# PROCEEDINGS OF THE 37TH CROP SCIENTISTS' MEET (RICE) 2018

The 37th Crop scientists' Meet 2018 was held on 24.04.2018 under the chairmanship of the Vice-Chancellor, TNAU Coimbatore. The Director of Research, TNAU, Coimbatore and all the Technical Directors were present. The Director, TRRI, Aduthurai had given the introductory remarks and Lead scientists have presented the Action taken on the recommendations and Action Plan for the 36th Crop Scientist Meet. Based on the discussion and review of projects by the Director of Research, Director (CPBG), Director (CPMB), Director (DCM), Director (CPPS), Special Officer (Seeds) and Special Officer (NRM) in the concurrent sessions held on 23.04.2018, the following recommendations and work plan for the ensuing year that emanated from the discussion were presented by the Technical Directors for the approval of the Chairman. The meet ended with the critical remarks by the Vice-Chancellor and vote of thanks by Director of Research, TNAU, Coimbatore.

## A. CROP IMPROVEMENT

### I. SPECIFIC RECOMMENDATIONS

- The ART results are to be compiled by the Lead centre and presented at Crop scientists' meet. The identification of the variety for SVRC proposal will be done based on the comparative performance of cultures in each group.
- The ART particulars need to be communicated to all the rice breeding stations and all the station breeders may visit the ARTs conducted in the nearby districts along with the concerned JDA. Efforts may also be rendered to obtain results from the JDAs in the nearby districts where the stations are located as a cooperative work.
- Paiyur 1 rice variety may be utilized in the crossing programme to have cultures with early vigour and high biomass with high straw yield.
- Some of the thematic areas formulated for work plan may be merged and the themes may be reduced for effective execution of experiments.
- Research efforts on development of early/extra early duration rice varieties may be strengthened. A farmers participatory varietal selection for the developed extra early cultures alongwith checks *viz*., ADT(R) 48, MDU 5 and WGL14377 (*Varalu*) may be programmed in Cauvery Delta Districts
- The biotic/abiotic stress resistant gene introgressed lines developed at TNAU need to be deposited in the Ramiah Gene Bank for further utilization in the breeding programme.
- The TGMS lines may be evaluated for fertility reversion at Thadiyankudisai and Kodaikanal.
- Seed dormancy in rice varieties may be given importance in future breeding programmes to prevent *in-situ* germination especially, when crop harvest coincides with monsoon.

## II. GENERAL RECOMMENDATIONS

- Quality analysis of MLT cultures may be carried out at TRRI, Aduthurai during 2018-19. The ART cultures are to be analysed for quality at Coimbatore, Aduthurai and Community Science College, Madurai
- The cultures, which are recommended for the second year MLT have to be nominated compulsorily through AICRP centers for AICRP trials with the approval of the Director, CPBG.

## III. CULTURES RECOMMENDED FOR SUBMISSION OF VARIETY RELEASE PROPOSAL DURING 2018-19

### a. CVRC Release

**1. AD 13121 (IET 25521) (to be proposed as assigned the name Rice ADT 52in case of release)**

Parentage : CR 1009 / ADT 49
Duration : 145 days
Mean Yield : 4902 kg/ha; 15.5 per cent increase over BPT 5204 and 12.6 per cent over WGL 14 in Central Zone

- Medium tall and non-lodging
- Medium slender, translucent rice with high milling (67.1%) and HRR (62.0%)
- Resistant to gallmidge and moderately resistant to leaf blast, neck blast, grain discoloration, bacterial leaf blight and RTD.

### b. SVRC Release

**1. AD 07073 (IET 23955) (to be proposed as assigned the name Rice ADT 53 in case of release)**

Parentage : ADT 43/JGL 384
Duration : 110 - 115 days
Mean Yield : 6311 kg/ha; 10.5 per over ADT 43 and 7.0 per cent over CO 51.

- Moderate tillering and non-lodging plant habit
- Medium slender rice, HRR (58.0%), 1000 grain weight : 14.5 g
- Moderately resistant to blast and BPH

**2. VG 09006 (IET 24606) (to be proposed as assigned the name Rice VGD 1 in case of release)**

Parentage : ADT 43 / Jeeraga Samba
Duration : 128 days
Yield : 4882 kg/ha; 27.0 % higher yield than Jeeraga Samba

- Quality rice suitable for briyani making
- Non lodging dwarf plant stature (85 to 90 cm), Photo insensitive
- Short slender grain with good LER (2.1times), soft GC, intermediate amylose (21.9 %) and HRR of 62.1 %
- Moderately resistant to brown spot

## IV. CULTURES IDENTIFIED FOR ON FARM TRIALS DURING 2018-19

The following cultures which are recommended for the conduct of OFT during 2018-19

| Groups | | Cultures |
|---|---|---|
| Short duration | : | TM 10085, CB 12588, AD 09219 and AD (Bio) 09518 |
| Rainfed Early | : | CB 06803 in drought prone districts |
| Salt tolerant | : | TR 05031, I.W.Ponni Saltol in salt stress affected areas |
| Mid Early duration | : | ACM 07001** |
| Medium Duration | : | AD 09493*, CB 11107, CB MAS 14065 |
| Aromatic Slender Grain | : | CB MAS 14142 in Vellore, Dharmapuri, Salem, Erode, Coimbatore, Dindigul, Theni, Karur, Trichy and Perambalur districts |

* The culture is to be compared with TKM 13 and CO 52

** The culture is to be compared with ADT 39 and TKM 13 at appropriate season

## V. CULTURES RECOMMENDED FOR ADAPTIVE RESEARCH TRIALS 2018-19

| Cultures with Parentage and checks | Yield and Duration | Special attributes | Locations |
|---|---|---|---|
| **Rice 4/2018-19: Transplanted (Oct 25 – Nov 10, 110 to 125 days) (Mid early)** | | | |
| 1. AD 12132 (R)<br>(ADT 39xKonark) | 5608 kg/ha in 128 days<br>19.4 % higher than ADT 39<br>5464 kg/ha in 124 days<br>16.3 % higher than ADT 39 | Moderately resistant to blast and resistant to brown spot<br>LER - 1.64; BER - 1.48 Intermediate amylase | All districts except, Ramnad, Virudhunagar, Sivagangai and The Nilgris. |
| 2. TP 08053 (R)<br>(ADT 36x ADT 42)<br>Check: ADT 39 | | Long slender Rice<br>LER – 1.49<br>Intermediate amylose<br>Moderately resistant to blast and sheath rot | |
| **Rice 6/2018-19: Transplanted (August 15 - September 10) 140 days and above** | | | |
| AD 13116 (R)<br>( CR 1009xADT 49) | 6032 kg/ha in 145 days<br>8.1 % higher than ADT 50 and 9.24 % over CR 1009 *Sub*1 | Medium slender rice with LER – 1.77<br>Intermediate amylose,<br>Moderately resistant to blast and BLB | Ariyalur, Cuddalore, Trichy, Perambalur, Karur, Pudukkottai, Thanjavur, Thiruvarur and Nagapattinam. |

| | | | |
|---|---|---|---|
| AD 13125<br>(CR 1009xKR 1)<br><br>Check: CR 1009*Sub*1 | 7097 kg/ha in 151 days<br>12.6 % over CR 1009 *Sub*1 | Non lodging, short bold grain, HRR-62.1% | |
| **Rice 10/2018-19 Rainfed- Early (Sept.-Oct.)** | | | |
| 1. TM 12061 (R) (Senthooram x Vandana) | 3126 kg/ha under dry condition<br>18.1 % yield increase over Anna (R) 4 | MS grain<br>HRR: 60 %<br>LER of 1.72 and BER 1.58.<br>Amylose content 18.74%. | Ramnad, Sivaganga, Virudhunagar, Thoothukudi, Thiruvallur, Villupuram, Kancheepuram |
| 2. TM 12077 (TKM (R) 12 x IET 21620)<br><br>Checks : Anna(R) 4, TKM (R) 12 and IR 64 drt QTL | 2777 kg /ha under dry condition<br>31.9 and 24.1 % over | Tolerant to dry condition | |
| **Rice15/2018-19: Special transplanted Medium (September-October sowing:125-140 days)** | | | |
| CB 12132<br>**CO (R) 50 x CB 05501**<br>Checks:<br>CO 52 and TKM 13 | 6254 in 135 days<br>15.0 % than BPT 5204 | Medium slender rice, Resistant to blast, Non lodging, HRR- 60.8% | All districts except Virudhunagar, Ramnad, Sivagangai and The Nilgiris. |
| **Rice19/2018-19: Hybrid rice Mid Early(Oct 25 – Nov 10, 110 to 125 days)** | | | |
| TNTRH 55(R)<br>Checks : ADT 39, US 312 | 5414 kg/ha in 124 days<br>15.3 % over ADT 39 | Long bold grain with good Linear Elongation (LER: 1.76) | All districts except Virudhunagar, Ramnad, Sivagangai, Kanyakumari and The Nilgris. |

**VI. CULTURES RECOMMENDED FOR MULTI LOCATION TRIALS 2018-19**

**MLT I (100- 115 days; May-June sowing) 2018-19**

| Entry | Parentage | Duration (days) | Grain yield (kg/ha) | Rice grade | Nominating Centre |
|---|---|---|---|---|---|
| **Repeat** | | | | | |
| ACK 14001 | ACK 9009 / ASD 16 | 115 | 7307 | MB | Killikulam |
| **New** | | | | | |
| AS 15024 | ASD 16/Manjalsaradai | 115 | 6547 | MS | Ambasamudram |
| AD 16028 | WGL 14377/MDU 5 | 116 | 6283 | MS | Aduthurai |
| AD 16075 | ADT(R) 47/IR50 | 117 | 6250 | MS | Aduthurai |
| CB 15805 | ADT (R) 45/I.W.Ponni | 103 | 6481 | MS | Coimbatore |
| CB 14528 | Bhavani/ CB 05501 | 104 | 6963 | MS | Coimbatore |
| CBMAS 14110 | I.W. Ponni / Apo | 110 | 6093 | MS | Dept. of Rice &CPMB |

| | | | | | |
|---|---|---|---|---|---|
| AD (Bio) 13085 | ADT 43/IRBB60 | 115 | 6073 | -- | Aduthurai &CPMB |
| TP 09054 | ASD 16/ADT (R) 45 | 115 | 7944 | SB | Thirupathisaram |

| | | |
|---|---|---|
| Checks | : | Rice CO 51, TPS 5 |
| Replications | : | Three |
| Plot size | : | 9 $m^2$ |
| Spacing | : | 15 x 10 cm |
| Locations (12) | : | Aduthurai, Coimbatore, Madurai, Ambasamudram, Tirur, Thirupathisaram, Killikulam, Thanjavur, Paiyur, Cuddalore, Pattukottai and Vaigaidam. |
| Seed despatch | : | 5.0 kg to be sent before 14.5.2018 |

**MLT II (115-125 days, September/October sowing) 2018-19**

| Entry | Parentage | Duration (days) | Grain yield (kg/ha) | Rice grade | Nominating Centre |
|---|---|---|---|---|---|
| **Repeat** | | | | | |
| AS 14023 | Sona / ASD 16 | 120 | 7536 | MS | Ambasamudram |
| **New** | | | | | |
| ACK 15004 | ADT 36/ADT42 | 124 | 6833 | MS | Killikulam |
| ACK12022 | Mutant of I.W.Ponni | 122 | 6615 | MS | Killikulam |
| AS14001 | ADT 36/AS 6016 | 125 | 6875 | SB | Ambasamudram |
| AD16025 | Turant dhan/IET 22075 | 125 | 6263 | MS | Aduthurai |
| AD13298 | ADT (R) 46/IRBB60 | 120 | 4457 | LS | Aduthurai |
| AD15088 | CO(R) 49/ ADT (R) 46 | 124 | 4460 | MS | Aduthurai |
| AD 16037 | WGL14377/ ADT(R) 48 | 126 | 6565 | MS | Aduthurai |
| CB 15714 | ADT 43/GEB 24 | 121 | 6779 | MS | Coimbatore |
| CB 15541 | JGL 1798/ IET 21572 | 121 | 7356 | MS | Coimbatore |
| AD (Bio) 13071 | ADT 47/IRBB60 | 125 | 5928 | MS | ADT & CPMB |

| | | |
|---|---|---|
| Checks | : | ADT 39, TKM 13 |
| Replications | : | Three |
| Plot size | : | 9 $m^2$ |
| Spacing | : | 15 x 10 cm |
| Locations (9) | : | Aduthurai, Coimbatore, Madurai, Ambasamudram, Tirur, Thirupathisaram, Killikulam, Thanjavur and Paiyur. |
| Seed despatch | : | 4.0 kg to be sent before 14.5.2018 |

**MLT III (131-140 days, September/October sowing) – 2018-19**

| Entry | Parentage | Duration (days) | Grain yield (kg/ha) | Rice grade | Nominating Centre |
|---|---|---|---|---|---|
| **Repeat** | | | | | |
| AD 12161 | I.W.Ponni / Kalajoha | 137 | 5712 | MS | Aduthurai |
| AD 13299 | ADT 43 / IR 64 | 135 | 5817 | MS | Aduthurai |
| AD 12184* | IW.Ponni/Kalajoha | 143 | 6747 | MS | Aduthurai |
| CB 13132 | CO (R) 49 / KJTCMS 4B | 139 | 7513 | SS | Coimbatore |
| **New** | | | | | |
| ACK 14072 | BPT 5204/JGL 3844 | 130 | 5947 | MS | Killikulam |
| CB 15144 | CB 05022/CO 52 | 138 | 7113 | MS | Coimbatore |
| CB15133 | CO 40/C 20 | 135 | 7399 | SB | Aduthurai |
| AD15105 | BPT 5204/AD02233 | 137 | 5826 | MS | Aduthurai |
| AD13253 | AD 01246/CO(R) 49 | 134 | 5873 | MS | Aduthurai |

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|---|---|---|
| Checks | : | CO (R) 50, CO 52, ADT 49 |
| Replications | : | Three |
| Plot size | : | $9m^2$ |
| Spacing | : | 20 x 10 cm |
| Locations (13) | : | Aduthurai, Ambasamudram, Coimbatore, Madurai, Sirugamani,Thirupathisaram, Tirur, Killikulam, Vaigaidam, Thanjavur,Cuddalore, Pattukottai and Palur. |
| Seed despatch | : | 5.0 kg to be sent before 14.5.2018 |

**MLT* – Saline/Alkaline, Drought & Cold - 2018-19**

| Entry | Parentage | Duration (days) | Grain yield (kg/ha) | Rice grade | Nominating Centre |
|---|---|---|---|---|---|
| **Repeat** | | | | | |
| TR 13069 | ADT43/FL478//ADT 43 | 105 | 5139 | MS | Trichy |
| TR 13083 | ADT 43 / FL478//ADT 43 | 105 | 5171 | MS | Trichy |
| TM 12039 | ADT (R) 45 / Chandikar | 110 | 3430 | MS | Tirur |
| CB 13804* | Norungan x (Swarna *Sub* 1 x Norungan) | 105 | 3540 | MS | Coimbatore |
| **New** | | | | | |
| TM 12012* | ADT 37/ Tadukan | 117 | 3431 | MS | Tirur |
| PM 16003* | ADT (R) 45/ Morobrekan | 112 | 3240 | SS | Paramakudi |
| PY 12071** | ADT 43/PS 2 | 105 | 3200 | MS | Paiyur |

*drought ** cold

| | | |
|---|---|---|
| Checks | : | TRY (R) 2 , Anna (R) 4, IR 64 drt QTL and IR 20 |
| Replications | : | Three |
| Plot size | : | 9 $m^2$ |
| Spacing | : | 15 x 10 cm |
| Locations (10) | : | Salinity: Trichy, KVK Ramnad, KVK Tindivanam (Madurandagam)Dry and Semi dry : Tirur, Paramakudi, Madurai, Coimbatore Cold : Gudalur, Paiyur, Vaigaidam. |
| Seed despatch | : | 4.5 kg to be sent before 14.5.2018 |

At Paramakudi, trial is to be conducted both at field and ROS. (Rain out shelter)

At Coimbatore, trial is to be conducted in ROS (Rain out shelter)

Apart from the regular observations, Drought Sensitivity (DRS), Leaf Drying at vegetative stage, Spikelet Fertility and Drought Recovery (DR) need to be recorded.

**VII. RICE MULTILOCATION TRIALS MONITORING TEAM 2018-19**

| S.No. | MLT Stations | Monitoring team |
|---|---|---|
| 1. | Aduthurai/Thanjavur | Dr. A.Sheeba<br>Dr. S.Saravanan |
| 2. | Coimbatore/Bhavanisagar/Gudalur | Dr. D.Sassikumar<br>Dr. T.Thirumurugan |
| 3. | Thirupathisaram/Killikulam | Dr. S.Arumugachamy<br>Dr. R.Manimaran |
| 4. | Tirur/Tindivanam | Dr. S.Banumathy<br>Dr. K.Amudha |
| 5. | Palur/ Cuddalore | Dr. S.Banumathy<br>Dr. R.Suresh |
| 6. | Trichy/Sirugamani | Dr. R.P.Gnanamalar<br>Dr. S.Muthuramu |
| 7. | Madurai/Vaigaidam | Dr. N.Kumaresan<br>Dr. R. Pushpa |
| 8. | Paramakudi/Ramanathapuram | Dr. N.Aananthi<br>Dr. V.Dhandapani |
| 9. | Paiyur | Dr. R.Saraswathi<br>Dr. R.Suresh |
| 10. | Ambasamudram | Dr. M.Arumugampillai<br>Dr. N.Shanmugavalli |

The monitoring team will visit at appropriate stage of the trial and report on

1. General conduct of the trial
   a. Plot size and replications b. Labelling of the plots
2. Admixtures, disease and pest susceptibility, if any,
3. Top two entries based on visual observations
4. General remarks of the trial and entries.

**VIII. WORK MODULE FOR THE YEAR 2018-19 TO THE ACTION PLAN (2016-2019) ON THE IDENTIFIED THEMES**

| | | | |
|---|---|---|---|
| **Theme No 1** | **Germplasm characterization and Pre Breeding to develop genetic stocks in rice** | | |
| **Theme Leader** | **Dr.D. Kumaresan, Associate Professor and Head, HREC, Gudalur.** | | |
| **Sub Theme 1** | **Screening of 250-300 Rice accessions from Ramaiah Gene Bank to identify genotypes resistant to biotic and abiotic stress** | | |
| **S.No.** | **Activity** | **Name of the scientist and centre** | **Work Plan** |
| 1. | Artificial screening for BPH | **Coimbatore:**<br>Dr.K. Amudha (PBG)<br>Dr. R. P. Soundararajan (Ento.) | • Revalidation of identified resistant / moderate resistant lines *viz*., T 390 and T 1031 T 2030, T1306, T392, T429 and T1766.<br>• Screening of new accessions. |
| 2. | Artificial screening for Blast | **Gudalur:**<br>Dr. D. Kumaresan (PBG)<br>Dr. A. Ramanathan (Patho.) | • Revalidation of identified resistant / moderate resistant lines *viz*., RIL 29, Zenith, Dular, IR 64, Tetep, Rasi BL 245, NP 125 and Calaro.<br>• Screening of new accessions. |
| 3. | Natural screening for sodicity | **Trichy:**<br>Dr. T. Thirumurugan(PBG)<br>Dr. S. Nithila (CRP) | • Revalidation of identified resistant / moderate resistant lines *viz.*, CST 7-1, AT 69-1,CSR 28, *Pokkali, Manakkathai and Madumulungi.*<br>• Screening of new accessions. |
| **Sub theme 2** | **Developing Genetic Stocks for various traits** | | |
| **S.No.** | **Activity** | **Name of the scientist and centre** | **Work plan** |
| 1. | Developing genetic stocks with stem borer resistance. | **Coimbatore:**<br>Dr. P. Jeyaprakash (PBG)<br>Dr. R. P. Soundararajan (Ento.) | • New population may be developed using suitable donor for stem borer resistance.<br>• Revalidation of the identified resistant culture *viz.,* RG 148 and PTB 33.<br>• Screening of new accessions. |
| 2. | Transfer of salinity resistance from donors *viz*., Nonabokra, CSR 10 | **Aduthurai:**<br>Dr. D. Sassikumar (PBG)<br>**Trichy:** | • F3 progeny rows of segregating population of ADT 37 crossed with Nonabokra, CSR 10 and Cheriveruppu will be screened at Trichy. |

| | | | |
|---|---|---|---|
| | and Cheriveruppu into ADT 37 | Dr. T.Thirumurugan (PBG)<br>Dr. M. Baskar (SS&AC) | • Hybridization with new donors. |
| 3. | Developing genetic stocks with nutritional enhancement | **Aduthurai**<br>Dr. R. Pushpa (PBG) | • Screening the segregating material for Iron and Zinc<br>• Screening the germplasm for protein and amylose content |
| **Theme 2** | **Evolution of extra early rice varieties** | | |
| **Theme Leader** | **Dr.R.Suresh, Assistant Professor (PBG), TRRI, Aduthurai.** | | |
| **S.No.** | **Activity** | **Name of the Scientist and Centre** | **Work Plan** |
| 1. | Development of new segregating generations involving extra early donors | **Madurai:**<br>Dr.P.Arunachalam (PBG)<br>**Aduthurai:**<br>Dr.R.Suresh (PBG) | **Season I: Crossing Programme**<br>Newly identified extra early genotypes and drought tolerant cultures will be utilized as donors in the crossing programme.<br>**Season II: Evaluation of $F_1$s**<br>The $F_1$ will be fixed and $F_2$ seeds will be shared to all centres. |
| 2. | Screening segregants for early vigour for further advancement | **Madurai:**<br>Dr.P.Arunachalam (PBG)<br>**Aduthurai:**<br>Dr.R.Suresh, (PBG) | **Season I : Evaluation of $F_2$**<br>$F_2$ population developed at Madurai Centre will be shared to Aduthurai and *vice versa;* Single plant selection for high yield and earliness (<90 days) will be selected and forwarded as $F_3$ families.<br>**Season II:Evaluation of $F_3$**<br>$F_3$ families will be raised and superior single plants with earliness, good tillering will be selected and forwarded as $F_4$ families. |
| 3. | Yield evaluation under direct seeded and transplanted conditions | **Madurai:**<br>Dr.P.Arunachalam (PBG)<br>**Aduthurai:**<br>Dr.R.Suresh (PBG)<br>**Thanjavur**<br>Dr. L.Subha (PBG) | Homozygous advanced cultures identified with early duration (< 90 days) in Madurai and Aduthurai centres will be evaluated at Thanjavur, Madurai and Aduthurai. |

| Theme 3 | Evolution of early (115 days) rice varieties | | |
|---|---|---|---|
| **Team Leader** | **Dr. S. Arumugachamy, Professor & Head , RRS, Ambasamudram** | | |
| **Sub Theme 1** | Early duration cultivar development with fine grain/ Bold grain, BPH and Blast resistance | | |
| **S.No.** | **Activity** | **Name of the Scientist and Centre** | **Work Plan** |
| 1.<br><br><br><br><br><br><br>2. | **Fine Grain type**<br>Development of new segregating generations<br><br><br><br><br><br>Testing of advanced lines | **Aduthurai:**<br>Dr. R. Suresh (PBG)<br>Dr. Ananthi (Ento.)<br>Dr. R. Thilagavathi (Patho.)<br>**Coimbatore:**<br>Dr. P. Jeyaprakash (PBG)<br>Dr. R. P. Soundararajan (Ento.)<br>Dr. A. Ramanathan (Patho.)<br>**Madurai:**<br>Dr. R.P.Gnanamalar (PBG)<br>Dr. N. Revathi (Patho.) | • Continuing the hybridization programme and sharing of $F_1$s<br>• Evaluation of shared $F_1$s as $F_2$ and $F_3$ and selection with an eye to replace ADT 43 and CO 51.<br>• Selection and advancement of segregating progenies in possession of each centre.<br>• Testing of forwarded entries in their respective yield trials in comparison with ADT 43, ADT (R) 45 and CO 51(fine grain).<br>• Artificial screening of advanced cultures for BPH, Blast and BB.<br>• Team evaluation of MLT and ART cultures for yield, quality & resistance. |
| 1.<br><br><br><br><br><br><br>2. | **Bold Grain type**<br>Development of new segregating generations<br><br><br><br><br><br>Testing of advanced lines | **Ambasamudram:**<br>Dr. S .Arumugachamy (PBG)<br>Dr.R.Ramjegathesh (Patho.)<br><br><br><br>**Killikulam:**<br>Dr. M. Arumugampillai (PBG)<br>Dr.K. Elanchezhyan (Ento.)<br>Dr. R. Kannan (Patho.) | • Continuing the hybridization programme and sharing of $F_1$ s.<br>• Evaluation of shared F1s as $F_2$ and $F_3$ and selection with an eye to replace ASD 16 and ADT 37.<br>• Selection and advancement of segregating progenies in possession of each centre.<br>• Testing of forwarded entries in their respective yield trials in comparison with ASD 16, ADT 37, TPS 5 (Bold grain).<br>• Team evaluation of MLT & ART cultures for yield, quality & resistance.<br>• Artificial screening of advanced cultures for BPH, Blast & BB. |

| Theme 4 | Evolution of high yielding rice varieties suitable for irrigated eco system of Tamil Nadu | | |
|---|---|---|---|
| **Team Leader** | **Dr.D.Sassikumar, Associate Professor (PB&G) TRRI, Aduthurai** | | |
| **Sub Theme 1** | Medium duration cultivar development with **fine grain/boldgrain** high yield with BB and blast resistance | | |
| **S.No.** | **Activity** | **Name of the centre and scientists** | **Work Plan** |
| 1.<br><br><br><br><br><br>2. | **Fine Grain**<br>Development of new segregating generations involving new donors for quality, BB and Blast.<br><br>Testing of Advanced lines | **Aduthurai:**<br>Dr. D. Sassikumar (PBG)<br>**Coimbatore:**<br>Dr. K. Amudha (PBG)<br>Dr. R.P.Soundararajan (Ento.)<br>Dr. S. Ramanathan (Patho.)<br>**Madurai**<br>Dr. R.P.Gnanamalar (PBG)<br>Dr. N. Revathi (Patho.) | • Continuing the hybridization programme and sharing of $F_2$s.<br>• Evaluation of shared $F_2$ and $F_3$ and selection based on grain quality and yield.<br>• Selection and advancement of segregating progenies in possession of each centre.<br>• Testing of forwarded entries in their respective yield trials in comparison with popular and recently released variety as check.<br>• Team evaluation of MLT and ART cultures for yield, quality & resistance. |
| 1.<br><br><br><br><br><br>2. | **Bold Grain**<br>Development of new segregating generations involving new donors for quality, BB and Blast.<br><br>Testing of Advanced lines | **Ambasamudram**<br>Dr. S .Arumugachamy (PBG)<br>Dr.R.Ramjegathesh (Patho.)<br>**Killikulam:**<br>Dr. S. Saravanan (PBG)<br>Dr.K. Elanchezhyan (Ento.)<br>Dr. R. Kannan (Patho.)<br>**Tirupathisaram**<br>Dr. N. Shanmugavalli (PBG)<br>Dr. G. Preetha (Ento.)<br>Dr. M. Jayasekhar (Patho.) | • Continuing the hybridization programme and sharing of $F_1$s.<br>• Evaluation of shared $F_1$s as $F_2$ and $F_3$ and selection based on grain quality and yield.<br>• Selection and advancement of segregating progenies in possession of each centre.<br>• Testing of forwarded entries in their respective yield trials in comparison with popular and recently released variety as check.<br>• Team evaluation of MLT and ART cultures for yield, quality & resistance. |

| **Sub theme 2** | | **Evolution of long duration (>145 days) rice varieties** | |
|---|---|---|---|
| 1.<br><br><br><br><br>2. | Development of new segregating generations for yield/quality, BB and blast<br><br>Testing of advanced lines | **Aduthurai:**<br>Dr.R. Manimaran (PBG)<br>Dr. K.Rajappan (Patho.)<br>Dr.P. Ananthi (Ento.) | **Samba, 2018**<br>• Effecting new set of crosses involving *Sub 1* donors.<br>• Evaluation of segregating generations and fixing of promising homozygous lines for testing in yield trials.<br>• Conducting various yield trials *viz*., IYT, AYT and AICRIP to identify entries for next level of testing.<br>• Popularisation of new varieties *viz.,* ADT 51 and ADT 52 among the farmers. |

| **Theme 5:** | | **Breeding for abiotic stress situation** | |
|---|---|---|---|
| **Team Leader** | | **Dr. S. Banumathy, Associate Professor (PBG), AC&RI, Madurai** | |
| **Sub theme 1** | | **Evolving rice cultivars tolerant to salinity/sodicity** | |
| **S. No.** | **Activity** | **Name of the centre and scientists** | **Work Plan** |
| 1.<br><br><br><br>2. | Development of new segregating generations involving new donors for salinity/sodicity<br>Testing of advanced lines | **Trichy:**<br>Dr. T.Thirumurugan (PBG)<br>Dr. S. Nithila (CRP)<br>Dr. M. Baskar (SS&AC)<br>**Aduthurai**<br>D.Sassikumar (PBG) | Crossing work and raising $F_1$ (Aduthurai).<br>**Trichy**<br>• Providing donors for crossing programme.<br>• Handling of segregating generation.<br>• Conduct of PYT,CYT and MLT. |
| **Sub theme 2** | | **Evolving rice cultivars tolerant to drought** | |
| 1.<br><br><br><br>2. | Development of new segregating generations involving new donors for drought<br>Testing of advanced lines | **Madurai :**<br>Dr. S.Banuamthy (PBG)<br>**Coimbatore:**<br>Dr. P. Jeyaprakash (PBG)<br>Dr. Krishnasurendar (CRP) | • Continuing the hybridization programme and sharing of $F_1$.<br>• Evaluation of shared $F_1$s as $F_2$ and $F_3$ and selection based on grain quality and yield.<br>• Selection and advancement of segregating progenies in possession of each centre.<br>• Testing of forwarded entries in their respective yield trials in |

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| | | **Paramakudi**:<br>Dr.S.Muthuramu (PBG)<br>**Tirur:**<br>Dr. A. Sheeba (PBG) | comparison with popular & recently released variety as check.<br>• Team evaluation of MLT and ART cultures for yield, quality & resistance. |
| **Sub theme 3** | | **Evolving rice cultivars tolerant to submergence** | |
| 1.<br><br><br>2. | Development of segregating generations involving new donors<br>Testing of advanced lines | **Aduthurai:**<br>Dr. R. Manimaran (PBG) | • Effecting crosses with *Sub* 1 donors.<br>• Cultures with *Sub* 1 gene *viz*.,CB 13846, CB 13883, CB 13945, CB 131067, CB 131070/2, CB 13863, CB 13863/2, CB131017/1, CB 131033 will be evaluated for submergence. |
| **Theme 6:** | **Hybrid rice breeding** | | |
| **Theme leader** | **Dr.R. Saraswathi, Professor (PB&G), Department of Rice, CPBG, Coimbatore** | | |
| **S. No.** | **Activity** | **Name of the scientist & centre** | **Work plan** |
| **A. THREE LINE BREEDING** | | | |
| 1. | Developing new CMS lines | **Coimbatore:**<br>Dr. R. Saraswathi (PBG) | Effecting new crosses and identification of new combinations with 100 % sterility& effecting backcrosses. |
| 2. | Testing the stability of new CMS lines for sterility expression | **Coimbatore:**Dr. R. Saraswathi<br>**Aduthurai:**Dr. D. Sassikumar<br>**ASD:** Dr. S .Arumugachamy<br>**Killikulam**: Dr. N. Ananthi (PBG)<br>**Madurai:**Dr. S. Banumathy | Multi location evaluation of new CMS lines for pollen and spikelet sterility. |
| **B. TWO LINE BREEDING** | | | |
| 1. | Developing new TGMS lines. | **Coimbatore**:<br>R. Saraswathi (PBG)<br>**Gudalur:**<br>D. Kumaresan (PBG) | • Advancement of $F_4$ families based plant type, fertility/sterility expression.<br>• Selection of sterile stubbles in segregating lines and planting at GDR. |

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| 2. | Testing the stability of already developed new TGMS lines for sterility expression. | | Evaluation of new TGMS lines for stability. |
| 3. | Assessment of fertility reversion percentage of selected TGMS lines at plains and hills during fertile phases. | | Assessment of fertility reversion percentage. |
| **C. EVALUATION OF HYBRIDS FOR GRAIN YIELD & RESISTANCE** | | | |
| 1. | Testing of hybrids for yield, quality and resistance. | **Coimbatore**<br>Dr. R. Saraswathi (PBG)<br>Dr. A. Ramanathan(Patho.)<br>Dr. R.P. Soundararajan(Ento.) | • Mini seed production of identified combinations in CMS and TGMS system.<br>• Evaluation of new hybrids for yield and resistance. |

| **Theme 7** | **Biofortification through biotechnological approaches** | | |
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| **Theme leader** | **Dr. D. Sudhakar, Prof. (Biotech), Coimbatore.** | | |
| **Sub Theme 1** | **Bio-fortification of Fe and Zn through molecular breeding** | | |
| **S. No.** | **Activity** | **Name of the centre and scientists** | **Work Plan** |
| 1. | Introgression of Fe & Zn through MAS. | Dr. D. Sudhakar, (Biotech) | Validation of SSRs using bi-parental mapping populations for the QTL of Fe and Zinc accumulation in rice grains. |
| 2. | Genetic transformation of Fe transporter gene(s) into elite back grounds. | | Genetic transformation of elite rice genotypes using genes associated with elevated Fe accumulation in grains. |

| Theme 8 | Next generation genome sequencing and bioinformatics | | |
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| **Team Leader:Dr. N. Kumaravadivelu, Professor and Head, DPMB&B** | | | |
| **S. No.** | **Activity** | **Name of the centre and scientists** | **Work Plan** |
| 1. | Whole genome re-sequencing of native rice genotypes through Next Generation Sequencing. | **CPMB & B:**<br>Dr. N. Kumaravadivelu<br>Dr. M. Raveendran<br>Dr. M. Jayakanthan | Whole Genome re-sequencing of target genotypes/genetic materials. |
| 2. | Mining novel alleles (SNP) of genes for biotic/abiotic stress tolerance, nutrient use efficiency, photosynthetic efficiency, growth rate and grain quality traits | Mrs. N. Bharathi<br>Dr. N. Saranya | Targeted re-sequencing/TILLING of putative candidate genes. |

**IX. PROJECT WISE REMARKS**

| S. No. | Project No. & title | Remarks |
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| **I. PROJECTS ON GERMPLASM MAINTENANCE – ADUTHURAI** | | |
| 1. | **CPBG/ADT/PBG/RIC/2015/011:** Maintenance of germplasm types in rice.<br>**Period :** April 2015- March 2018<br>**Project Leader(s) :** Dr.R.Pushpa, Asst. Professor (PBG) | The project may be closed and completion report has to be submitted. New project may be initiated with two years project period. Characterisation of germplasm may be done in association with PGR department. Left over germplasm accessions may be deposited in the Ramiah Gene Bank. |

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| **COIMBATORE** | | |
| 2. | **CPBG/CBE/PBG/RIC/2016/001:** Germplasm collection, evaluation and conservation in rice.<br>**Period :** June 2016 - May 2021<br>**Project Leader(s):**Dr. K. Amudha, Asst. Professor (PBG) | Out of 2316 genetic accessions 534 genotypes were characterised. Documentation of morphological traits for the remaining genotypes may be continued along with screening for BPH resistance. |
| **II. PROJECTS ON EVOLUTION – ADUTHURAI** | | |
| 3. | **CPBG/ADT/PBG/RIC/2012/004*:** Development of advanced rice cultures with high yield, quality and in built resistance for Bacterial Leaf Blight suitable for Tamil Nadu.<br>**Period :** June 2012 - September 2017<br>**Project Leader(s):** Dr. D.Sassikumar, Assoc. Professor (PBG) | The project closes by September 2017. Completion report may be submitted at the earliest. The materials developed in this project should be utilised in other breeding programme. |
| 4. | **CPBG/ADT/PBG/RIC/2015/012:** Development of medium duration rice with high potential, preferential grain quality and resistance to BLB suitable for irrigated ecosystem of Tamil Nadu.<br>**Period :** October 2015 - September 2018<br>**Project Leader(s):** Dr. D.Sassikumar, Assoc. Professor (PBG) | Crossing will be effected with suitable donor which is to be test verified in the Aduthurai condition under leaf clip method. One or two backcrosses may be adopted for this programme. Cultures which satisfy the cooking quality alone may be forwarded in the yield trials. |
| 5. | **CPBG/ADT/PBG/RIC/2017/001:** Evolving short duration rice varieties/culture with fine grain and resistance to blast, brown plant hopper and bacterial leaf blight.<br>**Period :** June 2017 - May 2022<br>**Project Leader(s) :** Dr. R. Suresh, Asst. Professor (PBG) | The traits like semi compact plant type, non lodging nature may be concentrated during selection. Short duration parents with desirable resistance for blast, BLB may be included in the crossing programme. |
| 6. | **CPBG/ADT/PBG/RIC/2017/05:** Evolution of extra early rice varieties (<100 days) suitable for direct seeding in water limited areas of CDZ.<br>**Period :** June 2017 - May 2022<br>**Project Leader(s) :** Dr.R. Suresh, Asst. Professor (PBG) | The identified extra early genotype AD 16019 may be evaluated in large plots under direct seed condition along with suitable check. |

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| 7. | **CPBG/ADT/PBG/RIC/2017/003:** Development of high yielding, non lodging long duration (> 140 days) rice varieties suitable for samba season.<br>**Period :** August 2017 - July 2022<br>**Project Leader(s) :** Dr. R. Manimaran, Asst. Professor (PBG) | Genotype with *sub1* gene may be used as donor for crossing programme. Popularisation of newly released variety from this project should be done. Selection need to be concentrated for non lodging phenotype. |
| 8. | **CPBG/ADT/PBG/RIC/2017/006:** Development of breeding stocks in rice with preferable nutritional properties.<br>**Period :** November 2017 - October 2022<br>**Project Leader(s) :** Dr.R.Pushpa, Asst. Professor (PBG) | Iron and Zinc rich genotypes identified at Department of Rice may be included in the crossing programme. Methodology of estimation of iron and zinc to be standardized using the facilities available at AC&RI, Madurai or Soil Science Department at Coimbatore. |
| 9. | **CPBG/ADT/PBG/GMC/2017/001:** Evolving sunhemp variety with high biomass suitable to Cauvery Delta Zone of Tamil Nadu.<br>**Period :** September 2017 - Augest 2020<br>**Project Leader(s) :** Dr.R.Pushpa, Asst. Professor (PBG) | To be presented at Cotton Scientist Meet as fibre crop. |
| **COIMBATORE – CPBG** | | |
| 10. | **CPBG/CBE/PBG/RIC/2016/002:** Evolution of fine grain medium duration rice varieties resistance to blast and BLB.<br>**Period :** June 2016 - May 2021<br>**Project Leader(s):** Dr. K. Amudha, Asst. Professor (PBG) | Disease screening may be done at earlier stages. Pesticide spraying may be avoided in segregating generation to screen for pest and diseases. The details of the parents used in the crossing programme need to be documented and resistant donors may be deposited to Ramiah gene bank. |
| 11. | **CPBG/CBE/PBG/RIC/2016/003:** Development of stable CMS lines and restorer/maintainer breeding in rice with good phenotypic acceptability.<br>**Period :** June 2016 - May 2021<br>**Project Leader(s):** Dr.R.Saraswathi, Professor (PBG) | Efforts may be taken up to develop long duration CMS lines and slender grain CMS line in short duration category. |

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| 12. | **CPBG/CBE/PBG/RIC/2016/004:** Development of new three line hybrids with high yield and quality.<br>**Period :** June 2016 - May 2021<br>**Project Leader:** Dr.R.Saraswathi, Professor (PBG) | The project may be continued. |
| 13. | **CPBG/CBE/PBG/RIC/2016/005:** Developing early maturing (105-115 days) rice varieties resistant /tolerant to BPH and blast.<br>**Period :** June 2016 - May 2021<br>**Project Leader :** Dr. P. Jeyaprakash, Professor (PB&G) | Crosses may be effected in line with the objective of this project. |
| 14. | **CPBG/CBE/PBG/RIC/2017/001:** Development of two line hybrids and TGMS lines in rice.<br>**Period :** January 2017 - December 2021<br>**Project Leader :** Dr.R.Saraswathi, Professor (PB&G) | The project may be continued. |
| **COIMBATORE - CPMB&B** | | |
| 15. | **DBT/CPMB/CBE/DPB/2012/R001:** Rice bio-fortification with enhanced iron and zinc in high yielding non-basmati cultivars through marker assisted breeding and transgenic approaches-Phase II.<br>**Period :**2012 - 2017<br>**Project Leader(s) :** Dr. D. Sudhakar, Professor<br>Dr. M. Raveendran, Professor | The project may be continued. |
| 16. | **URP/CPMB/CBE/PMB/2015/001:** Deciphering Long non-coding RNAs and Database Development in Rice.<br>**Period :**July 2015 - July 2018<br>**Project Leader:** Dr. N. Saranya, Asst. Professor (Bioinformatics) | The project may be continued. |

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| 17. | **CPMB/CBE/BIN/PLN/2015/001:** Development of database and software tools for identifying polymorphic SSR markers in plant genomes.<br>**Period:**July 2015 - July 2018<br>**Project Leader:** . M. Jayakanthan, Asst. Professor (Bioinform.) | The project may be continued. |
| 18. | **CPMB/CBE/BIF/2018/001:** Functional annotation of hypothetical proteins present in *Xanthomonas oryzae pv. Oryzae* for prioritizing the targets against Bacterial blight.<br>**Period :** Jan 2018-Jan 2020<br>**Project Leader(s):** Tmt.N. Bharathi, Asst. Professor (Bioinformatics)<br>Dr. M. Sudha, Asst. Professor (Biotechnology) | The project may be continued. |
| **AMBASAMUDRAM** | | |
| 19. | **CPBG/ASD/PBG/RIC/2016/001:** Evolving high yielding medium duration rice variety suitable for *Pishanam* season.<br>**Period :** June 2016 - May 2021<br>**Project Leader:** Dr. S. Arumugachamy, Professor (PBG) | The objective may be fixed to replace TPS 3. The segregating materials may be shared among the centres working in medium duration group. The traditional rice genotype *sadai samba* may be used in the crossing programme. |
| 20. | **New:** Evolving high yielding short duration rice variety suitable for *Kar* and Late *Pishanam* seasons of Thamirabarani tract.<br>**Period :** April 2017 - March 2022<br>**Project Leader:** Dr. S. Arumugachamy, Professor (PBG) | Project number may be obtained. |

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| **THIRUPATHISARAM** | | |
| 21. | **CPBG/TPS/PBG/RIC/2016/001:** Evolving early duration rice variety suitable for Kannipoo season of Kanyakumari district.<br>**Period :**December 2016 - November 2021<br>**Project Leader :** Dr. N. Shunmugavalli, Professor (PBG) | The advanced cultures TP 09055, TP 09054 and TP08006, which are found to be free from pest and disease under field condition, need to be evaluated for consistent yield performance and the best culture may be nominated to MLT. |
| 22. | **CPBG/TPS/PBG/RIC/2016/002:** Evolving long duration rice variety suitable for *Kumbapoo* season of Kanyakumari district.<br>**Period :**December 2015 - November 2021<br>**Project Leader :** Dr. N. Shunmugavalli, Professor (PBG) | The culturesTP10101, TP 10006, TP 09098 and TP 08045, found promising during 2016, which could not be evaluated during 2017 due to oghi storm may be evaluated further along with a long duration check. |
| **TIRUR** | | |
| 23. | **CPBG/TKM/PBG/RIC/2015/001:** Evolving short duration drought tolerant rice varieties suitable for rainfed/semidry conditions.<br>**Period :** December 2015 - November 2020<br>**Project Leader :** Dr. A. Sheeba, Asst. Professor (PBG) | The promising advanced stage cultures may be evaluated along with TM09132 and other ART cultures in large plots strictly under rainfed condition. The best one may be focused for further advancement. The introductions may be avoided. |
| **MADURAI** | | |
| 24. | **CPBG/MDU/PBG/RIC/2015/001*:** Evolution of high yielding fine grain quality medium duration rice variety suitable for Periyar Vaigai River Project Area.<br>**Period :**April 2015 - March 2018<br>**Project Leader(s) :** Dr.A.Ramalingam, Professor(PBG)<br>April 2015 - March 2017<br>Dr. R.P.Gnanamalar, Professor(PBG)<br>April 20 17 - March 2018 | The project may be closed and completion report has to be submitted. The promising breeding materials from this project should be further utilized. |

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| 25. | **CPBG/MDU/PBG/RIC/2015/002*:** Evolution of high yielding extra-early rice variety for rainfed / tank-fed areas of Tamil Nadu.<br>**Period :** April 2015 - March 2018<br>**Project Leader:** Dr. P.Arunachalam, Asst. Professor (PBG) | The project may be closed and completion report may be submitted. The Selected F2 materials in this project will be handled with new sub project. Two generations per year may be explored. The $F_3$ may be raised under direct seeded condition. The genotype with early vigour and good tillering may be advanced. |
| 26. | **CPBG/MDU/PBG/RIC/2015/003*:** Development of high yielding short duration rice variety with fine grain, BPH and Blast resistance.<br>**Period :** April 2015 - March 2018<br>**Project Leader :** Dr.N.Aananthi, Asst. Professor (PBG) | The project may be closed and completion report may be submitted. The advanced cultures viz., ACM 15028, ACM 16002 may be forwarded in the new project. The new project may concentrate on evolving cultures for value addition in coordination with home science college. |
| 27. | **CPBG/MDU/PBG/RIC/2017/002:** Development of drought tolerant variety in rice.<br>**Period :**August 2017 -July 2022<br>**Project Leader:** Dr.S.Banumathy,Assoc. Professor (PBG)<br>Dr.R.Amutha, Professor (CRP) | The project may be continued. Marker assisted selection may be done for few selected crosses. The parents wayrarem and Jaya may be used in the crossing programme. The segregating material may be evaluated at Paramakudi and Tirur. |
| **KILLIKULAM** | | |
| 28. | **CPBG/KKM/PBG/RIC/2014/001***: Evolution of high yielding short duration rice variety (110-115 days) for *Kar* and *Pishanam* seasons of thoothukudi district.<br>**Period :** Jun 2014 – Mar. 2017- Extended upto March 2018<br>**Project Leader :** Dr.M. Arumugam Pillai, Prof.& Head (PBG) | The project may be closed and new project with the same objective may be formulated. Completion report has to be submitted. |
| 29. | **CPBG/KKM/PBG/RIC/2017/001:** Development of high yielding medium duration rice variety with desirable cooking quality traits suited for *Pishanam* season in Southern districts of Tamil Nadu.<br>**Period:** April 2017 - March 2022<br>**Project Leader:** Dr. S. Saravanan, Asst. Professor (PBG) | The project may be continued. |

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| **TRICHY** | | |
| 30. | **CPMB/TRY/BTB/RIC/2014/001*:** Screening rice landraces for enhanced barrier to salt uptake through the root apoplast.<br>**Period :** October 2014 - September 2017<br>**Project Leader :** Dr. L. Arul, Professor (Biotech.)<br>Dr. T. Thirumurugan, Asst. Professor (PBG)<br>Dr. S. Nithila, Asst. Professor (CRP) | • The project closes by September 2017. Completion Report to be submitted early.<br>• The endurant landraces identified *viz*., manakkathai, pokkali, madumulungi may be confirmed for the tolerance to salt and utilised in the crossing programme. |
| 31. | **CBPG/TRY/PBG/RIC/2016/001:** Development of high yielding sodicity tolerant rice varieties with desirable grain quality.<br>**Period :** October 2016 - September 2019 | The segregating materials from Aduthurai may be evaluated for sodicity tolerance and shuttle breeding for developing sodicity tolerant varieties may be followed. The advanced cultures may be evaluated in large plots. |
| **GUDALUR** | | |
| 32. | **CPBG/GDR/PBG/Rice/2016/001:** Development, Evaluation and Multiplication of Temperature Sensitive Genic Male Sterile (TGMS) lines suitable for Tamil Nadu.<br>**Period :**September 2015 - August 2020<br>**Project Leader :** Dr. D. Kumaresan, Assoc. Professor and Head | To be continued. |
| **PARAMAKUDI** | | |
| 33. | **CPBG/PMK/PBG/RIC/2015/004:** Evolution of early / very early duration drought tolerant rice genotypes with acceptable grain and cooking quality suitable for rainfed rice ecosystem.<br>**Period :** September, 2015 - August 2020<br>**Project Leader :** Dr.S.Muthuramu,Asst. Professor (PBG) | To be continued. |

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| **THANJAVUR** | | |
| 34. | **TRRI/SWMRI/TNJ/PBG/013*:** Development of early duration rice suitable for direct sown paddy areas in Cauvery delta zone of Tamil Nadu.<br>**Period :** April 2013 - March 2018 (5 Years )<br>**Project Leader :** Dr.L.Subha, Asst. Professor, SWMRI, TNJ | The project may be closed and completion report may be submitted. No progress in the last two years of project period is evidenced. |
| **PAIYUR** | | |
| 35. | **TRRI/SWMRI/TNJ/PBG/013:** Development of early duration rice suitable for direct sown paddy areas in Cauvery delta zone of Tamil Nadu.<br>**Period :**June 2016 - December 2018<br>**Project Leader :** Dr.M.Dhandapani, Asst.Professor (PBG**)** | The project may be closed and completion report may be submitted. |

* Submit completion report immediately.

All the seed production projects (Breeder seed and Maintenance breeding) may be continued. Care should be taken for maintaining the genetic purity and indent should be fulfilled without any short fall.

## B. CROP MANAGEMENT

### I. General remarks

- Agronomic practices such as seed rate, population maintenance and fertilizer management for different rice cultivation methods especially direct seeded and semi dry rice are to be studied.
- Motivate the farmers regarding the buyback arrangement for the alternate crop of maize during *kuruvai* with poultry industries.
- Traditional rice varieties along with ANNA 4 should be tested with the application of organic manures and foliar nutrients under rainfed condition.
- More studies on role of Silica and Zinc in rice may be entrusted to the PG students.
- Studies on soil based volatile compounds in the rice based cropping systems may be carried out.
- Silica content in different stages of rice has to be analysed.

### II. SALIENT FINDINGS

#### a. For ADOPTION

**1. Standardization of soil medium for production of sturdy rice seedlings suitable for machine transplant**

- Seedlings produced in Media with 70% soil + 20% well decomposed FYM + 10 % rice hull + DAP @ 7 g / tray + Vermicompost @ 100 g/ tray + *Azophos* 14 g / tray with a seed rate of 20 kg/ha had more suitable for machine planting.

**2. Nitric oxide donor based pre-sowing seed treatment for better seedling emergence and stablishment in saline /sodic soils.**

- Seed soaking with 80µM sodium nitroprusside @ 1:1 (v/v) seed: solution enhanced the seedling qualities in sodic soil

#### b. For INFORMATION

**1. Evaluation of nitrogen and weed management practices for unpuddled machine transplanted rice**

- Pre-emergence application of pretilachlor @ 750g a.i / ha followed by POE application of bispyibac Na @ 25 g a.i /ha reduced the weed growth and increased the growth, yield parameters which in turn enhanced the grain yield (5326 kg/ha)

**2. Permanent manurial experiment in rice based cropping system**

- Green manure @ 6.25 t $ha^{-1}$ and gypsum @ 500 kg $ha^{-1}$ with NPK (125:50:50 kg NPK $ha^{-1}$) recorded higher grain and straw yields in *kuruvai* season.
- In thaladi season, FYM @ 12.5 t $ha^{-1}$ and gypsum @ 500 kg $ha^{-1}$ with NPK (150:60:60) registered higher grain and straw yield.

3. **Direct and residual effect of organic sources and inorganic fertilizers on rice productivity and soil properties in the high rainfall zone**
    - Application of rice crop residue (6.25t/ha) + GLM (3.13 t/ha) along with recommended NPK and TNAU wetland rice MN mixture@ 25 kg/ha - number of productive tillers/$m^2$ (329 & 364), grain yield (7.05 & 7.03 t/ha) and straw yield (10.0 & 9.85 t/ha) of rice during *kharif* and rabi seasons in the high rainfall zone.
4. **Role of zinc, silicate and potash solubiliser for improvement in soil fertility and yield of paddy in high rainfall zone**
    - The application of the recommended NPK + $ZnSO_4$ @ 25 kg/ha + Si as rice husk ash @ 2t/ha gave highest number of productive tillers/$m^2$ (316 & 330) grain yield (6.52 & 6.62 t/ha) & straw yield (9.10 & 9.22 t/ha) of rice during *kharif* and *rabi* seasons respectively in the high rainfall zone. The soil organic C (0.46 & 0.47 %), DTPA-Zn (0.93 & 0.94 mg/kg) & silicon content (52.0 & 52.5 mg/kg) were increased during *kharif* and *rabi* seasons.
5. **Permanent Manurial Experiment on rice (Mono-cropping)**
    - Application of GLM @ 6.25 t $ha^{-1}$ in conjoint with recommended dose of N, $P_2O_5$ and $K_2O$ @ 120: 40: 40 kg $ha^{-1}$ recorded the highest grain yield of rice (5820 kg $ha^{-1}$ ).
    - A positive balance of available P ( + 11.2 to 25.7 kg $ha^{-1}$) , K (+10 to + 48 kg $ha^{-1}$ ) and Organic Carbon (+ 1.1 to +4.4 g $kg^{-1}$ ) and negative balance of available N has been observed in all the treatments (- 13 to -87 kg $ha^{-1}$ ).
6. **Studying the role of methanotrophs for reducing the methane emission in transplanted rice ecosystem of Cauvery Delta Zone**
    - Application of 75% RDF of NPK (112.5: 37.5:37.5 kg/ha)+ azophos + methanotrophs showed better performance towards MMO activity and reduced the green house gas emission *viz*., $CH_3$ (4.4 mg/$m^2$/hr), $CO_2$ (10 µ mol $m^{-2}$ $S^{-1}$) and $N_2O$ (0.154 µg N $m^{-2}$ $h^{-1}$).
7. **Performance of microbial inoculants in low land and SRI rice**
    - Application of 50% RDF of NPK (75: 25: 25 kg/ha) + Azolla+ Azophos + KRB + ZSB was found to have maximum soil microbial population and soil enzyme activity under SRI than low land ecosystem.
    - Application of 100% RDF of NPK (150: 50: 50 kg/ha) was found to have maximum NPK and plant growth and yield parameters.
8. **Evaluation of selected *Paenibacillus* strains for increased growth, yield and of salinity stress in rice**
    - Two potential strains *viz., paenibacillus castaneae* VPB1 and P*aenibacillus stellifer* KVPB5 were identified from rice soil, having the potential for salinity tolerance (200 mM NaCl) with plant growth promoting traits.
9. **Development and evaluation of stress tolerant cyanobacterial consortia to various sodicity levels in rice ecosystem**
    - Five elite sodicity-tolerant cyanobacterial isolates from salt-affected soils (Manikandam block) were characterized with high extra cellular polysaccharides and phycobilin proteins.

**10. Study on the effect of seed management technologies on seed quality evaluation of stored seeds of rice variety ADT(R) 46**

- Rice var. ADT (R) 46 seeds soaked in α - tocopherol @ 1% for 18 h and stored in polylined gunny bag maintained the highest germination (95%) and vigour for at six months after storage. Thereafter, seed germination and vigour were decreased drastically irrespective of the treatments. Hence, the ADT (R) 46 seeds can be stored as per Indian Minimum Seed Certification Standards for a period of 6 months.

**11. Development of seed coating strategy to overcome rice seed dormancy**

- Seed coating with TNAU seed coating formulation (8g) + propanol (1 %) +$GA_3$ (100 ppm) was found to be effective in breaking dormancy of rice varieties.
- The coated seeds performed well and recorded a field emergence of 80 % and 82 % under sprouted nursery and 75 % and 80 % under direct sown nursery for rice varieties of ADT 37 and ADT 38, respectively.

**12. Measuring methane gas emission from paddy fields and mitigation**

- SRI and MSRI methods and AWD irrigation are effective in reducing $CH_4$ and $CO_2$-eq emission and saving irrigation water without affecting the rice yield.

**13. Response of different rice varieties suitable for organic farming**

- Suitable genotype were rice culture CB 05022(Medicinal and aromatic) and rice varieties CO (R) 48 (Improved), Mappillai samba and Improved white ponni (traditional) for higher yield.
- Quality-wise Mappillai samba, IR 20 and Red Kavuni are superior among traditional, improved and medicinal and aromatic category, respectively.

**14. Improvement of grain filling in rice through foliar spray of nutrients and growth promoter**

- Foliar application of 2% MAP + 1% KCl and 6-Benzyl aminopurine (30 ppm) at heading and grain filling stages of rice (ADT 46, ADT 49 and CO R 52) increased the grain yield from 14 % to 29 % over control and other treatments

**15. Multifunctional *Bacillus altitudinis* FD48 for moisture stress alleviation**

- *Bacillus altitudinis* FD48 is a rice phylloplane bacterium with ACC deaminase activity.
- Able to produce phytohormones like IAA, Gibberellin and Cytokinin.
- The isolate improved seed germination (up to 90%) under induced drought condition [polyethylene glycol (PEG)].
- Draft genome sequence data reveals that the isolate possess genes responsible for stress tolerance (biotic and abiotic) and regulation of plant ethylene level.
- Also be a potential antagonist to fight against various phytopathogens.
- Produced potential volatiles, 2,-3 butanediol under drought stress (PEG) elicit induced ISR activity

**16. Fungal endophyte *Trichoderma longibrachiatum* EF5 as a biocontrol agent against rice blast and blight**

- Of the seven fungal endophytes, isolated from rice leaves, *Trichoderma longibrachiatum* EF5 exhibited maximum antagonistic effect ( 26 to 82% against fungal pathogens 13 to 46% against bacterial pathogens).
- *T. longibrachiatum* EF5 produced unique volatile antimicrobial compounds like longipinene, longifolene, Azulene, butanol etc.
- The volatile mediated defense genes expression was well pronounced by up-regulation of *osPAL* and *osERF5* genes against rice blast, *Magnoporthe grisea.*
- *T. longibrachiatum* EF5 had 73.67% inhibition against rice bacterial blight. Upon interaction with *Xanthomonas oryzae*, volatiles like dimethyl sulfide and cinnamic acid were produced.

**17. ABA inducing *Bacillus methylotrophicus* RAB6 and *Candida tropicalis* RAYN2 for hormonal regulation under drought stress**

- Apoplast associated microbial isolates, RABA6 and RAYN2 isolated from drought tolerant rice varieties (Anna4 and Nutripathu) were screened for PGP traits including ABA synthesis.
- FT-IR spectral analysis confirmed ABA production by both the isolates besides IAA production of 15 and 14 µg $ml^{-1}$ by RABA 6 and RAYN2
- Both RABA6 and RAYN2 exhibited ACC deaminase activity of 149 and 248 nmoles of (α ketobutyrate $mg^{-1}$protein $h^{-1}$), respectively beside P solubilization.

**18. Evaluation of zinc solubilizing bacteria for Zn fertilization and fortification of rice**

- Zinc solubilizing bacterial strain, *Enterobacter cloacae* strain ZSB14 could be a potential inoculant for Zn nutrition as well as Zn fortification of rice. *Enterobacter cloacae* strain ZSB14 along with ZnPO4 (20 kg/ha) performed better than other strains in terms of higher yield and Zn content in grain as against no Zn application.

**III. ON FARM TESTING**

**OFT 1. Mechanized semidry rice cultivation with weed management practices**

**Objectives**

1. To identify yield attributes responsible for the yield gap under semi dry condition
2. To identify better weed management option under semidry condition

**Treatment details**

$T_1$ - Sowing of seeds by seed drill @ 40 kg/ha+ application of pretilachlor@ 0.45 l/ ha on 5 DAS and two machine weeding (power weeder) on 30 & 45 DAS +AWD + RDF120:50:50 kg NPK /ha

$T_2$ - Farmers practice- sowing of seeds @100kg/ha + pre-emergence herbicide (pendimethalin or butachlor or pretilachlor) along with two hand weeding on 30 and 45 DAS

**Centres**

- ARS, Paramakudi : Dr.S.Sakthivel, Professor & Head
- AECRI, Kumulur : Dr.S.Vallal Kannan, AP(Agronomy)
- DARS, Chettinad : Dr.P.Kannan, AP (SS&AC)
- AC&RI, Killikulam : Dr.M.Hemalatha, Assoc. Prof.(Agronomy)

**Observations to be recorded**

- Plant population (numbers/$m^2$) at 15 DAS
- Weed flora and weed density on 25 and 40 DAS
- Number of tiller production
- Productive tillers / $m^2$
- Number of grains per panicle
- Grain and straw yields (kg/ha)
- Economics
- Labour requirement

**IV. PROJECT WISE REMARKS**

| S. No. | Project No. & Title | PI | Period | Remarks |
|---|---|---|---|---|
| I. | **AGRONOMY** | | | |
| 1. | **DCM/ADT/AGR/RIC/2016/001:** Comparative performance of different crop establishment methods for Rice - Rice - Black gram cropping system | Dr. C. Umamageswari<br>Dr. M. Jeyabharathi<br>Dr. C. Sharmila Rahale<br>Dr. M. Nagaraja<br>Dr. M. Babu<br>Dr. S.K. Natarajan<br>Dr. S. Thenmozhi<br>Dr. N. Senthil Kumar<br>Dr. M. Gomathy<br>Dr. V. Arun Kumar | 2016-2019 | Non puddled transplanted rice saves 200 mm of water during kuruvai season as against puddled transplanted rice (1246mm).<br>The system based water requirement has to be studied one more year. |
| 2. | **DCM/ADT/AGR/RIC/2016/002:** Alternate cropping system for Cauvery Delta Zone | Dr. K. Subrahmaniyan<br>Dr. M. Raju<br>Dr. C. Sharmila Rahale<br>Dr. M. Jeyabharathi<br>Dr. S. Porpaavai<br>Dr. M. Babu | 2016-2019 | The alternate cropping system of Maize - Rice - Pulse and Pulse - Rice - Pulse are recorded higher Net return and B:C ratio for Thanjavur and Aduthurai, respectively.<br>The project has to be continued for confirmation; two years result may be given as information. |
| 3. | **DCM/PMK/AGR/RIC/2016/001:** Traditional rice cultivation through organics under rainfed ecosystem | Dr. S. Sakthivel<br>Dr. T. Myrtle Grace<br>Dr. S. Jesupriya Poornakala<br>Dr. J. Arockia Mary | 2016-2019 | The traditional variety Norungan has performed better with application of FYM along with foliar application of panchagavya and PPFM.<br>The project has to be continued with Anna (R) 4 variety as a check. |

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| 4. | **DCM/PAI/AGR/RIC/2015/001*:** Pre and post emergence herbicides with mechanical weeding on weed management in direct (drum) seeded rice | Dr. C. Sivakumar | November 2015 - October 2017 | Application of pyrazosulfuron ethyl 10% WP @ 20 g $ha^{-1}$ at 3 DAS followed by post emergence application of bispyribac sodium 10% EC @ 25 g $ha^{-1}$ recorded higher weed control efficiency and grain yield.<br><br>The project has to be closed. |
| 5. | **DCM/MDU/AGR/RIC/2016/001:** Optimisation of nitrogen fertilizer requirement for short duration pre-release rice cultures. | Dr. N. S. Venkataraman | October 2016 - September 2019 | Pre-emergence application of pretilachlor @ 750 g a.i / ha followed by POE application of Bispyibac Na @ 25 g a.i /ha reduced the weed growth and increased the growth, yield parameters which in turn enhanced the grain yield (5326 kg/ha).<br><br>The project has to be continued; two years result may be given as information. |
| 6. | **DCM/TKM/AGR/RIC/2016/001:** Optimisation of nitrogen fertilizer requirement for short duration pre-release rice cultures. | Dr. C. Muralidharan | December 2016 - November 2018 | The highest grain yield was recorded in TM 10085 culture which was applied with 150:50:50 NPK kg $ha^{-1}$ fertilizer.<br><br>The project has to be continued. |

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| II. | **SOIL SCIENCE AND AGRL. CHEMISTRY** | | | |
| 1. | **NRM/CBE/SAC/RIC/2016/001:** Screening short duration rice genotypes for high grain Zn enrichment through mineral Zn fertilization | Dr. T. Chitdeshwari<br>Dr. D. Jegadeeswari<br>Dr. P. Boominathan<br>Dr. C. Sharmila Rahale<br>Dr. K. Vanitha | 2016-2019 | Soil application of 50 kg $ZnSO_4$ + 0.50 % foliar spray thrice at flowering, milky and dough stages enhanced the grain Zn loading.<br>The project has to be continued;two years result may be given as information. |
| 2. | **NRM/TRY/SAC/RIC/2016/001:**<br>Development of technology for improving the productivity in Sodic Soil under water scarce condition. | Dr. P. Santhy<br>Dr. P. Balasubramaniam<br>Dr. P. Janaki<br>Dr. A. Alagesan<br>Dr. S. Nithla<br>Dr. J. Ejilane | 2016-2019 | To be continued. |
| 3. | **NRM/ADT/SAC/RIC/2017/001:**<br>Permanent manurial experiment in rice based cropping system | Dr. C. Sharmila Rahale | April 2017 - March 2022 | Green manure @ 6.25 t $ha^{-1}$ and gypsum @ 500 kg $ha^{-1}$ with NPK (125:50:50 kg NPK $ha^{-1}$) recorded higher grain yield in *kuruvai* season. In thaladi season, FYM @ 12.5 t $ha^{-1}$ and gypsum @ 500 kg $ha^{-1}$ with NPK (150:60:60) registered higher grain yield. The project may be continued. |
| 4. | **NRM/ADT/SAC/RIC/2015***: Evolving appropriate zinc fertilization strategy for rice-rice cropping system in Delta Zone | Dr. C. Sharmila Rahale | April 2015 - March 2018 | During kuruvai and thaladi seasons, the application of 25kg $ZnSO_4$ + FYM 12.5t/ha recorded higher grain yield, Zn uptake and Zn content in both grain and straw and Zn content in soil. The project may be closed. |

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| 5. | **NRM/ADT/SAC/RIC2017/002:** Nitrogen management strategies for direct seeded rice in *samba* and late *samba* season | Dr. A. Anuratha | August 2017 - July 2020 | To be continued with midterm correction. |
| 6. | **NRM/MDU/SAC/RIC/1975/001:** Permanent manurial experiment on rice | Dr. P. Saravana Pandian | September 1975 ($59^{th}$ rice crop) | Integrated application of GLM @ 6.25 t $ha^{-1}$ in conjoint with recommended dose of N, $P_2O_5$ and $K_2O$ @ 120: 40: 40 kg $ha^{-1}$ recorded the highest grain yield of rice.<br>The project has to be continued with modified treatment schedule. |
| 7. | **NRM/MDU/SAC/RIC/2017/001:** Optimization of silicon requirement for enhancing growth and yield of rice in the intensively rice growing soils of Periyar Vaigai Command area of Madurai district | Dr. P .P. Mahendran | 2017-2019 | To be continued for two more years. Movement of silica in the plant system should be studied. |
| 8. | **NRM/TPS/SAC/RIC/2015/001:** Direct and residual effect of organic sources and inorganic fertilizers on rice productivity and soil properties of vertisol in the High Rainfall Zone | Dr. S. Suresh | 2015-2018 | Application of rice crop residue (6.25t/ha) + GLM (3.13 t/ha) along with recommended NPK and TNAU MN mixture@ 25 kg/ha recorded higher grain yield in *kharif* and *rabi* seasons.<br>Completion report to be submitted |
| 9. | **NRM/TPS/SAC/RIC/2015/002:** Role of zinc, silicate solubiliser & potash mobiliser for improvement in soil fertility & yield of paddy in a vertisol of high | Dr. S. Suresh | 2015-2018 | The application of the recommended NPK + $ZnSO_4$ @ 25 kg/ha + Si as rice husk ash @ 2t/ha gave highest grain yield during |

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| | rainfall zone | | | *kharif* and *rabi* seasons. The project has to be continued. Movement of silica in the plant system should also be studied.<br>Completion report to be submitted |
| 10. | **NRM/ASD/SAC/RIC/2015/003:**<br>Permanent Manurial Experiment on rice-rice cropping system in acid soils of Ambasamudram | Dr. S. Jothimani | June2015-May 2020 | Application of nutrients in an integrated manner especially N through INM practice significantly registered higher grain yield in all the centers.<br>Since, these are all the demonstration trials, the projects may be closed. |
| 11. | **NRM/BSR/SAC/RIC/2015/001:**<br>Permanent manurial experiment on rice – groundnut cropping system in red sandy loam soil of Bhavanisagar under irrigated condition | Dr. S. Thenmozhi | February 2015-April 2020 | |
| 12. | **NRM/TRY/SAC/RIC/2015/001:**<br>Permanent Manurial Experiment on rice-pulse cropping sequence in sandy clay loam calcareous sodic soil (Typic Ustropepts) of Trichy under Wet land condition. | Dr. P. Balasubramaniam | September 2015-August 2020 | |
| 13. | **NRM/KUM/SAC/RIC/2015/001:**<br>Permanent Manurial Experiment on rice in clay loam soil (Vertic Ustropept) of Trichirapalli under flood irrigation | Dr. M. Baskar | August 2015-April 2020 | |
| 14. | **NRM/KTM/SAC/RIC/2016/001:**<br>Evaluation of organic sources under safe AWDI method in transplanted rice | Dr. M. Babu | Aug. 2016-Mar. 2019 | To be continued. Project title and treatment schedule may be revised. |

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| 15. | **NRM/TPS/ENS/RIC/2018/001:** Studies on effect of application of composted market waste and graded levels of fertilizers on carbon storage and yield of aerobic Rice | Dr. C. Prabakaran | January 2018-December 2019 | To be continued. |
| **III.** | **CROP PHYSIOLOGY** | | | |
| 1. | **DCM/CBE/CRP/RIC/2016/001:** Improvement of grain filling in rice through foliar spray of nutrients and growth promoter | Dr. V. Ravichandran<br>Dr. V.Vakeswaran<br>Dr. K. Vanitha<br>Dr. K. Raja<br>Dr. M. Raju | 2016-2018 | Foliar application of 2% MAP + 1% KCl and 6-Benzylaminopurine (30 ppm) at heading and grain filling stages of rice increased the grain yield from 14 % to 29 % over control and other treatments in ADT 46, ADT 49 and CO R 52.<br><br>The project may be closed;results may be given as information. |
| 2. | **DCM/ADT/CRP/RIC/2014/002*:** Screening of rice genotypes for salinity tolerance | Dr. K. Vanitha | November 2014 - April 2018 | To be continued. |
| **IV.** | **AGRL MICROBIOLOGY** | | | |
| 1. | **NRM/ADT/AGM/RIC/2014/001*:** Studying the role of methanotrophs for reducing the methane emission in transplanted rice ecosystem of Cauvery Delta Zone | Dr. M. Jeya Bharathi | September 2014-August 2017 | Application of 75% RDF + Azophos + Methanotrophs showed better performance towards MMO's activity and reduced the green house gas emission.<br><br>The project may be closed. |

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| 2. | **NRM/ADT/AGM/RIC/2016/001:** performance of microbial inoculants in low land and SRI rice | Dr. M. Jeya Bharathi | October 2016-September 2018 | Application of 50% RDF of NPK + Azolla+ Azophos + KRB + ZSB was found to have maximum soil microbial population and soil enzyme activity under SRI than low land ecosystem.<br>The project has to be continued. |
| 3. | **NRM/MDU/AGM/RIC/2016/001:** Development of multifunctional strains of *Azatobactor* sp. for enhancing rice productivity | Dr. K. Kumutha | October 2016 – September 2019 | To be continued; seed scientist may be included as Co-PI. |
| 4. | **NRM/CBE/AGM/RIC/15/002:** Screening of nitrogen fixing anaerobes from flooded rice ecosystem for bioinoculant development | Dr. R. Raghu | July 2015-June 2018 | Biochemical characterization of the isolates was completed.<br>The project has to be continued with change of project leader. |
| 5. | **NRM/CBE/AGM/RIC/2016/001*:** Evaluation of selected *Paenibacillus* strains for increased growth, yield and mitigation of salinity stress in Rice | Dr. N. O. Gopal | May 2016-April 2018 | Two potential strains *viz., Paenibacillus castaneae* VPB1 and *Paenibacillus stellifer* KVPB5 were identified from rice soil, having the potential for salinity tolerance (200 mM NaCl) with plant growth promoting traits.<br>The project has to be continued. |
| 6. | **NRM/TRY/AGM/RIC/2015/001*:** Development and evaluation of stress tolerant cyanobacterial consortia to various sodicity levels in rice | Dr. M. Sundar | March 2015-February 2018 | Five promising sodicity tolerant cyanobacterial isolates has been isolated.<br>Field trials have to conducted. |

| V. | SEED SCIENCE AND TECHNOLOGY | | | |
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| 1. | **SEED/ADT/SST/RIC/2015/002*:** Study on the effect of seed management technologies on seed quality evaluation of stored seeds of rice variety ADT (R) 46 | Dr. K. Raja | February 2015-March 2018 | Rice var. ADT (R) 46 seeds soaked in α - tocopherol @ 1% for 18 h and stored in polylined gunny bag maintained the highest germination and vigour at six months after storage. Thereafter, seed germination and vigour were decreased drastically irrespective of the treatments.<br>The project may be closed; results may be given as information. |
| 2. | **SEED/CBE/SST/RIC/2016/001:** Development of seed coating strategy to overcome rice seed dormancy | Dr. J. Renugadevi | June 2016-May 2019 | Seed coating with TNAU seed coating formulation (8g) + propanol (1 %) +$GA_3$ (100 ppm) was found to be effective in breaking dormancy of rice varieties.<br>The project may be continued to complete the storage studies; results may be given as information. |
| 3. | **SEED/BSR/SST/RIC/2017/001:** Evaluating an integrated management approach against angoumois grain moth (*Sitotroga cerealella*) infestation to improve rice seed storability | Dr. R. Vigneshwari | December 2016-December 2018 | There was no carry over pest incidence of Angoumois grain moth in paddy ADT (R) 45 from field to storage.<br>The project is to be completed. In future only an entomologist should be the project leader of such projects. |

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| 4. | **SEED/TNJ/RIC/2015/001*:** Strategies to induce seed dormancy to mitigate pre-sprouting in rice variety ADT 43 | Dr.N.Punithavathi | January 2015-December 2017 | Maleic hydrazide spray @ 500 ppm induces dormancy in rice varietyADT43.<br>The project may be continued; extension proposal may be submitted. |

## V. ACTION PLAN WITH URP (FOR 2018-19)

| S.No. | Project number | Title of the project |
|---|---|---|
| 1. | DCM/ ADT/ AGR/ RIC/ 2016/ 001 | Comparative performance of different crop establishment methods for Rice - Rice - Black gram cropping system |
| 2. | DCM/ADT/ AGR/RIC/ 2016/002 | Alternate cropping system for Cauvery Delta Zone |
| 3. | DCM/PMK/AGR/RIC/ 2016/001 | Traditional rice cultivation through organics under rainfed ecosystem |
| 4. | NRM/ CBE/SAC/ RIC/ 2016/001 | Screening short duration rice genotypes for high grain Zn enrichment through mineral Zn fertilization |
| 5. | NRM/TRY/SAC/RIC/2016/001 | Development of technology for improving the productivity in Sodic Soil under water scarce condition. |
| 6. | DCM/ CBE/ CRP/ RIC/ 2016/001 | Improvement of grain filling in rice by foliar spray of nutrients and growth promoters |
| 7. | New | Comprehensive nutrient package for direct sown rice in Cauvery Delta Zone |
| | **Comprehensive nutrient package for direct sown rice in Cauvery Delta Zone**<br>**Rationale**<br>• Dry seeding is gaining momentum (around one lakh ha in CDZ).<br>• Nutrient package for direct sown rice is required<br>**Objective**<br>• To optimize the nutrient requirement for direct sown rice<br>**Treatments details**<br>Season: *Kuruvai*<br>• Dry seeding with seed drill ( Irrigated condition)<br>Season: *Samba*<br>• Semidry rice ( rainfed condition till canal water receipt or rainfall)<br>Nutrient levels<br>• 75: 50: 37.5 kg NPK/ ha ( existing)<br>• 100: 50: 50 kg NPK/ ha<br>• 125: 50: 62.5 kg NPK/ ha<br>• 150: 50:75 kg NPK/ ha<br>• STCR for targeted yield of 6 t/ ha<br>( All other practices are common)<br><br>**Period:** June 2018 to May 2021 | |

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| | **Lead centre:** SWMRI, Kattuthottam<br>**Centres**<br>TRRI, Aduthurai<br>SWMRI, Kattuthottam<br>KVK - Sikkal & Needamangalam<br>**Observations to be recorded**<br>• Growth and yield attributes<br>• Water requirement and WUE<br>• Initial and post soil nutrient status<br>• Nutrient uptake and nutrient use efficiency<br>• Economics |

**C. CROP PROTECTION**

**A. Remarks on the ongoing University Research Projects**

**I. AGRICULTURAL ENTOMOLOGY**

| Sl. No | Project No. and Title | Remarks |
|---|---|---|
| 1 | **CPPS/ADT/ENT/RIC/2011/002*:**<br>Development of Tolerant / Resistant rice genotypes against yellow stem borer. (Nov. 2013 to Oct. 2017)<br>**Dr.S.Suresh** | The project has been completed during 2017. Completion report is to be submitted on or before 15.06.18. A special note on the entries handed over for breeding trials may be sent to Director (CPPS). A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation.<br>**Action:** Dr.P.Anandhi in consultation with Dr.S.Suresh, Dean, AC&RI, Madurai ) |
| 2. | **CPPS/ADT/ENT/RIC/2011/003***<br>Studies on the monitoring of pest and their natural enemies in rice cropping sequence of Cauvery delta Zone.<br>(Nov. 2013 to Oct. 2017)<br>**Dr.S.Suresh** | |
| 3. | **CPPS/ADT/ENT/RIC/2015/004:**<br>Optimization of time of release and conservation of *Trichogramma japonicum* and *Trichogramma chilonis* for robust management of yellow stem borer and leaffolder in rice ecosystem.<br>(Aug. 2015 to July 2018)<br>**Dr.V.G. Mathirajan** | The findings of the project have not been presented. As the project completion deadline is July 2018, Completion report is to be submitted on or before 15.08.18 (Action: Dr.V.G.Mathirajan and Dr. P.Anandhi). A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. The final outcome should be presented in the next crop scientist meet 2019. |

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| | | Dr. P. Anandhi has to propose a new sub-project based on the thrust area discussed during CSM-2018 |
| 4. | **CPPS/CBE/DOR/ENT/RIC/2016/001/295:** Standardization of artificial screening and identification of resistant sources for yellow stem borer, *Scirpophaga incertulas* in rice.<br>(Oct. 2016 to Sep. 2019)<br>**R.P.Soundararajan** | Project may be continued. The silica content in the stem portion of resistant varieties, TKM 6, W1263, is to be estimated. Artificial screening of stem borer resistance in Jaya and Swarna suggested along with the data on physical and biochemical mechanisms of resistance. The results may be published in peer reviewed journals. |
| 5. | **CPPS/CBE/AEN/13/048*:** Developing nano matrices to regulate the release of pheromone to monitor yellow stem borer, *Scirpophaga incertulas* in Rice<br>(Nov. 2013 to Oct. 2017)<br>**Dr. M. Kannan** | As the project scheduling is 2016-17, completion report may be sent on or before 30.06.18. A copy of the publication (both soft and hard copy) published from this URP may be sent to Director (CPPS) for documentation. |
| 6. | **CPPS/CBE/ENT/RIC/2016/001/294:** Developing ecological engineering methods for enhancing rice entomophages and pest management under zero insecticide condition<br>(Jun. 2016 to May 2019)<br>**Dr.N.Muthukrishnan** | Project may be continued. Benefit: cost ratio needs tobe worked out for each treatment. Use of the terminology like ecological engineering may be verified. Instead, it has been suggested to use the terms like “habitat manipulation”. If, needed the title may be changed accordingly through a mid-term correction. |
| 7. | **CPPS/ASD/ENT/PAT/RIC/2014/002*:** Screening and evaluation of advanced and pre-release rice cultures against major pests and diseases in Thamirabarani tract.<br>(Jul. 2014 to Jun. 2017)<br>**Dr. M. Ariavanamkatha Pillai**<br>**Dr. N.Rajinimala** | The screened entries may be handed over for breeding trials. A special note in this regard may be sent to Director (CPPS). Completion report is to be submitted on or before 30.07.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. |
| 8. | **CPPS/BSR/ENT/RIC/2016/001:** Evaluation of eco-friendly methods against rice yellow stem borer.<br>(Sep. 2016 to Aug. 2019).<br>**Dr. Sheela Venugopal** | No substantial finding due to low incidence of yellow stem borer. It is suggested to include other major pests also. Accordingly, a midterm correction may be submitted for approval. The title, treatments, methodology and |

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| | | observations to be recorded needs modification. In habitat manipulation studies, both the pests and natural enemies population may be recorded. Good field photographs may be given along with reports. |
| 9. | **CPPS/KKM/ENT/RIC/2014/001*:** Studies on Species Diversity and Host Plant Resistance of Rice Stem borer in Tamirabarani Tract in Tamil Nadu.<br>(Dec. 2014 to Nov. 2017)<br>**Dr.K.Elanchezhyan**<br>**Mrs. Kavitha Pushpam** | Completion report is to be submitted on or before 30.06.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. A new research sub project may be proposed based on the results of the present project / thrust area identified. In the new proposal emphasis may be given to test verify artificial screening and mechanisms of resistance (physical and biochemical). The resistant entries may be shared among the stem borer screening centres for evaluation at TPS, TNJ, CBE, ADT, TRY and BSR on or before 30.06.18. A special note on material transfer is to be submitted to Director (CPPS). |
| 10. | **ACMDU/MDU/AEN/14/008*:** Effect of foliar spraying of silicic and salicylic acids on inducing resistance against major insect pests of rice.<br>(Sep. 2014 to Aug.2017)<br>**Dr. P. Chandramani** | Completion report is to be submitted on or before 15.06.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. A new URP may be proposed from MDU centre based on the theme area of research in consultation with the Professor & Head, Department of Agrl. Ent., AC&RI, Madurai.<br>**(Action:** Dr.K.Premalatha and Dr.P.Chandramani) |
| 11. | **CPPS/TNJ/ENT/RIC/2016/001/351:**<br>Exploring rice stem borer diversity, plant resistance sources and its management through habitat diversification in Thanjavur belt. | Project is to be continued. The data on both male and female adults may be collected. Diversity of coccinellids need to be documented with good quality photographs. Morphological and |

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| | (Jun.2016 to May 2019)<br>**R.Nalini** | biochemical basis of resistance in the screened entries should be identified, getting the facilities from ADAC&RI, Trichy or Dept. of Agrl. Entomoloy, TNAU, Madurai / Coimbatore. In habitat manipulation studies uniform treatment should be followed at all centres in consultation with Dr. N.Muthukrishnan, Prof.&Head (Agrl.Ent.), TNAU, Coimbatore. |
| 12. | **CPPS/TNJ/ENT/RIC/2017/001/518:**<br>Developing a bio-intensive insect pest management module for organic rice cultivation.<br>(Aug. 2017 to Jul. 2020)<br>**R.Nalini** | Project may be continued. The BC ratio should be worked out in all BIPM trials. Parasitoids and predators may be purchased from TNAU centres for conducting the trials. |
| 13. | **CPPS/TPS/ENT/RIC/2016/001:**<br>Pest management strategies for the changing rice pest scenario in Kanyakumari District.<br>(Oct. 2016 to Sep. 2019)<br>**Dr.G.Preetha** | Project to be continued. It is suggested to reason out why PSB and YSB were dominant during 2017-18. Correlation and regression analysis with weather data, continuous monitor of the change in species complex in relation to cropping pattern have been suggested. The mechanisms of resistance in Jaya and Swarna against stem borer may be studied. |
| 14. | **CPPS/TPS/ENT/RIC/2017/001:** Insecticide resistance monitoring of rice pink stem borer, *Sesamia inferens* (Walker)<br>(Aug. 2017 to Jul. 2020)<br>**Dr.G.Preetha** | Project may be continued. Resistance monitoring can be made in the insect populations collected from adjacent rice growing districts. |
| 15. | **ACTR/TRY/PAT/14/001*:** Identification of sources of resistance in rice to major pests and diseases under salt stress conditions.<br>(Oct. 2014 – Sep. 2017)<br>**Dr.K.Chitra and Dr.Sheeba Joyce Rosleen** | Completion report is to be submitted on or before 15.06.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. |
| 16. | **CPPS/TRY/PAT/RIC/2015/001*:** Combined effect of *Beauveria* and endophytic bacteria on stem borer (*Scripophaga incertulas* Walker) and sheath blight disease (*Rhizoctonia solani* Kuhn.) in rice.<br>(Apr.2015 to Mar.2018)<br>**Dr.Sheeba Joyce Rosleen** | A new URP on the thrust area identified should be submitted separately by both the scientists. |

**II. Plant Pathology**

| S. No. | Project No. and Title | Remarks |
|---|---|---|
| 1 | **CPPS/ADT/PAT/RIC/2014/001*:** Evaluation of PGPB for the management of sheath blight in the direct seeded and transplanted rice. (Sept. 2014 – Feb. 2018) **Dr.R. Thilagavathi** | Bacterial cultures in the consortia may be deposited at AITCC/ MTCC / ITCC for getting accession numbers. Reference culture should be submitted along with passport data for long term preservation at Dept. of Plant Pathology, TNAU, Coimbatore. Completion report is to be submitted on or before 15.07.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. |
| 2 | **CPPS/ADT/PAT/RIC/2015/005:** Exploring *Bacillus* sp. for the control of bacterial leaf blight of rice caused by *Xanthomonas oryzae* pv. *oryzae* (July 2015 – June 2018) **Dr.R. Thilagavathi** | Profiling of antibiotics produced by the new cultures may be done in consultation with the Prof.& Head, Dept. of Plant Pathology, TNAU, Coimbatore through PG student research proposal. Submission of effective bacterial culture with IDA recognized culture collection centre (AITCC / MTCC / ITCC) is mandatory. Also the identified culture needs to be submitted along with passport data for long term conservation at Dept. of Plant Pathology, TNAU, Coimbatore. |
| 3 | **CPPS/ADT/PAT/RIC/2014/002*:** Evaluation of endophytic bio-control agents against sheath rot of rice (Oct. 2014 – Sept. 2017) **Dr.P. Ahila Devi** | The scientist is currently working at NPRC, Vamban. She is requested to send the completion report on or before 15.06.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. The effective endophytes identified against sheath rot may be handed over to Dr.R.Thilagavathi for further evaluation. In this context, a special report may be sent to Director (CPPS). The effective culture should also be deposited with IDA recognized culture collection centre (AITCC/ MTCC / ITCC) and accession number is to be obtained. Reference |

| | | |
|---|---|---|
| | | culture to be deposited at Dept. of Plant Pathology, TNAU, Coimbatore<br>(**Action:** Dr.P.Ahila Devi,Dr.R.Thilagavathi) |
| **4** | **CPPS/ADT/PAT/RIC/2014/003*:**<br>Exploring the possibilities of using rhizosphere inhabiting *Streptomyces* sp. for the management of brown leaf spot of rice<br>(Oct. 2014 – Sept. 2017)<br>**Dr.P. Ahila Devi** | The scientist is currently working at NPRC, Vamban. She is requested to send the completion report on or before 15.06.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. The effective actinobacteria identified against brown spot may be handed over to Dr.R.Thilagavathi for further evaluation. In this context, a special report may be sent to Director (CPPS). The effective culture should also be deposited with IDA recognized culture collection centre (AITCC/ MTCC / ITCC) and accession number is to be obtained. Reference culture to be deposited at Dept. of Plant Pathology, TNAU, Coimbatore.<br>(**Action:** Dr.P.Ahila Devi,Dr.R.Thilagavathi) |
| **5** | **CPPS/ASD/PAT/RIC/2013/001*:**<br>Management of rice blast using chemical fungicides and bio-pesticides<br>(Jun. 2014 – May 2017)<br>**Dr.N. Rajinimala** | Completion report is to be submitted on or before 15.06.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. |
| **7** | **CPPS/CBE/PAT/RIC/2016/001:**<br>Assessing the occurrence and distribution of mycotoxins in rice<br>(Feb. 2016 – Jan. 2019)<br>**Dr. M. Karthikeyan** | The scientist is now working in Department of Vegetable crops, HC&RI, Coimbatore. As there is no significant finding for the past two years. Since, the scientist is specialized in this aspect he has to continue the work during ensuing season and complete the work and submit the completion report. |
| **8** | **CPPS/KKM/PAT/RIC/2015/001*:**<br>Management of major fungal diseases of rice in Tamirabarani tract of Tuticorin District<br>(Feb. 2015 – Feb. 2018)<br>**Dr. R. Akila** | There is no consistent result from the project. Characterization of anti-fungal compounds from Kodukapuli and Henna were not carried out and the same may be completed in the every season/ immediately. Completion report / Deletion proposal is to be submitted on or |

| | | |
|---|---|---|
| | | before 30.06.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. |
| **9** | **CPPS/MDU/PAT/RIC/2014/001*:**<br>Innovative approaches for the management of bacterial leaf blight and bacterial leaf streak diseases of rice using antagonist.<br>(Apr. 2014 – Mar. 2017)<br>**Dr.S. Thiruvudainambi** | Completion report submission is long pending. It is suggested to submit the completion report on or before 30.06.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. |
| **10** | **CPPS/MDU/PAT/RIC/2014/002*:**<br>Identification of resistant genotypes against major diseases of rice<br>(May 2014 – Apr. 2017)<br>**Dr. N. Revathy** | Completion report submission is long pending. It is suggested to submit the completion report on or before 30.06.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. A report on the resistant entries identified and handed over for breeding trials may be submitted to the Director (CPPS). |
| **12** | **CPPS/TRY/PAT/RIC/2015/001*:**<br>Combined effect of *Beauveria* and endophytic bacteria on stem borer (*Scirpophaga incertulas* Walker) and sheath blight disease (*Rhizoctonia solani* Kuhn.) in rice<br>(Apr. 2015 to Mar. 2018)<br>**Dr. L. Karthiba**<br>**Dr. S. Sheeba Joyce Roseleen** | It is suggested to submit the completion report on or before 30.06.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. Newly identified strains of endophytic bacteria may be deposited with IDA recognized culture collection centre (AITCC/ MTCC / ITCC) and accession number to be obtained. Reference culture to be deposited at Dept. of Plant Pathology, TNAU, Coimbatore. |
| **13** | **CPPS/TPS/PAT/RIC/2015/001*:**<br>Screening of rice cultures to major diseases and management of sheath rot and grain discolouration<br>(Sep. 2015 – Mar. 2018)<br>**Dr. M. Jayasekhar** | The findings of the project have not been presented. As the project period is over by Mar.2018, completion report may be submitted on or before 30.06.18. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. |

**B. Action plan (2018 -2019)**

**I. Agricultural Entomology**

**Theme Area:**

1. Prediction of changing insect pest scenario in rice ecosystems
2. Ecological engineering approaches for rice pest management
3. Exploring insect resistance mechanism
4. Tritrophic interaction for rice pest management

**Action Plan 1: Prediction of changing insect pest scenario**

| **Theme Leader** | **Dr. P.Anandhi**, Asst. Professor (Agrl. Entomology), TRRI, Aduthurai | | |
|---|---|---|---|
| **Activity** | **Name of the Scientist & Centre** | **Observations to be recorded** | **Deliverables** |
| Keeping vigilance on emerging pests either through introduction or shift in pest status.<br><br>Assessment of insect pest and natural enemies population *in situ*, light & pheromone trap.<br><br>Impact of light trap on non target arthropods. | Dr.R.Nalini,SWMRI, TNJ<br>Dr.R.P.Soundararajan<br>TNAU, CBE<br>Dr. G.Preetha,<br>RRS, TPS & ASD<br>Dr.K.Elanchezhyan,<br>AC & RI, KKM<br>Dr. K.Premalatha,<br>AC & RI, MDU<br>Dr. Sheela Venugopal<br>ARS, BSR<br>Dr. Sheeba Joyce Roseleen,<br>ADAC & RI, TRY | Continuing the vigilance on changing pest scenario.<br>Insect pests and natural enemies data from light trap and in-situ counts<br>Key pest monitoring<br>Exploring biotic & abiotic factors to predict the pest population. | Forewarning on emerging pests.<br><br>Intervention with suitable IPM package. |

**Action Plan 2. Ecological engineering approaches for rice pest management**

| **Theme Leader** | **Dr. N. Muthukrishnan, Prof.& Head (Agrl. Ento.), TNAU, CBE** | | |
|---|---|---|---|
| **Activity** | **Name of the Scientist & Centre** | **Observations to be recorded** | **Deliverables** |
| 1. Evaluation of rice–non rice cropping systems for enhancing natural enemies.<br>2. Effect of organic amendments and bio-fertilizers<br>3. Integration of effective components. | Dr.P.Anandhi<br>TRRI, Aduthurai<br>Dr.R.Nalini<br>SWMRI, TNJ<br>Dr.K.Elanchezhyan<br>AC & RI, KKM<br>Dr. K.Premalatha<br>AC & RI, MDU | Identified suitable bund crops - Sunflower, sesame, cowpea , bhendi, brinjal, maize, sorghum, chrysanthemum & vetiver.Identification of cost effective organic amendment and integration with habitat manipulation. | Cost effective ecological engineering techniques for rice pest management |

**Action Plan 3. Exploring insect resistance mechanism**

| **Theme Leader** | **Dr.R.P. Soundararajan, TNAU, CBE** | | |
|---|---|---|---|
| **Activity** | **Name of the Scientist & Centre** | **Observations to be recorded** | **Deliverables** |
| 1. Identification of resistance sources for major arthropods.<br><br>2. Investigation of resistancemechanism | Dr.P.Anandhi<br>TRRI, Aduthurai<br>Dr. G.Preetha<br>RRS, TPS and ASD<br>Dr.R.Nalini<br>SWMRI, TNJ<br>Dr.K.Elanchezhyan<br>AC & RI, KKM<br>Dr.K.Premalatha<br>AC & RI, MDU<br>Dr.Sheela Venugopal<br>ARS, BSR<br>Dr. Sheeba Joyce Roseleen,<br>ADAC & RI, TRY | Investigating bio-physical and biochemical bases of resistance.<br>Each centre will work on the specified insects for HPR studies<br>CBE - BPH & SB<br>ADT- BPH & SB<br>TPS - SB, TNJ - SB<br>ASD - SB, KKM - SB<br>MDU - LF & SB<br>BSR - LF & SB<br>TRY - LF & SB | Resistant donors for breeding programme can be identified. |

**Action Plan 4. Tritrophic interaction for rice pest management**

| **Theme Leader** | **Dr. R. Nalini, SWMRI, TNJ** | | |
|---|---|---|---|
| **Activity** | **Name of the Scientist & Centre** | **Observations to be recorded** | **Deliverables** |
| Identification of chemical mediated attractant to enhance the natural enemies of SB & LF through PG student research project. | Dr.N.Muthukrishnan<br>TNAU, CBE<br><br>Dr. K.Premalatha<br>AC & RI, MDU | Characterization of plant volatiles that enhance natural enemies or suppress pest dynamics in rice growing ecosystem. | Chemical attractants to enhance the biological control of rice pests will be possible |

**II. Plant Pathology**

**Theme Area**

1. Disease monitoring, surveillance, epidemiological studies on rice diseases and forewarning
2. Identification of resistant sources for pests and diseases
3. Studies on mechanism of resistance
4. Management of rice diseases through eco-friendly approaches

**Action Plan 1:** Disease monitoring, surveillance, epidemiological studies on rice diseases and forewarning

| **Theme Leader** | **Dr. K. Rajappan, TRRI, Aduthurai** | | |
|---|---|---|---|
| **Activity** | **Name of the Scientist & Centre** | **Observations to be recorded** | **Deliverables** |
| Monitoring of diseases under irrigated and direct sown rice:<br>blast, sheath blight, sheath rot, bacterial blight, brown spot, grain discoloration and false smut diseases. | Dr. A. Ramanathan<br>Dept. of rice, CBE<br>Dr. N. Revathy<br>AC&RI, Madurai<br>Dr. K.Chitra<br>ADAC&RI, TRY<br>Dr. M. Jeyasekhar<br>ARS, TPS & RRS, ASD<br>Dr. R. Akila and<br>Dr. R. Rajinimala<br>AC&RI, KKM. | • Per cent disease incidence / PDI as per standard grades.<br>• Correlation and regression analysis of disease progression during cropping periods in relation to weather parameters.<br>• Regular bulletins on disease scenario in the particular zone should be given for the benefit of farmers through press and media marking a copy to Director (CPPS). | Timely monitoring of disease epidemics and fore-warning of farmers and line departments. |

**Action Plan 2: Identification of resistant sources for pests and diseases**

| **Theme Leader** | **Dr. A. Ramanathan TNAU, Coimbatore** | | |
|---|---|---|---|
| **Activity** | **Name of the Scientist & Centre** | **Observations to be recorded** | **Deliverables** |
| Identification of resistant sources for diseases and pests<br>Blast, sheath blight, sheath rot, bacterial blight, brown spot, grain discolouration and false smut | Dr.K. Rajappan, TRRI, Aduthurai<br>Dr. N. Revathy<br>AC&RI, Madurai<br>Dr. P. Jeyasekar<br>ARS, TPS<br>Dr. R. Akila<br>AC&RI, KKM in coordination with the Entomology Scientists working in the respective places. | Multiple resistant entries for both pests and diseases natural and artificial conditions<br>(wherever possible) | Multiple resistant donors for breeding programme will be identified |

**Action Plan 3: Studies on mechanism of resistance**

| **Theme Leader** | **Dr. R. Thilagavathy, TRRI, Aduthurai** | | |
|---|---|---|---|
| **Activity** | **Name of the Scientist & Centre** | **Observations to be recorded** | **Deliverables** |
| Studies on mechanism of resistance to Blast, sheath blight, sheath rot, bacterial blight, brown spot, grain discolouration and false smut | Dr.K. Rajappan, TRRI, ADT<br>Dr. A. Ramanathan<br>Dept. of Rice, CBE<br>Dr. N. Revathy<br>AC&RI, Madurai<br>Dr. M. Jeyasekhar<br>ARS, TPS<br>Dr. N. Rajinimala<br>AC&RI, KKM | In addition to PO, PPO & PAL; other biochemical and bio physical alterations in the resistant entries v*iz*., AS 10036, AS 10038, AS 10040 and susceptible check, CO 39 may be recorded. | Identification of the mechanism of resistance will be helpful in resistant breeding and evolving disease management strategies. |

**Action Plan 4: Management of rice diseases through eco-friendly approaches**

| **Theme Leader** | ***Dr. K. Rajappan, TRRI, Aduthurai and Dr. A. Ramanathan, Dept. of Rice, TNAU, Coimbatore in consultation may identify uniform treatments and replications on or before 15.06.2018 and circulate to all other centres with an intimation to Director (CPPS).** | | |
|---|---|---|---|
| **Activity** | **Name of the Scientist & Centre** | **Observations to be recorded** | **Deliverables** |
| Evaluating biointensive strategies, organic inputs, soil amendments with green manure, green leaf manure, biomanure and oil cakes for the management of sheath blight, sheath rot, bacterial blight, brown spot, grain discolouration and false smut | Dr. A. Ramanathan<br>Dept. of Rice, CBE<br>Dr. N. Revathy<br>AC&RI, Madurai<br>Dr. PM Jeyasekhar<br>ARS, TPS<br>Dr.R.Rajinimala and<br>Dr. R. Akila<br>AC&RI, KKM | PDI / Per cent diseases. Build up of beneficial microbes in the infection court and soil environment. | To develop suitable organic methods of rice disease management |

**C. General Remarks**

- All scientists are instructed to monitor the insect pests and diseases of rice in their districts constantly. Monthly Pest and disease surveillance report should be submitted to the Director (CPPS) on or before 25$^{th}$ of every month without fail.
- The dates given for sending the closure proposal / deletion proposal should be strictly adhered.
- Based on the thrust area identified new URP should be submitted by the concerned scientists on or before 30.06.18. All proposals should be presented before the RPAC convened by the Director (CPPS) before getting final approval.
- Basic work on mechanism of resistance, effect of cropping systems and volatilomes on pests and diseases and their natural enemies should be taken up involving PG and Ph.D students.

**D. WORK LOAD OF RICE SCIENTISTS FOR THE YEAR 2018-19**

**I. CROP IMPROVEMENT**

**TRRI, Aduthurai**

| Scientists | Titles | Theme | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | % time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dr.D.Sassikumar Associate Professor (PBG)** | | | | | | | | | | | | | | | |
| URP | CPBG/ADT/PBG/RIC/2012/004 | 4a | Kuruvai trial | | | | | | | | | Reporting | | | 10 |
| | CPBG/ADT/PBG/RIC/2015/ 012 | 4a | | | | | Thaladi trial | | | | | Reporting | | | 25 |
| | **CPBG/ADT/PBG/RIC/2016/New:** Breeder seed production | 10 | ADT 43, ADT(R) 47 | | | | ADT 49, ADT 50 and CR 1009 sub 1 | | | | | | | | 25 |
| AICRP | AICRP/PBG/ADT/RIC/002 : AICRP on Rice | | Kuruvai trials | | | | Thaladi trials | | | | | Reporting | | | 15 |
| EFP | Product testing – 2 companies<br>2 hybrids and 3 variety | | | | | | Thaladi trials | | | | | | | | 10 |
| Teaching | Student Guidence<br>As chairman -1 M.Sc<br>As member 1 PH.D and 1 M.Sc | | <----------PG guidance----------> | | | | | | | | | | | | 10 |
| Others | Report compilation | | Compilation of Monthly report, AICRP and CSM reports | | | | | | | | | | | | 5 |
| **Dr.R.Manimaran Assistant Professor (PBG)** | | | | | | | | | | | | | | | |
| URP | **CPBG/ADT/PBG/RIC/2015/010 :** | | <------Kharif trials--------> | | | | | | | | | | | | 20 |
| | **CPBG/ADT/PBG/RIC/2014/008** | 5a, 6c | | | | <----------Rabi trials----------> | | | | | | Reporting | | | 20 |
| | Hybrid Rice –New | 7c | <-Kharif trials--------> | | | | <--Rabi trials-> | | | | | Reporting | | | 20 |
| AICRP | - | | | | | | | | | | | | | | 0 |
| EFP | | | | | | | | | | | | | | | 0 |
| Teaching | | | | | | | | | | | | | | | 0 |
| Others | Farm Management | | <---------- Farm Management---------- --------> | | | | | | | | | | | | 20 |
| | Conduct of OFT, Establishment Wild Rice Park | | <---------- Conduct of OFT & Reporting ----------> | | | | | | | | | | | | 20 |
| **Dr.R.Suresh, Assistant Professor (PBG)** | | | | | | | | | | | | | | | |
| URP | **CPBG/ADT/PBG/RIC/2014/009** | 2a,b,c&3 | <------Kharif trials--------> | | | | | | | Summer Trials, Reporting | | | | | 20 |
| | **CPBG/ADT/PBG/RIC/2012/005** | 10 | | | | | | <----------Rabi trials------> | | | | Reporting | | | 10 |
| AICRP | **AICRP/PBG/ADT/RIC/002 : AICRP on Rice** | | <--------Kharif trials------> | | | | | <--Rabi trials-> | | | | Reporting | | | 20 |
| EFP | **DBT/CPMB/CBE/DPB/2016/R020:** | | | | | | | | | | | | | | 10 |
| | **DST/** | | | | | | | | | | | | | | 10 |
| Teaching | | | | | | | | | | | | | | | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Others | Farm Management | | <---------- Farm Management---------- --------> | | | 20 |
| | In charge of MAS Lab and Tissue Lab | | <----------MAS Lab and Tissue Lab work ----------> | | | 10 |
| **Dr.R.Pushpa, Assistant Professor (PBG)** | | | | | | |
| URP | **CPBG/ADT/PBG/RIC/2015/ 011** | | <------Kharif trials--------> | <--Rabi trials-> | Reporting | 20 |
| | **CPBG/ADT/PBG/RIC/2014/010:** | | <--------Kharif trials------> | <--Rabi trials-> | Reporting | 20 |
| AICRP | **AICRP/PBG/ADT/JUT/001 :**AINPJAF | | <----------Kharif trials----------> | Summer Trials & Reporting | | 30 |
| EFP | - | | | | | 0 |
| Teaching | - | | - | | | 0 |
| Others | MLT/ART seed packing and dispatch | | <-----Seed packing , dispatch ,Collecting results & Reporting --------> | | | 15 |
| | MLT/ART quality analysis | | <---------- MLT/ART seeds quality analysis & Reporting ----------> | | | 15 |

## Department of Rice, Coimbatore

| Scientists | Titles | Theme | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | % time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dr.P.Jeyaprakash, Professor (PBG) and Head** | | | | | | | | | | | | | | | |
| URP | CPBG/CBE/PBG/RIC/2016/005 | 3a,1b | Kharif - Hybridization , Evaluation of $F_1$s ,MLT 1 and yield trials | | | | Rabi - MLT II evaluation, Evaluation of segregating progenies($F_2$-$F_6$) and seed multiplication MLT, ART, AICRIP nominations and promoted cultures | | | | | | | | 15 |
| | CPBG/CBE/PBG/RIC/2016/006 | | Maintenance breeding and breeder seed multiplication of early duration rice varieties | | | | Maintenance breeding and breeder seed multiplication of medium and long duration rice varieties | | | | | | | | 10 |
| AICRP | AICRP/PBG/CBE/RIC/New | | <-Kharif trials------> Early, mid early, biofortification, aerobictrials, FLD | | | | Production oriented survey, Reporting & Meeting | | | | | | | | 15 |
| EFP | ICAR/CPBG/CBE/RIC/R 012-Biofortification | | <-Kharif trials--------> | | | | <----------Rabi trials & reporting---------> | | | | | | | | 10 |
| | DBT/CPBG/CBE/RIC/2013/R 013- N 22 | | <-Kharif trials--------> | | | | <----------Rabi trials & reporting---------> | | | | | | | | 10 |
| | DBT/CPBG/CBE/RIC/2015/R 014- MAS, STRASA | | <-Kharif trials--------> | | | | <----------Rabi trials & reporting---------> | | | | | | | | 10 |
| Teaching | GPB 605(2+1), GPB 607(2+1), PG.Ph.D Students, | | <----------Teaching and Guidance----------> | | | | | | | | | | | | 15 |
| Others | P&H, Dept. of Rice, COE (Molecular breeding) | | <----------Administration----------> | | | | | | | | | | | | 15 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Dr.R.Saraswathi, Professor (PBG)** | | | | | | |
| URP | CPBG/CBE/PBG/RIC/2016/003 | 8a | Back cross nursery, maintainer and restorer breeding & Reporting | | | 10 |
| | CPBG/CBE/PBG/RIC/2016/004 | 8a, 8c | Kharif – New Three line Hybrid synthesis, evaluation, seed production of Expl. Hybrids for yield testing | Rabi - seed production of Expl. Hybrids for yield testing, quality test & Reporting | | 20 |
| | CPBG/CBE/PBG/RIC/2017/001 | 8b,8c | Kharif – hybrid evaluation | Rabi – Two line Hybrid synthesis, seed production of Expl. Hybrids for yield testing, quality test , reporting | | 20 |
| | CPBG/CBE/PBG/RIC/2017/New | | Nucleus /breeder seed production of R and A lines of released hybrids, seed multiplication of A,B, R lines of experimental /pipeline hybrids, seed multiplication of MLT/ART hybrids | | | 10 |
| AICRP | AICRP/PBG/CBE/RIC/New | | <-Kharif trials--------> IHRT-Early, IHRT-mid early, medium ,medium slender, MLT on released hybrids and FLD | Production oriented survey Reporting & Meeting | | 10 |
| EFP | ICAR/CPBG/CBE/RIC/2015/R010 | | <-Kharif trials--------> | <--Rabi trials-> | Reporting | 10 |
| Teaching | GPB. 602 (3+1) and PGR.610 (1+1) | | <----------PG guidance----------> | | | 10 |
| Others | Farm Superintendant | | <----------Administration ----------> | | | 10 |
| **Dr.K.Amudha, Assistant Professor (PBG)** | | | | | | |
| URP | CPBG/CBE/PBG/RIC/2016/001 | 1a | Characterization of 250germplasm accessions for morphological, yield and yield components | Screening of germplasm accessions against BPH and reporting | | 15 |
| | CPBG/CBE/PBG/RIC/2016/002 | 4a,4b | Kharif – Hybridization & Evaluation of $F_1$s | Rabi - Exhibition plot,Yield trials, MLT III and IV evaluation, Evaluation of segregating progenies($F_2$-$F_6$) and seed multiplication MLT, ART, AICRIP nominations and promoted cultures | | 30 |
| AICRP | AICRP/PBG/CBE/RIC/New | | <-Kharif trials--------> Medium, Medium slender, FLD | Production oriented survey, Reporting & Meeting | | 15 |
| R | PBG-201,PBG-301&PBG-401 | | | | | 10 |
| Others | Farm Manager | | <----------Administration ----------> | | | 30 |

## RRS, Ambasamudram

| Scientists | Titles | Theme | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | % time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dr.S.Arumugachamy, Professor (PBG)** | | | | | | | | | | | | | | | |
| URP | New- Evolving short duration rice | 3B | < ---- Kharif trials ---- > | | | | | < ---- Rabi trials ---- > | | | | Analysis & reporting | | | 40 |
| Teaching | Diploma (Agri) Teaching | | STHA21 & ENG X12 | <---- PG Guidance ----> | | | | | | | | | | | 20 |
| Others | Head, Principal, Warden, Extension & development activities | | | | | | | | | | | | | | 40 |
| **Dr. A. Muthuswamy, Assistant Professor (PBG)** | | | | | | | | | | | | | | | |
| URP | CPBG/ASD/PBG/RIC/2016/001 | 4B | < ---- Kharif trials ---- > | | | | | < ----- Rabi trials --- > | | | | Analysis & reporting | | | 40 |
| | CPBG/ASD/PBG/RIC/2016/002 | | <- - ASD 16 NSP & BSP -- > | | | | | <-- ASD 19 NSP & BSP -- > | | | | Seed processing & Supply | | | 40 |
| AICRP | | | | | | | | | | | | | | | 0 |
| EFP | | | | | | | | | | | | | | | 0 |
| Teaching | Diploma (Agri) Teaching | | AGB A22 | | | | | | | | | | | | 10 |
| Others | TNIAMP Scientist incharge | | | | | | | | | | | | | | 10 |

## AC&RI, Killikulam

| Action plan Scientists | Title | Theme | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | % time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dr. M. ArumugamPillai, Professor and Head (PBG)** | | | | | | | | | | | | | | | |
| URP | CPBG/ KKM/ PBG/ RIC/ 2014/ 001: Evolution of high yielding short duration rice variety (110-115 days) for kar and pishanam seasons of thoothukudi district. | **Theme 3b** | | | | | | | | | | | | | 20 |
| EFP | Augmentation and assessment of Redgram global collection and application of molecular approaches for identifying and developing new germplasm to enhance its productivity in India | | | | | | | | | | | | | | 10 |
| Teaching | PG Eduction/Student Guide | | | | | | | | | | | | | | 40 |
| Others | Department Administration, Member in Vehicle and Purchase committee | | | | | | | | | | | | | | 30 |

| | | | | | |
|---|---|---|---|---|---|
| **Dr.R.Pushpam, Associate Professor (PBG)** | | | | | |
| URP | New. Development of Cumbu Napier hybrids with superior quality traits for stress areas of Tamil Nadu | Theme 2 | | | 15 |
| | Hybrid Rice Breeding – Test cross synthesis, Evaluation of A lines and Hybrids | Theme 7 | | | 10 |
| | Evaluation of hybrids / composites and conduct of MLT | 5 | | | 10 |
| EFP | -- | | | | |
| Teaching | PG Education | | | | 50 |
| Others | PG Coordinator/ UG Coordinator (I Year) | | | | 15 |
| **Dr.S.Saravanan, Assistant Professor (PBG)** | | | | | |
| URP | **CPBG/ KKM/ PBG/ RIC/ 2017/001:** Development of high yielding medium duration rice variety with desirable cooking quality traits suited for Pishanam season in Southern districts of Tamil Nadu | **Theme 4b** | | | 20 |
| | **CPBG/ KKM/ PBG/ BSP/ 2014/001:** Breeder seed production of rice variety ASD 16 | | | | 20 |
| EFP | **NADP/CARDS/KKM/SAC/2016/R010:** Diversified agricultural cafeteria with the state of art technologies for third generation under NADP | | | | 5 |
| Teaching | UG/PG Education/Project Guide | | | | 40 |
| Others | **Venture capital scheme**<br>Breeder seed production of TNAU released rice and black gram varieties suited for Thoothukudi and Tirunelveli districts | | | | 15 |

## AC&RI, Madurai

| Scientists | Titles | Theme | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | % time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dr.R.P. Gnanamalar, Professor (PBG)** | | | | | | | | | | | | | | | |
| URP | CPBG/MDU/PBG/RIC/2015/ 002 | | <-Kharif trials--------> | | | | | <--Rabi trials-> | | | | Reporting | | | 25 |
| Teaching | Guiding PG & PhD students | | <----------PG & PhD guidance----------> | | | | | | | | | | | | 30 |
| | Handling PG and PhD courses | | <----------Teaching----------> | | | | | | | | | | | | 25 |
| Others | Extension activities, MLT | | <----------Extension activities, conduct of MLT----------> | | | | | | | | | | | | 20 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Dr. S. Banumathy, Associate Professor (PBG)** | | | | | | |
| URP | CPBG/MDU/PBG/ RIC/2017/001 | | <-Kharif trials--------> | <------Rabi trials ---> | Reporting | 25 |
| AICRP | | | | | | 0 |
| EFP | | | | | | 0 |
| Teaching | Handling UG , PG and PhD courses | | <----------Teaching ----------> | | | 30 |
| | PG guidance | | <----------PG guidance----------> | | | 25 |
| Others | Dept. Research Coordinator , extension activities, MLT | | <---------- Coordination of dept. research activities----------> | | | 20 |
| **Dr. N. Aananthi, Assistant Professor (PBG)** | | | | | | |
| URP | CPBG/MDU/PBG/RIC/2015/ 003 | 3a | <-Kharif trials--------> | <--Rabi trials-> | Reporting | 25 |
| AICRP | | | | | | 0 |
| EFP | | | | | | 0 |
| Teaching | Handling UG, PG courses | | <----------Teaching ----------> | | | 30 |
| | PG guidance | | <----------PG guidance----------> | | | 20 |
| Others | MDU 6 rice breeder seed production, UG year co-ordinator, extension activities, MLT | | ← Breeder Seed production , coordination of 2014 UG batch activities--> | | | 25 |

## ADAC&RI, Trichy

| Scientists | Titles | Theme | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | % time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dr.T.Thirumurugan, Assistant Professor (PBG)** | | | | | | | | | | | | | | | |
| URP | Evolution of high yielding short duration rice genotypes tolerant to sodicity | | | | | | | | | | | | | | 15<br>5 |
| Teaching | Under Graduate: 3 courses<br>Post Graduate: 3 courses | | | | | | | | | | | | | | 75 |
| Others | -- | | Member of monitoring team of rice network trials, PG Coordinator – Dept. of Plant Breeding and Genetics and Ward counselorfor 2015-16 Agri students | | | | | | | | | | | | 5 |

## ARS, Paramakudi

| Scientists | Titles | Theme | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | % time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dr. S. Muthuramu, AssistantProfessor (PBG)** | | | | | | | | | | | | | | | |
| URP | **CPBG/PMK/PBG/RIC/2015/004:** Evolution of early / very early duration drought tolerant rice genotypes with acceptable grain and cooking quality suitable for rainfed rice ecosystem. | 6b | ←……Conducting Trials @Rabi & Reporting…..-> | | | | | | | | | | | | 20 |
| | **CPBG/PMK/PBG/BSP/2015/001:** Nucleus and Breeder seed production of rice varieties released from ARS, Paramakudi | 10a | ←Conducting Trials @Rabi, dispatching the seed & Reporting…..-> | | | | | | | | | | | | 20 |
| EFP | **DBT/CPMB/CBE/DPB/2016/R020:** Accelerating the development and delivery of multiple stress tolerant and resilient rice genotypes through genomics assisted breeding | 9a | ←……Conducting Trials @Rabi & Reporting…..-> | | | | | | | | | | | | 10 |
| Teaching | | | | | | | | | | | | | | | |
| Others | -- | | Farm Manager, TFL seed production, Germplasm maintenance Conducting MLT & OFTs, Vehicle In-charge, Custodian of all the stocks Advisory Committee Member for PG Student Research. | | | | | | | | | | | | 50 |

## ARS, Vaigai Dam

| Scientists | Titles | Theme | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | % time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dr.S.JulietHepziba, Professor (PBG) and Head** | | | | | | | | | | | | | | | |
| Administration | P&H, ARS - Office administration | | | | | | | | | | | | | | 40 |
| Research | Breeder Seed Production in Rice | 10a | | | | | | | | | | | | | 30 |
| Teaching | Guiding PG and PhD students | | | | | | | | | | | | | | 20 |
| Others | Extension activities, Pulses and Oilseeds Breeder Seed Production | 10a | | | | | | | | | | | | | 10 |
| **Dr.M.Madhan Mohan, AssistantProfessor (PBG)** | | | | | | | | | | | | | | | |
| URP | Aromatic Rice Research and Seed production in Rice | 8a | | | | | | | | | | | | | 20 |
| ICAR –RVF | Seed production in Rice | 10a | | | | | | | | | | | | | 15 |
| Farm Management | Farm Superintendent- Farm II | | | | | | | | | | | | | | 25 |
| Teaching | PG Student Guidance | | | | | | | | | | | | | | 10 |
| Extension | BLTF- Periyakulam, Attending the visitors | | | | | | | | | | | | | | 10 |

| | | | | |
|---|---|---|---|---|
| | (Farmers / students) | | | |
| Others | Pulses and Oilseeds Breeder Seed Production | 10a | | 20 |
| **Dr.S.Utharasu,Assistant Professor (PBG)** | | | | |
| URP | Breeder seed production in Rice | 10a | | 20 |
| EFP | Heat Tolerance in rice | 6 | | 05 |
| ICAR- RVF | Seed production in Rice | 10a | | 20 |
| Farm Management | Farm Manager - Farm I | | | 20 |
| Education | Study Tour , Paper Evaluation and External examiner | | | 05 |
| Extension | BLTF- Uthamapalayam, Attending the visitors (Farmers / students) | | | 10 |
| Others | Pulses & Oilseeds Breeder Seed Production and MLTs evaluation. | 10a | | 20 |

## ARS, Bhavanisagar

| Scientists | Titles | Theme | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | % time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dr.D. Kavithamani, Assistant Professor (PBG)** | | | | | | | | | | | | | | | |
| URP | CPBG/BSR/PBG/RIC/2016/001-Nucleus and Breeder seed production in popular rice varieties of Tamil Nadu | | | | | | | | | | | | | | 30 |
| AICRP | -- | | | | | | | | | | | | | | 0 |
| EFP | -- | | | | | | | | | | | | | | 0 |
| Teaching | AGB A21 Breeding of Field Crops II (1+1) for Diploma Agri students of MSSIA, Bhavanisagar | | | | | | | | | | | | | | 10 |
| Others | | | Breeder seed production in greengram, blackgramvarieties and evaluation of pre released cultures under multi location trial testing | | | | | | | | | | | | 20 |
| | | | Farm Manager for Pungar block of ARS, Bhavanisagar,NSP (RF) Scientist incharge, Block Level Scientist incharge for Talavady block of Erode district | | | | | | | | | | | | 25 |
| **Dr. A. Bharathi., Assistant Professor (PBG)** | | | | | | | | | | | | | | | |
| URP | CPBG/PKT/PBG/BSP/2015/003 | | <----Breeder Seed production (Short and Medium duration varieties ----> | | | | | | | | | Processing, Tagging, Testing, Despatch | | | 20 |
| | CPBG/PKT/PBG/BGR/2016/001 | | Processing, Tagging, Testing, Despatch | | | | | | | | <----Breeder Seed production ----> | | | | 20 |
| MLT | | | <-- Rice MLTs (Short duration & Medium duration) Reporting---> | | | | | | | | Black gram MLT, Reporting | | | | 10 |

| | | | | | |
|---|---|---|---|---|---|
| ICAR_RF | | | | <---Seed production under ICAR_RF, Report ---> | 10 |
| Others | Research Coordinator, Store Manager | | | | 10 |

**ARS, Tirupathisaram**

| Scientists | Titles | Theme | Jun | Jul | Aug | Sept | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | % time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dr. N. Shunmugavalli, Professor (PBG)** | | | | | | | | | | | | | | | |
| URP | Evolving long duration rice variety resistence to stemborer suitable for Kumbapoo season of Kanyakumari district | Theme 4b | | | | | Conduct of long duration evaluation trials, Handling segregating populations, MLT and seed multiplication | | | | | | | | 30 |
| | Evolving early duration rice variety suitable for Kannipoo season of Kanyakumari district | 1b | Conduct of short duration evaluation trials, Handling segregating populations. | | | | | | | | | | | | 30 |
| | Teaching | | | | | | | | | | | | | | 5 |
| | Extension | | | | | | | | | | | | | | 10 |
| | others | | | | | | | | | | | | | | 25 |

**RRS, Tirur**

| Scientists | Titles | Theme | Jun | Jul | Aug | Sept | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | % time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dr. A. Sheeba, Assistant Professor (PBG)** | | | | | | | | | | | | | | | |
| URP | CPBG/TKM/PBG/RIC/2015/001 | 6b | Sornavari season Seed production – ART cultures | | | <--Yield Evaluation trials under Rainfed / semidry – Samba season> Conducting OFT –drought cultures | | | | Navarai season Seed production- MLT cultures Evaluation of segregating materials Report submission | | | | | 30 |
| AICRIP | Voluntary centre | | - | | | AVT –EDS IVT – EDS | | | | Report submission | | | | | 5 |
| | Nucleus and breeder seed production | | BS despatch – II season | | | TKM 13 – BSP Nucleus seed production | | | | TKM 9 – BSP BS despatch – I season | | | | | 30 |
| | Maintenance breeding &MLT trials | | MLT I | | | MLT II , MLT III, MLT – drought Maintenance breeding - all TKM varieties | | | | MLT results consolidation and report submitting | | | | | 5 |
| Others | Farm Management | | <---------- | | | | | | | | | | | ----------> | 50 |

## II. CROP MANAGEMENT

### Agronomy

| S.No. | Scientists | % of time |
|---|---|---|
| 1. | **Dr. K. Subrahmaniyan** | |
| | Univ. Sub Project | 10 |
| | AICRIP | 50 |
| | Administration | 30 |
| | Other activities | 10 |
| 2. | **Dr. M. Raju** | |
| | Univ. Sub Project | 10 |
| | AINPJAF | 50 |
| | TNIAMP | 20 |
| | Farm management | 15 |
| | Other activities | 10 |
| 3. | **Dr. C. Umamageshwari** | |
| | Univ.Sub Project | 30 |
| | AICRIP | 50 |
| | Other activities | 20 |
| 4. | **Dr. S. Porpavai** | |
| | Univ. Sub Project | 20 |
| | AICRP | 40 |
| | Administration | 35 |
| | Others | 5 |
| 5. | **Dr. S. Sakthivel** | |
| | Univ. Sub Project | 20 |
| | Administration | 50 |
| | Other activities | 30 |
| | | |
| | | |

| S.No. | Scientists | % of time |
|---|---|---|
| 6. | **Dr. M. Hemalatha** | |
| | Univ. Sub Project | 20 |
| | Teaching | 50 |
| | Other activities | 30 |
| 7. | **Dr. S. K. Natarajan** | |
| | AICRIP | 50 |
| | Farm management | 20 |
| | Teaching | 20 |
| | Others | 10 |
| 8. | **Dr. N. Senthil Kumar** | |
| | Univ. Sub Project | 30 |
| | Teaching | 60 |
| | Other activities | 10 |
| 9. | **Dr. N. S. Venkataraman** | |
| | Univ. Sub Project | 30 |
| | Administration | 15 |
| | Teaching | 55 |
| | Other activities | 5 |
| 10. | **Dr. C. Muralidharan** | |
| | Univ. Sub Project | 40 |
| | Teaching | 20 |
| | Other activities | 40 |
| 11. | **Dr. S. Vallal Kannan** | |
| | Univ. Sub Project | 30 |
| | Teaching | 60 |
| | Other activities | 10 |

### Soil Science and Agrl. Chemistry

| | | | | | | |
|---|---|---|---|---|---|---|
| 1. | **Dr. C. Sharmila Rahale** | | | 10. | **Dr. S. Suresh** | |
| | Univ. Sub Project | 50 | | | Univ. Sub Project | 44 |
| | Extension | 10 | | | Teaching | 20 |
| | Students guidance | 10 | | | Extension | 6 |
| | Other activities | 30 | | | Other activities | 30 |
| 2. | **Dr. M. Babu** | | | 11. | **Dr. V. Arunkumar** | |
| | Univ.Sub Project | 50 | | | Teaching | 50 |
| | Analytical work | 25 | | | Extension | 10 |
| | Teaching | 12.5 | | | Other activities | 20 |
| | other activities | 12.5 | | | | |
| 3. | **Dr. S. Jothimani** | | | 12. | **Dr. P. Saravana Pandiyan** | |
| | Univ. Sub Project | 20 | | | Univ. Sub Project | 25 |
| | Externally Funded | 20 | | | Teaching | 60 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Teaching | 20 | | | Students Guidance | 10 |
| | Extension & Farm Mgt. | 30 | | | Other activities | 5 |
| 4. | **Dr. S. Thenmozhi** | | | 13. | **Dr. R. Shanthi** | |
| | Teaching | 30 | | | Univ. Sub Project | 40 |
| | Research | 50 | | | AICRP | 50 |
| | Other activities | 20 | | | Other activities | 10 |
| 5. | **Dr. P. Santhy** | | | 14. | **Dr. T. Chitdeshwari** | |
| | Research | 20 | | | Univ. Sub Project | 20 |
| | Administration | 40 | | | AICRP | 30 |
| | Teaching | 30 | | | Teaching | 40 |
| | Other activities | 10 | | | Other activities | 10 |
| 6. | **Dr. P. Balasubramaniam** | | | 15. | **Dr. D. Jagadeeswari** | |
| | Univ. Sub Project | 20 | | | Univ. Sub Project | 40 |
| | AICRP | 30 | | | AICRP | 50 |
| | Externally Funded | 20 | | | Other activities | 10 |
| | Teaching | 20 | | 16. | **Dr. K. M. Sellamuthu** | |
| | Other activities | 10 | | | Univ. Sub Project | 40 |
| 7. | **Dr. S. Janaki** | | | | AICRP | 50 |
| | Teaching | 60 | | | Other activities | 10 |
| | URP | 20 | | 17. | **Dr. J. Balamurugan** | |
| | Extension | 10 | | | Univ. Sub Project | 40 |
| | Others | 10 | | | AICRP | 50 |
| 8. | **Dr. T. Sherene Jenita Rajammal** | | | | Other activities | 10 |
| | Univ. Sub Project | 20 | | 18. | **Dr. M. Baskar** | |
| | AICRP | 30 | | | Univ. Sub Project | 20 |
| | Teaching | 40 | | | Teaching | 60 |
| | Other activities | 10 | | | Students Guidance | 10 |
| 9. | **Dr. P. P. Mahendran** | | | | Others | 10 |
| | Univ. Sub Project | 25 | | 19. | **Dr. P. Malathi** | |
| | Teaching | 60 | | | Univ. Sub Project | 40 |
| | Students Guidance | 10 | | | AICRP | 50 |
| | Other activities | 5 | | | Other activities | 10 |

**Crop Physiology**

| | | |
|---|---|---|
| 1. | **Dr. V. Ravichandran** | |
| | Univ. Sub Project | 20 |
| | AICRP | 40 |
| | Teaching | 30 |
| | Other activities | 10 |
| 2. | **Dr. D. Vijayalakshmi** | |
| | Externally funded | 40 |
| | Teaching | 45 |
| | Other activities | 15 |
| | | |

| | | |
|---|---|---|
| 3. | **Dr. P. Boominathan** | |
| | Univ. Sub Project | 10 |
| | Externally funded | 20 |
| | Teaching | 50 |
| | Other activities | 20 |
| 4. | **Dr. K. Vanitha** | |
| | Univ. Sub Project | 40 |
| | Externally funded | 30 |
| | VCS | 20 |
| | Other activities | 10 |

**Agrl. Microbiology**

| | | |
|---|---|---|
| 1. | **Dr. M. Jeya Bharathi** | |
| | Farmers guideline | 20 |
| | Research | 40 |
| | Administration | 20 |
| | Other Activities (VCS) | 10 |
| 2. | **Dr. K. Kumutha** | |
| | Externally funded | 20 |
| | Univ. Sub Project | 10 |
| | Teaching | 20 |
| | Students guide | 40 |
| 3. | **Dr. U. Sivakumar** | |
| | Externally funded | 40 |
| | Teaching | 20 |
| | Other Activities | 10 |
| 4. | **Dr. N. O. Gopal** | |
| | Univ. Sub Project | 30 |
| | Teaching | 30 |
| | Administration | 20 |
| | Other Activities | 20 |
| | | |
| | | |

| | | |
|---|---|---|
| 5. | **Dr. D. Balachander** | |
| | AICRIP work | 40 |
| | Teaching | 20 |
| | Externally funded | 20 |
| | Administration | 10 |
| | Other Activities | 10 |
| 6. | **Dr. K. Sabarinathan** | |
| | Subproject | 20 |
| | NADP | 10 |
| | Administration | 10 |
| | UG teaching | 40 |
| | Extension | 10 |
| 7. | **Dr. R. Raghu** | |
| | Teaching | 50 |
| | Univ. Sub Project | 25 |
| | Students guide | 20 |
| | Other Activities | 5 |
| 8. | **Dr. M. Sundar** | |
| | Teaching | 50 |
| | Univ. Sub Project | 25 |
| | Other activities | 25 |

**Seed Science & Technology**

| | | |
|---|---|---|
| 1. | **Dr. K. Raja** | |
| | Univ. Research Project-1 | 20 |
| | Univ. Research Project-2 | 20 |
| | Seed production | 10 |
| | GOT (Rice) | 10 |
| | Others (Coordinator) | 40 |
| 2. | **Dr. J. Renugadevi** | |
| | Uni. Research project-1 | 20 |
| | Teaching | 30 |
| | Student guide | 30 |
| | Other activities | 20 |

| | | |
|---|---|---|
| 3. | **Dr. R. Vigneshwari** | |
| | Univ. Research Project-2 | 20 |
| | AICRP | 10 |
| | Seed production | 30 |
| | Other Activities (Farm) | 40 |
| 4. | **Dr. N. Punithavathi** | |
| | Univ. Research Project-1 | 20 |
| | Seed production | 25 |
| | OFT | 10 |
| | Teaching & Co-ordinator | 30 |
| | Other Activities (Farm) | 15 |

**III. CROP PROTECTION**

**Work load of each scientist - Entomology (Theme wise)**

Theme 1: Prediction of changing insect pest scenario

Theme 2: Ecological engineering approaches for rice pest management

Theme 3: Exploring insect resistance mechanism

Theme 4: Tritrophic interaction for rice pest management

| Sl. No. | Name of the scientist | Theme 1 | Theme 2 | Theme 3 | Theme 4 | Total |
|---|---|---|---|---|---|---|
| **(man hours / week)** | | | | | | |
| 1. | Dr.N.Muthukrishnan, CBE | - | 5 | - | 5 | 10 |
| 2. | Dr. R.P.Soundararajan, CBE | 5 | - | 5 | - | 10 |
| 3. | Dr. P.Anandhi, ADT | 5 | 5 | 5 | 3 | 18 |
| 4. | Dr.R.Nalini, TNJ | 3 | 5 | 5 | 5 | 18 |
| 5. | Dr. K.Premalatha, MDU | 3 | 5 | 5 | 3 | 13 |
| 6. | Dr.Sheeba Joyce Rosleen, TRY | 3 | - | 5 | - | 8 |
| 7. | Dr.K. Elenchezian, KKM | 3 | 5 | 5 | - | 13 |
| 8. | Dr.M.A.K.Pillai, ASD | 3 | - | 5 | - | 8 |
| 9. | Dr.Sheela Venugopal, BSR | 3 | - | 5 | - | 8 |
| 10. | Dr.G.Preetha, TPS | 3 | - | 5 | - | 8 |

**Work load of each scientist - Plant Pathology (Theme wise)**

1. Disease monitoring, surveillance, epidemiological studies on rice diseases and Fore-warning
2. Identification of resistant sources for pests and diseases
3. Studies on mechanism of resistance
4. Management of rice diseases through eco-friendly approaches

| Sl. No. | Name of the scientist | Theme 1 | Theme 2 | Theme 3 | Theme 4 | Theme 5 | Total |
|---|---|---|---|---|---|---|---|
| **(man hours / week)** | | | | | | | |
| 1. | A. Ramanathan | 3 | 5 | 4 | 4 | 4 | 20 |
| 2. | K. Rajappan | 5 | 4 | 4 | 3 | 4 | 20 |
| 3. | N.Revathy | 3 | 2 | 3 | 3 | 2 | 13 |
| 4. | N. Rajinimala | 4 | 5 | 3 | 4 | 3 | 19 |
| 5. | R.Thilagavathi | - | - | - | 5 | - | 5 |
| 6. | P. Akila | 3 | 2 | 3 | 3 | 2 | 13 |
| 7. | K.Chitra | 5 | 5 | - | - | - | 10 |
| 8. | M. Jeyasekhar | 3 | 5 | 5 | 3 | 3 | 19 |
| 9. | M. Karthikeyan | - | - | - | - | - | - |

**WORK LOAD OF RICE SCIENTISTS (ENTOMOLOGY) FOR THE YEAR 2018-19**

| S. No. | Scientists | % of time |
|---|---|---|
| **1.** | **N.Muthukrishnan** | |
| | URP - 1 | 20 |
| | Teaching | 20 |
| | Students guidance | 20 |
| | Administration | 40 |
| **2.** | **R.P.Soundararajan** | |
| | URP -1 | 20 |
| | AICRP | 40 |
| | Teaching | 20 |
| | Students guidance | 15 |
| | Other Activities | 5 |
| **3.** | **P.Anandhi*** | |
| | URP - New | 20 |
| | AICRP | 40 |
| | Other Activities | 40 |
| | | |
| **4.** | **K.Elenchezian*** | |
| | URP -1 | 20 |
| | Teaching | 40 |
| | Other Activities | 40 |
| **5.** | **Sheela Venugopal** | |
| | URP -1 | 20 |
| | Other projects | 20 |
| | Other Activities | 30 |

| S.No. | Scientists | % of time |
|---|---|---|
| **6.** | **K.Premalatha*** | |
| | URP – New | 20 |
| | Teaching | 30 |
| | Students guidance | 15 |
| | Other activities/projects | 35 |
| **7.** | **Sheeba Joyce Rosleen*** | |
| | URP -1 | 20 |
| | Teaching | 20 |
| | Students guidance | 15 |
| | Other projects | 45 |
| **8.** | **R.Nalani** | |
| | URP -2 | 40 |
| | Other projects/activities | 60 |
| **9.** | **M.A.K. Pillai*** | |
| | URP -1 | 40 |
| | Other projects/activities | 60 |
| **10.** | **G.Preetha** | |
| | URP -2 | 40 |
| | Other projects | 20 |
| | Other Activities | 40 |
| **11.** | **N.Swarnakumari (Nematology)** | |
| | AICRIP | 40 |
| | Other projects | 20 |
| | Other Activities | 40 |

* The scientists will propose new university research projects

**WORK LOAD OF RICE SCIENTISTS (PATHOLOGY) FOR THE YEAR 2018-19**

| S. No. | Scientists | % of time |
|---|---|---|
| **1.** | **A.Ramanathan** | |
| | URP - 1 | 20 |
| | AICRIP | 40 |
| | Teaching | 20 |
| | Students guidance | 20 |
| **2.** | **K.Rajappan** | |
| | URP -1 | 20 |
| | AICRP | 40 |
| | Other Activities | 40 |
| **3.** | **N.Revathy** | |
| | URP -1 | 20 |
| | Teaching | 20 |

| S.No. | Scientists | % of time |
|---|---|---|
| **6.** | **P. Akila** | |
| | URP | 20 |
| | Teaching | 30 |
| | Other projects/activities | 50 |
| **7.** | **K. Chitra** | |
| | URP -1 | 20 |
| | Teaching | 20 |
| | Other projects/activities | 60 |
| **8.** | **M. Karthikeyan** | |
| | URP | 20 |
| | AICRIP | 40 |
| | Teaching | 20 |

| | | |
|---|---|---|
| | Students guidance | 15 |
| | OtherActivities | 45 |
| **4.** | **N.Rajinimala** | |
| | URP | 50 |
| | Other Activities | 50 |
| **5.** | **R.Thilagavathi** | |
| | URP | 40 |
| | Other activities | 60 |

| | | |
|---|---|---|
| | Other projects/activities | 20 |
| **9.** | **M.Jeyasekhar** | |
| | URP -1 | 40 |
| | Other projects/activities | 60 |
| | | |
| | | |
| | | |
| | | |

**General Suggestions:**

- While screening promising cultures under artificial conditions, care may be taken to screen against both key pests and diseases.
- Care may be taken to include scientists from Ambasamudram, Thirurkuppam and Thirupathisaram in the major rice projects works carried out by Coimbatore and Aduthurai centres.
- Sowing time of the promising rice cultures in different research stations/centres may be informed in advance, so as to arrange for the visit of private companies to look for the traits of their interest for commercial purpose.
- Bio-availability level of 'Fe' and 'Zn' in the bio-fortification studies must be ensured.
- Water saving levels in rice through the usage of newer irrigation technique must be quantified.
- Availability levels of Azotobacter under non-puddled conditions needs to be confirmed.
- Foliar mineral nutrition also should be considered besides soil application.
- Care may be taken to choose cost effective inputs for experimental purpose, to benefit the farmers.
- Regular monitoring to assess the variations in the rice blast spore structure and its virulence is needed.
- Protein enrichment works in rice may be considered and looked into.
- In the soil medium standardization studies, rooting pattern of rice seedling must be studied and correlated.

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