (CR Dhan 212)	ICAR-NRRI, Cuttack	Variety
22	42	29415	RP 6326-278-14-1 (DRR Dhan 70)	ICAR-IIRR, Hyderabad	Variety
23	43	29421	RP 6324-123-14-4-1 (DRR Dhan 71)	ICAR-IIRR, Hyderabad	Variety
24	46	29430	CR 4118-1-1-2-2-1 (CR Dhan 213)	ICAR-NRRI, Cuttack	Variety
25	56	29409	TRC 2020-14	ICAR RC for NEH Region, Tripura Centre	Variety
<b>Medium Slender Grain</b>					
26	31	29523	R 2054-685-1-205-1	IGKV, Raipur	Variety
<b>Biofortification</b>					
27	32	28694	GNV 1906 (Spoorthi)	UAS, Gangavathi	Variety
<b>Saline Alkaline</b>					
28	33	29353	GNV 18-64	UAS, Gangavathi	Variety
29	54	27807	KR 15066 (KKL (R) 3)	PAJANCOA & RI, Karaikal	Variety
<b>Low Phosphorus Tolerant</b>					
30	34	28816	MTU 1329 (MTU Rice 1329)	ANGRAU, Maruteru	Variety
31	45	28821	RP 5964-82 (DRR Dhan 72)	ICAR-IIRR, Hyderabad	Variety
<b>Boro:</b>					
32	37	28840	PUR-B-190 (Uttar Ganga)	UBKV, Pundibari	Variety
<b>Irrigated Early Hills</b>					
33	38	28895	VL 32560 (VL Dhan 89)	ICAR-VPKAS, Almora	Variety
34	52	28882	HPR 3201 (HIM PALAM DHAN 4)	RWRC, Malan (CSK HPKV)	Variety
35	53	27472	HPR 2865 (HIM PALAM DHAN 3)	RWRC, Malan (CSK HPKV)	Variety <b>Re-Submission</b>
<b>Near Isogenic Lines- Herbicide Tolerance</b>					
36	39	30438	CR 4333-35-2-2-1 (CR Dhan 807)	ICAR-NRRI, Cuttack	MAS Variety
<b>Near Isogenic Lines- Drought Tolerance</b>					
37	40	28834	CRR 809-11-1-9-B	CRURRS (ICAR-NRRI), Hazaribagh	MAS Variety



S. No.	Proposal No.	IET No.	Designation	Submitted by	Variety/ Hybrid
38	41	28032	CRR 751-1-7-B-B	CRURRS (ICAR-NRRI), Hazaribagh	MAS Variety <b>Re-Submission</b>
<b>Semi Deep Water</b>					
39	47	28299	CR 4039-2-1-2-1-1 (CR Dhan 513)	ICAR-NRRI, Cuttack	Variety <b>Re-Submission</b>
40	48	29121	CR 3838-2-2-1-1-2 (CR Dhan 514)	ICAR-NRRI, Cuttack	Variety
41	60	28296	CN 1758-2-TTB7	AAU, Titabar, Assam	Variety
<b>Rainfed Shallow Lowland</b>					
42	51	27538	BRR 2110 (Sabour Heera Dhan)	BRU, Dhangain (BAU, Sabour)	Variety <b>Area Extension</b>

**List of VIC Proposals (Hybrids) received for 58<sup>th</sup> ARGM 2023**

Sl. No.	Proposal No.	IET No.	Designation	Submitted by	Variety/ Hybrid
<b>Irrigated Early Transplanted</b>					
1	1	28950	HRI-207 (Arize INH 211120)	M/s. Bayer BioScience Pvt. Ltd.	<b>Hybrid</b>
2	2	28960	RRX-848	M/s. Rasi Seeds Pvt. Ltd.	<b>Hybrid</b>
3	3	28959	PHI-20101	M/s. PHI Seeds Pvt. Ltd. (Corteva Agriscience)	<b>Hybrid</b>
4	4	28954	KAVERI-7299	M/s. Kaveri Seed Company Ltd.	<b>Hybrid</b>
5	5	28964	VNR-227	M/s. VNR Seeds Pvt. Ltd.	<b>Hybrid</b>
<b>Irrigated Mid-Early</b>					
6	10	28128	SHX-468 (Sava 7501)	M/s. Savannah Seeds Pvt. Ltd.	<b>Hybrid</b>
7	11	28982	RRX-809	M/s. Rasi Seeds Pvt. Ltd.	<b>Hybrid</b>
8	12	28979	PHI-20102	M/s. PHI Seeds Pvt. Ltd. (Corteva Agriscience)	<b>Hybrid</b>
<b>Irrigated Medium</b>					
9	14	28997	HRI-204 (Arize 8455DT)	M/s. Bayer Bioscience Pvt. Ltd.	<b>Hybrid</b>
10	15	29000	HRI-205 (Arize Dhani DT)	M/s. Bayer Bioscience Pvt. Ltd.	<b>Hybrid</b>
11	16	29004	PHI-20107	M/s. PHI Seeds Pvt. Ltd. (Corteva Agriscience)	<b>Hybrid</b>
12	17	29001	S-7004	M/s. Syngenta India Pvt. Ltd.	<b>Hybrid</b>
<b>Aerobic</b>					
13	29	29412	US 393	M/s. Seed Works International Ltd.	<b>Hybrid</b>

Sl. No.	Proposal No.	IET No.	Designation	Submitted by	Variety/Hybrid
<b>Medium Slender Grain</b>					
14	30	29017	RALLIS-19608 (DR 8611)	M/s. Rallis India Ltd.	<b>Hybrid</b>
<b>Coastal Saline</b>					
15	44	27847	IIRRH 115 (DRR H-5)	ICAR-IIRR, Hyderabad	<b>Hybrid</b>
<b>Boro</b>					
16	35	28848	JKRH 2728	M/s. J.K. Agri Genetics Ltd.	<b>Hybrid</b>
17	36	28849	NK 5231	M/s. Syngenta India Pvt. Ltd.	<b>Hybrid</b>
<b>Basmati</b>					
18	59	28579	Taj (Basmati Hybrid) Resubmission	Shakthi Seeds Pvt. Ltd.	<b>Hybrid</b>

All the 60 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. The committee re-emphasized that if the proposal is for a single state per zone, such proposals may be submitted to SVRC for state release instead of submitting to VIC. Specific comments and decision of the committee are given below for all the proposals.

### ***Recommendations of the varietal entries in VIC, 2023***

#### **Irrigated Early Transplanted**

##### **Proposal No. 1 IET 29140 (BRR 2176)**

The entry IET 29140 was submitted for irrigated early transplanted ecology and the proposal was considered. It is moderately resistant to leaf blast and sheath rot. IET 29140 with medium slender grains and high HRR of 67.6% is recommended for **Bihar, Jharkhand, Odisha, West Bengal and Uttar Pradesh (Zone III)**.

##### **Proposal No. 2 IET 29142 (JGL 35085)**

The entry IET 29142 was submitted for irrigated early transplanted ecology and the proposal was considered. The proposal is deferred as data was submitted for only two years in most of the zones and states. Hence, it is suggested for **re-testing for one more year**.

##### **Proposal No. 3 IET 28356 (KNM 7037)**

The entry IET 28356 was submitted for irrigated early transplanted ecology and the proposal was considered. IET 28356 recorded promising yield performance with early duration and moderate resistance to leaf blast and desirable grain quality characteristics, high HRR-62.3%; intermediate AC-23.33%; soft GC-71.5 mm and long slender (LS) grain type and is recommended for **Odisha, Uttar Pradesh, and West Bengal (Zone III)**.

##### **Proposal No. 4 IET 26898 (HURS 17-1-IR 95786-9-2-1-2)**

This proposal is a resubmission proposal under irrigated early transplanted ecology and the proposal was considered. IET 26898 exhibited resistance to gallmidge and moderate

resistance to leaf blast and brown spot with desirable grain quality characteristics of high HRR-63.5%; AC-26.3%, soft GC-55.5 mm and long slender (LS) grain type. It is recommended for **Odisha and Bihar (Zone III)**.

**Proposal No. 5 IET 27866 (HKR 49)**

The entry IET 27866 was submitted for irrigated early transplanted ecology. It has a HRR of 55.1, intermediate amylose content of 24.14, soft GC of 45 mm and long slender grains. It has moderate resistance to leaf blast. IET 27866 is **recommended for Odisha and Bihar (Zone III) and Maharashtra and Gujarat (Zone VI)**.

**Proposal No. 6 IET 27880 [OUAT Kalinga Rice 9 (ORJ 1346)]**

The entry IET 27880 was submitted for irrigated early transplanted ecology and the proposal was considered. It has high HRR-67.4%, intermediate AC-20.94%, soft GC of 54 mm and long bold grains and is moderately resistant to leaf blast. IET 29177 is recommended for **Odisha, Bihar and West Bengal (Zone III)**.

**Proposal No. 7 IET 29177 [OUAT Kalinga Rice 10 (ORJ 1317)]**

The entry IET 29177 was submitted for irrigated early transplanted ecology and the proposal was considered. It has acceptable grain quality traits, HRR of 57.0%, AC of 27.98% and soft GC of 63 mm, It. IET 29177 is recommended for **Chhattisgarh and Maharashtra (Zone V)**.

**Irrigated Mid Early**

**Proposal No.8 IET 29236(CR Dhan 329)**

This proposal was submitted to irrigated mid early duration ecology and the proposal was considered. IET 29236 has desirable grain quality traits like high HRR-66.1% and intermediate AC-22.3% with short bold (SB) grain type and has moderate resistance to neck blast, brown spot and sheath rot. IET 29236 is recommended for **Odisha and Bihar (Zone III) and Maharashtra and Gujarat (Zone VI)**.

**Proposal No. 9 IET 28506 [(CR 3849-2-1-2-1-2) CR Dhan 332]**

The proposal for IET 28506 was submitted to mid early duration ecology and the proposal was considered. It has acceptable grain quality parameters like HRR-59.0%; intermediate AC-24.71%, soft GC-59 mm and long slender grain type. It showed moderate resistance to leaf blast, neck blast, brown spot and sheath rot. It is recommended for **Odisha and West Bengal (Zone III)**.

**Proposal No. 10 IET 29217 (Pusa 2090-17-20)**

IET 29217 is proposed for irrigated mid early duration ecology. As the entry has shown superiority only the state of Odisha, it is recommended for submission to **SVRC in the state of Odisha**.

**Irrigated Medium**

**Proposal No. 11 IET 29256 (BPT 3050)**

IET 29256 is proposed for irrigated medium duration ecology. It has moderate resistance to leaf blast, neck blast, brown spot and sheath rot with desirable grain quality traits of

high HRR-66.5%; intermediate AC-24.62%; GC-22 mm and long bold (LB) grains. Hence, the entry is recommended for **Maharashtra and Gujarat (Zone VI)**.

**Proposal No. 12 IET 27908 (MTU Rice 1275)**

IET 27908 is proposed for irrigated medium duration ecology and the proposal was considered. It is moderately resistant to leaf blast, neck blast, BLB and brown spot. With high HRR of 62.6% and medium slender (MS) grain type, IET 27908 is recommended for **Andhra Pradesh, Telangana, Tamil Nadu, Karnataka and Puducherry (Zone VII)**.

**Proposal No. 13 IET 27900 (MTU Rice 1276)**

This proposal is submitted under irrigated medium duration ecology. The proposal was **rejected** as the entry didn't show promising performance over the local check on zonal mean basis.

**Proposal No. 14 IET 28489 (BRR 2141)**

IET 28489 is submitted under irrigated medium duration ecology and the proposal is considered. It has resistance to gallmidge biotype 1 and moderate resistance to neck blast and sheath rot. It has HRR of 62%, AC of 27%, soft GC of 45 mm and medium slender grains. IET 28489 is recommended for **Bihar, Uttar Pradesh and Jharkhand (Zone III), Chhattisgarh and Madhya Pradesh (Zone V), and Maharashtra and Gujarat (Zone VI)**.

**Irrigated Late**

**Proposal No. 15 IET 28508 [(CR 2830-48-1) CR Dhan 331]**

IET 28508 is submitted under irrigated late duration ecology and the proposal was considered. It has desirable grain quality characteristics of high HRR 70.1%, intermediate amylose content of 24.55% and short bold grains. It has moderate resistance to neck blast and sheath rot. IET 28508 is recommended for **Chhattisgarh and Maharashtra (Zone V) and Maharashtra (Zone VI)**.

**Proposal No. 16 IET 28544 [(CR 3969-17-2-2-1-1-1) CR Dhan 322]**

IET 28544 is submitted under irrigated late duration ecology and the proposed is considered. With potential yield, the entry has long slender grain type and good quality traits of high HRR-67.3%; intermediate AC-24.67% and moderate resistance to leaf blast, neck blast and brown spot. Hence, the entry is recommended for **Maharashtra and Chhattisgarh (Zone V)**.

**Proposal No. 17 IET 29351 (WGL 1289)**

The proposal is submitted under irrigated late duration ecology and the proposed is considered. It has high HRR-62.7% and long bold grains and moderate resistance to neck blast, neck blast and sheath rot. IET 29351 is recommended for **Gujarat and Maharashtra (Zone VI) and Chhattisgarh (Zone V)**

**Aerobic**

**Proposal No. 18 IET 29396 (CRR 822-20-1-2-2)**

The entry IET 29396 is submitted for aerobic ecology. The proposal is not considered and **suggested for submission to SVRC for state release.**

**Proposal No. 19 IET 29436 (CRR 821-21-2-1-3)**

The proposal was considered under aerobic ecology of rice. It has moderate resistance to leaf blast, neck blast brown spot, sheath rot and RTD and desirable quality traits of high HRR-62.3%; intermediate AC-23.07% with long slender (LS) grain type. Hence, the entry is recommended for **Odisha and Bihar (Zone III)**.

**Proposal No. 20 IET 29411 (CR Dhan 211)**

IET 29411 was considered under aerobic ecology of rice. It has high HRR-66%, intermediate AC-24.86% and long slender grains. It is moderately resistant to leaf blast, neck blast, brown spot and sheath rot. IET 29411 is recommended for **Odisha, Bihar and Jharkhand (Zone III), Chhattisgarh (Zone V) and Maharashtra and Gujarat (Zone VI)**.

**Proposal No. 21 IET 29424 (CR Dhan 212)**

IET 29424 is considered under aerobic ecology of rice. It has moderate resistance to leaf and neck blast and sheath rot. It has good head rice recovery 60.15 % (51.4%) and intermediate amylose content (23.5%). The entry is recommended for **Odisha, Bihar and Jharkhand (Zone III)**.

**Proposal No. 22 IET 29415 (DRR Dhan 70)**

The proposal is considered under aerobic ecology of rice. It has HRR of 64.8 %, intermediate amylose of 21.26% and long bold grains. It has resistance to sheath rot and moderate resistance to brown spot. IET 29415 is recommended for **Odisha and Bihar (Zone III)**.

**Proposal No. 23 IET 29421 (DRR Dhan 71)**

IET 29421 is submitted for aerobic ecology. It has high HRR of 64 %, medium slender grains, intermediate amylose content of 24.75%. It has moderate resistance to leaf blast, neck blast, sheath rot and stem borer. IET 29421 is recommended for **Odisha (Zone III), Gujarat (Zone VI) and Tamil Nadu (Zone VII)**.

**Proposal No. 24 IET 29430 (CR Dhan 213)**

IET 29430 is submitted for aerobic ecology. The proposal is not considered and **suggested for submission to SVRC for state release.**

**Proposal No. 25 IET 29409 [(TRC 2020-14) ICAR-NEH NICRA Aerobic Dhan 2]**

IET 29409 is submitted for aerobic ecology. It has long bold grains, HRR of 64.6% and intermediate AC of 21.82 %. It is moderately resistant to neck blast, leaf blast, sheath rot and brown spot. IET 29409 is recommended for **Bihar and Haryana (Zone II)**.

**Medium Slender Grain**

**Proposal No. 26 IET 29523 (Chhattisgarh Bhavya Dhan)**

IET 29523 is proposed for medium slender grain trial. It has moderate resistance to neck blast and sheath rot. It has HRR of 65.15% and intermediate AC of 24.49% and medium slender grains. IET 29523 is recommended for **Zone VI (Maharashtra and Gujarat)**

### **Biofortification**

#### **Proposal No. 27 IET 28694 [(GNV 1906) Spoorthi]**

IET 28694 is proposed as a biofortified variety with high zinc content. It has long bold grains, HRR of 63.8% and intermediate AC of 22.5%. It has moderate resistance to leaf blast, neck blast and sheath rot. It is recommended for **Karnataka, Andhra Pradesh, Tamil Nadu and Telangana (Zone VII)**.

### **Saline Alkaline**

#### **Proposal No. 28 IET 29353 (GNV 18-64)**

The proposal is submitted under saline/alkaline ecology. The proposal is not considered and **suggested for submission to SVRC for state release**.

#### **Proposal No. 29 IET 27807 (KR 15066)**

This proposal is submitted under saline/alkaline ecology. The proposal is considered. It has high HRR of 61.3%, AC of 27.15% and soft GC of 41 mm with long bold grains. It has moderate resistance to leaf blast and resistance to gallmidge IET 27807 is recommended for **Haryana (Zone II), Puducherry and Tamil Nadu (Zone VII)**.

### **Low Phosphorus Tolerance**

#### **Proposal No. 30 IET 28816 (MTU 1329)**

This proposal is deferred due to insufficient data, **one more year of testing** is suggested.

#### **Proposal No. 31 IET 28821 (RP5964-82)**

The proposal was submitted for low phosphorous tolerance and it was considered. It has moderate resistance to neck blast and acceptable grain quality of HRR 62.5%; AC 24.37%; GC 22 and long bold (LB) grain type. It was recommended for **Karnataka and Telangana (Zone VII)**.

### **Boro**

#### **Proposal No. 32 IET 28840 (Uttar Ganga)**

The proposal was submitted for Boro ecology and it was considered. It has resistance to blast. It has acceptable grain quality of HRR 57.90%; AC 24.37%; GC 22 and short bold (SB) grain type. It was recommended for **West Bengal, Odisha and Uttar Pradesh (Zone III)**.

### **Irrigated Early Hills**

#### **Proposal No. 33 IET 28895 (VL 32560)**

The proposal was submitted for irrigated early ecology and it was considered. It had acceptable grain quality of HRR 67.2%; AC 24.21%; GC 22 and long slender (LS) grain type. IET 28895 is recommended for **Uttarakhand, Himachal Pradesh and Jammu & Kashmir (Zone I)**.

#### **Proposal No. 34 IET 28882 (HPR 3201)**

The proposal was submitted for hill ecology of Medium Northern Hills and it was considered. It has acceptable grain quality of HRR-58.6; AC-25.28%; GC-24 and long

slender (LS) grain type and moderately resistant to leaf blast, neck blast, sheath rot and BPH. IET 28882 is recommended for **Himachal Pradesh and Uttarakhand (Zone I)**.

**Proposal No. 35 IET 27472 (HPR 2865)**

The proposal considered under Medium Northern Hills was Medium Northern Hills. It has long bold grain with desirable grain quality traits of HRR-53.0, AC-24.49%, GC-22 and moderately resistant to leaf blast, neck blast, sheath rot and RTD. The proposal is recommended for **Medium Northern Hills in Himachal Pradesh and Uttarakhand (Zone I)**.

**Near Isogenic Lines – Herbicide Tolerance**

**Proposal No. 36 IET 30438 (CRR Dhan 807)**

IET 30438 is MAS derived NIL of Sahbhagidhan introgressed with herbicide tolerance gene (AHAS). The proposal is considered in rainfed early direct seeded trial. It had acceptable quality parameters, HRR (58%), AC (21.79 %) and GC of 38.5 mm. It is recommended for the **gazette notified and adaptable states of Sahbhagidhan viz., Jharkhand, Odisha, Andhra Pradesh, Tamil Nadu, Chhattisgarh and Gujarat**.

**Near Isogenic Lines – Drought Tolerance**

**Proposal No. 37 IET 28834 (CR 4333-35-2-2-1)**

The IET 28834 is a MAS derived line in the background of Anjali for drought with QTL for drought. It possesses desirable grain quality parameters short bold grain type, AC (21.2) and HRR (62 %). It is recommended for **Jharkhand and Bihar (Zone III)**.

**Proposal No. 38 IET 28032 (CRR 751-1-7-B-B)**

This entry is MAS derived line in the genetic background of IR 64 with qDTY2.2 and Sub1 QTL. The entry showed significant superiority in yield over the IR 64 with respect to the trait introgressed (drought tolerance and submergence tolerance) under artificial screening. Further, the entry showed equivalent performance to IR 64 at non-stress locations. Hence, IET 28032 **is recommended for the states of Jharkhand, UP, Tamilnadu, Madhya Pradesh, Chhatisgarh, AP and Telanagana**.

**Semi-Deep Water**

**Proposal No. 39 IET 28299 (CR Dhan 513)**

The proposal is not considered and **suggested for submission to SVRC for state release**.

**Proposal No. 40 IET 29121 (CR 3838-2-2-1-1-2)**

The proposal is not considered and **suggested for submission to SVRC for state release**.

**Proposal No 41 IET 28296 (AAU-KMJ-Dhan 46; Surma Dhan)**

The proposal considered under Semi Deep-water ecology. It possesses desirable grain quality parameters long bold grain type, AC (22.7) and HRR (61.9 %). It is recommended for **Odisha, Uttar Pradesh, West Bengal and Bihar (Zone III)**.

**Rainfed Shallow Lowland (Area Extension)**

**Proposal No. 42 IET 27538 (BRR 2110)**

The proposal is not considered due to inferior yield performance in the proposed states.

***Recommendations of the hybrid entries in VIC, 2023***

**Irrigated Early Transplanted**

**Proposal No 1 IET 28950 [HRI-207 (Arize INH 211120)]**

IET 28950 is proposed for all the zones in the early transplanted ecology and the proposal is considered. It has HRR of 62%, and intermediate AC of 24.61%. It is recommended for all zones viz., **Punjab, Haryana, Western UP (Zone II), Uttar Pradesh, Bihar, Jharkhand, Odisha and West Bengal (Zone III), Assam and Tripura (Zone IV), Madhya Pradesh and Chhattisgarh (Zone V), Gujarat and Maharashtra (Zone VI) and Telangana, Andhra Pradesh, Tamil Nadu and Karnataka (Zone VII).**

**Proposal No 2 IET 28960 (RRX-848)**

IET 28960 is proposed for II, III, V, VI zones in the early transplanted ecology and the proposal is considered. It has moderate resistance to leaf blast, neck blast and sheath rot. It has high HRR of 66.7%, intermediate AC of 23.9%. IET 28960 is recommended for **Punjab, and Haryana UP (Zone II), Uttar Pradesh, Bihar, Jharkhand, Odisha and West Bengal (Zone III), Madhya Pradesh and Chhattisgarh (Zone V), and Gujarat and Maharashtra (Zone VI).**

**Proposal No 3 IET 28959 (PHI-20101)**

The proposal on IET 28959 is **withdrawn**.

**Proposal No 4 IET 28954 (KAVERI-7299)**

IET 28954 is proposed for Zone II and III in the early transplanted ecology. It has moderate resistance to leaf blast, neck blast and brown spot. It has high HRR of 67.4%, intermediate AC of 24.6%. It is recommended for **Punjab, Haryana, Uttarakhand and Rajasthan (Zone II) and Uttar Pradesh, Bihar, Odisha and West Bengal (Zone III).**

**Proposal No 5 IET 28964 (VNR-227)**

IET 28964 is proposed for Zone II, III, IV, V, VI in the early transplanted ecology. It has moderate resistance to leaf blast, neck blast and brown spot. It has high HRR of 64.7%, intermediate AC of 24.2%. It is recommended for **Uttar Pradesh, Bihar, Jharkhand and Odisha (Zone III).**

**Irrigated Mid-Early**

**Proposal No 6 IET 28128 [SHX-468 (Sava 7501)]**

IET 28128 is proposed for Zone II, IV, VI and VII in the irrigated mid-early ecology. It has moderate resistance to leaf blast, neck blast, sheath rot and brown spot. It has high HRR of 60.0%, intermediate AC of 22.35%. It is recommended for **Punjab, Jammu and Kashmir and Western UP (Zone II).**



**Proposal No 7 IET 28982 (RRX-809)**

IET 28982 is proposed for Zone II, III, VI and VII in the irrigated mid-early ecology. It has moderate resistance to leaf blast, neck blast and sheath rot. It has high HRR of 65.2%, intermediate AC of 26.35% and soft GC of 52 mm. IET 28982 is recommended for **Punjab and Haryana (Zone II)**.

**Proposal No 8 IET 28979 (PHI-20102)**

IET 28979 is proposed for Zone V and VI in the irrigated mid-early ecology. It has moderate resistance to leaf blast, neck blast and sheath rot. It has high HRR of 62.3%, intermediate AC of 23.3 %. IET 28979 is recommended for **Maharashtra, Madhya Pradesh and Chhattisgarh (Zone V)** and **Gujarat and Maharashtra (Zone VI)**.

**Irrigated Medium**

**Proposal No 9 IET 28997 [HRI-204 (Arize 8455DT)]**

IET 28997 is proposed for Zone II, III, IV, V, VI in the irrigated medium ecology. It has moderate resistance to BLB, leaf blast, neck blast, brown spot and sheath rot. It has high HRR of 65%, intermediate AC of 22.66%. IET 28997 is recommended for **Punjab, Haryana, Western UP (Zone II), Uttar Pradesh, Bihar, Jharkhand, Odisha and West Bengal (Zone III), and Madhya Pradesh and Chhattisgarh (Zone V)**.

**Proposal No 10 IET 29000 [HRI-205 (Arize Dhani DT)]**

IET 29000 is proposed for Zone II, III, IV, V, VI in the irrigated medium ecology. IET 29000 is deferred and suggested for resubmission with proper verification of data.

**Proposal No 11 IET 29004 (PHI-20107)**

IET 29004 is proposed for Zone III in the irrigated medium ecology. It has moderate resistance to leaf blast, neck blast and brown spot. It has high HRR of 62.8%, intermediate AC of 25.26%. IET 29004 is recommended for **Uttar Pradesh, Bihar, Jharkhand, Odisha and West Bengal (Zone III)**.

**Proposal No 12 IET 29001 (S-7004)**

IET 29001 is proposed for Zone V, VI and VII in the irrigated medium ecology. It has moderate resistance to leaf blast, neck blast and sheath rot. It has high HRR of 60.95%, intermediate AC of 25.71%. IET 29001 is recommended for **Madhya Pradesh and Chhattisgarh (Zone V), Gujarat and Maharashtra (Zone VI) and Andhra Pradesh and Tamil Nadu (Zone VII)**.

**Aerobic**

**Proposal No 13 IET 29412 (US 393)**

IET 29412 is proposed for Zone II, III and V in the aerobic ecology. It has moderate resistance to leaf blast, sheath rot and brown spot. It has high HRR of 65.6%, intermediate AC of 23.33%. IET 29412 is recommended for **Maharashtra, Madhya Pradesh and Chhattisgarh (Zone V)**.

### **Medium Slender Grain**

#### **Proposal No 14. IET 29017 [RALLIS-19608 (DR 8611)]**

IET 29017 is proposed for Zone III, V, VI and VII in medium slender grain segment. It has moderate resistance to leaf blast, neck blast, brown spot, sheath rot and WBPH. It has high HRR of 63.1%, intermediate AC of 25.4%. IET 29017 is recommended for **Maharashtra, Madhya Pradesh and Chhattisgarh (Zone V) and Gujarat and Maharashtra (Zone VI).**

### **Coastal Saline**

#### **Proposal No 15 IET 27847 [IIRRH 115 (DRRH-5)]**

IET 27847 is proposed for Coastal Saline ecology for Zone III, VI and VII in coastal saline ecology. It has moderate resistance to leaf blast and neck blast. It has high HRR of 62.0%, intermediate AC of 26.16% and soft GC of 49.67 mm. IET 27847 is recommended for **West Bengal (Zone III), Gujarat and Goa (Zone VI) and Andhra Pradesh (Zone VII).**

### **Boro**

#### **Proposal No 16 IET 28848 (JKRH 2728)**

IET 28848 is proposed for Zone III and IV in *boro* rice ecology. It has moderate resistance to leaf blast. IET 28848 is recommended for **Uttar Pradesh and Odisha (Zone III) and Assam and Tripura (Zone IV).**

#### **Proposal No 17 IET 28849 (NK 5231)**

IET 28849 is proposed for Zone III in *boro* rice ecology. It is resistant to blast and has high HRR of 57.45%, intermediate AC of 24.21%. IET 28849 is recommended for **Uttar Pradesh and West Bengal (Zone III).**

### **Basmati**

#### **Proposal No 18. IET 28579 [Taj (Basmati Hybrid)]**

IET 28579 is a resubmission proposal and the proposal **was not considered** due to late submission and inferior quality.

***Further, the committee also decided that the promotions/identification of an entry as promising, should be on Zonal basis only, from Kharif 2023, onwards and seeds should be sent to only those zones in which the entry has been promoted.***

**List of members participated in the VIC Committee Meeting on virtual mode during 58<sup>th</sup> ARGM, 2023 at AAU, Jorhat, Assam.**

1	<b>Dr. T. R. Sharma, DDG (CS), ICAR, New Delhi</b>	<b>Chairman</b>
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	Dr Ashok Bhattacharyya, Director of Research (Agri), Assam Agricultural University	Member
5	Dr PK Singh, Agril. Commissioner, DAC & FW, Ministry of Agriculture, Govt. of India, New Delhi	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	Member
10	Dr R. M. Sundaram, Director (A), ICAR- Indian Institute of Rice Research, Hyderabad-500030	<b>Member Secretary</b>
11	Dr LV Subba Rao, Principal Scientist & Head	Member
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 CN Neeraja, PS & Head (Biotechnology), ICAR-IIRR, Hyderabad	Member
15	Dr. M. Srinivas Prasad, PS & PI, Pathology, ICAR-IIRR, Hyderabad	Member
16	Dr. A.S. Hariprasad, PS & PI Hybrid Rice, ICAR-IIRR, Hyderabad	Member
17	Dr. AVSR Swamy, PS, Plant Breeding, ICAR-IIRR, Hyderabad	Special invitee
18	Dr SV Sai Prasad, PS, Plant Breeding, ICAR-IIRR, Hyderabad	Special invitee
19	Dr. Jyothi Badri, Senior Scientist, ICAR-IIRR, Hyderabad	Rapporteur
20	Dr. R. Abdul Fiyaz, Senior Scientist, ICAR-IIRR, Hyderabad	Rapporteur

**(Dr T.R. Sharma)**  
**Chairman**

**(Dr R.M. Sundaram)**  
**Member Secretary**

## **PLENARY SESSION**

**Chairman** : Dr S.K. Pradhan, ADG (FFC), ICAR-New Delhi  
**Co-Chairman** : Dr MP Pandey, Ex-VC, IGKV & BAU  
**Convenors** : Dr R.M. Sundaram, Director, ICAR-IIRR  
Dr A.K. Nayak, Director, ICAR-NRRI  
**Rapporteurs** : Dr S.V. Sai Prasad & Dr Ch. Padmavathi, ICAR-IIRR

The Plenary session of the 58<sup>th</sup> Annual Rice Research Group Meeting was held on 5<sup>th</sup> May 2023 at 2:30 PM in the University Auditorium, Assam Agricultural University, Jorhat, in hybrid mode. At the outset, Chairman, Dr S.K. Pradhan, welcomed the participants and requested the Principal Investigators of various disciplines to present a brief report of the proceedings of group discussions (held on 10-11<sup>th</sup> April 2023). The following Principal investigators presented the minutes of various disciplines.

<b>S.No</b>	<b>Principal Investigator</b>	<b>Discipline</b>
1	Dr L.V.Subba Rao	Plant Breeding & VIC minutes of varieties
2	Dr. A.S. Hariprasad	Hybrid Rice & VIC minutes of hybrids
3	Dr. R Mahender Kumar	Agronomy & CPPTIC minutes
4	Dr. M.B.B.Prasada Rao	Soil Science
5	Dr. P Raghuveer Rao	Plant Physiology
6	Dr. V. Jhansilakshmi	Entomology
7	Dr. M. Srinivasa Prasad	Pathology

Following the presentation of VIC minutes by Dr. LV Subba Rao, , Co-chairman, Dr. Pandey informed the house that if a variety is superior in a Zone on a Zonal basis, it is recommended for release for that zone. If it is superior in only one state within a zone, then it is not considered for identification and release through VIC/CVRC. Regarding Crop Production and Crop Protection Technology Identification Committee proceedings, Dr R Mahender Kumar informed the house that there were 13 proposals, among which, many had merit for consideration. However, the innovators have to submit detailed proposals, which will be examined/scrutinized by an expert sub-committee. After scrutinizing, there will be another meeting of the CPPTI committee for identification and release of the technologies.

Dr Gopala Krishnan, Principal Scientist, IARI requested Entomology and Pathology PIs to identify a set of genes effective against races prevalent across the zone with respect to blast and bacterial blight pathogens, for use in breeding programmes. Dr MS Prasad informed that he has already in the pre-group meeting, presented a list of effective resistance genes required to deploy across different rice growing zones for the blast disease.

The presentations, were followed by the felicitation of superannuating scientists who have contributed immensely for AICRPR. These include Dr BG Mastan Reddy, Principal Scientist, Agronomy, ARS, Gangavathi, Dr LV Subba Rao, Principal Scientist & Head and PI, Plant Breeding, ICAR-IIRR, Hyderabad and Dr. Nitendra Prakash (online), Rice breeder, Crop Research station, Ghaghraghat. Based on multiple criteria and overall performance of the last 5 years, the best AICRPR centre award was given for the year 2022 to Assam Rice Research Institute (ARRI), Titabar led by Dr Sanjay Chetia, Chief Scientist. Dr RM Sundaram informed the house that from this year onwards, the criteria would be revised by including various indices to monitor the progress of each centre, discipline-wise and they will be circulated to all the co-operators. Awards will be given for the best centre on overall basis and also discipline-wise and urged all the centres to be improve their output and be competitive. He also announced that next year (2024) annual rice group meeting will be conducted at ICAR-NRRI, Cuttack by Dr. AK Nayak, and his team.

Dr. MP Pandey, Co-Chairman, gave the following remarks:

- Rice is one of the most important staple cereals, and very important for food and livelihood security.
- Rice is one of the important export items and in 2022, India exported rice worth 96,000 crores.
- Increase in rice productivity was achieved through depleting resources, mostly soil, and water, which is of great concern.
- By 2050, we have to produce 136 million tonnes.
- Consider including other agriculture-related sectors like livestock, fish, etc. Improved farming system models suited for smallholder farmers can be promoted and upscaled.
- Newer cutting-edge technologies like AI, drone technology, molecular techniques, gene editing, etc. have to be encouraged for deployment with adequate funding support.
- Encouraging DSR - Rice is one of the major consumers of water. Govt. of Punjab wants some 30 lakh acres of land under DSR by this year-end. Adequate encouragement should be given for DSR in AICRIP by developing appropriate crop improvement, production and protection technologies suited for DSR conditions.

Dr. Deepak Sharma, Chairman, PAMC appreciated the contribution of AICRPR in increasing area, production, and productivity by releasing many high-yielding mega varieties that are climate-resilient and deliberated the following points:

- Area under hybrid rice is not increasing, which is of great concern. We should be serious about the seed production of hybrid rice. As seed yield is low in some locations, there is a need to adopt different methodologies and identify new locations to improve the seed yield.

- Although rice yield is increased, there is a serious problem of low head rice recovery (HRR). HRR should be very high priority trait and should be considered the main criterion for advancing entries in breeding programs.
- The funded and voluntary centres under AICRPR should enhance their pre-breeding activity.
- Selecting good parental material that has broad genetic diversity is the need of the hour. He informed the house that Raipur Center has good germplasm material and they are ready to share it with MTA.
- Speed breeding and smart breeding concepts can help in reducing the time for life cycles and to get more genetic gain.
- Genomic selections should be practiced as an alternative to conventional breeding
- Genome editing, CRISPR/CAS may be used. Best lines should be selected from hundreds of entries and progenies so that important and precious material is not lost in the field selections.
- He stressed that the trials should be conducted more precisely and efficiently with proper management following the guidelines\

The key to the success of rice breeding lies in the selection of the best genotypes and identifying unequal from equal. He advised that rice breeders of both the public and private sectors should shift their focus from breeding by default to breeding by design.

The Chairman, Dr. SK Pradhan, ADG (FFC) complemented and congratulated the organizers, Titabar Center of Assam Agricultural University, and IIRR team for the successful conduct of the 58<sup>th</sup> ARGM, a four days' program with two days of pre-group meetings in virtual mode (10-11 April 2023) and two days of group meetings in hybrid mode (4-5, May 2023). He thanked all the veterans like Prof. MP Pandey, Prof. BN Singh, Prof. B Mishra, Prof. SR Das, who participated in the 58<sup>th</sup> ARGM for providing guidance and encouragement. He congratulated all the plant breeders, whose cultures were identified in the VIC for release and thanked all the co-operators for their efforts in the conduct of the trials. He said that that all the scientists interacted with each other in the pre-group meetings and 58<sup>th</sup> ARGM and appreciated the collaboration with IRRI, the Philippines wherein the focus was on the breeding of Climate-smart varieties and DSR. IRRI's program on genomics-assisted breeding involves a large number of donors and the Indian programme also should emulate it. He appreciated the efforts of both scientists and farmers for increasing rice production in India. However, the challenges are many in the future, like climate adversity, bio-fortification, methane emission, straw problem, the substitution of rice with maize, adding value to the product, etc. and scientists should work with renewed vigour. Lastly, he suggested right sizing of AICRPR network, in terms of incentivizing good performing centres and penalizing poor performing centres.

Dr. Sanjay Chetia, Convenor, 58<sup>th</sup> ARGM and Head, Assam Rice Research Institute, Titabar, proposed vote of thanks.

## **Proceedings of 10<sup>th</sup> Rice Research group meeting for Hill region (28<sup>th</sup> February, 2023)**

The meeting of 10<sup>th</sup> Annual Hill Rice workshop was conducted on 28<sup>th</sup> February 2023 on virtual mode. Dr S. K. Pradhan, ADG (FFC) ICAR chaired the session and Dr R M Sundaram, Director (ICAR-IIRR) was the Co-chair and co-ordinated the session. Dr. L V Subba Rao and Dr R M Kumar were the conveners and Dr AVSR Swamy, Dr. C. Gireesh and Dr. Divya Balakrishnan were co-conveners of the session. The rapporteurs of the session were Dr. A. P. Padma Kumari, Dr. M. S. Anantha and Dr. Ch. Suvarna Rani. Scientists from ICAR-IIRR, ICAR-NRRI, ICAR IARI and scientists from different AICRIP cooperating centres participated in the workshop.

Dr R M Sundaram, Director (ICAR-IIRR) welcomed the delegates and briefed about the importance of Hill rice ecology with respect to food security of the people living in hills and the need to conduct Hill workshop during February every year as sowing has to be taken up quite early for Hill rice ecology. He also highlighted constraints of the ecology and progress in terms of release of 20 varieties in the recent years. Dr A K Naik, Director ICAR NRRI opined that Aluminum and Iron toxicity in acid soils of Hill area and blast disease are important problems that are needed to be addressed. He also suggested to increase the number of locations in Hill ecology. Dr Gopal Krishna, Principal scientist IARI mentioned the need for giving special focus to the Hill rice ecology.

Dr S K Pradhan ADG (FFC) mentioned that average grain yield of hills ecology is less than national average, hence scientists can think of innovative ways like genomic selection for improving rice yields under this challenging ecologies. Performance of entries will vary with altitude and rice is integral part of people in Hill ecologies. Therefore, we cannot replace rice in these areas. Important challenges in these ecologies are cold, blast, and drought and there is need to deliver bio fortified rice varieties. Dr. Pradhan suggested that some of the early entries performing better under aerobic condition may also be tested in hill ecology.

Dr AVSR Swamy presented the action taken report and mentioned that all the suggestions made in previous year workshop were addressed and three additional locations were included in the trials carried out during Kharif 2022. It was also decided that 7<sup>th</sup> March 2023 will be last date for submission of seed material for IVT trials of 2023.

Dr R M Sundaram, Director ICAR IIRR suggested for reanalysis of grain quality data of those entries for which sub-optimal grain quality parameters (HRR, AC etc.) were recorded. Within 10-15 days, seeds of those entries may be sent to ICAR IIRR for grain quality analysis. He also suggested scientists in Hill ecology to use introgressed lines of MTU 1010 and other varieties possessing resistance against blast along with yield enhancing genes available at ICAR IIRR and ICAR NRRI.

Dr Surendra from Sirsi suggested considering two entries IET 28907 and IET 28222 for repetition as these two entries did well at Sirsi but the data was not considered

due to low average yield of location. Both these entries will be retested in the forthcoming kharif 2023 in the Hill trials.

After inaugural session, presentation from Co-operating centres of Hill ecology was done in the order of ICAR-Almora, Khudwani, Rajouri, Baderwah, CAU Barapani, Malan, Palampur, Upper Shillong, Gangtok, Wangbal, Ponnampet, Sirsi, Gudalur. After deliberations the meeting ended with the following action points

- Co-operators can use facilities at ICAR IIRR, ICAR- NRRI, ICAR-IARI for estimation of Iron, Zinc, protein and other bio fortification related traits.
- More number of crossings should be effected at co-operating centres and they should also increase the number of entries nominated for the trials (Especially for Japonica rice trail).
- Areas with considerable tribal/SC population can submit indent for funds under TSP/SCSP.
- Local Checks of appropriate duration should be used in different trails. [(Separate for E (H) and M (H)].
- Reduce HRR to 50% and amylose content to 18% for Hill trials as criteria of promotion.
- Hybrid rice programme may be initiated/strengthened. Material for initiation of Hybrid rice programme will be provided by ICAR- IIRR and ICAR- NRRI
- ICAR IIRR and ICAR NRRI may jointly submit project on genomic selection including many cooperating centres from Hill ecology.
- Cold tolerance is an important trait in Hills ecology. Separate trials in Physiology may be constituted in Hill areas for evaluation of entries for this trait in consultation with breeders. This issue may be discussed in main AICRIP group meeting.
- Japonica x Indica crossing should be strengthened and japonica varieties can be improved for various quality traits (for e.g. beverage quality).
- Efforts should be made to improve seedling vigour and earliness for increase in average yield across hill ecology
- Varieties rich in nutrients like iron, zinc and protein need to be developed
- Sticky rice has global importance, the stability of expression of this trait across localities need to be studied
- It is suggested to work multi-disciplinary team mode comprising ICAR-IIRR, ICAR-NRRI, ICAR-IARI and all cooperating centres of Hill ecology to address various problems.



## **RESULTS AND CONCLUSIONS**

### **Crop Improvement**

- ✓ A need was felt to strengthen the public sector R&D research. It may be explored through the recently signed ICAR-IRRI Collaborative research project network to access the improved parental lines from IRRI.
- ✓ Hybrid rice parental lines need to be screened for false smut resistance to identify the resistant parental lines that will help in the development of hybrids with resistance to false smut.
- ✓ In the IVT-Late trial, based on the superior performance of Observational hybrid check CR Dhan 702, over the existing check PA6444 (both in terms of yield and duration), it's decided to replace PA 6444 with the CR Dhan 702 as hybrid check in the trial.
- ✓ It's decided to include the newly released and notified hybridS AZ 8433DT (IHRT Medium); MRP 5222 (IVT Late); DRRH-4 (Aerobic trial) and INDAM100-012 (IVT Basmati trial) as observational hybrid checks to evaluate their performance via-a-vis the existing hybrid checks, in the respective trials.
- ✓ Four Initial Hybrid Rice Trials (IHRT Early; Mid Early; Medium; Medium slender) and one hybrid Multi Location Trial (MLT with the released and notified hybrids) will be constituted during Kharif 2023.

### **Plant Pathology**

- ✓ Five donors viz., 19273 (Moderately resistant to sheath blight, sheath rot and rice tungro disease), CB MSP9 006 (Moderately resistant to leaf blast, brown spot and sheath rot) KNM 12346 (resistant to neck blast & moderately resistant to sheath blight and brown spot), UB 1066 (moderately resistant to leaf blast, sheath blight, sheath rot) and VP-R36-SHB (resistant to neck blast, moderately resistant to sheath blight, sheath rot) and RP-Bio Patho-3 – (resistant to neck blast, moderately resistant to leaf blast and bacterial blight) exhibited resistant or moderate reaction to minimum of three diseases. These donors can be used in the Plant Breeding Programme.
- ✓ Isoprothiolane 40% EC (1.5 ml/L), kitazin 48% EC (1.0 ml/L) effective against leaf and neck blast. Tebuconazole 25.9% EC (1.5 ml/L) showed broad spectrum activity against blast, sheath blight, sheath rot and brown spot. Difenconazole 25% EC (0.5 ml/L) showed broad spectrum activity sheath blight, sheath rot and brown spot and Glume discoloration. These fungicides can be used for the management of rice diseases.

## **Entomology**

- ✓ Two breeding lines viz., RP-GP-3000-179-3-9-1, WGL 1533\* and one local collection IBT-BPH M 23\* which performed better in two years of testing in Planthopper Screening Trial (PHS) can be registered as genetic stocks with NBPGR.
- ✓ IBTWGL 3, RP 6614-102-11-3-3-1-1(FBL 19101), GM 5 (IBT), IBTWGL 2, IBTWGL 21 were the cultures promising against gall midge populations.
- ✓ BK 49-76 and BK 64-116 for both stem borer dead heart and white ear damage and RP 2068-18-3-5 for stem borer white ear damage were promising.
- ✓ RP 6461-248-1, RP Bio 4918-230 and CRCPT 8 exhibited multiple pest resistance.
- ✓ In Gall Midge Biotype Trial (GMBT), the new donor INRC 17470 has been consistently conferring resistance to gall midge populations.
- ✓ In the Insecticide Botanical Evaluation trial (IBET), all insecticides treatment was most effective against major insect pests and recorded highest mean yield (4991 kg/ha) followed by treatment consisting of neemazal, neem oil and triflumezopyrim (4554 kg/ha).

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## Appendix-1

## Particulars of Zones, States and test Locations

Region / State	Locations	
	Funded	Voluntary
<b>ZONE I – HILLY AREAS</b>		
<b>North Western Hills</b>		
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)
<b>North Eastern Hills</b>		
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)
<b>Southern Hills</b>		
Karnataka	Ponnampet (1)	Sirsi (1)
Tamil Nadu		Gudaluru (1)
<b>ZONE II – NORTHERN</b>		
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)	
<b>ZONE III – EASTERN</b>		
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, Ghaghrahat, Varanasi (3)	ICAR-Lucknow, BEDF-Modipuram, Gautam Budha Nagar, Gorakhpur, SVPUAT, Meerut(5)
<b>ZONE IV – NORTH EASTERN</b>		
Assam	Titabar (1)	ICAR-Gerua, Karimganj, Shillongani (3)
Manipur	Wangbal (1)	ICAR-Lamphalpat, (1)
Tripura	Arundhutinagar (1)	ICAR-Lembucherra (1)
Nagaland		Nagaland Univ-Mezdiphema
<b>ZONE V – CENTRAL</b>		
Madhya Pradesh	Rewa (1)	Waraseoni, Jabalpur (2)
Chhattisgarh	Raipur, Jagadapur (2)	Bilaspur, Ambikapur (2)
Maharashtra	Sakoli (1)	Sindewahi (1)
<b>ZONE VI - WESTERN</b>		
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)
<b>ZONE VII - SOUTHERN</b>		
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)
<b>Total locations</b>	<b>45</b>	<b>88</b>

Underline: ICAR Institutions

## Appendix-2

**List of Coordinated Trials, Kharif, 2023**

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)				

## Appendix 3 a

**Seed Requirement for New Nominations, Kharif,2023**

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

## Appendix 3 b

## Nominations for AICRIP Trials, Kharif, 2023\*

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 <sup>#</sup>	Days to 50% flow.		Grain type	Local trial yield (kg/ha)**		Quality Characters	Pest/disease reaction <sup>@</sup>		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.

<sup>#</sup> : Source of material (IRRI-INGER, IRRI Collaboration; any other within country programme;

<sup>@</sup> : 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 – 2023

1.	For entries which have been tested for 3 years	:	Last date of receipt: <b>31<sup>st</sup> December, 2023</b>
2.	For entries which are in 3 <sup>rd</sup> year (final) of testing.	:	Last date of receipt: <b>10<sup>th</sup> March, 2024</b>
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. ( <a href="http://www.drricar.org">www.drricar.org</a> )		

## 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 <sup>th</sup> July, 2023
2.	Number of copies for submission	:	40 Copies
	<b>35 copies of the proposal should be sent to:</b>		Deputy Commissioner (QC)-cum Member Secretary of CSC on CSN&RV Ministry of Agriculture & Cooperation F212, Shastry Bhavan <b>NEW DELHI-110002</b>
	<b>5 copies of the proposal should be sent to:</b>		The Director ICAR-Indian Institute of Rice Research Rajendranagar <b>HYDERABAD-500030</b>
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**

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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 44<sup>th</sup> Annual Rice Research Group Meeting held at ANGRAU, Hyderabad during May 2009. The members of the committee met on 11<sup>th</sup> 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 52<sup>nd</sup> ARGM held at AAU, Jorhat.**

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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 52<sup>nd</sup> Annual Rice Research Group Meeting held at Assam Agricultural University, Jorhat, Assam during 8-11, April 2017. The members of the committee met on 10<sup>th</sup> 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 44<sup>th</sup> 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	NIL				

#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

**Appendix 7**

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

**Content**

<b>S. No.</b>	<b>Item</b>
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 (under 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 <sup>st</sup> year									
	2 <sup>nd</sup> year									
	3 <sup>rd</sup> year									
	Weighted mean									
Percentage increase or decrease over checks & qualifying varieties Frequency in the top three groups (pooled for three years)	1 <sup>st</sup> year									
	2 <sup>nd</sup> year									
	3 <sup>rd</sup> 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 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
Disease 2	Natural	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
Disease 3	Natural	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
Disease 4	Natural	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> 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 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> year								
Pest 2	Natural	1 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> year								
Pest 3	Natural	1 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> 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 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> year								
2	Days to flowering	1 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> year								
3	Days to maturity	1 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> year								
4	1000-grain weight	1 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> year								
5	Lodging	1 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> year								
6	Others	1 <sup>st</sup> year 2 <sup>nd</sup> year 3 <sup>rd</sup> 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, weather 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 in 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 ratio 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 seed/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 to 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.

**Appendix 8****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 condition s(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 (under 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	
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)	1 <sup>st</sup> year									
a) Zonal	2 <sup>nd</sup> year									
b) Across zones (if applicable)	3 <sup>rd</sup> year									
Percentage increase or decrease over the checks and qualifying varieties	Weighted mean 2 <sup>nd</sup> year 3 <sup>rd</sup> 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 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
Disease 2	Natural	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
Disease 3	Natural	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
	Natural	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
Disease 4	Artificial	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> 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 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
Pest 2	Natural	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
Pest 3	Natural	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
	Artificial	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> 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 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
2	Days of flowering	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
3	Days to maturity	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
4	1,000-grain weight	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> 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 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> year								
6	Others	1 <sup>st</sup> year								
		2 <sup>nd</sup> year								
		3 <sup>rd</sup> 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*, 2023

Trial name	:	
Date of sowing	:	
Date of planting	:	
Plot size (Gross) m <sup>2</sup>	:	
Plot size (Net)m <sup>2</sup>	:	
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)

## Appendix 10

**CENTRE WISE BREEDER SEED PRODUCTION DURING KHARIF, 2022  
(AS PER DAC INDENT)**

(Quantity in Quintals)

S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus(+) Deficit (-)
<b>Andhra Pradesh</b>					
1	ANGRAU, Guntur	Amara (MTU-1064)	5.30	27.50 56.00*	78.20
		Bapatla Mahsuri (BPT 2295)	0.70	40.00	39.30
		Bhavathi (BPT 2782)	0.10	70.00	69.90
		Bheema (MTU 1140)	3.35	1.10 17.00*	14.75
		BPT 5204	40.40	700.00	659.60
		BPT 2411 (Sasya)	0.50	15.00	14.50
		BPT 2595 (Teja)	0.40	40.00	39.60
		Chandra (IET 23409) (MTU 1153)	70.55	61.60 130.00*	121.05
		CottondoraSannalu (MTU1010)	176.80	400.00	223.20
		Maruteru Sannalu (MTU 1006) (IET 14348)	0.50	0.66 2.50*	2.66
		MTU 1061	7.00	65.00*	58.00
		MTU (1075)(IET 18482)	9.00	55.00	46.00
		MTU 1155	5.70	2.50 7.50*	4.30
		MTU 1156	72.10	104.93 150.00*	182.83
		MTU 1172	3.00	3.25 18.00*	18.25
		MTU 1210	13.70	9.61 18.00*	13.91
		MTU 1223	17.20	12.00 22.00*	16.80
		MTU 1224	9.60	34.98 70.00*	95.38
		MTU 1239	16.20	7.75 36.00*	27.55
		MTU 1262	7.80	46.75 63.00*	101.95
		MTU 1281	0.30	1.00 7.50*	8.20
		MTU 7025#	2.60	0.00	-2.60
		MTU 7029	232.6	550.00	317.40
		Nellore Dhyanyarassi (NLR 3354)	0.90	6.00*	5.10
		Nellore Mahsuri (NLR 34449)	10.60	140.00*	129.40
		Nellore Sugandha(NLR40054)	0.10	1.00*	0.90
		NLR 4001	0.40	5.00*	4.60
		NDLR 7	2.75	25.00 25.00*	47.25

S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus(+) Deficit (-)
		Panduranga (MCM 100)	0.30	6.00	5.70
		Pardhhiva (NLR 33892)	0.60	10.00	9.40
		RGL 2537	6.10	83.60	77.50
		Sona Mahsuri (BPT 3291)	4.80	45.00	40.20
		Vijetha (MTU 1001)	56.50	125.00	68.50
		Varam (MTU 1190)	2.40	2.25 7.50*	7.35
		Sri Dhruthi (MTU 1121)	14.70	162.00	147.30
		<b>Total:</b>	<b>795.55</b>	<b>3489.48*</b>	<b>2693.93</b>
<b>Assam</b>					
2	AAU, Titabar	Bahadur	1.10	49.45	48.35
		Bahadur Sub-1	8.62	43.40	34.78
		Disang [Dehangi] (IC-574471)]	0.50	0.50	-
		Gitesh	0.50	23.60	23.10
		Inglongkheri	0.50	0.13	-0.37
		Jalashri (TTB 202-3)	0.50	0.00	-0.50
		Jalkuwari	0.50	0.00	-0.50
		Ketakijoha	3.00	23.70	20.70
		Numali	5.00	72.50	67.50
		RANJIT SUB -1	83.45	209.45	126.00
		RANJEET (IET - 12554)	1.60	99.00	97.40
		<b>Total:</b>	<b>105.27</b>	<b>521.73</b>	<b>416.46</b>
<b>Bihar</b>					
3	RAU, Pusa	RajendraBhagvati	2.00	2.00	-
		RajendraSawaswati (IET 23423)	10.30	9.00	-1.30
		Rajendra Mahsuri-1	7.50	15.00	7.50
		RAJENDRA SWETA	0.50	4.00	3.50
		R Neelam	10.00	15.08	5.08
		Sita	0.25	0.00	-0.25
		<b>Total:</b>	<b>30.55</b>	<b>45.08</b>	<b>14.53</b>
4	ICAR RC for Eastern Region, Patna	Swarna Shakti Dhan (IET 25640)***	14.20	29.60	15.40
		SwarnaShreya	17.50	45.90	28.40
		SwarnaSmriddhi Dhan (IET 24306)	15.00	51.80	36.80
		<b>Total:</b>	<b>46.70</b>	<b>127.30</b>	<b>80.60</b>
5	BAU, Sabour	SABOURSHREE(RAU724-48-33)(IET18878)	60.05	169.00	108.95
		SabourHarshit Dhan (IET 25342)	20.00	43.00	23.00
		SabourSampanna Dhan	60.00	83.00	23.00
		SabourSurbhit	20.00	21.00	1.00
		SabourArdhjal (BRR 0007)	15.00	24.50	9.50
		<b>Total:</b>	<b>175.05</b>	<b>340.50</b>	<b>165.45</b>
		<b>Total:</b>	<b>252.30</b>	<b>512.88</b>	<b>260.58</b>
<b>Chhattisgarh</b>					
6	IGKV, Raipur	CG Madhuraj Dhan-55	13.00	21.90	8.90
		Chhattisgarh Devbhog	18.00	45.00	27.00
		Chhattisgarh Zinc Rice -1	12.00	15.60	3.60
		Chhattisgarh Zinc Rice-2	15.40	15.40	-

S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus(+) Deficit (-)
		Dubraj Selection-1	18.00	20.00	2.00
		IGKVR-1 (IET 19569)	66.00	66.00	-
		IGKVR-2 (IET 19795)	10.00	10.00	-
		Indira Aerobic-1(R1570-2649-1-1546-1)(IET21686)	26.00	33.60	7.60
		IR-64	35.00	55.50	20.50
		IR-20**	2.20	0.00	-2.20
		Mahamaya (IET-10749)	95.00	121.80	26.80
		Maheswari (IGRKVR-1244)(IET 19796)	14.00	14.00	-
		TarunBhog Selection-1	22.10	23.10	1.00
		Bhadshabhhog Selection-1	22.50	23.10	0.60
		Vikram TCR	21.30	39.60	18.30
		CG Barani Dhan -2 (IET 24690)	4.30	8.40	4.10
		Protezin (IET 25470) (R-RHZ-R-56)	10.00	18.90	8.90
		TrombeyChattisgarhDubraj Mutent-1	15.00	27.00	12.00
		Vishnubhog Selection-1	22.30	29.70	7.40
		ZINCO RICE MS	15.30	21.90	6.60
		<b>Total:</b>	<b>457.40</b>	<b>610.50</b>	<b>153.10</b>
7	IGKV, Jagdalpur	Baster Dhan 1	3.00	30.00	27.00
		<b>Total:</b>	<b>460.40</b>	<b>640.50</b>	<b>180.10</b>
<b>Gujarat</b>					
8	AAU, Nawagam	GUJ ANAND RICE-14	0.10	0.25	0.15
		Gujarat Anand Rice-3 (GAR-3)	0.65	0.75	0.10
		GS-1#	1.00	0.00	-1.00
		GAR-21	0.10	2.00	1.90
		GAR-22	0.05	1.00	0.95
		GNR-3#	0.40	1.00	0.60
		GNR-5#	0.30	0.50	0.20
		GNR-8 (Aarti)#	0.10	0.50	0.40
		<b>Total:</b>	<b>2.70</b>	<b>6.00</b>	<b>3.30</b>
9	NAU, Navsari	GR 16 (Tapi) (NVSr-2233)	0.30	1.40	1.10
		GR 17 (Sardar)	0.55	4.76	4.21
		GR 18 (DevliKolam)	0.10	1.40	1.30
		GR 19 (Auranga)	0.10	0.00	-0.10
		<b>Total:</b>	<b>1.05</b>	<b>7.56</b>	<b>6.51</b>
		<b>Total:</b>	<b>3.75</b>	<b>13.56</b>	<b>9.81</b>
<b>Haryana</b>					
10	CSSRI, Karnal	CSR 76	2.10	3.50	1.40
		CSR-30	0.08	2.50	2.42
		CSR-43	1.50	7.50	6.00
		<b>Total:</b>	<b>3.68</b>	<b>13.50</b>	<b>9.82</b>
11	IARI Regional Station,Karnal	Pusa Basmati-1609^	0.60	0.60	-
		PUSA BASMATI 1728	10.60	12.00	1.40
		Imp. Pusa Basmati-1(IET - 18990)(PUSA 1460-01-32)	0.60	0.60	-
		Pusa Basmati-1718 (IET 24565)	49.60	10.54	-39.06
		Pusa Basmati 1692 (IET	32.92	15.0	-17.92

S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus(+) Deficit (-)
		26995)%			
		Pusa Basmati-1509(IET 21960)(PUSA 1509-03-3-9-5)%	62.06	12.0	-50.06
		PUSA-1121 (PUSA SUGANDH-4)%	30.69	17.0	-13.69
		PUSA BASMATI-6 (PUSA 1401)(IET 18005)%	9.32	12.0	2.68
		PUSA BASMATI 1637 (IET 24570)%	4.00	4.00	-
		<b>Total:</b>	<b>200.39</b>	<b>83.74</b>	<b>-116.65</b>
12	RRS, Kaul	BASMATI-370	12.00	15.00	3.00
		HKR-127 (HKR-95-222)	0.80	5.00	4.20
		HKR-47	0.43	5.00	4.57
		HKR-147\$	0.80	0.00	-0.80
		<b>Total:</b>	<b>14.03</b>	<b>25.00</b>	<b>10.97</b>
		<b>Total:</b>	<b>218.10</b>	<b>122.24</b>	<b>-95.86</b>
<b>Himachal Pradesh</b>					
13	CSKHPKV, MALAN	HPR 2143	10.00	6.43	-3.57
		HPR-2656	15.00	14.85	-0.15
		HPR-2880	10.00	9.20	-0.80
		HPR-2795 (HIM PALAM DHAN-1)	10.00	3.53	-6.47
		<b>Total:</b>	<b>45.00</b>	<b>34.01</b>	<b>-10.99</b>
<b>Jharkhand</b>					
14	BAU, Ranchi	BirsaVikas Dhan-111(IET 19848)(PY-84)	1.65	1.70	0.05
		BirsaMati	0.50	1.00	0.50
		BirsaVikas Dhan - 203	2.10	5.00	2.90
		BirsaVikas Dhan- 109	0.50	0.60	0.10
		BirsaVikas Dhan -110	0.50	0.60	0.10
		BirsaVikasSugandha - 1 (IET 18941)	2.10	11.00	8.90
		<b>Total:</b>	<b>7.35</b>	<b>19.90</b>	<b>12.55</b>
15	CRURRS, Hazaribagh	Sahbhagi (Sahbhagi Dhan IET-19576)	30.55	30.90	0.35
		<b>Total:</b>	<b>37.90</b>	<b>50.80</b>	<b>12.90</b>
<b>Jammu and Kashmir</b>					
16	SKUAST, Khudwani	K 39	3.00	2.50	-0.50
		K-448	3.00	4.20	1.20
		Shalimar Rice-3	0.10	1.20	1.10
		Shalimar Rice-4	0.10	20.00	19.90
		Shalimar Rice-2	0.10	7.50	7.40
		<b>Total:</b>	<b>6.30</b>	<b>35.40</b>	<b>29.10</b>
17	SKUAST, Chatha	GIZA-14	6.00	7.00	1.00
		<b>Total :</b>	<b>12.30</b>	<b>42.40</b>	<b>30.10</b>
<b>Karnataka</b>					
18	UAS, Bangalore	BR-2655	1.05	3.50	2.45
19	ZARS, Mandya	THANU	1.85	3.17	1.32
		TUNGA (IET-13901)	4.87	10.00	5.13
		<b>Total:</b>	<b>6.72</b>	<b>13.17</b>	<b>6.45</b>

S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus(+) Deficit (-)
20	ARS, Mugad	Intan	0.75	3.00	2.25
		Abhilash (KMD-2)	0.75	3.00	2.25
		Total:	1.50	6.00	4.50
21	SDRARS, Gangavati	GangavatiSona (GGV-05-01)	0.30	0.50	0.20
22	UAHS, Shimoga	KKP-5 (IET 24250)	0.40	10.00	9.60
		SAHYADRI MEGHA	0.05	3.00	7.95
				5.00*	
		Total:	0.45	18.00	17.55
		Total:	10.02	41.17	31.15
Kerala					
23	KAU, Pattambi	Athira (PBT-51)	0.15	0.00	-0.15
		Jyothi	5.30	18.75	28.45
				15.00*	
		Total:	5.45	33.75	28.30
24	RRS, Moncompu	Bhadra (MO-4)*@	3.25	0.00*	-3.25
		MO 21 (Pratiksha)	0.25	2.23	1.98
		UMA (MO-16)	12.9	3.04*	-9.86
		Total:	16.40	5.27*	-11.13
		Total:	21.85	39.02*	17.17
Madhya Pradesh					
25	J.N.K.V.V, Jabalpur	Improved Chinnor	2.40	9.00	6.60
		Improved Jeera Shankar	3.70	10.00	6.30
		JR 767	16.50	16.55	0.05
		JR-81	28.00	110.00	82.00
		JR-206	58.40	150.00	91.60
		JRB-1	20.00	6.75	-13.25
		JRH-19@	3.20	3.40	0.20
		KRANTI (R-2022)	2.05	10.00	7.95
		Total:	134.25	315.70	181.45
Maharashtra					
26	RARS, Karjat	Karjat-2	0.40	16.80	16.40
		Karjat-3	4.60	30.00	25.40
		Karjat-5	1.00	6.80	5.80
		Karjat-7	1.50	12.90	11.40
		Karjat-8	0.52	3.00	2.48
		Karjat-9	0.80	9.30	8.50
		TrombeyKarjatKolam (BARCKKV 13)	0.20	5.70	5.50
		Total:	9.02	84.50	75.48
27	MPKV,Radhanagari	Bhogavati	1.00	5.70	4.70
28	ARS, Sakoli	SAKOLI-9	0.20	0.50	0.30
29	ARS, Shirgaon	Ratnagiri-1	0.40	10.00	17.10
				7.50*	
		Ratnagiri-5	0.60	6.00	5.40
		Ratnagiri-6	0.20	6.00	14.80
				9.00*	
		Ratnagiri-7	0.40	7.00	10.80
				4.20*	
		Ratnagiri-8	0.30	20.00	26.90
				7.20*	

S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus(+) Deficit (-)
		<b>Total:</b>	<b>1.90</b>	<b>76.90</b>	<b>75.00</b>
30	ARS, Vadagon	INDRAYANI (IET - 12897)	22.60	70.00	47.40
		PhuleSamruddhi (VDN -99-29)	0.60	4.00	3.40
		<b>Total:</b>	<b>23.20</b>	<b>74.00</b>	<b>50.80</b>
31	PDKV, Sindewahi	PDKV TILAK (SYE-503-78-34-2)	4.30	15.00	10.70
		PKV KISAN DKL -22-39-31-25*3134	0.20	2.00	1.80
		PKV HMT	34.50	52.00	17.50
		<b>Total:</b>	<b>39.00</b>	<b>69.00</b>	<b>30.00</b>
		<b>Total</b>	<b>74.32</b>	<b>310.60</b>	<b>236.28</b>
<b>New Delhi</b>					
32	IARI, New Delhi	Pusa 1592	0.20	0.40	0.20
		Pusa 1612	1.00	1.50	0.50
		Pusa Basmati 1847 %	7.48	7.00	-0.48
		Pusa Basmati 1985%	6.50	3.00	-3.50
		Pusa Basmati 1885%	2.56	5.00	2.44
		Pusa Basmati 1886%	2.00	5.00	3.00
		Pusa Basmati 1979%	0.08	1.00	0.92
		<b>Total:</b>	<b>19.82</b>	<b>22.90</b>	<b>3.08</b>
33	BEDF, Meerut	Pusa Basmati-1(IET 10364)	0.08	1.00	0.92
		PUSA-1121 (PUSA SUGANDH-4)	30.00	25.00	-5.00
		PUSA BASMATI 1637 (IET 24570)	4.00	0.00	-4.00
		PUSA BASMATI-6 (PUSA 1401) (IET 18005)	10.00	8.00	-2.00
		<b>Total:</b>	<b>44.08</b>	<b>34.00</b>	<b>-10.08</b>
		<b>Sub-Total:</b>	<b>63.90</b>	<b>56.90</b>	<b>-7.00</b>
<b>Odisha</b>					
34	NRRI, Cuttack	Ankit	5.30	14.00	8.70
		Annada	2.00	2.00*	-
		CR DHAN 201 (IET 21924)	1.00	1.00*	-
		CR DHAN 202 (IET 21917)	0.30	1.50*	1.20
		CR DHAN 300 (CR2301-5) (IET 19816)	0.70	2.00*	1.30
		CR DHAN 304 (IET 22117)#@	0.50	0.00	-0.50
		CR DHAN 305 (IET 21287)	0.20	1.00*	0.80
		CR DHAN 306	0.60	1.00*	0.40
		CR DHAN 315	3.05	10.00*	6.95
		CR DHAN 316	1.00	1.50*	0.50
		CR DHAN 318	0.30	0.00	-0.30
		CR DHAN 317 (Roshan)	1.00	3.00*	2.00
		CR DHAN 311 (MUKUL)	14.50	22.00	7.50
		CR DHAN 401(REETA) (IET 19969)#@	0.50	0.00	-0.50
		CR DHAN 505 (IET 21719)	0.10	0.00	-0.10
		CR DHAN 507	0.30	1.70	1.40
		CR DHAN 511#@	0.50	0.00	-0.50
		CR DHAN 601(IET 18558)	0.50	5.00	4.50
		CR DHAN 800 (SWARNA-MAS)#@	25.25	6.50	-12.75
				6.00*	



S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus(+) Deficit (-)
		CR DHAN 801 (IET-25667)	1.90	6.00*	4.10
		CR Dhan 802 (Subhar)*#	8.20	6.00*	-2.20
		CR DHAN 803 (Trilochan)*#	5.00	0.00	-5.00
		CR DHAN 1017	0.40	1.00	0.60
		CR DHAN 1018	0.20	1.50	1.30
		CR DHAN 1030	0.10	0.00	-0.10
		CR DHAN-203	12.45	13.00 8.00*	8.55
		CR DHAN-207	0.30	0.00	-0.30
		CR DHAN-209	0.30	1.00*	0.70
		CR DHAN-307	1.70	6.00	4.30
		CR DHAN-309	1.00	2.50*	1.50
		CR DHAN-310	26.90	27.00 12.00*	12.10
		CR DHAN-311	0.20	0.00	-0.20
		CR DHAN 407	0.20	0.00	-0.20
		CR DHAN 408	0.20	0.00	-0.20
		CR DHAN 409	0.60	15.00	14.40
		CR DHAN 410	0.37	0.00	-0.37
		CR Dhan 411 (Swaranjali)	1.00	0.00	-1.00
		CR Dhan 412#@	1.00	0.00	-1.00
		CR Dhan 413	1.00	0.50	-0.50
		CR Dhan 506	0.20	0.00	-0.20
		CR Dhan 508	2.10	3.50	1.40
		CR Dhan 512	1.00	0.00	-1.00
		CR Dhan 702	1.00	0.00	-1.00
		CR Dhan 703	1.00	0.00	-1.00
		CR 1009	2.40	1.50	-0.90
		CR 1009 <i>sub1</i>	42.15	45.00	2.85
		CR Dhan 102 (IET 26121)	3.60	11.00	7.40
		CR Dhan 210 (IET 23449)	1.50	2.50*	1.00
		CR Dhan 308 (IET 25523)	1.50	4.00*	2.50
		CR Dhan 312 CR 3808-13 (IET 25997)	1.50	15.00*	13.50
		Geetanjali (CRM-2007-1) (IET 17276)	0.50	2.00*	1.50
		Luna Sampad (IET 19470)	0.50	0.00	-0.50
		Luna Suvarna (IET 18697)	0.50	0.00	-0.50
		Naveen (CR-749-20-2) (IET 14461)	3.20	6.00*	2.80
		Samba <i>sub1</i> (IET 21248)*#	17.55	0.00	-17.55
		CR Sugandh Dhan 908 (IET 23189)*#	1.12	0.00	-1.12
		Swarnasub1 (CR 2539-1) IET 20266	78.10	85.00	6.90
		Varshadhan (CRLC-899) (IET 16481)	1.50	1.00	-0.50
		CR Dhan 602 (IET 26692)	1.50	3.00*	1.50
		CR Sugandh Dhan 910(IET22649)(CR 2713-180)	1.30	0.00	-1.30

S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus(+) Deficit (-)
		<b>Total:</b>	<b>284.34</b>	<b>357.20*</b>	<b>72.86</b>
35	O.U.A.T, Bhubaneswar	Ashuthosh	1.50	1.80	0.30
		Hasanta	1.80	5.00	3.20
		Improved Lalat	12.00	15.00*	3.00
		Kalachampa	46.60	54.00	7.40
		Lalat (IET 9947)	5.00	10.00	5.00
		Mandakini (IET 17847)	6.00	4.00 2.00*	-
		Mrunalini (OR 1898-18-) (IET 18649)	3.00	5.00	2.00
		Praijat (IET 2684)	1.00	1.40 1.00*	1.40
		Pradeep (IET 20923)	0.30	0.30	-
		Pratikshya (ORS 201-5) (IET 15191)	16.00	24.00	8.00
		Rani Dhan (IET 19148)	2.00	2.00	-
		Sebati (IET 11786)*#	2.00	0.00	-2.00
		Gobinda (OR 2324-8)	1.50	1.50	-
		Kalinga Dhan 1204	1.00	0.80 1.00*	0.80
		Kalinga Dhan 1205	1.00	1.00	-
		Kalinga Dhan 1401*#	1.00	0.40	-0.60
		Kalinga Dhan 1501	1.00	1.40	0.40
		Kalinga Dhan 1502	1.00	1.40	0.40
		<b>Total:</b>	<b>103.70</b>	<b>133.00</b>	<b>29.30</b>
		<b>Sub Total:</b>	<b>388.04</b>	<b>490.20</b>	<b>102.16</b>
Punjab					
36	PAU, Ludhiana	PR 121	26.29	30.00	3.71
		PR 122	5.74	15.00	9.26
		PR 127	3.50	10.00	6.50
		PR-113	0.43	10.00	9.57
		PR-114	0.48	10.00	9.52
		PR-124	3.03	10.00	6.97
		PR-126	37.66	40.00	2.34
		PR-128	12.10	16.00	3.90
		PR-129	9.00	19.00	10.00
		PR-130	1.98	10.00	8.02
		PR-131#	1.48	0.00	-1.48
		Punjab Basmati 7	6.94	10.00	3.06
		<b>Total:</b>	<b>108.63</b>	<b>180.00</b>	<b>71.37</b>
		Tamil Nadu			
37	TNAU, Coimbatore	CO 51	12.79	13.00	0.21
		Improved White Ponni	16.60	17.50*	0.90
		<b>Total:</b>	<b>29.39</b>	<b>30.50*</b>	<b>1.11</b>
38	TRRI, Aduthurai	ASD-16	0.2	1.00	0.80
		ADT-37	0.4	1.00	0.60
		ADT-39	0.4	1.00*	0.60
		ADT-45	0.2	1.00	0.80
		ADT (R )-46	0.2	0.50*	0.30
		<b>Total:</b>	<b>1.40</b>	<b>4.50*</b>	<b>3.10</b>

S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus(+) Deficit (-)
		<b>Total:</b>	<b>30.79</b>	<b>35.00*</b>	<b>4.21</b>
<b>Telangana</b>					
39	IIRR, Hyderabad	Kasturi (IET-8580)	5.00	5.00	-
		Mahsuri	0.70	0.70	-
		BRRI Dhan 69	0.30	0.30	-
		BRRI Dhan-75 (HUA 565)	0.40	0.40	-
		Ciherang Sub-1**@	6.15	6.15*	-
		IET 5656	0.50	0.50	-
		BINA DHAN-11**@	23.60	23.60*	-
		BINA DHAN-17**@	10.60	10.60*	-
		DRR DHAN 50 (IET 25671) **@	39.80	39.80*	-
		DRR DHAN-45 (IET 23832) \$\$	7.85	4.00	-
		DRR DHAN-53	30.50	34.50	4.00
		DRR DHAN-39\$\$	10.00	5.00	-
		DRR DHAN-42	59.12	60.00	0.88
		DRR DHAN-43	10.50	35.00	24.50
		DRR DHAN-44	14.45	20.00	5.55
		DRR DHAN-46**@	3.90	3.90*	-
		DRR DHAN -47**@	0.30	0.30*	-
		DRR DHAN-48	0.20	80.00	79.80
		DRR DHAN-49	0.20	5.00	4.80
		DRR DHAN-51**@	11.00	11.00*	-
		DRR DHAN -52**@	0.90	0.90*	-
		DRR DHAN -54\$\$	20.20	1.00	-
		DRR DHAN -55	20.00	76.70	56.70
		Improved Samba Mahsuri	0.10	5.00	4.90
		JAYA	11.80	12.00	0.20
		DRR Dhan -58	0.50	87.00	86.50
		DRR Dhan -62	0.30	45.00	44.70
		<b>Total:</b>	<b>288.87</b>	<b>573.35</b>	<b>284.48</b>
40	PJTSAU, Hyderabad	ErraMallelu (WGL-20471)	1.00	2.00*	1.00
		JGL-1798	2.92	2.92	-
		JGL-18047 (Bathukamma)	7.02	7.02	-
		JGL-24423	20.85	50.00	29.15
		JGL-17004	0.30	0.30	-
		JGL 11118 (Anjana)	0.40	0.40	-
		KunaramSannalu	101.55	101.55	-
		Kunaram Rice 1 (KNM 733)	0.40	0.40	-
		RNR-15048 (Telangana Sona)	47.15	50.00*	2.85
		Krishna (RNR-2458)	0.30	0.30	-
		Siddhi (WGL 44)	1.50	4.25	2.75
		Shobhini (RNR-2354) (IET-21260)	0.80	1.00*	0.20
		Somnath (WGL-347)	1.30	1.50*	0.20
		Tellahamsa	0.75	0.00	-0.75
		Telangana Vari-1 (IET 25330) (WGL-739)	1.00	5.00*	4.00
		Telangana Vari-3 (JGL 21078)	0.10	0.10	-
		WGL-697 (IET 26027)	0.10	0.50*	0.40
		WGL-915	1.40	1.40	-

S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus(+) Deficit (-)
		<b>Total:</b>	<b>188.84</b>	<b>228.64</b>	<b>39.80</b>
		<b>Sub-Total:</b>	<b>477.71</b>	<b>801.99</b>	<b>324.28</b>
		<b>Uttarakhand</b>			
41	VPKAS, Almora	VL DHAN 157 (VL 31611) (IET 22292)@	2.50	0.00	-2.50
		VL DHAN 68 (VL 31611) (IET 22283)@	2.00	0.00	-2.00
		VL 88@	3.60	0.00	-3.60
		<b>Total:</b>	<b>8.10</b>	<b>0.00</b>	<b>-8.10</b>
42	GBPUAT,	PANT DHAN-18 (IET 17920) (UPRI 99-1)	1.00	9.00	8.00
	Pantnagar	Pant Basmati-1	1.00	17.50	16.50
		PD-18	0.20	9.00	8.80
		PANT DHAN-24	7.30	20.00	12.70
		PANT DHAN-26	3.30	9.00	5.70
		<b>Total:</b>	<b>12.80</b>	<b>64.50</b>	<b>51.70</b>
		<b>Sub-total:</b>	<b>20.90</b>	<b>64.50</b>	<b>43.60</b>
<b>Uttar Pradesh</b>					
43	BHU, Varanasi	HUR-917	3.00	20.00	17.00
44	NDUAT, Faizabad	NDR 9930111	5.00	6.20	1.20
		NDR-359	1.00	1.50	0.50
		Narendra Dhan 97	0.10	0.50	0.40
		Sarjoo 52	1.00	122.00	121.00
		<b>Total:</b>	<b>7.10</b>	<b>130.20</b>	<b>123.10</b>
45	PRDF, GORAKHPUR	Bauna Kalanamak-102***	0.90	5.00	4.10
		Bauna Kalanamak-101	0.90	2.00	1.10
		KN3 (Kalanamak)	0.10	2.00	1.90
		KalanamakKiran (PRDF-2-14-10)	1.50	11.50	10.00
		<b>Total:</b>	<b>3.40</b>	<b>20.50</b>	<b>17.10</b>
47	SHUATS,	SHIATS DHAN 5	3.00	2.00	-1.00
	Prayagraj	SHIATS DHAN-4	6.00	3.00	-3.00
		<b>Total:</b>	<b>9.00</b>	<b>5.00</b>	<b>-4.00</b>
		<b>Sub-total:</b>	<b>22.50</b>	<b>175.70</b>	<b>153.20</b>
<b>West Bengal</b>					
48	RRS, Chinsurah	Ajit	8.10	8.50	0.40
		Bhupesh (CN 1752-18-1-9-MLD-19)	0.20	0.50	0.30
		Chinsurah Nona -2 (GOSABA-6)(IET-21943)	0.70	1.00	0.30
		Chinsurah Rice (IET 19140)(CNI 383-5-11)	0.50	0.50	-
		CN1272-55-105 (IET-19886)	0.50	1.50	1.00
		Khitish (IET-4094)	4.00	5.00	1.00
		Manisha (IET 23770)	0.30	0.80	0.50
		Rajdeep (CN 1039-9)	0.30	2.00	1.70
		Sabita (IET 8970)	0.20	1.00	0.80
		Sukumar (IET 21261)	15.40	5.00	-10.40
		Muktashree (IET 21845)	1.30	2.00	0.70
		Shatabdi (IET 4786)	15.00	24.50	9.50

S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus(+) Deficit (-)
		<b>Total:</b>	<b>46.50</b>	<b>52.30</b>	<b>5.80</b>
46	BCKV, Nadia	Gontra Bidhan-1 (IET 17430)	9.25	10.00	0.75
		Gontra Bidhan-3 (IET 22752)	19.85	22.00	2.15
		Gontra Bidhan-4#	0.50	0.00	-0.50
		BidhanSurchi (IET 25701)	10.55	12.50	1.95
		<b>Total:</b>	<b>40.15</b>	<b>44.50</b>	<b>4.35</b>
49	RRS, Bankura	Dhruba (IET-20761)	1.00	1.00	-
		Pushpa (IET 17509)	1.30	0.00	-1.30
		BNKR-1 (DHIREN) (IET 20760)	4.60	4.30	-0.30
		<b>Total:</b>	<b>6.90</b>	<b>5.30</b>	<b>-1.60</b>
50	ICAR-RC for NEH Region, Lembuchera	Gomati Dhan TRC-2005-1 (TRC-05-8-4-42-8-3-7) IET 21512	0.10	0.80	0.70
		Khowai TRC-2005-3 (TRC 05-2-6-4-39-3-6) IET 21564	0.05	0.72	0.67
		Tripura Chikandhan	0.10	0.49	0.39
		Tripura Aush	0.10	0.35	0.25
		Tripura Nirog	0.10	0.46	0.36
		Tripura Jala (IET 22167)	0.05	0.36	0.31
		Tripura Khara 1	0.05	0.24	0.19
		Tripura Sarat	0.10	2.90	2.80
		<b>Total:</b>	<b>0.65</b>	<b>6.32</b>	<b>5.67</b>
51	UBKV, Pundibari	Uttar Lakshmi (UBKVR-15) (IET 24173)	1.00	6.10	5.10
		UTTAR SONA (UBKVR-1) (IET-24171)	3.30	5.40	2.10
		<b>Total:</b>	<b>4.30</b>	<b>11.50</b>	<b>7.20</b>
52	RRS, Wangbal	RC Maniphou-13	0.30	3.00	2.70
		<b>Total:</b>	<b>98.80</b>	<b>122.92</b>	<b>24.12</b>
		<b>Grand Total:</b>	<b>3382.28</b>	<b>8053.74</b>	<b>4671.46</b>

\*: indicates expected yield to be produced during Rabi 2022-23; @contingent plan taken in Rabi, 2022 (Jabalpur);@: Very poor yield and seed quality due to heavy incidence of Southern Rice Black-Streaked Dwarf Virus (SRBSDV); #: No variety by MTU 7025, it may be MTU 7029, Gontra Bidhan-4 variety not yet notified, PR-131 Variety not notified yet, GS-1, GNR-3, GNR-5, GNR-8 (Aarti)Not a variety developed by AAU, Anand ; &: BS plot rejected due to lodging; ^ : Paddy seed crop across the varieties affected high attack of stem borer, SRBSD Virus and high rains during 19-24 Sept., 2022; % : Licensed variety; \$ : This is not CCS HAU variety, it may be availability of Nucleus Seed or Availability of less quantity of Nucleus Seed or nucleus seed deficit or problem in nucleus; #@ : Production loss due to water stagnation and lodging; \*\*\*: As per BSP II or As per BSP III; \*\*@ : Standing in the Crop; \$\$: During rabi 2022-23 seed production taken up however due to two successive hailstorms in the month of April 2023 resulted in poor seeds yields.

### Parental lines of Hybrids:

S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit (-)
1	IIRR, Hyderabad	DRRH-2 (A Line)	0.10	0.00	-0.10
		DRRH-2 (A Line)	0.10	0.00	-0.10

		DRRH-2 (A Line)	0.10	0.00	-0.10
		Total:	0.30	0.00	-0.30
2	UAS, Bangalore	KRH 2 ( A Line)	0.10	1.00*	0.90
		KRH 2 ( B Line)	0.10	1.00*	0.90
		KRH 2 ( R Line)	0.10	0.10	-
			0.30	2.10	1.80
		Total:	3382.88	8055.84	4672.96

**Appendix-11**

**VARIETY WISE BREEDER SEED PRODUCTION DURING KHARIF, 2022  
(AS PER DAC INDENT)**

(Quantity in Quintals)

Sl. No	Name of the Variety	Year of release	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit(-)	Name of the Centre
1	Abhilash (KMD-2)	1987	0.75	3.00	2.25	ARS, Mugad
2	ADT-37	1989	0.40	1.00	0.60	TRRI, Aduthurai
3	ADT-39	1989	0.40	1.00*	0.60	TRRI, Aduthurai
4	ADT-45	2001	0.20	1.00	0.80	TRRI, Aduthurai
5	ADT (R )-46	2002	0.20	0.50*	0.30	TRRI, Aduthurai
6	Ajit	2014	8.10	8.50	0.40	RRS, Chinsurah
7	Amara (MTU-1064)	2009	5.30	27.50 56.00*	78.20	ANGRAU, Guntur
8	Ankit	2015	5.30	14.00	8.70	NRRI, Cuttack
9	Annada	1988	2.00	2.00*	-	NRRI, Cuttack
10	ASD-16	1986	0.20	1.00	0.80	TRRI, Aduthurai
11	Ashuthosh	2018	1.50	1.80	0.30	O.U.A.T, Bhubaneswar
12	Athira (PBT-51)	2006	0.15	0.00	-0.15	KAU, Pattambi
13	Bahadur	1994	1.10	49.45	48.35	AAU, Titabar
14	Bahadur Sub-1	2018	8.62	43.40	34.78	AAU, Titabar
15	Bapatla Mahsuri (BPT 2295)	2018	0.70	40.00	39.30	ANGRAU, Guntur
16	BASMATI-370	1973	12.00	15.00	3.00	RRS, Kaul
17	Baster Dhan 1	2020	3.00	30.00	27.00	IGKV, Jagdalpur
18	Bauna Kalanamak-101	2016	0.90	2.00	1.10	PRDF, Gorakhpur
19	Bauna Kalanamak-102***	2017	0.90	5.00	4.10	PRDF, Gorakhpur
20	Bhadra (MO-4)*@	1980	3.25	0.00*	-3.25	RRS, Moncompu
21	Bhadshabhhog Selection-1	2016	22.50	23.10	0.60	IGKV, Raipur
22	Bhavathi (BPT 2782)	2020	0.10	70.00	69.90	ANGRAU, Guntur
23	Bheema (MTU 1140)	2016	3.35	1.10 17.00*	14.75	ANGRAU, Guntur
24	Bhogavati	2007	1.00	5.70	4.70	MPKV,Radhanagari
25	Bhupesh(CN 1752-18-1-9-MLD-19)	2019	0.20	0.50	0.30	RRS, Chinsurah
26	BidhanSurchi (IET	2019	10.55	12.50	1.95	BCKV, Nadia

Sl. No	Name of the Variety	Year of release	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit(-)	Name of the Centre
	25701)					
27	BINA DHAN-11**@	2015	23.60	23.60*	-	IIRR, Hyderabad
28	BINA DHAN-17**@	2018	10.60	10.60*	-	IIRR, Hyderabad
29	BirsaMati	2003	0.50	1.00	0.50	BAU, Ranchi
30	BirsaVikas Dhan - 203	2015	2.10	5.00	2.90	BAU, Ranchi
31	BirsaVikas Dhan-109	2005	0.50	0.60	0.10	BAU, Ranchi
32	BirsaVikas Dhan - 110	2005	0.50	0.60	0.10	BAU, Ranchi
33	BirsaVikas Dhan-111(IET 19848)(PY-84)	2015	1.65	1.70	0.05	BAU, Ranchi
34	BirsaVikasSugandha -1(IET 18941)	2015	2.10	11.00	8.90	BAU, Ranchi
35	BNKR-1 (DHIREN) (IET 20760)	2015	4.60	4.30	-0.30	RRS, Bankura
36	BPT 2411 (Sasya)	2020	0.50	15.00	14.50	ANGRAU, Guntur
37	BPT 2595 (Teja)	2019	0.40	40.00	39.60	ANGRAU, Guntur
38	BPT 5204	1989	40.40	700.00	659.60	ANGRAU, Guntur
39	BR-2655	2006	1.05	3.50	2.45	UAS, Bangalore
40	BRRI Dhan 69	2018	0.30	0.30	-	IIRR, Hyderabad
41	BRRI Dhan-75 (HUA 565)	2018	0.40	0.40	-	IIRR, Hyderabad
42	CG Barani Dhan -2 (IET 24690)	2021	4.30	8.40	4.10	IGKV, Raipur
43	CG Madhuraj Dhan-55	2016	13.00	21.90	8.90	IGKV, Raipur
44	Chandra (IET 23409) (MTU 1153)	2016	70.55	61.60 130.00*	121.05	ANGRAU, Guntur
45	Chhattisgarh Devbhog	2019	18.00	45.00	27.00	IGKV, Raipur
46	Chhattisgarh Zinc Rice -1	2017	12.00	15.60	3.60	IGKV, Raipur
47	Chhattisgarh Zinc Rice-2	2019	15.40	15.40	-	IGKV, Raipur
48	Chinsurah Nona -2 (GOSABA-6)(IET-21943)	2019	0.70	1.00	0.30	RRS, Chinsurah
49	Chinsurah Rice (IET 19140)(CNI 383-5-11)	2011	0.50	0.50	-	RRS, Chinsurah
50	Ciherang Sub-1**@		6.15	6.15*	-	IIRR, Hyderabad
51	CN1272-55-105 (IET-19886)	2018	0.50	1.50	1.00	RRS, Chinsurah
52	CO 51	2017	12.79	13.00	0.21	TNAU, Coimbatore
53	CotondoraSannalu (MTU1010)	1999	176.80	400.00	223.20	ANGRAU, Guntur
54	CR 1009	1982	2.40	1.50	-0.90	NRRI, Cuttack
55	CR 1009 <i>sub1</i>	2015	42.15	45.00	2.85	NRRI, Cuttack
56	CR DHAN 1017		0.40	1.00	0.60	NRRI, Cuttack
57	CR DHAN 1018		0.20	1.50	1.30	NRRI, Cuttack

Sl. No	Name of the Variety	Year of release	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit(-)	Name of the Centre
58	CR DHAN 1030		0.10	0.00	-0.10	NRRI, Cuttack
59	CR Dhan 102 (IET 26121)		3.60	11.00	7.40	NRRI, Cuttack
60	CR DHAN 201 (IET 21924)	2014	1.00	1.00*	0.00	NRRI, Cuttack
61	CR DHAN 202 (IET 21917)	2014	0.30	1.50*	1.20	NRRI, Cuttack
62	CR DHAN-203	2015	12.45	13.00 8.00*	8.55	NRRI, Cuttack
63	CR DHAN-207	2018	0.30	0.00	-0.30	NRRI, Cuttack
64	CR DHAN-209	2018	0.30	1.00*	0.70	NRRI, Cuttack
65	CR Dhan 210 (IET 23449)		1.50	2.50*	1.00	NRRI, Cuttack
66	CR DHAN 300 (CR2301-5)(IET 19816)	2014	0.70	2.00*	1.30	NRRI, Cuttack
67	CR DHAN 304 (IET 22117)#@	2014	0.50	0.00	-0.50	NRRI, Cuttack
68	CR DHAN 305 (IET 21287)	2014	0.20	1.00*	0.80	NRRI, Cuttack
69	CR DHAN 306	2019	0.60	1.00*	0.40	NRRI, Cuttack
70	CR DHAN-307	2015	1.70	6.00	4.30	NRRI, Cuttack
71	CR Dhan 308 (IET 25523)		1.50	4.00*	2.50	NRRI, Cuttack
72	CR DHAN-309	2019	1.00	2.50*	1.50	NRRI, Cuttack
73	CR DHAN-310	2016	26.90	27.00 12.00*	12.10	NRRI, Cuttack
74	CR DHAN 311 (MUKUL)	2019	14.50	22.00	7.50	NRRI, Cuttack
75	CR DHAN-311	2019	0.20	0.00	-0.20	NRRI, Cuttack
76	CR Dhan 312 CR 3808-13 (IET 25997)		1.50	15.00*	13.50	NRRI, Cuttack
77	CR DHAN 315	2021	3.05	10.00*	6.95	NRRI, Cuttack
78	CR DHAN 316	2021	1.00	1.50*	0.50	NRRI, Cuttack
79	CR DHAN 317 (Roshan)	2021	1.00	3.00*	2.00	NRRI, Cuttack
80	CR DHAN 318	2021	0.30	0.00	-0.30	NRRI, Cuttack
81	CR DHAN 401(REETA) (IET 19969)#@	2010	0.50	0.00	-0.50	NRRI, Cuttack
82	CR DHAN 407	2014	0.20	0.00	-0.20	NRRI, Cuttack
83	CR DHAN 408	2018	0.20	0.00	-0.20	NRRI, Cuttack
84	CR DHAN 409	2018	0.60	15.00	14.40	NRRI, Cuttack
85	CR DHAN 410	2020	0.37	0.00	-0.37	NRRI, Cuttack
86	CR Dhan 411 (Swaranjali)		1.00	0.00	-1.00	NRRI, Cuttack
87	CR Dhan 412#@		1.00	0.00	-1.00	NRRI, Cuttack
88	CR Dhan 413		1.00	0.50	-0.50	NRRI, Cuttack
89	CR DHAN 505 (IET 21719)	2014	0.10	0.00	-0.10	NRRI, Cuttack
90	CR Dhan 506		0.20	0.00	-0.20	NRRI, Cuttack



Sl. No	Name of the Variety	Year of release	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit(-)	Name of the Centre
91	CR DHAN 507	2018	0.30	1.70	1.40	NRRI, Cuttack
92	CR Dhan 508		2.10	3.50	1.40	NRRI, Cuttack
93	CR DHAN 511#@	2019	0.50	0.00	-0.50	NRRI, Cuttack
94	CR Dhan 512		1.00	0.00	-1.00	NRRI, Cuttack
95	CR DHAN 601(IET 18558)	2011	0.50	5.00	4.50	NRRI, Cuttack
96	CR Dhan 602 (IET 26692)		1.50	3.00*	1.50	NRRI, Cuttack
97	CR Dhan 702		1.00	0.00	-1.00	NRRI, Cuttack
98	CR Dhan 703		1.00	0.00	-1.00	NRRI, Cuttack
99	CR DHAN 800 (SWARNA-MAS)#@	2018	25.25	6.50 6.00*	-12.75	NRRI, Cuttack
100	CR DHAN 801 (IET-25667)	2019	1.90	6.00*	4.10	NRRI, Cuttack
101	CR Dhan 802 (Subhar)*#	2019	8.20	6.00*	-2.20	NRRI, Cuttack
102	CR DHAN 803 (Trilochan)*#	2021	5.00	0.00	-5.00	NRRI, Cuttack
103	CR Sugandh Dhan 908 (IET 23189)*#	2017	1.12	0.00	-1.12	NRRI, Cuttack
104	CR Sugandh Dhan 910(IET22649)(CR 2713-180)	2016	1.30	0.00	-1.30	NRRI, Cuttack
105	CSR 76	2001	2.10	3.50	1.40	CSSRI, Karnal
106	CSR-30	2012	0.08	2.50	2.42	CSSRI, Karnal
107	CSR-43		1.50	7.50	6.00	CSSRI, Karnal
108	Dhruba (IET-20761)	2015	1.00	1.00	-	RRS, Bankura
109	Disang [Dehangi] (IC-574471)]	2016	0.50	0.50	-	AAU, Titabar
110	DRR DHAN-39\$\$	2015	10.00	5.00	-	IIRR, Hyderabad
111	DRR DHAN-42	2015	59.12	60.00	0.88	IIRR, Hyderabad
112	DRR DHAN-43	2015	10.50	35.00	24.50	IIRR, Hyderabad
113	DRR DHAN-44	2015	14.45	20.00	5.55	IIRR, Hyderabad
114	DRR DHAN-45 (IET 23832)\$\$	2016	7.85	4.00*	-	IIRR, Hyderabad
115	DRR DHAN-46**@	2016	3.90	3.90*	-	IIRR, Hyderabad
116	DRR DHAN -47**@	2018	0.30	0.30*	-	IIRR, Hyderabad
117	DRR DHAN-48	2018	0.20	80.00	79.80	IIRR, Hyderabad
118	DRR DHAN-49	2018	0.20	5.00	4.80	IIRR, Hyderabad
119	DRR DHAN 50 (IET 25671) **@	2018	39.80	39.80*	-	IIRR, Hyderabad
120	DRR DHAN-51**@	2018	11.00	11.00*	-	IIRR, Hyderabad
121	DRR DHAN -52**@	2019	0.90	0.90*	-	IIRR, Hyderabad
122	DRR DHAN-53	2021	30.50	34.50	4.00	IIRR, Hyderabad
123	DRR DHAN -54\$\$	2021	20.20	1.00	-	IIRR, Hyderabad
124	DRR DHAN -55	2021	20.00	76.70	56.70	IIRR, Hyderabad
125	DRR Dhan -58	2021	0.50	87.00	86.50	IIRR, Hyderabad
126	DRR Dhan -62	2021	0.30	45.00	44.70	IIRR, Hyderabad
127	Dubraj Selection-1	2016	18.00	20.00	2.00	IGKV, Raipur
128	ErraMallelu (WGL-	1993	1.00	2.00*	1.00	PJTSAU, Hyderabad

Sl. No	Name of the Variety	Year of release	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit(-)	Name of the Centre
	20471)					
129	GangavatiSona (GGV-05-01)	2014	0.30	0.50	0.20	SDRARS, Gangavati
130	GAR-21	2021	0.10	2.00	1.90	AAU, Nawagam
131	GAR-22	2021	0.05	1.00	0.95	AAU, Nawagam
132	Geetanjali (CRM-2007-1) (IET 17276)	2006	0.50	2.00*	1.50	NRRI, Cuttack
133	Gitesh	2017	0.50	23.60	23.10	AAU, Titabar
134	GIZA-14	1978	6.00	7.00	1.00	SKUAST, Chatha
135	GNR-3#	2012	0.40	1.00	0.60	AAU, Nawagam
136	GNR-5#	2015	0.30	0.50	0.20	AAU, Nawagam
137	GNR-8 (Aarti)#	2018	0.10	0.50	0.40	AAU, Nawagam
138	Gobinda (OR 2324-8)	1983	1.50	1.50	-	O.U.A.T, Bhubaneswar
139	Gomati Dhan TRC-2005-1 (TRC-05-8-4-42-8-3-7) IET 21512	2018	0.10	0.80	0.70	ICAR-RC for NEH Region, Lembuchera
140	Gontra Bidhan-1 (IET 17430)	2008	9.25	10.00	0.75	BCKV, Nadia
141	Gontra Bidhan-3 (IET 22752)	2014	19.85	22.00	2.15	BCKV, Nadia
142	Gontra Bidhan-4#		0.50	0.00	-0.50	BCKV, Nadia
143	GR 16 (Tapi) (NVS-2233)	2021	0.30	0.00	-0.30	NAU, Navsari
144	GR 17 (Sardar)	2020	0.55	0.00	-0.55	NAU, Navsari
145	GR 18 (DevliKolam)	2020	0.10	0.00	-0.10	NAU, Navsari
146	GR 19 (Auranga)	2020	0.10	0.00	-0.10	NAU, Navsari
147	GS-1#		1.00	0.00	-1.00	AAU, Nawagam
148	GUJ ANAND RICE-14	2018	0.10	0.25	0.15	AAU, Nawagam
149	Gujarat Anand Rice-3 (GAR-3)	2017	0.65	0.75	0.10	AAU, Nawagam
150	Hasanta	2018	1.80	5.00	3.20	O.U.A.T, Bhubaneswar
151	HKR-47	2007	0.43	5.00	4.57	RRS, Kaul
152	HKR-127 (HKR-95-222)	2010	0.80	5.00	4.20	RRS, Kaul
153	HKR-147\$		0.80	0.00	-0.80	RRS, Kaul
154	HPR 2143	2006	10.00	6.43	-3.57	CSKHPKV, MALAN
155	HPR-2656	2016	15.00	14.85	-0.15	CSKHPKV, MALAN
156	HPR-2795 (Him Palam Dhan-1)	2018	10.00	3.53	-6.47	CSKHPKV, MALAN
157	HPR-2880	2016	10.00	9.20	-0.80	CSKHPKV, MALAN
158	HUR-917	2017	3.00	20.00	17.00	BHU, Varanasi
159	IET 5656	1980	0.50	0.50	-	IIRR, Hyderabad
160	IGKVR-1 (IET 19569)	2011	66.00	66.00	-	IGKV, Raipur
161	IGKVR-2 (IET 19795)	2011	10.00	10.00	-	IGKV, Raipur

Sl. No	Name of the Variety	Year of release	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit(-)	Name of the Centre
162	Imp. Pusa Basmati-1(IET - 18990)(PUSA 1460-01-32)	2007	0.60	0.60	-	IARI Regional Station,Karnal
163	Improved Chinnor	2018	2.40	9.00	6.60	J.N.K.V.V, Jabalpur
164	Improved Jeera Shankar	2018	3.70	10.00	6.30	J.N.K.V.V, Jabalpur
165	Improved Lalat	2012	12.00	15.00*	3.00	O.U.A.T, Bhubaneswar
166	Improved Samba Mahsuri	2008	0.10	5.00	4.90	IIRR, Hyderabad
167	Improved White Ponni	1986	16.60	17.50*	0.90	TNAU, Coimbatore
168	Indira Aerobic-1(R1570-2649-1-1546-1) (IET21686)	2015	26.00	33.60	7.60	IGKV, Raipur
169	Indrayani (IET - 12897)	1993	22.60	70.00	47.40	ARS, Vadagon
170	Inglongkheri	2017	0.50	0.13	-0.37	AAU, Titabar
171	Intan	1992	0.75	3.00	2.25	ARS, Mugad
172	IR-20**	1991	2.20	0.00	-2.20	IGKV, Raipur
173	IR-64	1974	35.00	55.50	20.50	IGKV, Raipur
174	Jalashri (TTB 202-3)	2016	0.50	0.00	-0.50	AAU, Titabar
175	Jalkuwari	2016	0.50	0.00	-0.50	AAU, Titabar
176	JAYA	1969	11.80	12.00	0.20	IIRR, Hyderabad
177	JGL 11118 (Anjana)	2001	0.40	0.40	-	PJTSAU, Hyderabad
178	JGL-17004	2019	0.30	0.30	-	PJTSAU, Hyderabad
179	JGL-1798	2019	2.92	2.92	-	PJTSAU, Hyderabad
180	JGL-18047 (Bathukamma)	2016	7.02	7.02	-	PJTSAU, Hyderabad
181	JGL-24423	2020	20.85	50.00	29.15	PJTSAU, Hyderabad
182	JR 767	2018	16.50	16.55	0.05	J.N.K.V.V, Jabalpur
183	JR-206	2019	58.40	150.00	91.60	J.N.K.V.V, Jabalpur
184	JR-81	2016	28.00	110.00	82.00	J.N.K.V.V, Jabalpur
185	JRB-1	2018	20.00	6.75	-13.25	J.N.K.V.V, Jabalpur
186	JRH-19@	2016	3.20	3.40	0.20	J.N.K.V.V, Jabalpur
187	Jyothi	1977	5.30	18.75 15.00*	28.45	KAU, Pattambi
188	K 39	1978	3.00	2.50	-0.50	SKUAST,Khudwani
189	K-448		3.00	4.20	1.20	SKUAST,Khudwani
190	Kalachampa	2015	46.60	54.00	7.40	O.U.A.T, Bhubaneswar
191	KalanamakKiran (PRDF-2-14-10)	2019	1.50	11.50	10.00	PRDF, Gorakhpur
192	Kalinga Dhan 1204		1.00	0.80 1.00*	0.80	O.U.A.T, Bhubaneswar
193	Kalinga Dhan 1205	2021	1.00	1.00	-	O.U.A.T, Bhubaneswar
194	Kalinga Dhan 1401*#	2021	1.00	0.40	-0.60	O.U.A.T, Bhubaneswar

Sl. No	Name of the Variety	Year of release	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit(-)	Name of the Centre
195	Kalinga Dhan 1501		1.00	1.40	0.40	O.U.A.T, Bhubaneswar
196	Kalinga Dhan 1502		1.00	1.40	0.40	O.U.A.T, Bhubaneswar
197	Karjat-2	1994	0.40	16.80	16.40	RARS, Karjat
198	Karjat-3	1994	4.60	30.00	25.40	RARS, Karjat
199	Karjat-5	2006	1.00	6.80	5.80	RARS, Karjat
200	Karjat-7	2007	1.50	12.90	11.40	RARS, Karjat
201	Karjat-8	2010	0.52	3.00	2.48	RARS, Karjat
202	Karjat-9	2016	0.80	9.30	8.50	RARS, Karjat
203	Kasturi (IET-8580)	1989	5.00	5.00	-	IIRR, Hyderabad
204	Ketakijoha	2005	3.00	23.70	20.70	AAU, Titabar
205	Khitish (IET-4094)	1982	4.00	5.00	1.00	RRS, Chinsurah
206	Khowai TRC-2005-3 (TRC 05-2-6-4-39-3-6) IET 21564	2012	0.05	0.72	0.67	ICAR-RC for NEH Region, Lembuchera
207	KKP-5 (IET 24250)	2018	0.40	10.00	9.60	UAHS, Shimoga
208	KN3 (Kalanamak)	2009	0.10	2.00	1.90	<b>PRDF, Gorakhpur</b>
209	KRANTI (R-2022)	1976	2.05	10.00	7.95	J.N.K.V.V, Jabalpur
210	Krishna (RNR-2458)	2019	0.30	0.30	-	PJTSAU, Hyderabad
211	Kunaram Rice 1 (KNM 733)	2020	0.40	0.40	-	PJTSAU, Hyderabad
212	KunaramSannalu	2016	101.55	101.55	-	PJTSAU, Hyderabad
213	Lalat (IET 9947)	1989	5.00	10.00	5.00	O.U.A.T, Bhubaneswar
214	Luna Sampad (IET 19470)		0.50	0.00	-0.50	NRRI, Cuttack
215	Luna Suvarna (IET 18697)		0.50	0.00	-0.50	NRRI, Cuttack
216	Mahamaya (IET-10749)	1996	95.00	121.80	26.80	IGKV, Raipur
217	Maheswari (IGRKVR-1244) (IET 19796)	2012	14.00	14.00	-	IGKV, Raipur
218	Mahsuri	1972	0.70	0.70	-	IIRR, Hyderabad
219	Mandakini (IET 17847)	2009	6.00	4.00 2.00*	-	O.U.A.T, Bhubaneswar
220	Manisha (IET 23770)	2019	0.30	0.80	0.50	RRS, Chinsurah
221	Maruteru Sannalu (MTU 1006) (IET 14348)		0.50	0.66 2.50*	2.66	ANGRAU, Guntur
222	MO 21 (Pratiksha)	2010	0.25	2.23	1.98	RRS, Moncompu
223	Mrunalini(OR 1898-18) (IET 18649)	2009	3.00	5.00	2.00	O.U.A.T, Bhubaneswar
224	MTU 1061	2006	7.00	65.00*	58.00	ANGRAU, Guntur
225	MTU (1075)(IET 18482)	2008	9.00	55.00	46.00	ANGRAU, Guntur
226	MTU 1155	2017	5.70	2.50 7.50*	4.30	ANGRAU, Guntur
227	MTU 1156	2016	72.10	104.93	182.83	ANGRAU, Guntur

Sl. No	Name of the Variety	Year of release	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit(-)	Name of the Centre
				150.00*		
228	MTU 1172	2018	3.00	3.25 18.00*	18.25	ANGRAU, Guntur
229	MTU 1210	2019	13.70	9.61 18.00*	13.91	ANGRAU, Guntur
230	MTU 1223	2019	17.20	12.00 22.00*	16.80	ANGRAU, Guntur
231	MTU 1224	2019	9.60	34.98 70.00*	95.38	ANGRAU, Guntur
232	MTU 1239	2019	16.20	7.75 36.00*	27.55	ANGRAU, Guntur
233	MTU 1262	2019	7.80	46.75 63.00*	101.95	ANGRAU, Guntur
234	MTU 1281	2021	0.30	1.00 7.50*	8.20	ANGRAU, Guntur
235	MTU 7025#		2.60	0.00	-2.60	ANGRAU, Guntur
236	MTU 7029	1982	232.60	550.00	317.40	ANGRAU, Guntur
237	Muktashree (IET 21845)	2019	1.30	2.00	0.70	RRS, Chinsurah
238	Narendra Dhan 97	1992	0.10	0.50	0.40	NDUAT, Faizabad
239	Naveen (CR-749-20-2) (IET 14461)		3.20	6.00*	2.80	NRRI, Cuttack
240	NDLR 7	2018	2.75	25.00 25.00*	47.25	ANGRAU, Guntur
241	NDR-359	2021	1.00	1.50	0.50	NDUAT, Faizabad
242	NDR 9930111		5.00	6.20	1.20	NDUAT, Faizabad
243	Nellore Dhyanyarassi (NLR 3354)	2019	0.90	6.00*	5.10	ANGRAU, Guntur
244	Nellore Mahsuri (NLR 34449)	2009	10.60	140.00*	129.40	ANGRAU, Guntur
245	Nellore Sugandha (NLR40054)	2020	0.10	1.00*	0.90	ANGRAU, Guntur
246	NLR 4001	2020	0.40	5.00*	4.60	ANGRAU, Guntur
247	Numali		5.00	72.50	67.50	AAU, Titabar
248	PanduRanga (MCM 100)	2019	0.30	6.00	5.70	ANGRAU, Guntur
249	Pant Basmati-1	2015	1.00	17.50	16.50	GBPUAT, Pantnagar
250	PANT DHAN-18 (IET 17920) (UPRI 99-1)	2002	1.00	9.00	8.00	GBPUAT, Pantnagar
251	PANT DHAN-24	2015	7.30	20.00	12.70	GBPUAT, Pantnagar
252	PANT DHAN-26	2016	3.30	9.00	5.70	GBPUAT, Pantnagar
253	Pardhhiva (NLR 33892)	2007	0.60	10.00	9.40	ANGRAU, Guntur
254	PD-18		0.20	9.00	8.80	GBPUAT, Pantnagar
255	PDKV Tilak (SYE-503-78-34-2)	2019	4.30	15.00	10.70	PDKV, Sindewahi
256	PhuleSamruddhi (VDN -99-29)	2018	0.60	4.00	3.40	ARS, Vadagon
257	PKV HMT	2008	34.50	52.00	17.50	PDKV, Sindewahi

Sl. No	Name of the Variety	Year of release	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit(-)	Name of the Centre
258	PKV KISAN DKL - 22-39-31-25*3134	2008	0.20	2.00	1.80	PDKV, Sindewahi
259	PR-113	2000	0.43	10.00	9.57	PAU, Ludhiana
260	PR-114	2000	0.48	10.00	9.52	PAU, Ludhiana
261	PR 121	2015	26.29	30.00	3.71	PAU, Ludhiana
262	PR 122	2013	5.74	15.00	9.26	PAU, Ludhiana
263	PR-124	2015	3.03	10.00	6.97	PAU, Ludhiana
264	PR-126	2018	37.66	40.00	2.34	PAU, Ludhiana
265	PR 127	2020	3.50	10.00	6.50	PAU, Ludhiana
266	PR-128	2019	12.10	16.00	3.90	PAU, Ludhiana
267	PR-129	2019	9.00	19.00	10.00	PAU, Ludhiana
268	PR-130	2021	1.98	10.00	8.02	PAU, Ludhiana
269	PR-131#	2021	1.48	0.00	-1.48	PAU, Ludhiana
270	Pradeep (IET 20923)	2018	0.30	0.30	-	O.U.A.T, Bhubaneswar
271	Praijat (IET 2684)	1985	1.00	1.40 1.00*	1.40	O.U.A.T, Bhubaneswar
272	Pratikshya(ORS 201-5) (IET 15191)	2006	16.00	24.00	8.00	O.U.A.T, Bhubaneswar
273	Protezin(IET 25470)(R-RHZ-R-56)	2020	10.00	18.90	8.90	IGKV, Raipur
274	Punjab Basmati 7	2021	6.94	10.00	3.06	PAU, Ludhiana
275	Pusa 1592	2015	0.20	0.40	0.20	IARI, NEW DELHI
276	Pusa 1612	2013	1.00	1.50	0.50	IARI, NEW DELHI
277	Pusa Basmati-1509(IET 21960)(PUSA 1509-03-3-9-5)%	2013	62.06	12.00	-50.06	IARI Regional Station, Karnal
278	Pusa Basmati-1609^		0.60	0.60	-	IARI Regional Station, Karnal
279	Pusa Basmati-1718 (IET 24565)	2016	49.60	10.54	-39.06	IARI Regional Station, Karnal
280	PUSA BASMATI 1728	2020	10.60	12.00	1.40	IARI Regional Station, Karnal
281	PUSA BASMATI 1637 (IET 24570)%	2017	8.00	4.00	-4.00	IARI Regional Station, Karnal & BEDF, Meerut
282	Pusa Basmati 1692 (IET 26995)%	2016	32.92	15.00	-17.92	IARI Regional Station, Karnal
283	Pusa Basmati 1847 %	2021	7.48	7.00	-0.48	IARI, NEW DELHI
284	Pusa Basmati 1885%	2021	2.56	5.00	2.44	IARI, NEW DELHI
285	Pusa Basmati 1886%	2021	2.00	5.00	3.00	IARI, NEW DELHI
286	Pusa Basmati 1979%	2021	0.08	1.00	0.92	IARI, NEW DELHI
287	Pusa Basmati 1985%	2021	6.50	3.00	-3.50	IARI, NEW DELHI
288	Pusa Basmati-1(IET 10364)	1989	0.08	1.00	0.92	BEDF, Meerut

Sl. No	Name of the Variety	Year of release	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit(-)	Name of the Centre
289	Pusa Basmati-6 (PUSA 1401) (IET 18005)%	2010	19.32	20.00	0.68	IARI Regional Station, Karnal & BEDF, Meerut
290	PUSA-1121 (Pusa Sugandh-4)%	2003	60.69	42.00	-18.69	IARI Regional Station, Karnal & BEDF, Meerut
291	Pushpa (IET 17509)	2015	1.30	0.00	-1.30	RRS, Bankura
292	R Neelam		10.00	15.08	5.08	RAU, Pusa
293	Rajdeep (CN 1039-9)	2017	0.30	2.00	1.70	RRS, Chinsurah
294	RajendraBhagvati	2010	2.00	2.00	-	RAU, Pusa
295	Rajendra Mahsuri-1	2007	7.50	15.00	7.50	RAU, Pusa
296	RajendraSawaswati (IET 23423)	2020	10.30	9.00	-1.30	RAU, Pusa
297	RajendraSweta	2007	0.50	4.00	3.50	RAU, Pusa
298	Rani Dhan (IET 19148)	2009	2.00	2.00	0.00	O.U.A.T, Bhubaneswar
299	Ranjeet (IET - 12554)	1994	1.60	99.00	97.40	AAU, Titabar
300	RanjitSub -1	2018	83.45	209.45	126.00	AAU, Titabar
301	Ratnagiri-1	1990	0.40	10.00 7.50*	17.10	ARS, Shirgaon
302	Ratnagiri-5	2016	0.60	6.00	5.40	ARS, Shirgaon
303	Ratnagiri-6	2019	0.20	6.00 9.00*	14.80	ARS, Shirgaon
304	Ratnagiri-7	2019	0.40	7.00 4.20*	10.80	ARS, Shirgaon
305	Ratnagiri-8	2019	0.30	20.00 7.20*	26.90	ARS, Shirgaon
306	RC Maniphou-13	2018	0.30	3.00	2.70	RRS, Wangbal
307	RGL 2537	1996	6.10	83.60	77.50	ANGRAU, Guntur
308	RNR-15048 (Telangana Sona)	2014	47.15	50.00*	2.85	PJTSAU, Hyderabad
309	Sabita (IET 8970)	1987	0.20	1.00	0.80	RRS, Chinsurah
310	SabourArdhjal (BRR 0007)	2017	15.00	24.50	9.50	BAU, Sabour
311	SabourHarshit Dhan (IET 25342)	2020	20.00	43.00	23.00	BAU, Sabour
312	SabourSampanna Dhan	2021	60.00	83.00	23.00	BAU, Sabour
313	SabourSurbhit	2015	20.00	21.00	1.00	BAU, Sabour
314	SABOURSHREE(RA U724-48-33) (IET18878)	2017	60.05	169.00	108.95	BAU, Sabour
315	Sahbhagi (Sahbhagi Dhan IET-19576)	2011	30.55	30.90	0.35	CRURRS, Hazaribagh
316	SahyadriMegha	2019	0.05	3.00 5.00*	7.95	UAHS, Shimoga
317	SAKOLI-9	2019	0.20	0.50	0.30	ARS, Sakoli
318	Samba sub1 (IET 21248)*#		17.55	0.00	-17.55	NRRI, Cuttack
319	Sarjoo 52	1980	1.00	122.00	121.00	NDUAT, Faizabad

Sl. No	Name of the Variety	Year of release	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit(-)	Name of the Centre
320	Sebati (IET 11786)*#	1998	2.00	0.00	-2.00	O.U.A.T, Bhubaneshwar
321	Shalimar Rice-2	2015	0.10	7.50	7.40	SKUAST,Khudwani
322	Shalimar Rice-3		0.10	1.20	1.10	SKUAST,Khudwani
323	Shalimar Rice-4	2019	0.10	20.00	19.90	SKUAST,Khudwani
324	Shatabdi (IET 4786)	2000	15.00	24.50	9.50	RRS, Chinsurah
325	SHIATS DHAN 5	2016	3.00	2.00	-1.00	SHUATS, Prayagraj
326	SHIATS DHAN-4	2016	6.00	3.00	-3.00	SHUATS, Prayagraj
327	Shobhini (RNR-2354) (IET- 21260)	2014	0.80	1.00*	0.20	PJTSAU, Hyderabad
328	Siddhi (WGL 44)	2012	1.50	4.25	2.75	PJTSAU, Hyderabad
329	Sita	1972	0.25	0.00	-0.25	RAU, Pusa
330	Somnath (WGL-347)	2016	1.30	1.50*	0.20	PJTSAU, Hyderabad
331	Sona Mahsuri (BPT 3291)	2005	4.80	45.00	40.20	ANGRAU, Guntur
332	Sri Dhruthi (MTU 1121)	2015	14.70	162.00	147.30	ANGRAU, Guntur
333	Sukumar (IET 21261)	2020	15.40	5.00	-10.40	RRS, Chinsurah
334	Swarna Shakti Dhan (IET 25640)***	2010	14.20	29.60	15.40	ICAR RC for Eastern Region, Patna
335	SwarnaShreya	2020	17.50	45.90	28.40	ICAR RC for Eastern Region, Patna
336	SwarnaSmriddhi Dhan (IET 24306)	2016	15.00	51.80	36.80	ICAR RC for Eastern Region, Patna
337	Swarnasub1 (CR 2539-1) IET 20266	2021	78.10	85.00	6.90	NRRI, Cuttack
338	TarunBhog Selection-1	2016	22.10	23.10	1.00	IGKV, Raipur
339	Telangana Vari-1 (IET 25330) (WGL-739)	2020	1.00	5.00*	4.00	PJTSAU, Hyderabad
340	Telangana Vari-3 (JGL 21078)	2021	0.10	0.10	-	PJTSAU, Hyderabad
341	Tellahamsa	1975	0.75	0.00	-0.75	PJTSAU, Hyderabad
342	Thanu	2008	1.85	3.17	1.32	ZARS, Mandya
343	Tripura Aush	2015	0.10	0.35	0.25	ICAR-RC for NEH Region, Lembuchera
344	Tripura Chikandhan	2015	0.10	0.49	0.39	ICAR-RC for NEH Region, Lembuchera
345	Tripura Jala (IET 22167)	2015	0.05	0.36	0.31	ICAR-RC for NEH Region, Lembuchera
346	Tripura Khara 1	2015	0.05	0.24	0.19	ICAR-RC for NEH Region, Lembuchera
347	Tripura Nirog	2015	0.10	0.46	0.36	ICAR-RC for NEH Region, Lembuchera



Sl. No	Name of the Variety	Year of release	Actual allocation as per BSP-I	Actual Production	Surplus (+) Deficit(-)	Name of the Centre
348	Tripura Sarat	2015	0.10	2.90	2.80	ICAR-RC for NEH Region, Lembuchera
349	TrombeyChattisgarhDubraj Mutent-1	2019	15.00	27.00	12.00	IGKV, Raipur
350	TrombeyKarjatKola m (BARCKKV 13)	2020	0.20	5.70	5.50	RARS, Karjat
351	TUNGA (IET-13901)	2006	4.87	10.00	5.13	ZARS, Mandya
352	UMA (MO-16)	1998	12.90	3.04*	-9.86	RRS, Moncompu
353	Uttar Lakshmi (UBKVR-15) (IET 24173)	2020	1.00	6.10	5.10	UBKV, Pundibari
354	Uttar Sona(UBKVR-1) (IET-24171)	2019	3.30	5.40	2.10	UBKV, Pundibari
355	Varam (MTU 1190)	2019	2.40	2.25 7.50*	7.35	ANGRAU, Guntur
356	Varshadhan(CRLC-899) (IET 16481)		1.50	1.00	-0.50	NRRI, Cuttack
357	Vijetha (MTU 1001)	1995	56.50	125.00	68.50	ANGRAU, Guntur
358	Vikram TCR	2021	21.30	39.6	18.30	IGKV, Raipur
359	Vishnubhog Selection-1	2016	22.30	29.7	7.40	IGKV, Raipur
360	VL 88@	2021	3.60	0.00	-3.60	VPKAS, Almora
361	VL DHAN 157 (VL 31611) (IET 22292)@	2014	2.50	0.00	-2.50	VPKAS, Almora
362	VL DHAN 68 (VL 31611) (IET 22283)@	2014	2.00	0.00	-2.00	VPKAS, Almora
363	WGL-697 (IET 26027)	2021	0.10	0.50*	0.40	PJTSAU, Hyderabad
364	WGL-915	2020	1.40	1.40	-	PJTSAU, Hyderabad
365	ZINCO RICE MS	2019	15.30	21.9	6.60	IGKV, Raipur
	Total:		3382.28	8053.74	4671.46	

\*: indicates expected yield to be produced during Rabi 2022-23; @: contingent plan taken in Rabi, 2022 (Jabalpur); @: Very poor yield and seed quality due to heavy incidence of Southern Rice Black-Streaked Dwarf Virus (SRBSDV); #: No variety by MTU 7025, it may be MTU 7029, Gontra Bidhan-4 variety not yet notified, PR-131 Variety not notified yet, GS-1, GNR-3, GNR-5, GNR-8 (Aarti) Not a variety developed by AAU, Anand; &: BS plot rejected due to lodging; ^: Paddy seed crop across the varieties affected high attack of stem borer, SRBSD Virus and high rains during 19-24 Sept., 2022; %: Licensed variety; \$: This is not CCS HAU variety, it may be availability of Nucleus Seed or Availability of less quantity of Nucleus Seed or nucleus seed deficit or problem in nucleus; #@ : Production loss due to water stagnation and lodging; \*\*\*: As per BSP II or As per BSP III; \*\*@ : Standing in the Crop; \$\$: During rabi 2022-23 seed production taken up however due to two successive hailstorms in the month of April 2023 resulted in poor seeds yields.

**Parental lines of Hybrids:**

S. No	Name of the Producing centre	Name of variety	Actual allocation as per BSP-I	Actual Production	Surplus(+) Deficit (-)
1	IIRR, Hyderabad	DRRH-2 (A Line)	0.10	0.00	-0.10
		DRRH-2 (A Line)	0.10	0.00	-0.10
		DRRH-2 (A Line)	0.10	0.00	-0.10
		Total:	0.30	0.00	-0.30
2	UAS, Bangalore	KRH 2 ( A Line)	0.10	1.00*	0.90
		KRH 2 ( B Line)	0.10	1.00*	0.90
		KRH 2 ( R Line)	0.10	0.10	-
			0.30	2.10	1.80
		Total:	3382.88	8055.84	4672.96

**Appendix-12****BREEDER SEED PRODUCTION OF ADDITIONAL RICE VARIETIES / STATE INDENTS DURING KHARIF 2022****(Quantity in Quintals)**

Sl. No	Name of the Producing centre		Name of variety	Produced
1	ANGRAU, Maruteru	1	MTU 1280	15.20
		2	MTU 1310	4.30
		3	MTU 1273	13.60
		4	MTU 1293	9.40
		5	MTU 1212	11.80
		6	MTU 1321	7.00
		7	MTU 1232	12.00
			Total:	73.30
2	RARS, Karjat	1	Karjat-184	7.65
		2	Karjat-2	16.80
		3	Karjat-3	30.00
		4	Karjat-4	9.60
		5	Karjat-5	6.80
		6	Karjat-6	6.00
		7	Karjat-7	12.90
		8	Karjat-8	3.00
		9	Karjat-9	9.30
		10	TrombayKarjat-Kolam	5.70
			Total:	107.75
3	ARS, Sakoli	1	PDKV Sadhana	2.09
		2	PDKV Kisan	2.38
		3	Sakoli-9	2.97
		4	PDKV SRR-1	3.37
		5	PKV HMT	0.99
			Total:	11.80
4	RWRC, Malan	1	HPR 1156	0.45
		2	Kasturi	3.50
		3	RP 2421	0.31
		4	HPR 2720	2.40

Sl. No	Name of the Producing centre		Name of variety	Produced
		5	HPR 1068	1.28
			<b>Total:</b>	<b>31.54</b>
5	SKUAST, Jammu & Kashmir	1	Shalimar Rice-1	2.35
		2	Shalimar Rice-3	1.20
		3	Shalimar Rice-4	20.00
		4	Shalimar Sugandh-1	1.90
			<b>Total:</b>	<b>25.45</b>
6	BAU, Ranchi	1	Sahbhagi	4.00
		2	MTU 1010	15.00
		3	RajendraMansuri	4.00
		4	Swarna (MTU 7029)	3.00
		5	IR-64 (Drt.1)	10.00
		6	CR Dhan-202	2.00
		7	CR Dhan305	5.00
		8	SwarnaShreya	6.00
		9	Awarna Shakti	5.00
			<b>Total:</b>	<b>54.00</b>
7	PJSTAU, Rajendranagar	1	Sugandha Samba (RNR 2465)	10.00*
		2	Rajendranagar vari-1 (RNR 11718)	10.00*
		3	Rajendranagar vari-2 (RNR 15435)	5.00*
	RARS, Warangal	4	WGL 48684	0.50
		5	WGL 962	3.00
		6	WGL-14	2.00*
		7	WGL 32100	2.00*
		8	WGL 1487	2.00*
	RARS, Jagityal	9	JGL 384	2.00
	ARS, Kampasagar	10	BPT 5204	10.00
		11	IR 64	0.50
	ARS, Kunaram	12	KNM 1638	15.00*
	RS&RRS, Rudrur	13	RDR 763	0.20*
			<b>Total:</b>	<b>62.20*</b>
8	IGKV, Raipur	1	DRR Dhan 42	13.20
		2	IR 36	13.20
		3	MTU 1010	15.00
		4	CG Tejaswi Dhan	8.10
		5	Trombay CG Vishnubhog Mutant	3.30
		6	Trombay CG Sonaghathi Mutant	4.80
		7	CG JawaphoolTrombay	5.40
		8	Swarna	19.80
		9	CG Dhan 1919	30.00
			<b>Total:</b>	<b>112.80</b>
9	ARS, Pattambi	2	Annapurna	1.84
		3	Kanchana	1.74
			<b>Total:</b>	<b>3.58</b>
10	KAU, Moncompu	1	KAU Pournami (MO 23)	4.57
		2	Shreyas (MO 22)	4.34
			<b>Total:</b>	<b>8.91</b>
11	RARS, Mandya	1	KMP-175	2.87
12	UAHS, Shimoga	1	SahyadriKempumukthi	13.00
		2	SahyadriBramha	0.05
		3	SahyadriPanchamukhi	0.60
		4	MO-4	0.60
		5	IET-7191	0.25
		6	KHP-9	0.25

Sl. No	Name of the Producing centre		Name of variety	Produced
		7	Intan	0.25
		8	KHP-5	0.25
		9	KHP-2	1.75
		10	KHP-10	2.00
		11	KHP-11	5.00
		12	KHP-13	2.00
		13	KPR-1	5.00
		14	Sharavathi	0.25
		15	JGL-1798	10.00
		16	Tunga	10.00
			<b>Total:</b>	<b>51.25</b>
13	ICAR Reg. Sta, Patna	1	SwarnaUnnat Dhan	3.00
		2	SwarnaSukha Dhan	1.50
		3	SwarnaPurvi Dhan 3	5.20
			<b>Total:</b>	<b>9.70</b>
14	RRS, Chinsurah	1	Sujala ((IET 20235)	100.00
		2	Chinsurah Nona 1 (IET23403)	100.00
			<b>Total:</b>	<b>200.00</b>
15	BAU, Sabour	1	Sabour Deep	32.00
		2	Rajendra Mahsuri-1	31.00
		3	RajendraSweta	25.00
		4	RajendraSuwasini	27.00
		5	RajendraKasturi	6.50
		6	Swarna sub-1	12.00
			<b>Total:</b>	<b>133.50</b>
16	SKAUST, Chatha	1	K-39	0.80
		2	K-448	0.65
		3	SJR-5	0.01
		4	JB 118	0.01
		5	JB 123	0.01
		6	JB 129	0.01
		7	JB 138	0.01
		8	Basmati 564	0.01
			<b>Total:</b>	<b>1.51</b>
17	RAU, Pusa	1	Sahbhagi	9.00
		2	Sudha	0.50
		3	Vaidehi	0.50
			<b>Total:</b>	<b>10.00</b>
18	MRRI, Navasari	1	NAUR-1	0.50
		2	GRN-2	0.50
		3	GNR-3	10.00
		4	GNR-4	0.20
		5	GNR-5	0.50
		6	GNR-7	0.50
		7	GNR-8	1.00
		8	GR-15	0.50
		9	GR-19	0.20
		10	GR-20	0.50
			<b>Total:</b>	<b>14.40</b>
19	AAU, Nawagam	1	GR-3	1.25
		2	GR-4	8.00
		3	GR-7	5.00
		4	GR-11	8.00
		5	GAR-13	60.00

Sl. No	Name of the Producing centre		Name of variety	Produced
		6	Jaya	18.00
		7	Masuri	4.00
		8	Gurjari	110.00
		9	IR 28	1.50
			<b>Total:</b>	<b>215.75</b>
20	NRRI, Cuttack	1	Pooja	14.50
		2	Sarala	5.00
		3	Khitish	5.00*
		4	Improved Lalat	15.00*
		5	CR Dhan 313	2.50*
		6	Shatabdi	7.00*
		7	Ratna	2.50*
		8	CR Dhan 204	1.00*
		9	CR Dhan 205	1.00*
21	BHU, Varanasi	1	HUR 1309	4.50
		2	HUR 1304	3.20
		3	HUR 105	7.60
		4	HUBR 2-1	2.25
			<b>Total:</b>	<b>17.55</b>
22	CRURRS, Hazaribagh	1	CR Dhan 320	13.03
		2	CR Dhan 107	0.32
		3	CR Dhan 415	0.33
		4	Virender	2.83
			<b>Total:</b>	<b>16.51</b>
23	GBPUAT, Pantnagar	1	Pusa 44	15.00
		2	PR 113	150.00
		3	NDR 359	45.00
		4	Pant Sugandhdhan 17	8.00
		5	Pusa Basmati 1	6.00
		6	Pusa Sugandh 4 (1121)	50.00
		7	PR 114	10.00
		8	PR 121	15.00
		9	HKR 47	50.00
		10	Pant Dhan 11	6.00
		11	PR 124	15.00
		12	MTU 7029	60.00
		13	BPT 5204	20.00
		14	Type 3 (Organic)	3.00
		15	Pant Dhan 28	5.00
		16	Govind	25.00
		17	Pusa Sugandh 5 (2511)	8.00
		18	HKR 127	5.00
		19	Pusa 1612	5.00
		20	Pant Dhan 4	8.00
		21	Basmati 370	2.00
		22	Sarjoo 52	12.00
			<b>Total:</b>	<b>523.00</b>
24	VPKAS, Almora	1	VL Dhan 221	0.20
25	NDUAT, Faizabad	1	IR-64 sub-1	1.20
		2	NDGR-701	26.00
		3	NDGR-702	25.00
		4	NDR-6093	6.00
		5	MTU-7029	53.00
		6	NDR-2064	16.00

Sl. No	Name of the Producing centre		Name of variety	Produced
		7	NDR-2065	70.00
		8	BPT-5204	135.00
			<b>Total:</b>	<b>332.20</b>
26	JNKVV, Jabalpur	1	Imp. Chinnor	63.98
		2	Imp Jeera Shankar	5.28
		3	IR 36	14.36
		4	IR 64	103.96
		5	JR 10	14.85
		6	JR 206	2424.77
		7	JR 21	15.30
		8	JR 81	445.47
		9	MTU 1010	63.49
		10	P 1460	48.66
		11	PB 1	175.86
		12	PS 4	55.55
		13	PS 5	7.88
		14	Kranti	1089.50
			<b>Total:</b>	<b>4528.91</b>
27	Lembuchera	1	TRC PSM-1720-B-B-5	0.17
		2	Hakuchuk-1	0.43
		3	Hakuchuk-2	0.39
		4	TRC-2014-8	0.55
		5	TRC-2016-14	0.25
			<b>Total:</b>	<b>1.79</b>
28	CSSRI, Karnal	1	CSR 10	0.50
		2	CSR 13	0.50
		3	CSR 23	0.50
		4	CSR 27	0.50
		5	CSR 36	2.00
		6	CSR 46	1.50
		7	CSR 49	1.00
		8	CSR 56	3.50
		9	CSR 60	3.00
			<b>Total:</b>	<b>13.00</b>
29	CCS HAU, RRS, Kaul	1	HKR-48	0.50
		2	HKR-128	2.00
		3	Haryana Basmati-2	2.00
		4	Taroari Basmati	1.00
			<b>Total:</b>	<b>5.50</b>

## Parental Lines of Hybrid

Sl. No	Name of the Producing centre		Name of variety	Produced
1	RARS, Karjat	1	<i>Sahyadri 1</i>	
			A line	0.20
			B line	0.25
			R line	0.30
		2	<i>Sahyadri 2</i>	
			A line	0.20
			B line	0.25
			R line	0.30

Sl. No	Name of the Producing centre		Name of variety	Produced
		3	<i>Sahyadri 3</i>	
			A line	0.30
			B line	0.30
			R line	0.45
		4	<i>Sahyadri 4</i>	
			A line	0.40
			B line	0.30
			R line	0.40

\* : Rabi seed production

### 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.

**Promising entries in Varietal trials, kharif 2022**

S. No	IET No	Designation	Cross Combination	Source Trial	Yield kg/ha	FD days	GT	Promising for
01	28959	PHI 20101	Hybrid	AVT-2ETP	6693	94	LS	Promising, for Uttarakhand, Odisha, Bihar, Uttar Pradesh Chhattisgarh, Maharashtra, Gujarat
2	28950	HRI-207	Hybrid	AVT-2ETP	6393	92	SB	Promising for Odisha, Bihar, Jharkhand, Maharashtra and Chhattisgarh
3	28960	RRX-848	Hybrid	AVT-2ETP	6369	92	LS	Promising for Haryana, Odisha, Bihar, Jharkhand, Chhattisgarh and Gujarat
4	28954	Kaveri 7299	Hybrid	AVT-2ETP	5930	91	LB	Promising for Haryana, Uttar Pradesh and Bihar
5	28964	VNR 227	Hybrid	AVT-2ETP	5800	107	LB	Promising for Odisha, Jharkhand and Maharashtra
6	29177	ORJ-1317-RP5530-23-1	Samba Mahsuri/IRGC48960//MTU1081	AVT-2ETP	5704	99	LS	Promising for Kerala, Bihar, Chhattisgarh, Maharashtra
7	29142	JGL 35085	JGL 2017/NLR3444 9//JGL20171	AVT-2ETP	5691	91	LB	Promising for Haryana, Rajasthan, Gujarat and Bihar
8	28506	CR 3849-2-1-2-1-2	Pooja/IR64	AVT-2IME	5582	101	LB	Promising for Odisha
9	29235	PNPK 7106	PNP 3/SR	AVT-2IME	6198	100	LS	Promising for Haryana, Chhattisgarh, Andhra Pradesh, Telangana and Maharashtra
10	29246	HRK 16-35),	HKR 47/HKR 99-60//HKR 47	AVT-2IME	5636	101	LS	Promising for Maharashtra
11	29236	(CR 3580-3-1-1-1-1-2)	Lalat/N22	AVT-2IME	5561	104	SB	Promising for Odisha and Gujarat
12	28982	(RRX-809)	Hybrid	AVT-2IME	6290	98	LB	Promising for Maharashtra
13	28489	BRR 2141	TTB 680-2-35-2 Selection	AVT-2 IM	6535	111	MS	Promising for the states of Chhattisgarh, Bihar
14	29268	OROI-8- IR 88228-33-3-5-2	IR 80410-B-197-4 / IR 64-	AVT-2 IM	6223	106	LS	Promising for the state of Odisha

S. No	IET No	Designation	Cross Combination	Source Trial	Yield kg/h a	FD days	GT	Promising for
			Sub 1 // NCIC RC 158					only
15	27908	MTU 1275 (MTU 2385-123-1-2-3)	MTU 1075 / MTU 1081 // MTU 1121	AVT-2 IM	6195	112	MS	Promising for the state of Telangana
16	<b>29001</b>	<b>S-7004</b>	<b>Hybrid</b>	AVT-2 IM	6347	101	LB	Promising for the state of Andhra Pradesh
17	<b>28997</b>	<b>HRI-204</b>	<b>Hybrid</b>	AVT-2 IM	6393	101	LB	Promising for the state of Punjab
18	29349	R 2284-52-114-1	R 1670-3267-1-3920-1 / ARC 10550	AVT 2 & AVT 1-L	6539	116	SB	Promising in Zone V for the state of Chhattisgarh
19	29411	CR4161-5-6-IR 14L572	IR 10L146 / IR 10L149	AVT 2- AEROB	4628	83	LS	Promising in Haryana(Z II), Bihar (Z III) & Gujarat(Z VI)
20	29396	CRR 822-20-1-2-2	IR11L152 / Sabitri	AVT 2- AEROB	4168	79	LS	Promising in Haryana(Z II)
21	29409	TRC 2020-14	Hakuchuk 1 / Naveen	AVT 2- AEROB	4217	81	MS	Promising in Haryana(Z II) & Bihar (Z III)
22	29421	RP 6324-123-14-4-1	CR 691-1 / CR Dhan 202	AVT 2- AEROB	3813	78	MS	Promising in Gujarat(Z VI)
23	29412	US393	Hybrid	AVT 2- AEROB	5014	81	LB	Promising in Chhattisgarh (ZV)
24	29422	CRR 756-21	IR08L183 / MTU 1010	AVT 2- AEROB	3590	83	LS	Promising in Chhattisgarh (ZV)
25	29430	CR 4118-1-1-2-2-1	CR Dhan 201 / IR 84549-B-183-13-1-1-2	AVT 2- AEROB	4127	85	LS	Promising in Haryana(Z II) & Bihar (Z III)
26	29415	RP 6326-278-14-1	MTU 1010 / WGL 505	AVT 2- AEROB	4100	82	LB	Promising in Gujarat (ZVI) & Odisha(Z III)
27	29436	CRR 821-21-2-1-3	IR09L337 / IR09L154	AVT 2- AEROB	4666	80	LB	Promising in Gujarat(Z VI) & Haryana(Z II)
28	29424	CR 4317-2-IR 97034-21-2-1-3	IR09L337 / IR09L154	AVT 2- AEROB	4455	82	LB	Promising in Odisha (Z III), Gujarat (Z VI) & Haryana (ZII)
29	28636	RP 6361-RAF-252-GSR-IR1-DQ146-L18-Y1	-	AVT 2- AEROB	3934	82	LS	Promising in Bihar (Z III) and Gujarat (Z VI)
30	29536	OR 2674-14-6-2	CRMS 32A / OR 1889-5	AVT 2- MS	6341	103	MS	promising for Maharashtra in Zone V
31	29523	R2054-685-1-205-1	R 1033-2559-1-1 / Gopal bhog	AVT 2- MS	5812	105	MS	promising for Chhattisgarh State
32	29365	CSR TPB 159	Trichy 1 / PB1	AVT 2 - AL & ISTVT	3022	84	LS	promising in Haryana state only.
33	29361	CSR CPB 69	CSR 89 IR15 / PB1	AVT 2 - AL & ISTVT	3531	93	MS	promising in Haryana state only
34	29354	CSR YET 59	CSR 27 / CSR36	AVT 2 - AL	3106	86	LS	promising in

S. No	IET No	Designation	Cross Combination	Source Trial	Yield kg/h a	FD days	GT	Promising for
				& ISTVT				Haryana state only
35	28206	HPR 3106	HPR 2336 / AC 19146 // HPR 2143	AVT - 2- E (H)	4566	106	LB	Promising in Medium Northern Zone for the state of Uttarakhand
36	28883	VL 32585	VL 31290 / O. minuta	AVT - 2- E (H)	4122	103	LB	Promising in Medium Northern hill Zone for the state of Uttarakhand and Himachal Pradesh
37	28895	VL 32560	VL 31339 / BL 122	AVT - 2- E (H)	4836	105	LS	Promising in Medium Northern hill Zone for the state of Uttarakhand and Himachal Pradesh
38	28907	CAUS 124 (ULRC 26-11-2-1-1)	Kasalath / Borodhan	AVT 2-M (H)	3916	107	LB	promising only for the state of Manipur
39	28821	RP 5964-82	KMR 3 / Swarna	AVT 2 & 1 LPT)	5054		LB	promising for Karnataka and Telangana in Zone VII

**CONSTITUTION OF VARIETY TRIALS-2023**

<b>Trial No</b>	<b>Test Entries</b>	
<b>1</b>	<b>ADVANCE VARIETY TRIAL 2 –EARLY TRANSPLANTED (AVT2-E TP)</b>	
	3 <sup>rd</sup> year of testing	<b>IET Nos.</b> 29947, 29940, 29939, 29694, 29689, 29692, 28123, 29691, 29690, 29696, 29700, 29975, 28965, 28956
	Checks:	CO-51 (NC), PR 124 (Northern,) Narendra 97 (Eastern), Luit(North Eastern), Sahbhagidhan (Central & Western), MTU 1153 (Southern)—ZC, US 314 (Hybrid)and Local Check
<b>2</b>	<b>ADVANCE VARIETY TRIAL 1 –EARLY TRANSPLANTED (AVT1-E TP)</b>	
	2 <sup>nd</sup> year of testing	<b>IET Nos.</b> 30657, 30642, 30641, 30656, 30669, 30690, 30679, 30638, 30674, 30660, 30673, 30662, 30651, 30691, 30686, 30677, 30659, 30645, 30684, 30636, 30637, 30635, 30640, 30642, 30643, 30644, 30646, 30647, 30653, 30658, 30661, 30668, 30669, 30671, 30673, 30676, 30680, 30681, 30683, 30685, 30687, 30688, 30689, 30694, 30652 <b>From IHRT-E:</b> IET Nos. 30565, 30561, 30555, 30570, 30557, 30572, 30568 and 30567.
	Checks:	CO-51 (NC), PR 124 (Northern,) Narendra 97 (Eastern), Luit(North Eastern), Sahbhagidhan (Central & Western), MTU 1153 (Southern)—ZC, US 314 (Hybrid) and Local Check
<b>3</b>	<b>INITIAL VARIETY TRIAL –EARLY TRANSPLANTED (IVT-E TP)</b>	
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b>
	Checks:	CO-51 (NC), PR 124 (Northern,) Narendra 97 (Eastern), Luit(North Eastern), Sahbhagidhan (Central & Western), MTU 1153 (Southern)—ZCand Local Check
<b>4</b>	<b>ADVANCE VARIETY TRIAL 2 –IRRIGATED MID-EARLY (AVT2-IME)</b>	
	3 <sup>rd</sup> year of testing	<b>IET Nos.</b> 29738, 29734, 29726, 29708, 29717, 29820, 29808, 29822, 29188, 29304 <b>NILs:</b> IET No. 30282, 29203 and 30697
	Checks:	Gontra Bidhan-3 (National), PR 113 (Northern,)Lalat (Eastern and North Eastern), MTU 1010 (Central and Southern), Karjat 7 (Western)—Zonal, US 312 (Hybrid) and Local Check
<b>5</b>	<b>ADVANCE VARIETY TRIAL 1 –IRRIGATED MID-EARLY (AVT1-IME)</b>	
	2 <sup>nd</sup> year of testing	<b>IET Nos.</b> 30742, 30704, 30736, 30730, 30062, 30708, 30735, 30756, 30213, 30719, 30752, 30705, 30707, 29976, 30740 <b>From IHRT-ME:</b> IET Nos. 30577, 30578, 30575, 30587, 30576, 30589, 30573, 30593, 30574, 30579, 30580
	Checks:	Gontra Bidhan-3 (National), PR 113 (Northern,)Lalat (Eastern and North Eastern), MTU 1010 (Central and Southern), Karjat 7 (Western)—Zonal, US 312 (Hybrid) and Local Check
<b>6</b>	<b>INITIAL VARIETY TRIAL –IRRIGATED MID-EARLY (IVT-IME)</b>	

Trial No	Test Entries	
	1 <sup>st</sup> Year of testing	<b>Repeat:</b> IET No.30713 <b>New Nominations:</b> <b>Shifts from IVT-E TP:</b> 30692, 30639, 30649, 30667,30672 <b>Shifts from IVT-IM:</b> 30804
	Checks:	Gontra Bidhan-3 (National), PR 113 (Northern,)Lalat (Eastern and North Eastern), MTU 1010 (Central and Southern), Karjat 7 (Western)—Zonal and Local Check
7	<b>ADVANCE VARIETY TRIAL 2 –IRRIGATED MEDIUM (AVT2-IM)</b>	
	3 <sup>rd</sup> year of testing	IET Nos.29743, 29741, 29833, 28523, 29742 <b>Repeats:</b> IET Nos. 29290, 29301, 29257, 29284, 29014, 29009, 29002
	Checks:	NDR 359 (National), PR 121 (Northern), CR Dhan 300 (Eastern & North Eastern), Karma Mahsuri (Central), Akshayadhan (Western), Jaya (Southern)—Zonal, HRI 174 (Hybrid)andLocal Check (LC)
8	<b>ADVANCE VARIETY TRIAL 1 –IRRIGATED MEDIUM (AVT1-IM)</b>	
	2 <sup>nd</sup> year of testing	<b>IET Nos.</b> 30819, 30772, 30771, 30790, 30762, 30794,30798 Repeat: 29859 <b>From IHRT-M:</b> IET Nos.30603, 30620, 30602, 30604, 30608, 30614, 30600, 30605, 30613, 30617, 29616
	Checks:	NDR 359 (National), PR 121 (Northern), CR Dhan 300 (Eastern & North Eastern), Karma Mahsuri (Central), Akshayadhan (Western), Jaya (Southern)—Zonal, HRI 174 (Hybrid) and Local Check (LC)
9	<b>INITIAL VARIETY TRIAL –IRRIGATED MEDIUM (IVT-IM)</b>	
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b> <b>Shift from IVT-E TP:</b> IET 30684 <b>Shift from IVT-L:</b> IET Nos.30877, 30888
	Checks:	NDR 359 (National), PR 121 (Northern), CR Dhan 300 (Eastern & North Eastern), Karma Mahsuri (Central), Akshayadhan (Western), Jaya (Southern)—Zonal and Local Check (LC)
10	<b>ADVANCE VARIETY TRIAL 2 –IRRIGATED LATE (AVT2-L)</b>	
	3 <sup>rd</sup> year of testing	<b>IET Nos.</b> 28524, 29891, 29935 NILs: 30826, 30828
	Checks:	Swarna (National), Pusa 44 (Northern), NDR 8002 (Eastern and Central), Ranjeet (North Eastern), Salivahana (Western), Pushyami (Southern)—Zonal and Local Check (LC)
11	<b>ADVANCE VARIETY TRIAL 1 – IRRIGATED LATE (AVT1-L)</b>	
	2 <sup>nd</sup> year of testing	<b>IET Nos.</b> 30882, 30869, 30844, 30835, 30860, 30851, 30888, 30841, 30846,30864, 30877, 30831
	Checks:	Swarna (National), Pusa 44 (Northern), NDR 8002 (Eastern and Central), Ranjeet (North Eastern), Salivahana (Western), Pushyami (Southern)—Zonal, PA 6444 (Hybrid) and Local Check (LC)
12	<b>INITIAL VARIETY TRIAL – IRRIGATED LATE (IVT-L)</b>	
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b>
	Checks:	Swarna (National), NDR 8002 (Eastern and Central), Ranjeet

Trial No	Test Entries	
		(North Eastern), Salivahana (Western), Pushyami (Southern)—Zonal, PA 6444 (Hybrid), CRHR 702 & MRP 5222 (Hybrid Observational)and Local Check
13	<b>ADVANCE VARIETY TRIAL 2 –AEROBIC (AVT2-AEROB)</b>	
	3 <sup>rd</sup> year of testing	<b>IET Nos.</b> 30008, 30023, 30032, 30051, 30024, 30028, 30004, 30034, 30029, 30005, 30021, 30020, 30041 <b>Repeats:</b> IET Nos.29405, 29410
	Checks:	CR Dhan 201 (National), CR Dhan 202 (Northern, Eastern, North Eastern and Central), AAUDR-1 (Western), MAS 946-1 (Southern)-Zonal, PA 6129 (Hybrid)andLocal Check
14	<b>ADVANCE VARIETY TRIAL 1 –AEROBIC (AVT1-AEROB)</b>	
	2 <sup>nd</sup> year of testing	<b>IET Nos.</b> 30919, 30932, 30911, 30917, 30935, 30910, 30912, 30895, 30929, 30904, 30902, 30907, 30939, 30890, 30897, 30892, 30936, 30934, 30893, 30933, 30927, 30901, 30925, 30906, 30938, 30918, 30928, 30942, 30937, 30894
	Checks:	CR Dhan 201 (National), CR Dhan 202 (Northern, Eastern, North Eastern and Central), AAUDR-1 (Western), MAS 946-1 (Southern)-Zonal, PA 6129 (Hybrid) and Local Check
15	<b>INITIAL VARIETY TRIAL – AEROBIC (IVT-AEROB)</b>	
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b>
	Checks:	CR Dhan 201 (National), CR Dhan 202 (Northern, Eastern, North Eastern and Central), AAUDR-1 (Western), MAS 946-1 (Southern)-Zonal, PA 6129 (Hybrid)& DRR Dhan 54 (Observational National), DRR H-4 (Hybrid Observational)and Local Check
16	<b>ADVANCE VARIETY TRIAL 2 –MEDIUM SLENDER GRAIN (AVT2-MS)</b>	
	3 <sup>rd</sup> year of testing	<b>IET Nos.</b> 30083, 30078, 30107 Repeats: IET Nos. 29536,
	Checks:	WGL-14 (National-Medium Duration), BPT 5204 (National-Late Duration), Improved SambaMahsuri (Eastern & Central), Ketekijoha (North Eastern), Karjat-6 (Western), ADT 49 (Southern)—Zonal, 27P 63 (Hybrid)andLocal Check
17	<b>ADVANCE VARIETY TRIAL 1 – MEDIUM SLENDER GRAIN (AVT1-MS)</b>	
	2 <sup>nd</sup> year of testing	<b>IET Nos.</b> 30989, 30957, 30961, 31002, 31001, 30966, 30959,30978, 30949, 30981, 30958, 30969 <b>From IHRT-MS:</b> 30623, 30629, 30622
	Checks:	Telangana Sona--(National-Early Duration), WGL-14 (National-Medium Duration), BPT 5204 (National-Late Duration), Improved SambaMahsuri (Eastern & Central), Ketekijoha (North Eastern), Karjat-6 (Western), ADT 49 (Southern)—Zonal, 27P 63 (Hybrid) and Local Check
18	<b>INITIAL VARIETY TRIAL – MEDIUM SLENDER GRAIN (IVT-MS)</b>	
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b>
	Checks:	Telangana Sona--(National-Early Duration), WGL-14 (National-Medium Duration), BPT 5204 (National-Late Duration), Improved Samba Mahsuri (Eastern and Central), Ketekijoha (North Eastern), Karjat-6 (Western), ADT 49 (Southen)—

Trial No	Test Entries	
		ZC&Local Check (LC)
19	<b>INITIAL VARIETY TRIAL – BIOFORTIFICATION (IVT-BIOFORT)</b>	
	2 <sup>nd</sup> Year of testing	IET Nos. 31004, 31027 and 31031
	1 <sup>st</sup> Year of testing:	<b>New Nominations:</b>
	Checks:	BPT 5204 (Yield Check), IR 64 (Yield Check), DRR Dhan 45 (Yield & Micro Nutrient Check), DRR Dhan 48 (Yield & Micro Nutrient Check), Chittimuthyalu (Micro Nutrient Check)
20	<b>ADVANCE VARIETY TRIAL 2 –AL&amp;ISTVT (AVT2-AL&amp;ISTVT)</b>	
	3 <sup>rd</sup> year of testing	<b>IET Nos.</b> 30162, 30164, 30165, 30176, 30178, <b>NILs:</b> IET Nos. 30827, 30830 Repeat: 29354
	Checks:	CSR 36 (Alkaline), Pusa 44 (Sensitive), CSR 10 (Early duration Saline), FL 478 (Saline Tolerant)and Local Check
21	<b>ADVANCE VARIETY TRIAL 1 – AL&amp;ISTVT (AVT1-AL&amp;ISTVT)</b>	
	2 <sup>nd</sup> year of testing	<b>IET Nos.</b> 31042, 31044, 31048, 31050, 31051, 31053, 31054, 31055
	Checks:	CSR 36 (Alkaline Check), Pusa 44 (Sensitive Check and Recurrent Parent), CSR 10 (Early duration Saline Check), FL 478 (Saline Tolerant Check& Donor Parent)&Local Check (LC)
22	<b>INITIAL VARIETY TRIAL – AL&amp;ISTVT (IVT-AL&amp;ISTVT)</b>	
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b>
	Checks:	CSR 36 (Alkaline), CSR 23 (Inland Saline), CSR 10 (Early duration Saline), FL 478 (Saline Tolerant), DRR Dhan 58 Pusa 44 (Sensitive) and Local Check
23	<b>ADVANCE VARIETY TRIAL 2 –CSTVT (AVT2-CSTVT)</b>	
	3 <sup>rd</sup> year of testing	<b>IET Nos.</b> 30201
	Checks:	Bhuthnath (Coastal Saline), FL 478 (Saline Tolerant), Pusa 44 (Sensitive), CSR 10 (Early duration saline)andLocal Check
24	<b>INITIAL VARIETY TRIAL – CSTVT (IVT-CSTVT)</b>	
	1 <sup>st</sup> Year of testing	<b>IVT-CSTVT Kharif 2022Trial All entries Repeat</b> <b>New Nominations:</b>
	Checks:	Bhuthnath (Coastal Saline), FL 478 (Saline Tolerant), Pusa 44 (Sensitive), CSR 10 (Early duration saline) and Local Check
25	<b>INITIAL VARIETY TRIAL – AROMATIC SHORT GRAIN (IVT-ASG)</b>	
	2 <sup>nd</sup> Year of testing	<b>IET</b> 31091
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b>



<b>Trial No</b>	<b>Test Entries</b>	
	Checks:	Shobini (NC), Badshahog Sel.-1 (Northern & Central), CR Sugandh Dhan 907 (Eastern & North Eastern), GAR-14 (Western), Sugandh Samba (Southern)—ZC, Dubraj Sel.1(QC), Ketekijoha (QC) and Local Check
<b>26</b>	<b>ADVANCE VARIETY TRIAL 2 –LOW PHOPHORUS (AVT2-LPT)</b>	
	3 <sup>rd</sup> year of testing	<b>IET Nos.</b> 29549, 30240, 30252, 30235, 30233, 30230, 30242,
	Checks:	Swarna (Positive), Rasi (Positive), Vandana (Positive Very Early Duration), Improved Samba Mahsuri (Negative),
<b>27</b>	<b>ADVANCE VARIETY TRIAL 1 – LOW PHOPHORUS (AVT1-LPT)</b>	
	2 <sup>nd</sup> year of testing	<b>IET Nos.</b> 31100, 31096, 31097,31098, 31101, 31102, 31103, 31105, 31106, 31108, 31110, 31112, 31115, 29569, 29560 <b>Repeats:</b> IET Nos. <b>30241, 30245</b>
	Checks:	Swarna (Positive), Rasi (Positive), Vandana (Positive Very Early Duration), Improved Samba Mahsuri (Negative),
<b>28</b>	<b>INITIAL VARIETY TRIAL – LOW PHOPHORUS (IVT-LPT)</b>	
	1 <sup>st</sup> Year of testing	<b>Repeats:</b> IET Nos. 31116, 31107 <b>New Nominations:</b>
	Checks:	Swarna (Positive), Rasi (Positive), Vandana (Positive Very Early Duration), Improved Samba Mahsuri (Negative),
<b>29</b>	<b>ADVANCE VARIETY TRIAL 2 –LOW NITROGEN (AVT2-LNT)</b>	
	3 <sup>rd</sup> year of testing	<b>IET Nos.</b> 29578, 29577, 30270, 30261, 29581, 30273
	Checks:	Varadhan (Positive), Swarna, Rasi (Positive), Improved Samba Mahsuri (Susceptible)
<b>30</b>	<b>ADVANCE VARIETY TRIAL 1 – LOW NITROGEN (AVT1-LNT)</b>	
	2 <sup>nd</sup> year of testing	<b>IET Nos.</b> 31117, 31118, 31119, 31120, 31124, 31126, 31127, 31128, 31129, 31130, 31131, 31132, 31134, 31135 <b>Repeat:</b> IET No.30269
	Checks:	Varadhan (Positive), Swarna, Rasi (Positive), Improved Samba Mahsuri (Susceptible)
<b>31</b>	<b>INITIAL VARIETY TRIAL – LOW NITROGEN (IVT-LNT)</b>	
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b>
	Checks:	Varadhan (Positive), Swarna, Rasi (Positive), Improved Samba Mahsuri (Susceptible)
<b>32</b>	<b>INITIAL VARIETY TRIAL – COLOURED RICE (IVT-COLOURED RICE)</b>	
	1 <sup>st</sup> Year of testing	<b>IET Nos.</b> 31142, 31150, 31141, 31151, 31145, 31139 <b>New Nominations:</b>
	Checks:	ChakhoPoireiton (manipur black rice), SahydriKempmukhi (Red Rice) and Local Check
<b>33</b>	<b>SPECIAL CRP BIOFORTIFICATION</b>	
	1 <sup>st</sup> Year of testing	<b>CRP-Biofort Kharif 2022 Trial Repeat</b>
	Checks:	BPT 5204, Kalanamak Kiran, DRR Dhan 49
<b>34</b>	<b>INITIAL VARIETY TRIAL –EARLY HILLS (IVT – E(H))</b>	
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b> ALM-4, ICAR UMM-2, MLN-3, KHD-10

<b>Trial No</b>	<b>Test Entries</b>	
	Checks:	Vivekdhan 86 (National), Shalimar Rice-3 (Zonal) and Local Check
<b>35</b>	<b>ADVANCE VARIETY TRIAL 1 –MEDIUM HILLS (AVT1-M (H))</b>	
	3 <sup>rd</sup> year of testing	<b>IET Nos.</b> 29654, 28906
	2 <sup>nd</sup> year of testing	<b>IET Nos.</b> 30506, 30513, 30518 <b>NILs:</b> IET30503
	Checks:	Vivekdhan 62 (NC), VL Dhan 68 (ZC for North & South) RC Maniphou-11 (ZC for North East) and Local Check (LC)
<b>36</b>	<b>INITIAL VARIETY TRIAL –MEDIUM HILLS (IVT – M(H))</b>	
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b> ALM-4,ICAR UMM-2, MLN-2, KHD-7, LPP-2
	Checks:	Vivekdhan 62 (NC), VL Dhan 68 (ZC for North & South) RC Maniphou-11 (ZC for North East) and Local Check (LC)
<b>37</b>	<b>INITIAL VARIETY TRIAL –UPLAND HILLS (IVT-U (H))</b>	
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b> ALM-3, ICAR UMM-2, MLN-6
	Checks:	Sukaradhan 1 (NC), VL Dhan 158 (ZC for North & South), Bhalum-1 (ZC for North East), and Local Check (LC)
<b>38</b>	<b>INITIAL VARIETY TRIAL –JAPONICA (IVT-J)</b>	
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b> MLN-3
	Checks:	Bhrigudhan,Varundhan, Shalimar Rice-5 and Local Check
<b>39</b>	<b>ADVANCE VARIETY TRIAL &amp; INITIAL VA RIETY TRIAL- BORO (AVT &amp; IVT – BORO)</b>	
	3 <sup>rd</sup> year of testing	<b>IET Nos.</b> 29624
	2 <sup>nd</sup> year of testing	<b>IET Nos.</b> 30467, 30465 <b>Repeat:</b> IET 29632
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b> CHN-3, INDO AMERICAN-1, IIRR-13, JBP-2, PNB-1, CTK-15
	Checks:	Gautam, IR 64, Rajalaxmiand Local Check
<b>40</b>	<b>INITIAL VARIETY TRIAL –EARLY RABI (IVT-E- RABI)</b>	
	1 <sup>st</sup> Year of testing	<b>New Nominations:</b> CBT-3, IIRR-16, NLR-2, CTK-10, MTU-3, RNR-3
	Checks:	CO-51 (Natmional), Narendra 97 (Eastern), MTU 1153 (Southern)-Zonal and Local Check

## Appendix-16

## Entries for Agronomic Evaluation Kharif 2023

SNo.	IET No.	Designation	Cross Combination	Trial name 2022 (Breeding)	Trial name in 2023 (Agronomy)
1	29947	NLR 3684	NLR 34449 / NLR 33359	AVT 1-E TP	AVT 2-E TP
2	29940	CRU-BCKV-22-35 (14-N22 / 35-13-4-5-2)	N22 / IET 25701	AVT 1-E TP	AVT 2-E TP
3	29939	CR 4060-1318-5-2-2-2-1-5-3-4	IET 22729 / Brown gora	AVT 1-E TP	AVT 2-E TP
4	29694	<b>UPLRH-181325 (Hybrid)</b>	-	AVT 1-E TP	AVT 2-E TP
5	29689	<b>HRI-214 (Hybrid)</b>	-	AVT 1-E TP	AVT 2-E TP
6	29692	<b>UPLRH-162087 (Hybrid)</b>	-	AVT 1-E TP	AVT 2-E TP
7	28123	<b>IIRRH-130 (Hybrid)</b>	-	AVT 1-E TP	AVT 2-E TP
8	29691	<b>VNR-228 (Hybrid)</b>	-	AVT 1-E TP	AVT 2-E TP
9	29690	<b>UPLRH-180842 (Hybrid)</b>	-	AVT 1-E TP	AVT 2-E TP
10	29696	<b>PAN-2150 (Hybrid)</b>	-	AVT 1-E TP	AVT 2-E TP
11	29700	<b>JKRH-1004 (Hybrid)</b>	-	AVT 1-E TP	AVT 2-E TP
12	29975	KPS 6251	MTU 1010 / Chittimuthyalu	AVT 1-E TP	AVT 2-E TP
13	28965	<b>Pusa RH-60 (Hybrid)</b>	-	AVT 1-E TP	AVT 2-E TP
14	28956	<b>JKRH-1601 (Hybrid)</b>		AVT 1-E TP (2021)	AVT 2-E TP
15	29738	<b>RNC-0457 (Hybrid)</b>	-	AVT 1-IME	AVT 2-IME
16	29734	<b>PHI-21104 (Hybrid)</b>	-	AVT 1-IME	AVT 2-IME
17	29726	<b>PHI-21103 (Hybrid)</b>	-	AVT 1-IME	AVT 2-IME
18	29708	<b>MALI-348 (Hybrid)</b>	-	AVT 1-IME	AVT 2-IME
19	29717	<b>RRX-271 (Hybrid)</b>	-	AVT 1-IME	AVT 2-IME
20	29820	OR 2517-8	OR 2006-25 / IR 65629-22-1	AVT 1-IME	AVT 2-IME
21	29808	RP 6317-RMS-S35-BC <sub>2</sub> F <sub>4</sub> -49-25-12-24	MTU 1121* 2 / Swarna	AVT 1-IME	AVT 2-IME
22	29822	ORJ 1342 (TP 29409)	IR 10M300	AVT 1-IME	AVT 2-IME
23	29188	WGL 1355	WGL 347 / HKR 06-47	AVT 1-IME	AVT 2-IME
24	29304	R 2454-1-R1-10	KM / IRBB 59	AVT 1-IME	AVT 2-IME
25	30282	CR 4331-74-2-2-1 (NIL)	Naveen*3 / CR 3006-8-2	AVT 1-IME	AVT 2-IME
26	29203	CR 4331-85-1-1-1 (NIL)	Naveen*3 / CR 3006-8-2	AVT 1-IME	AVT 2-IME
27	30697	KR 19011 (NIL)	ADT 39*4 / Swarna Sub-1	AVT 1-IME	AVT 2-IME
28	29743	<b>HRI-211 (Hybrid)</b>	-	AVT 1-IM	AVT 2-IM
29	29741	<b>HRI-209 (Hybrid)</b>	-	AVT 1-IM	AVT 2-IM
30	29833	JGL 34560	JGL 20171 / MTU 1075	AVT 1-IM	AVT 2-IM
31	28523	CR 3564-1-1-4-2-2-1	Vijetha / N22	AVT 1-IM	AVT 2-IM
32	29742	<b>RRX-338 (Hybrid)</b>	-	AVT 1-IM	AVT 2-IM
33	29290(R)	HURS 19-3	CR 2407 / IR 64	AVT 2-IM	AVT 2-IM
34	29301(R)	AD 16124	CO (R) 50 /AD 08132	AVT 2-IM	AVT 2-IM
35	29257(R)	RNR 28399	BPT 5204 / IR 79216-141-1-3-3-3	AVT 2-IM	AVT 2-IM

SNo.	IET No.	Designation	Cross Combination	Trial name 2022 (Breeding)	Trial name in 2023 (Agronomy)
36	29284(R)	MTU 1348 (MTU 2689-45-1-1)	MTU 1010 / MTU 7029	AVT 2-IM	AVT 2-IM
37	29014(R)	<b>MEPH-159 (Hybrid)</b>	-	AVT 2-IM	AVT 2-IM
38	29009(R)	<b>US-375 (Hybrid)</b>	-	AVT 2-IM	AVT 2-IM
39	29002(R)	<b>PHI-20106 (Hybrid)</b>	-	AVT 2-IM	AVT 2-IM
40	28524	RP 6330-179-3-9-1	MTU 1121 / Vijetha	AVT 2&1-Late	AVT 2-Late
41	29891	MTU 1376	MTU 2077 / WGL 3962	AVT 2&1-Late	AVT 2- Late
42	29935	MTU 1377	MTU 1075 / MTU 1001	AVT 2&1-Late	AVT 2- Late
43	30826	Pusa 1988-15-7-44-98-67	Pusa 44*4 / Robin	AVT 2&1-Late	AVT 2- Late
44	30828	Pusa 3039-16-4-2-5-1-1-1	Pusa 44 /*2 Pusa 1790	AVT 2&1-Late	AVT 2- Late
45	30008	BRR 0180-IR14L157	IR 81039-B-173-U 3-3 / IR 81063-B-94-U 3-1	AVT 1-Aerob	AVT 2-Aerob
46	30023	TRC 184-B-B-76-1-1	Tripura Nirog / TRC 87-251	AVT 1-Aerob	AVT 2-Aerob
47	30032	BRR 0181-IR 93827-29-1-1-4	IR 81039-B-173-U 3-3 / IR 81063-B-94-U 3-1	AVT 1-Aerob	AVT 2-Aerob
48	30051	CRR 790-69	CR Dhan 40 / IR 73963-86-1-5-2-2 (NPT PSR 12)	AVT 1-Aerob	AVT 2-Aerob
49	30024	NVSR 3110	IR 28 / GAR 13	AVT 1-Aerob	AVT 2-Aerob
50	30028	CR 3937-1-1-1-1-1-2-3	IR 73895-33-1-3-2 / Lalat	AVT 1-Aerob	AVT 2-Aerob
51	30004	CSR PET 27	CSR 30 / CSR 27	AVT 1-Aerob	AVT 2-Aerob
52	30034	TRC 185-B-B-82-2-11	Tripura Nirog / TRC 87-251	AVT 1-Aerob	AVT 2-Aerob
53	30029	BRR 2183	IR 74355-CN3 / CN 6-78	AVT 1-Aerob	AVT 2-Aerob
54	30005	<b>US 391 (Hybrid)</b>	-	AVT 1-Aerob	AVT 2-Aerob
55	30021	HURS 21-2-IR15T1473	IR 11T252 / IR 09N522	AVT 1-Aerob	AVT 2-Aerob
56	30020	CRR 842-IR14L159	IR 10N102 / IR 86931-B-400	AVT 1-Aerob	AVT 2-Aerob
57	30041	BRR 2184	HHZ 14-Sal-10-DT-1-DT-1-Selection (Huang-Hua-Zhan * 2 / IR 64)	AVT 1-Aerob	AVT 2-Aerob
58	29405(R)	RCPR 70- IR 84899-B-184-16-1-1-1	IR 78877-208-B-1-1 / IRRI 132	AVT 2-Aerob	AVT 2-Aerob
59	29410(R)	RP 5594-147-23-1	MTU 1010 / RPHR 1005	AVT 2-Aerob	AVT 2-Aerob
60	30083	BRR 2152	CR 2582-2 / Varshadhan / IR 82809-237	AVT 1-MS	AVT 2-MS
61	30078	MTU 1382	MTU 1075 / MTU 1001	AVT 1-MS	AVT 2-MS
62	30107	RP 6528-RMS 1421-43-25-29	Improved Samba Mahsuri *2 // Habataki / ST 12	AVT 1-MS	AVT 2-MS
63	29536 (R)	OR 2674-14-6-2	CRMS 32A / OR 1889-5	AVT 2-MS	AVT 2-MS

SNo.	IET No.	Designation	Cross Combination	Trial name 2022 (Breeding)	Trial name in 2023 (Agronomy)
64	30162	NVSR 545	(RP Bio-226 / IRGC 71598) / Nidhi	AVT 1-AL&ISTVT	AVT 2-AL&ISTVT
65	30164	CSR 189-11-122	Sajoo 52 / FL478 // Sajoo 52 *3	AVT 1-AL&ISTVT	AVT 2-AL&ISTVT
66	30165	<b>IIRRH 155 (Hybrid)</b>	-	AVT 1-AL&ISTVT	AVT 2-AL&ISTVT
67	30176	<b>IIRRH 156 (Hybrid)</b>	-	AVT 1-AL&ISTVT	AVT 2-AL&ISTVT
68	30178	NVSR 6361	NVSR 178 / IR 71907-3R-2-1-1	AVT 1-AL&ISTVT	AVT 2-AL&ISTVT
69	30827	CSR 389-16-22 (NIL)	Pusa 44 / FL 478 *3 // Pusa 44 / IRBB 60 *3	AVT 1-AL&ISTVT	AVT 2-AL&ISTVT
70	30830	CSR 389-16-6 (NIL)	Pusa 44 / FL 478 *3 // Pusa 44 / IRBB 60 *3	AVT 1-AL&ISTVT	AVT 2-AL&ISTVT
71	29354 (R)	CSR YET 59	CSR 27 / CSR36	AVT 2-AL&ISTVT	AVT 2-AL&ISTVT
72	30201	CR 4283-274-6-2-1-3	CR Dhan 310 / Getu	AVT 2&1-CSTVT	AVT 2-CSTVT
73	29549	RP 5977-MS-M-112-1-9-22-4-6-3	BPT 5204 Mutant	AVT 2&1-LPT	AVT 2-LPT
74	30240	RP 6524-MSA-16-399-16-332	Swarna / MTU 1010	AVT 2&1-LPT	AVT 2-LPT
75	30252	RP Bio 4919-B2-NSR 5	KMR 3 / O.rufipogon	AVT 2&1-LPT	AVT 2-LPT
76	30235	RP 6522-MSA-16-24-16-1550	MTU 1010 / Swarna	AVT 2&1-LPT	AVT 2-LPT
77	30233	WGL 1495	MTU 1121*2 / Swarna	AVT 2&1-LPT	AVT 2-LPT
78	30230	RP 6112-MS-M-92-11-5-7-33-6-2	BPT 5204 Mutant	AVT 2&1-LPT	AVT 2-LPT
79	30242	RP 5977-MS-M-33-4-8-3-7-5-1	BPT 5204 Mutant	AVT 2&1-LPT	AVT 2-LPT
80	29578	CR 3756-2-4-2-1-1-1	Salivahana / Krishnaveni	AVT 1-LNT	AVT 2-LNT
81	29577	RP 5594-71-14-2-1	MTU 1010 / RPHR 1005	AVT 1-LNT	AVT 2-LNT
82	30270	CR 4358-3-3-1-2-1	CR 3543-6-3-1-2-1-1 / CR 3510 -12-1-1-2-1-1	AVT 1-LNT	AVT 2-LNT
83	30261	RP 6317-RMS-S35-BC2F4-49-25-12-18	MTU 1121 * 2 / Swarna	AVT 1-LNT	AVT 2-LNT
84	29581	RP 6255-BV / RIL / BPT / Varadhan / 1696	BPT 5204 / Varadhan	AVT 1-LNT	AVT 2-LNT
85	30273	CR 3516 -1-1-1-1-1-1	Birupa / Pusa 44	AVT 1-LNT	AVT 2-LNT
86	29624	CR 4334-2-1-1	CR 3856-44-22-2-1-7*3 / Swarna MAS	AVT 1-Boro	AVT 2-Boro
87	29654	VL 32605	Vivek Dhan 62 / HPR 2644	AVT 1-M (H)	AVT 2-M (H)
88	28906	SKUA 543 (K 11-5-1-9-4-3)	CH 1039 / IR 24	AVT 1-M (H)	AVT 2-M (H)

**Rice Varieties Released in 2022-23**

S.No.	Variety/Hybrid	IET No.	Designation	Cross Combination	FD	Eco	GT	Reaction to pests and diseases	Recommended states	Yield (t/ha)	Notification No. & date
<b>CENTRAL RELEASES</b>											
1	ADT 56	27920	AD 16028	WGL 14377/MTU 5	90	ETP	LB	MR-BLB, SB, LF ; R-RTD	CH, MH, MP, BI, JH & WB	4.92	4065 (E) 31-08-2022
2	<b>AZ 8433 DT (Hybrid)</b>	28160	HRI 202	-	101	IM	MS	MR-BLB; R-BPH	HR, PU, UP, BI, JH, OD, MP, CH, TS, AP, TN & KA	6.72	4065 (E) 31-08-2022
3	CR Dhan 321	28354	CR 4073-1339-3-5-1-1-3	IET 22296/RR 2-6	90	ETP	MS	MR-BS; T-SB, LF	OD, BI, JH, WB, UP, TR, AS, CH, MH	6.48	4065 (E) 31-08-2022
4	CR Dhan 314	27263	CR 4113-3-2-1	CR 3724-1/TJ 171-1 (CR 2688-6-7)	110	IM	LB	MR-SB;R-LF	OD & BI	6.44	4065 (E) 31-08-2022
5	CR Dhan 414	27051	CR 2851-S-1-B-4-1-4-1-1	Gayatri/SR 26B	113	CSTVT	MS	MR-SB; R-LF	OD, WB, AP	4.22	4065 (E) 31-08-2022
6	ICAR NEH NICRA-Boro Dhan 1	26435	TRC 2016-14	Pyzum/SambhaMahasuri	126	BORO	LS	-	TR, AS, WB	6.43	4065 (E) 31-08-2022
7	ICAR NEH NICRA Hill Rice 2022-2	28230	TRC PSM - 1720-B-B-5-1	Pyzum/BPT 5204	91	U (H)	SB	-	HP, MA	3.05	4065 (E) 31-08-2022
8	KKL (R ) 2	28791	KR 16024	ADT 46*3/Swarna Sub 1	105	IM	LS	-	TN, PD	6.80	4065 (E) 31-08-2022
9	Rajendranagar Vari-1	27077	RNR 11718	MTU 1010/NLR 34449	105	AL&ISTVT	MS	MR-BLB, SB, BPH, WBPH, LF	KA, PD	7.78	4065 (E) 31-08-2022
10	Telangana Rice 5	28746	RNR 28362	Bhadrakali/NSN 20894 (HKR 05-22)	105	MS	MS	MR-BS	UP, OD	5.31	4065 (E) 31-08-2022
11	Telangana Rice 6	28332	KNM 7048	KPS 3219/KNM 118	90	ETP	LB	MR-BL	OD, WB, CH, MH	5.72	4065 (E) 31-08-2022
12	Telangana Rice 7	28343	KNM 6965	MTU 1010/KNM 118	90	ETP	LS	MR-BL	CH, MH	4.92	4065 (E) 31-08-2022
13	Telangana Vari 8 (WGL-1487)	28818	RP 6317-S35-BC2F4-49-25-6-21	MTU 1121*1/Swarna	99	LPT	MS	MR-BL; R-BPH	AP, TS	4.02	4065 (E) 31-08-2022
14	DRR Dhan 64	28358	RP 5599-212-	MTU 1010/KMR 3R	90	ETP	LS	MR-BL, WBPH	BI, WB	5.33	4065 (E) 31-

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S.No.	Variety/Hybrid	IET No.	Designation	Cross Combination	FD	Eco	GT	Reaction to pests and diseases	Recommended states	Yield (t/ha)	Notification No. & date
			56-3-1								08-2022
15	DRR Dhan 65	27641	RP Bio-4919-B-B-NSR 86	KMR 3/ <i>O. rufipogon</i>	110	LPT	SB	T-BL, BLB	TS, AP, KA, CH, JH, MH	6.00	4065 (E) 31-08-2022
16	DRR Dhan 66	28066	RP 5973-13-1-6-67-12-57	MTU 1010*2/Swarna	87	LPT	LS	MR-BL	AP, TS	5.03	4065 (E) 31-08-2022
17	DRR Dhan 67 (BRRI Dhan 84)		BR7831	BRRI Dhan 29/IR 68144//BRRI Dhan 28//BR 11	110	BORO	LS		AS, WB, TR	6.00	4065 (E) 31-08-2022
18	DRR Dhan 68 (BRRI Dhan 99)		HHZ5-DT20-DT2-DT1 (GSR IR1-5-D20-D2-D1)	Huang-Hua-Zhan/OM 1723	105	BORO	LS		AS, WB, TR	6.56	4065 (E) 31-08-2022
19	DRR Dhan 69 (BRRI Dhan 100)		BR 8631-12-3-5-P2	BR 7166-5B-5/BG 305//BRRI Dhan 29	118	BORO	LS		AS, WB, TR	6.85	4065 (E) 31-08-2022
20	Sabour Heera Dhan	27538	BRR 2110	AD 12173-Sel (Improve white Ponni/Kalajoha)	120	RSL	MS	MR-BL, BLB, ShBI, BS	KA, AP	4.59	4065 (E) 31-08-2022
21	<b>DRRH 4 (Hybrid)</b>	27937	IIRRH 124		94	Aerob	LB	MR-SB	PU, OD, CH, TR, GU	5.03	4065 (E) 31-08-2022
22	Pusa Basmati 1882	28788	Pusa 1882-12-111-20	Pusa Basmati 1/Nagina 22//Pusa Basmati 1*3	101	NIL DRT	LS		UP, DL, UK, HR, PU, J&k	4.68	4065 (E) 31-08-2022
23	Pusa Samba 1853	28014	Pusa 1853-12-288	Pusa 1850-5-18/Pusa 1701-10-5-8	100	NIL Blast	MS	R-BL, BLB	AP, TS	3.97	4065 (E) 31-08-2022
24	Swarna Purvi Dhan 3	28329	RCPR 60-IR 97073-26-1-1-3	IR10L146/IR10L137	87	ETP	LS	MR-BLB, ShBI, BS	HR, RJ, BI, UP, CH, MH	5.53	4065 (E) 31-08-2022
25	MTU Rice 1273	26790	MTU Rice 1273	MTU 1010/FL 478//*3 MTU 1010	87	ETP	LS	MR-BL, BS	CH, MH, GU	5.31	4065 (E) 31-08-2022
26	MTU Rice 1293	28010	MTU Rice 1293	MTU 1010/FL 478//*3 MTU 1010	88	NIL CS	LS	MR-BL, BS	AP, TS	3.44	4065 (E) 31-08-2022
27	MTU Rice 1310	27686	MTU Rice 1310	MTU 1075/CR 3598-1-4-2-1	110	IM	MS	MR-SB, LF	AP, TS, TN, KA	7.49	4065 (E) 31-08-2022
28	MTU Rice 1321	28757	MTU Rice 1321	MTU 5249/IR 72	110	MS	MS	MR-BL, ShBI	TS, TN, KA, PD	6.94	4065 (E) 31-08-2022
<b>STATE RELEASES</b>											
29	Uttar Samir	26453	PUR-B-36	Annada/Gontra Bidhan-1	122	BORO	SB	R-BLB, BS	WB	5.88	4065 (E) 31-08-2022

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S.No.	Variety/Hybrid	IET No.	Designation	Cross Combination	FD	Eco	GT	Reaction to pests and diseases	Recommended states	Yield (t/ha)	Notification No. & date
30	Uttar Sugandhi	24616	UBKVRA -2	Selection from <i>Kalo Nunia</i>	120	ASG	MS	MR-BL, BS	WB	3.68	4065 (E) 31-08-2022
31	GR 20 (Navsari Kamod)	27797	NVSR 407	IET-19347/GAR-1	92	ASG	SS	MR-BLB, SB, LF; T-BPH	GU	5.66	4065 (E) 31-08-2022
32	Gujarat Rice 21 (Vatrak)	28733	NWGR 15022	GR11/IR-60	96	MS	MS	MR-BL, BLB, SB, BPH, LF	GU	4.67	4065 (E) 31-08-2022
33	GAR 22 (Swagat)	29278	NWGR 8001	GR3/NWGR 97011	99	IM	LS	R-BL, SB, BPH, LF; MR-BLB	GU	5.61	4065 (E) 31-08-2022
34	Haccha (Aaudpu Dhan 04)	26344	AAUDR 9304-14-4-1	CRM 53/IR64	76	EDS	LS	R-BL, MR-SB	AS	3.06	4065 (E) 31-08-2022
35	Langpi (AAUDPU Dhan 05)	27688	TTBDR 205-2-1	IET 17684/RANJIT	111	IM	MS	R-BL, ShBI	AS	5.32	4065 (E) 31-08-2022
36	Diyung (AAUDPU Dhan 06)	27680	TTBDR 103-4-4	Malbhog/Bahadur	111	IM	MS	MR-SB, LF	AS	6.23	4065 (E) 31-08-2022
37	AAU-TTB-Dhan 40 (Dholi)	26848	TTB-AAU-TTB-DHAN-40	Ranjit/Swarna Sub-1//Ranjit	105	IM	MS	MS-BL, BLB, ShBI; T-SB	AS	4.71	4065 (E) 31-08-2022
38	Surma Dhan (AAU KMJ Dhan 46)	28296	CN 1758-2-TTB7	CN 1216/CN 1131-4-1-4	113	SDW	MS	R-BLB, BS	AS	4.53	4065 (E) 31-08-2022
39	Kamesh (CR Dhan 415)	22097	CRR 624-207-B-1-B	Apo/IR 64	96	IME	SB	R-BL; MR-BS, SB, LF	JK	5.00	4065 (E) 31-08-2022
40	Pramod (CR Dhan 103)	22020	CRR 451-1-B-2-1	Vandana/IR 64	68	EDS	LS	R-BL, BS	JK	3.30	4065 (E) 31-08-2022
41	Unnat Vandana (CR Dhan 107)	26337	CRR 747-12-3-B	Vandana*4/C101A51//IR84984-83-15-862-B	81	EDS	LS	R-BL	JK	3.31	4065 (E) 31-08-2022
42	VL Dhan 70	26593	VL 32094	VL Dhan 85/VOHP 3102	95	M(H)	ELS	R-BS, SB, LF	UK	3.98	4065 (E) 31-08-2022
43	RC Maniphou 15	26583	RCM 36	Moirangphou/Lawagin	114	-	SB	R-BL	MA	7.10	4065 (E) 31-08-2022
44	RC Maniphou 16	27495	RCM 37	RCM 10/RCM9	112	-	LB	T-BL	MA	5.50	4065 (E) 31-08-2022
45	RC Maniphou 14	25841	RCM 33	IR 64 / Phougak	101	-	LS	R-BL, BS; T-ShBI	MA	7.43	4065 (E) 31-08-2022
46	Lalkada Gold (GNR 9)	28699	NVSR-2756	IR28 / Lalkada	81	Biofort	LS	MR-SB, LF	GU	4.20	4065 (E) 31-08-2022



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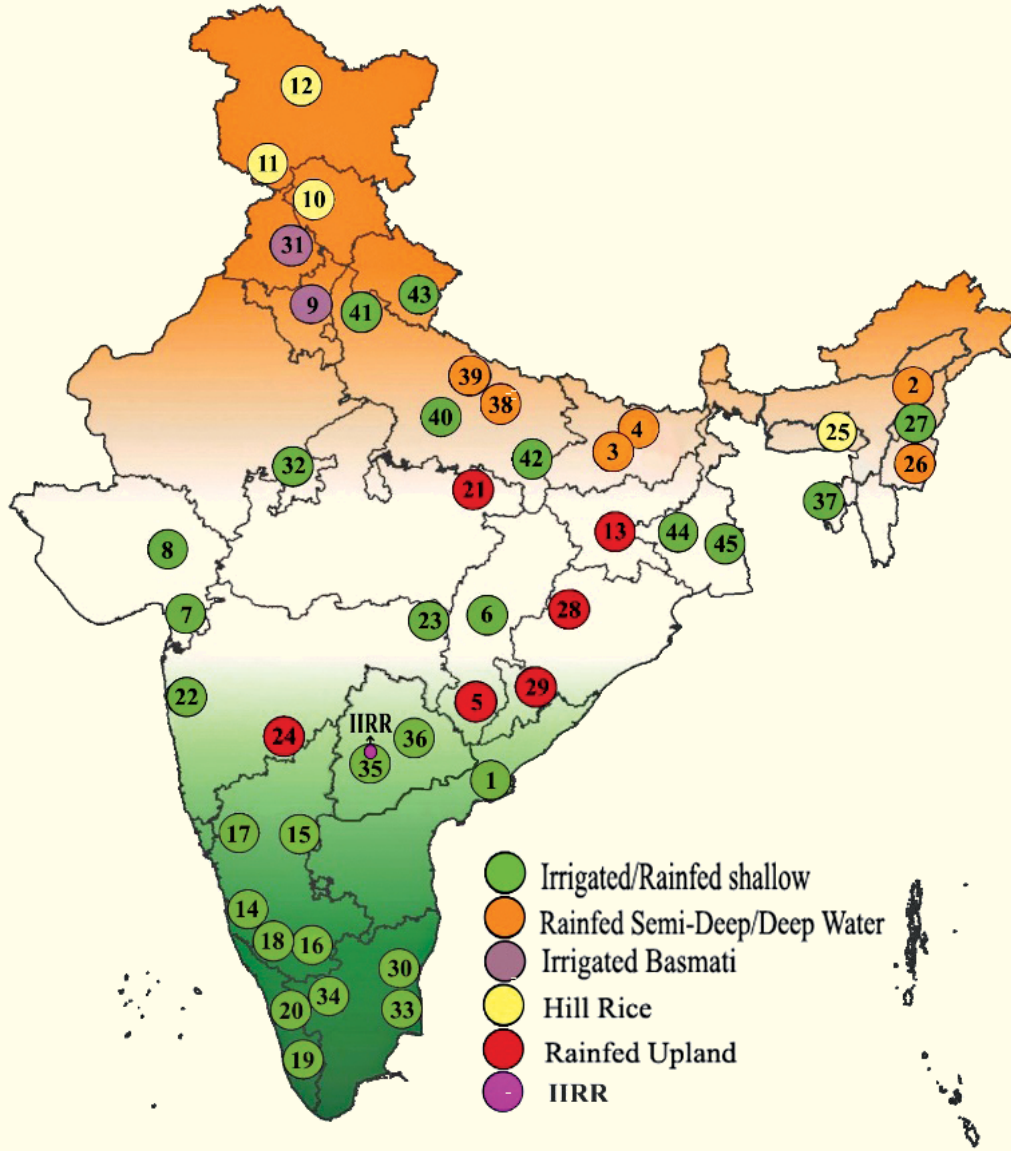
S.No.	Variety/Hybrid	IET No.	Designation	Cross Combination	FD	Eco	GT	Reaction to pests and diseases	Recommended states	Yield (t/ha)	Notification No. & date
47	Sahyadri Brahma	29830	BMR-MS-1-2-1	IR-8/PTB20	105		MB	T-BL	KA	5.76	4065 (E) 31-08-2022
48	Sahyadri Kempumukthi	29855	Sahyadri Kempumukthi	Jyothi / KPR-1	95	IM	MB	R-BL; MR-RTD	KA	5.99	4065 (E) 31-08-2022
49	Shalimar Sugandh 1	26558	SKUA 494	Selection Pusa Sugandha-3	96	Early Hills	LS	T-BL	Kashmir Valley	6.38	4065 (E) 31-08-2022
50	CO 55	27873	CB 15714	ADT 43/GEB 24	89		SS	R-BL; MR-RTD, BS	TN	6.95	4065 (E) 31-08-2022
51	ADT 57	25569	AD 09219	ADT (R ) 45/ ACK 03002	84	ETP	MS	R-BL; MR-RTD, ShBI, BS, BPH, GM; T-SB	TN	6.50	4065 (E) 31-08-2022
52	TRY 5	26068	TR 09030	Mutant of TRY 2	75		LS	MR-BL, BS	TN	4.06	4065 (E) 31-08-2022
53	TKM 15	26645	TM 12077	TKM (R) 12 / IET 21620	88	EDS	MS	MR-BL, BS, SB	TN	4.00	4065 (E) 31-08-2022
54	Punjab Basmati 7	29672	RYT 3677	BAS 386/IET 17948// BAS 386*2///PUSA BAS 1121	97	BT	LS	R-ShBI, BS, SB	PU	4.86	4065 (E) 31-08-2022
55	CR Dhan 310	24780	CR 2829-PLN-37	ARC10075 (HP-2)/Naveen	97	Biofort	MS	MR-SB, GM, LF	AS	4.82	4065 (E) 31-08-2022
56	CR Dhan 311 (Mukul)	24772	CR 2829-PLN-100	HP-2/ Naveen	95	Biofort	LB	T-BLB, RTD, BS, LF; MR-SB, GM	AS	4.38	4065 (E) 31-08-2022
57	Maudamani (CR Dhan 307)	20925	CR2 599	Dandi/Naveen//Dandi	105		SB	T-BL; MR-SB, WBPH, GM, LF	AS	8.12	4065 (E) 31-08-2022
58	CR Dhan 801	25667	IR96322-34-223-B-1-1-1-CR3955-2	IR8189-B-B-195/2*Swarna-Sub1//IR91659-54-35	112	NIL SUB	SB	MR-BLB, RTD; R-SB, LF	AS	4.82	4065 (E) 31-08-2022
59	CR Dhan 802 (Subhas)	25673	CR 3925-22-7	Swarna-Sub1*4 /IR81896-B-B-195	110	NIL SUB	SB	MR-BLB, RTD; R-SB, LF	AS	2.27	4065 (E) 31-08-2022
60	JKRH 3333								AS		4065 (E) 31-08-2022
61	S-4001 (NK 14722)		<b>NK 14722</b>						AS		4065 (E) 31-08-2022
62	Swarna Shusk Dhan	27962	RCPR 56-IR93827-29-1-	IR 81039-B-173-U3-3/IR 81063-B-94-U3-1	75-80	<b>AEROB</b>	LS	MR- BL, LF	UP	2.2	1056 (E) 06-03-2023

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S.No.	Variety/Hybrid	IET No.	Designation	Cross Combination	FD	Eco	GT	Reaction to pests and diseases	Recommended states	Yield (t/ha)	Notification No. & date
			1-4								
63	Swarna Purvi Dhan -1	24660	RCPR 19-IR 84899-B-179-13-1-1-1	IR 78877-208-B-1-1/IRRI 132	85-90	AEROB	SB	MR-BL, ShBI, BS, SB	JH	4.5	1056 (E) 06-03-2023
64	Swarna Purvi Dhan-2	26767	RCPR 46-IR93827-29-1-1-2	IR 81039-B-173-U-3-3/IR 81063-B-94-U-3-1	85-90	ETP	LS	MR-BLB, RTD, ShBI, SB, GM, LF	JH	4.3	1056 (E) 06-03-2023
65	MCM Rice 103	23407	MCM 103	BPT 5204/MTU 4870	110	CSTVT	MS	MT-BL, ShBI, WBPH; T-SB	AP	5.5	1056 (E) 06-03-2023
66	MTU Rice 1232	26422	MTU 1232	MTU 1075/Swarna Sub 1/* Swarna Sub 1	110	NIL SUB	MS	MR-BL, ShBI; R-BPH	AP	6.0	1056 (E) 06-03-2023
67	MTU Rice 1318	28527	MTU 1318	MTU 1064/MTU 7029	120	LATE	MS	T-BPH	AP	6.6	1056 (E) 06-03-2023
68	Jagtiala Vari-2	27448	JGL 28545	JGL 11727/BPT 5204	105	IM	MS	T-BLB, SB	TS	6.2	1056 (E) 06-03-2023
69	Jagtiala Vari-3	30064	JGL 27356	JGL 11470/Jai Sriram	105	MS	SS	T-SB	TS	2.80	1056 (E) 06-03-2023
70	RajendranagarVari-3	28567	RNR 15459	RNR 17818/Chittimutyalu	105-110	ASG	SB	MR-BL, SB, BPH, GM	TS	4.2	1056 (E) 06-03-2023
71	RajendranagarVari-4	27107	RNR 21278	RNR 2645/NLR 34449	85-90	MS	MS	MR-BL	TS	6.0-6.5	1056 (E) 06-03-2023
72	RajendranagarVari-5	29789	RNR 29325	TME 80518/BPT 5204	90-95	IME	LS	MR-BL, BPH; S-SB, GM, LF	TS	7.5	1056 (E) 06-03-2023
73	Luchai Selection 1	27015	Luchai	Selection from land race Luchai	105-110	ASG	SB	MR-BL, BLB	MP	5.1	1056 (E) 06-03-2023
74	Kali Kamod Selection 1	27029	Kali Kamod	Selection from land race Kali Kamod	105-110	ASG	MS	MR-BL, BLB	MP	3.2	1056 (E) 06-03-2023
75	Shalimar Rice -6	28199	SKUA 485	MushkBudji/DHMAS 70Q 164-1b//MushkBudji//MushkBudji)	105-115	E(H)	SS		J&K	4.5	1056 (E) 06-03-2023
76	PR 130	29190	RYT 3797( PAU 6260-3-1-6)	PR 121/HKR47	105	ETP	LS	R-BLB	PU	7.2	1056 (E) 06-03-2023
77	PDKV Sadhana	27894	SKL 3-1-41-8-33-15	Mugad Sugandha/SKL 8-SKL 3-1-41-8-33-15	90	IME	LS	MR-BL, SB	MH	5.0	1056 (E) 06-03-2023
78	Mandya Jyothi	26901	KMP-220	Jyothi/BR-2655	101	IME	LB	MR-BL; MT-BPH	KA	5.0	1056 (E) 06-

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S.No.	Variety/Hybrid	IET No.	Designation	Cross Combination	FD	Eco	GT	Reaction to pests and diseases	Recommended states	Yield (t/ha)	Notification No. & date
											03-2023
79	Samruddhi	28349	MSN 99	KMR 04/ BPT 5204 (4-1-1-4)	85-90	ETP	MS		KA	6.5	1056 (E) 06-03-2023
80	Pant Sugandh Dhan 27	29675	UPR 3488-6-2-1	UPR 1840-31-1-1/Pusa Sugandh 2	103	BT	LS	MT-BLB; T-SB	UT	3.8	1056 (E) 06-03-2023
81	Swarna Sukha Dhan	24692	RCPR 16-IR84894-143-CRA-17-1	IR 77080-B-34-3/IRRI 132	80-85	EDS	MS	MR-BL, BLB, BS, SB, BPH	JH	4.3	1056 (E) 06-03-2023
82	<b>PAC 837 Plus (Hybrid)</b>	29720	PAC 837 Plus	-	97-103	IME	LB	R-BL; MR-BS	AS	7.5	1056 (E) 06-03-2023
83	<b>NPH -242 (Hybrid)</b>	24981	NPH-242	-	99	BORO	LS	T-BL, BLB	AS	6.0	1056 (E) 06-03-2023
84	<b>VNR 2228 (Hybrid)</b>	24951	VNR 218	-	103	IME	MS	MR-BL, BLB	AS	5.9	1056 (E) 06-03-2023
85	<b>PAC 8744 Plus (Hybrid)</b>	25785	PAC 8744 Plus (ADV 1603)	-	108	IM	LB	T-BLB	AS	7.5	1056 (E) 06-03-2023
86	<b>PAC 8744 (Hybrid)</b>	20743	PAC 8744 (PAC 85052)	-	105	IM	MS	MR-BS, SB, WBPH, LF	AS	7.0	1056 (E) 06-03-2023
87	<b>Indam 200-017 (Hybrid)</b>	20419	Indam 200-017	-	96	IME	LB	MR-BL, BS; R-SB	AS	5.8	1056 (E) 06-03-2023
88	<b>BIO 799 (Hybrid)</b>	22919	BIO 453	-	105	IM	LB	T-BL, BLB, RTD, BPH	AS	7.0	1056 (E) 06-03-2023
89	<b>PAN 2423 (Hybrid)</b>	21395	PAN 2423	-	97	BORO	SB	T-BL, BLB, BS, SB, LF; MR-ShBI	AS	7.8	1056 (E) 06-03-2023
90	<b>PAN 802 (Hybrid)</b>	23498	PAN 802	-	99	BORO	LS	MR-BL, BLB, ShBI	AS	6.3	1056 (E) 06-03-2023



भाकृअनुप - भारतीय चावल अनुसंधान संस्थान  
भारतीय कृषि अनुसंधान परिषद

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