**Bangladesh Rice Research Institute**
**Plant Breeding Division**

## Summary Research Program for Boro 2025-26

### Program Area (1): Varietal Development Program (VDP)
### Sub-Program (01): Plant Breeding

### Summary of RYT, ALART and PVT, Boro 2025-26

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
|---|---|---|---|---|---|
| **Regional Yield Trial (RYT)** | | | | | |
| | **Project 6: Development of Salt Tolerant Rice (STR)** | | | | |
| 1-2 | Regional Yield Trial (RYT#1 & 2) | To evaluate specific and general adaptability of the early maturity/shorter or longer duration (GD: ~140 days or more) advanced breeding lines as compared with standard checks in on-station and/ on-farm (salinity) conditions | Total 24 genotypes along with 2 checks will be evaluated Checks: BRRI dhan89, BRRI dhan67 and BRRI dhan99 | PI: MAR CI: NJ, AAS, RFD & R/S | Gazipur, Satkhira (Kaliganj, Debhata, BRRI Farm Satkhira) Gopalganj, Bhanga, Cumilla, Rangpur, Rajshahi and Sonagazi (10 locations) |
| | **Project 7b: Development of Premium Quality Rice (PQR) Boro** | | | | |
| **3** | Regional Yield Trial (RYT) | To evaluate specific and general adaptability of the advanced breeding lines as compared with standard | Total nine long grain type advanced lines will be tested along with checks BRRI dhan50, BRRI dhan81, BRRI dhan104 and BRRI dhan107 | PI: RRM CI: MAK, SSC, MMBA & R/S | Gazipur H/Q, BRRI R/S Rangpur, BRRI S/S Dinajpur, BRRI R/S Rajshahi, |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
|---|---|---|---|---|---|
| | | checks in on-station condition | | | Naogaon, BRRI R/S Satkhira, BRRI R/S Kushtia, BRRI R/S Cumilla |
| | **Project 8: Development of Rice Varieties for Favorable Boro Environment** | | | | |
| **4-6** | Regional Yield Trial (RYT#1, 2, 3) | To evaluate specific and general adaptability of the advanced breeding lines as compared with standard checks in on-station condition | Total 20 advanced lines will be tested along with checks BRRI dhan88, BRRI dhan92 BRRI dhan102 and BRRI dhan113 | PI: PSB CI: FA, MAS & R/S | Gazipur and 10 locations of RS |
| | **Project 8: Development of Cold Tolerant Rice** | | | | |
| **7** | Regional Yield Trial (RYT) | To evaluate specific and general adaptability of the advanced breeding lines as compared with standard checks in on-station condition | Total 12 genotypes along with 4 checks: BRRI dhan88, BRRI dhan102, BRRI dhan113 and BRRI dhan118 | PI: PSB CI: FA, MAS & R/S | CS [4 locations Nikli, Taherpur, Habiganj and Gazipur] and NS [10 locs of RS] |
| | **Project 10: Development for Zinc Enriched Rice** | | | | |
| **8** | Regional yield Trial (RYT) | Evaluation of agronomic performance, specific and general adaptability under on station condition | Twelve genotypes will be tested in replicated trial against standard check varieties BRRI dhna100 and BRRI dhan102 | PI: MAK CI: RRM, SSC, MMBA & R/S | Gazipur, Barishal, Cumilla, Satkhira, Rangpur, Rajshahi, Sonagazi, Kushtia, Bhanga and Sirajganj |
| | **Project 12: Development of Disease Resistant Rice (BB and Blast)** | | | | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
|---|---|---|---|---|---|
| **9-10** | Regional yield Trial (RYT) | Evaluation of agronomic performance, specific and general adaptability under on-station condition | Twenty entries will be tested in the replicated yield trial (RYT#1 for BB (SD), RYT#2 for BB (LD) against susceptible and standard check varieties BRRI dhan88, BRRI dhan89, BRRI dhan92 and resistant check for BB BRRI dhan101. | PI: MK, CI: AR,NT, Plant Pathology Scientists & R/S | All BRRI R/S and Gaz |
| **Advanced Line Adaptive Research Trial (ALART)** | | | | | |
| | **Project 6: Development of Salt Tolerant Rice (STR)** | | | | |
| **1** | Advanced Line Adaptive Research Trial (ALART) | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability in different agro-ecological zones (AEZs) to nominate for proposed variety trial (PVT). | Four RYT genotypes, viz., BR13201-4R-15, BR13201-4R-219, BR13113-4R-121 and BR13201-4R-249 will be promoted to ALART. The ALART trial will be separately conducted in favorable and unfavorable/salt stress prone environments. Thus, for ALART at favorable site, the checks will be BRRI dhan102 and proposed BRRI dhan117 including the above mentioned four test genotypes. And ALART trial for saline zone, the checks will be BRRI dhan99 and BRRI dhan102 along with the same four genotypes. | Advanced Line Adaptive Research Trial (ALART) | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability in different agro-ecological zones (AEZs) to nominate for proposed variety trial (PVT). |
| | **Project 7b: Development of Premium Quality Rice (PQR) Boro** | | | | |
| **2** | Advanced Line Adaptive Research Trial (ALART) | Evaluation of specific and general adaptability under on-farm condition | BR11965-4R-75, BR11966-4R-344 and BR11973-4R-309 (after confirmation of percent amylose from GQN) will be | PI: Scientist of ARD | 10 locations (Location will be selected by ARD) |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
|---|---|---|---|---|---|
| | | | evaluated in ALART along with checks BRRI dhan50, BRRI dhan104 and BRRI dhan107 | CI: MAK, SSC, MMBA & R/S | |
| | **Project 10: Development of Pigmented Rice with Nutraceutical Properties** | | | | |
| **3-4** | Advance Line Adaptive Research Trial - ALART#1 (Medium duration) and ALART# 2 (Short duration) | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability | Under ALART-1 (Medium duration) two selected materials (BR12839-4R-157-2 and BR12839-4R-5-2) will be evaluated with BRRI recommended practices with check variety BRRI dhan115 (proposed). Under ALART-2 (Short duration) one selected material (BR12839-4R-137) will be evaluated with check variety BRRI dhan115 (proposed). | PI: Scientist of ARD CI: SG, SMZ, STT and KMI | 10 locations (Locations will be chosen by ARD |
| | **Project 12: Development of Disease Resistant Rice (BB & BB-Blast)** | | | | |
| **5-8** | Advance Line Adaptive Research Trial (ALART) ALART#1 (SD_Blast) ALART#2 (MD_Blast) ALART#3 (LD_Blast) ALART#4 (SD_BB+Blast) | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability | Under ALART#1 (SD_Blast) selected genotypes; will be evaluated with the check varieties BRRI dhan88. ALART#2 (MD_Blast) selected genotypes; will be evaluated with the check varieties BRRI dhan58 and BRRI dhan101. ALART#3 (LD_Blast) selected genotypes; will be evaluated with the check varieties BRRI dhan89. | PI: Scientist of ARD CI: MK, MAL & THA | 10 locations (Locations will be selected by ARD |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
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| | | | ALART#4 (SD_BB+Blast) selected genotypes; will be evaluated with the check varieties BRRI dhan88. | | |
| **Proposed Variety Trial (PVT)** | | | | | |
| | **Project 6: Development of Salt Tolerant Rice (STR)** | | | | |
| **1-2** | Proposed Variety Trial (PVT) (STR) | On-farm evaluation of advanced breeding lines compared to standard checks for release as new variety | BR13113-4R-63 and BR13113-4R-116 will be evaluated under improved management practices compared with BRRI recommended practices with check varieties BRRI dhan28 and BRRI dhan67 | SCA | 10 locations (Locations will be selected by SCA) |
| | **Project 8: Development of Rice Varieties for Favorable Boro Environment** | | | | |
| **3** | Proposed Variety Trial (PVT) (Favorable Boro) | On-farm evaluation of advance breeding lines compared to standard checks for release as variety | BR11318-5R-63 will be re-evaluated with check varieties BRRI dhan88 | SCA | 10 locations (Locations will be selected by SCA |
| | **Project 12: Development of Disease Resistant Rice (BB, Blast)** | | | | |
| **4** | Proposed Variety Trial (PVT) (BB and Blast-long duration) | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability | Under PVT (BB + Blast Resistance) BR (Path)13800-BC3-134-25 will be evaluated with check variety BRRI dhan89 | SCA | 10 locations (Locations will be selected by SCA |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **6** | **Project 6: Development of Salt Tolerant Rice<br>Project Leader: Md. Akhlasur Rahman** | | | | | **30.0 GOB, AGGRi Alliance & TRB-BRRI (BMGF)** |
| **6.1** | Hybridization | Introgression of salinity tolerant genes in genetically advanced genotypes | 72 parents will be used | PI: MAR<br>CI: NJ, AAS & RFD | Gazipur | |
| **6.2** | Confirmation of $F_1$ | To confirm the crosses as true hybrid | 93 $F_1$ s will be grown | PI: MAR<br>CI: NJ, AAS & RFD | Gazipur | |
| | Quality check (QC) analysis of F1s | | | | | |
| **6.3** | FRGA | Generation Advance | One hundred fifty-one crosses comprising ~ 35,500 progenies | PI: MAR<br>CI: NJ, AAS & RFD | Gazipur | |
| **6.4** | Line Stage Test (LST) Trial | Identification of uniform lines based on plant height, flowering date and grain type | 4928 breeding lines under forty crosses | PI: MAR<br>CI: NJ, AAS, RFD, WAS & SR | Satkhira/ Gazipur | |
| **6.5** | Observational Yield Trial (OYT) | Selection of genetically fixed salt tolerant breeding lines with acceptable grain quality having high yield potential with good plant type | 619 Lines from LST along with 04 checks BRRI dhan67, dhan89, BRRI dhan97 and BRRI dhan99 will be evaluated | PI: MAR<br>CI: NJ, AAS, RFD, WAS & SR | Gazipur, Satkhira and Khulna | |
| | Trait paneling of OYT lines | Assessment of presence/ availability of favorable alleles in breeding lines/population | Total 619 lines | PI: MAR<br>CI:NJ, AAS, RFD | Out Sourcing | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | Grain quality analysis of OYT, PYT, AYT & RYT lines | To evaluate key economic traits based on consumers preference | Total 950 lines | PI: SSD<br>CI: AAS, NJ, MAR, RFD | GQN | |
| **6.6** | Preliminary Yield Trial (PYT-1, PYT-2 & PYT-3) | Initial yield evaluation of advanced lines compared to standard checks in replicated trial | 188 genotypes along with 4 checks BRRI dhan67, BRRI dhan89, BRRI dhan97 & BRRI dhan99 will be evaluated in PYT trial | PI: MAR<br>CI: NJ, AAS, RFD, WAS & SR | Gazipur, Satkhira and Khulna | |
| **6.7** | Advanced Yield Trial (AYT-1 & AYT-2) | Confirmatory yield evaluation of advanced lines compared to standard checks | 96 genotypes along with 4 checks BRRI dhan67, BRRI dhan89, BRRI dhan97 & BRRI dhan99 will be evaluated in AYT trial | PI: MAR<br>CI: NJ, AAS, RFD, WAS & SR | Gazipur, Satkhira and Khulna | |
| **6.8** | Multilocation Yield Trial (MLT) | Hotspot-based adaptability with yield evaluation of advanced lines compared to standard checks | 44 genotypes along with 4 checks BRRI dhan67, BRRI dhan89, BRRI dhan97 & BRRI dhan99 will be evaluated in MLT trial | PI: MAR<br>CI: NJ, AAS, RFD, WAS & SR & R/S | Satkhira (3 locations), Cumilla, Bhanga, Gopalganj, Gazipur, Sonagazi, Rajshahi and Rangpur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
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| **6.9** | Regional Yield Trial (RYT#1,2) | To evaluate specific and general adaptability of the early maturity/shorter duration (GD: ~140 days or less) advanced breeding lines as compared with standard checks in on-station and/ on-farm (salinity) condition | Total 24 genotypes along with 2 checks will be evaluated Checks: BRRI dhan89, BRRI dhan67 and BRRI dhan99 | PI: MAR<br>CI: NJ, AAS, RFD, WAS & SR & R/S | Gazipur, Satkhira, Gopalganj, Bagerhat and Khulna<br>10 locations) | |
| **6.10** | Advanced Line Adaptive Research Trial (ALART) | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability in different agro-ecological zones (AEZs) to nominate for proposed variety trial (PVT). | Four RYT genotypes, viz., BRI13201-4R-15, BR13201-4R-219, BR13113-4R-121 and BR13201-4R-249 will be promoted to ALART. The ALART trial will be separately conducted in favorable and non-favorable sites. Thus, for favorable site ALART, the checks will be BRRI dhan102 and proposed BRRI dhan117 including the above mentioned four genotypes. And for saline zone ALART trial, the checks will be BRRI dhan99 and BRRI | PI: Scientist of ARD<br>CI: MAR, NJ, AAS, RFD & R/S | Gazipur, Feni, Noakhali, Gopal ganj, Bagerhat, Satkhira and Khulna<br>(10 locations) | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | | dhan102 along with the same four genotypes. | | | |
| **6.11** | Maintenance of parent | Maintenance of parent for future use in the hybridization or in the experiment as check variety | 94 parents will be grown | PI: MAR<br>CI: NJ, AAS, RFD | Gazipur | |

**Expected Output:** Salt tolerant variety(ies) for farmers, consumers and miller's preference will be developed with better yield potential (7.5-8.0 t/ha) Salt tolerant variety(ies) with salt tolerance at seedling stage (12 dS/m) and reproductive stage tolerance (EC = 8-10 dS/m) will be developed based on different stakeholders' demands such as farmers, consumers, miller's preference of target region

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **7a** | **Project 7a: Development of National Grade Premium Quality Rice)**<br>**Project leader:** Khandakar Md. Iftekharuddaula | | | | | |
| **7a.1** | Hybridization | Introgression of aroma (fgr-1) with high 2-AP content into BRRI dhan90 type, BRRI dhan34 type and Katari type high-yielding elite and non-elite genetic background | 14 parents will be used to make 15 crosses | PI: MRI<br>CI: AR, STT and KMI | Gazipur | **9.00 PARTNER 3.00 LSTD** |
| **7a.2** | Confirmation of $F_1$ | To confirm the crosses as a true hybrid and backcrossing | 6 crosses will be grown to be identified as true crosses | do | Gazipur | |
| **7a.3** | FRGA | Advancement of Segregating aromatic progenies | Around 4579 progenies from 21 crosses will be advanced through FRGA | do | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **7a.4** | Line Stage Testing (LST) | Selection of national grade (small grain) genetically fixed lines in terms of plant height and days to flowering with key traits of interest | around 4880 fixed breeding lines from 27 crosses will be evaluated | do | Gazipur | |
| **7a.5** | Observational Yield Trial (OYT) | Selection of national grade (small grain) fixed superior aromatic lines for advancement and recycling | Total 400 advanced lines will be tested | do | Gazipur, Rajshahi Parbatipur | |
| **7a.7** | Advanced Yield Trial (AYT#1,2) | Advanced yield evaluation and selection of national grade (small grain) aromatic advanced breeding lines compared with standard checks | A total 33 (AYT#1: 15, AYT#2: 18) advanced lines will be tested along with standard checks | do | Gazipur, Rajshahi Parbatipur | |
| **7a.8** | Regional Yield Trial (RYT#1,2) | To evaluate the specific and general adaptability of national grade (small grain) aromatic advanced breeding lines | A total 10 advanced lines will be tested along with with standard checks | do | Gazipur, Rajshahi Parbatipur, Rangpur, Bogura, Kushtia, Sherpur | |

**Expected Output:** Region specific High yielding (≥6.5 t/ha) national grade (Chinigura/ Kataribhog/BRRI dhan34/BRRI dhan90 type) aromatic rice will be developed for Boro season

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **7b.** | **Project 7b: Development of Premium Quality Rice (PQR) Boro**<br>**Project leader: Md. Abdul Kader** | | | | | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| 7b.1 | Hybridization | Introgression of extra-long grain and small grain with or without aroma into high yielding rice genetic background | 20 parents will be used for hybridization using premium quality donor and high yielding advanced breeding lines | PI: RRM<br>CI: SS Chaity and M M B Afzal, MAK | Gazipur | **Total: 20 lakhs (PARTNER)** |
| 7b.2 | Confirmation of $F_1$ | To confirm the crosses as true hybrid | 13 crosses will be grown | do | Gazipur | |
| 7b.3 | FRGA | Generation Advance | Fifty-five Crosses comprising 19,000 progenies | do | Gazipur | |
| 7b.4 | Line Stage Testing (LST) | Identification of uniform lines based on plant height, flowering date and grain type | 7420 breeding lines of 24 crosses will be evaluated | do | Gazipur | |
| 7b.5 | Observational Yield Trial (OYT#1, OYT#2) | Selection of homogeneous breeding lines with fine grain properties having high yield with good plant type | Total 541 advanced lines will be tested along with checks BRRI dhan50, BRRI dhan81, BRRI dhan104 and BRRI dhan107 | do | Gazipur | |
| 7b.6 | Advanced Yield Trial (AYT#1, 2 & 3) | Confirmatory yield evaluation of advanced lines compared to standard checks | Total 40 genotypes along with checks BRRI dhan50, BRRI dhan81, BRRI dhan104 and BRRI dhan107 | Do | Gazipur | |
| 7b.8 | Regional Yield Trial (RYT) | To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition | Nine long grain type advanced lines will be tested along with checks BRRI dhan50, BRRI | PI: RRM<br>CI: SS Chaity and MMBA, MAK | Total 10 locations | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | | dhan81, BRRI dhan104 and BRRI dhan107 | | | |
| 7b.11 | Maintenance of parents | Maintenance of parent for future use in the hybridization or in the experiment as check variety | Total 81 parents will be grown | PI: RRM<br>CI: SS Chaity and MMBA, MAK | Gazipur | |

**Expected Output:** Aromatic and non-aromatic fine quality rice with international (Basmati/Banglamati/Soru Balam type) standards in Boro season will be developed for domestic use and export

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **8** | **Project 8: Development of Rice Varieties for Favorable Boro Environment**<br>**Project leader: Partha S. Biswas** | | | | | |
| **8.1** | Hybridization | To create variations for the development of new genotypes with high yield and acceptable grain quality | 34 single crosses will be made using 33 parents | PI: PSB<br>CI: MAS, FA, MFRP | Gazipur | **70.0 GOB, LSTD, RCGS, AGGRi Alliance** |
| **8.2** | Confirmation of $F_1$ | To confirm the crosses as true $F_1$s and use of the selected $F_1$s to produce $F_2$ seeds and use in making different types of crosses | • 53 single crosses will be confirmed to use in line augmentation with key target traits and in forward breeding | PI: PSB<br>CI: MAS, FA, MFRP | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | | • 19 backcrosses will be confirmed to produce $BC_1F_2$ and $BC_2F_2$ seeds | | | |
| **8.3** | Segregating RGA ($F_2$-$F_6$) | Generation Advance | >20,000 Segregating progenies ($F_2$-$F_5$, $BC_1F_2$-$F_3$, $BC_2F_2$-$F_3$) of 130 crosses will be advanced | PI: PSB<br>CI: MAS, FA, MFRP | Gazipur | |
| **8.4** | Line Stage Testing (LST) | To select uniform genotypes in terms of plant height and days to flowering with key target traits | 3000 $F_{5:6}$, $BC_1F_5$ and $BC_2F_4$ lines will be evaluated. | PI: PSB<br>CI: MAS, FA, MFRP | Gazipur | |
| **8.5** | Observational Yield Trial (OYT) | Selection of superior lines with desired agronomic characters | Total 1000 advanced lines will be evaluated at 12 locations following sparse testing model of genomic selection along with BRRI dhan88, BRRI dhan92, BRRI dhan102, BRRI dhan113 | PI: PSB<br>CI: MAS, FA, MFRP | Gazipur, and 11 RS | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **8.6** | Advanced Yield Trial (AYT) | Evaluation of breeding lines for yield potential in multi-locations in replicated trial | Total 137 (119+18) advanced lines will be evaluated at 4 locations against BRRI BRRI dhan88, BRRI dhan92, BRRI dhan102, and BRRI dhan113 | PI: PSB<br>CI: MAS, FA, MFRP | Gazipur, Cumilla, Habiganj, Rangpur | |
| **8.7** | Regional Yield Trial (RYT#1, 2) | To evaluate specific and general adaptability of the advanced breeding lines as compared with standard checks in on-station condition | Total 20 advanced lines will be tested along with checks BRRI dhan88, BRRI dhan92, BRRI dhan102 and BRRI dhan113 | PI: PSB<br>CI: MAS, FA, & R/S | HQ and 9 RS locations | |
| **8.8** | Proposed Variety Trial (PVT) (Favorable Boro) | On-farm evaluation of advance breeding lines compared to standard checks for release as variety | BR11318-5R-63 will be re-evaluated with check varieties BRRI dhan88 | SCA | 10 locations (Locations will be selected by SCA | |
| **8.9** | Maintenance and seed increase of key parents. | To maintain genetic purity of parent materials with seed production | Seeds of 200 key parents for breeding program will be increased, and their genetic purity will be maintained | PI: PSB,<br>CI: MAS, MFRP | Gazipur | |

**Expected Output:** Improved genotypes with high yield potential (≥8.0 t/ha), acceptable growth duration and better grain quality for irrigated ecosystem will be developed

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **9** | **Project 9: Development of Cold Tolerant Rice**<br>**Project leader: Partha S. Biswas** | | | | | |
| **9.1** | Hybridization | To create variations for the development of new genotypes with cold tolerance at reproductive and seedling stage with acceptable grain quality | 30 single crosses using 10 elite parents with three elite donor cold tolerance and blast resistance | PI: PSB<br>CI: MAS, FA, MFRP | Gazipur | **100.0 GOB, KGF, PARTNER, CRCIL** |
| **9.2** | Confirmation of $F_1$ | To confirm the crosses as true $F_1$s and use of the selected $F_1$s to produce $F_2$ seeds and use in making different types of crosses | - 35= (5+30) single crosses will be confirmed as true $F_1$s to use in backcrosses for line augmentation<br>- 39 backcrosses will be confirmed to produce $BC_1F_2$ and $BC_2F_2$ seeds | PI: PSB<br>CI: MAS, FA, MFRP | Gazipur | |
| **9.3** | Segregating RGA ($F_2$-$F_6$) | Generation Advance | >20,000 Segregating progenies ($F_2$-$F_6$, $BC_1F_3$, $BC_1F_5$, $BC_2F_2$, $BC_2F_3$) will be advanced | PI: PSB<br>CI: MAS, FA, MFRP | Gazipur | |
| **9.4** | Line Stage Testing (LST) | To select uniform genotypes in terms of plant height and days to flowering with key target traits | 9,250 $F_{5:6}$, $BC_1F_5$, $BC_2F_4$ and $BC_2F_5$ lines of 27 crosses will be evaluated. | PI: PSB<br>CI: MAS, FA, MFRP | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **9.5** | Observational Yield Trial (OYT#1 and 2) [Cold stress (15 Oct seeding) & non-stress (15 Nov seeding)] | Selection of superior and cold tolerant lines under natural cold condition | Total 504 advanced lines will be tested along with checks BRRI dhan88, BRRI dhan102, BRRI dhan113, and BR11894-R-R-R-R-169 (Proposed BRRI dhan118) | PI: PSB CI: MAS, FA, MFRP | Gazipur, Habiganj | |
| **9.6** | Advanced Yield Trial (AYT#1,2) [Cold stress (18 Oct seeding) & non-stress (15 Nov seeding)] | Evaluation of breeding lines for yield potential in multi-locations in replicated trial | Total 50 advanced lines will be tested along with checks BRRI dhan88, BRRI dhan102, BRRI dhan113 and BR11894-R-R-R-R-169 (Proposed BRRI dhan118) | PI: PSB CI: MAS, FA, MFRP | Gazipur, and 3 Haor sites of Nikli, Habiganj and Tahirpur | |
| **9.7** | Regional Yield Trial (RYT) [Cold stress (20 Oct seeding) & non-stress (15 Nov seeding)] | To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition | Total 12 advanced lines will be tested along with checks BRRI dhan88, BRRI dhan102, BRRI dhan113 and BR11894-R-R-R-R-169 (Proposed BRRI dhan118) | PI: PSB CI: MAS, FA, MSP & R/S | CS [Gazipur, and 3 Haor sites of Nikli, Habiganj and Tahirpur] and NS [10 locs. Of RS] | |

**Expected Output:** High yielding rice varieties tolerant to cold stress at seedling and reproductive stages will be developed

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **10** | **Project 10: Development of Pigmented Rice with Nutraceutical Property, Boro**<br>**Project leader: Sharmistha Ghosal** | | | | | **4.0 PARTNER** |
| 10.1 | Hybridization | Accumulation of anthocyanin, phenolic compound, flavonoid,Vit E, etc in Low GI backrground of Rice | Total 18 single crosses will be made combining 15 parents | PI: SG<br>CI: SMM, STT and KMI | Gazipur | |
| 10.2 | Confirmation of $F_1$ | To confirm the crosses as true $F_1$s and use of the selected $F_1$s to produce $F_2$ seeds and in different types of crosses | 14 single crosses will be confirmed and $F_2$ seed will be produced | Do | Gazipur | |
| 10.3 | Field RGA | Rapid advancement of $F_2$–$F_5$ generations through following single seed descent-based RGA method. | Totally 28,305 progenies of 76 crosses will be advanced through Field RGA | Do | Gazipur | |
| 10.4 | Line Stage Testing (LST) | Selection of uniform genotypes in terms of plant height and days to flowering with key target traits. | Totally 3,159 progenies of 11 crosses will be evaluated through Line Stage Testing (LST) trial | Do | Gazipur | |
| 10.5 | Observational Yield Trial (OYT) | Selection of homogeneous breeding lines with fine grain properties having high yield with good plant type | Total 483 advanced lines will be tested in OYTs. | do | Gazipur | |
| 10.6 | Advanced Yield Trial (AYT) | Confirmatory yield evaluation of advanced lines compared to standard checks | Total 150 advanced lines will be evaluated AYT. | Do | Gazipur | |

**Expected output:** High antioxidant enriched rice with high vit E content having Low GI will be developed.

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **11** | **Project 10: Development for Zinc Enriched Rice, Boro**<br>**Project leader: Md. Abdul Kader** | | | | | |
| 11.1 | Hybridization | Development of new genotypes with high zinc and iron content along with resistance to major insect pests and diseases, abiotic stress tolerance and acceptable grain quality | Total 20 single crosses will be made using 15 parents having high yield and high zinc content | PI: MAK<br>CI: RRM, SSC and MMBA | Gazipur | **Total: 12 lakhs (Boro) (PARTNER)** |
| 11.2 | Confirmation of $F_1$ | To confirm the crosses as true $F_1$s and use of the selected $F_1$s to produce $F_2$ seeds and in different types of crosses | Twenty-one single crosses will be confirmed and $F_2$ seed will be produced | do | Gazipur | |
| 11.3 | Field RGA | Rapid advancement of F2-F4 generations through following single seed descent-based RGA method. | Totally 10,754 progenies of 37 crosses will be advanced through Field RGA | do | Gazipur | |
| 11.4 | Line Stage Testing (LST) | Selection of uniform genotypes in terms of plant height and days to flowering with key target traits. | Totally 16,994 progenies of 58 crosses will be evaluated through Line Stage Testing (LST) | do | Gazipur | |
| 11.5 | Observational Yield Trial (OYT) | To select genetically fixed lines with desirable | Total 963 test entries will be evaluated in three OYTs against | do | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | agronomic characters and zinc content and high yield potential | BRRI dhan74, BRRI dhan92, BRRI dhan96, BRRI dhan100 and BRRI dhan102 | | | |
| 11.6 | Advanced Yield Trial (AYT) | Selection of homogeneous breeding lines with fine grain properties having high yield with good plant type. | Total 67 genotypes will be evaluated in two AYTs against BRRI dhan74 BRRI dhan96, BRRI dhan100 and BRRI dhan102 | do | Gazipur | |
| 11.7 | Regional yield Trial (RYT) | Evaluation of agronomic performance, specific and general adaptability under on station condition | Twelve genotypes' entries will be evaluated in replicated trial against standard check varieties BRRI dhan100 and BRRI dhna102 | PI: MAK CI: RRM, SSC, MMBA & R/S | Gazipur, Barishal, Cumilla, Satkhira, Rangpur, Rajshahi, Sonagazi, Kushtia, Bhanga and Sirajganj | |

**Expected output:** High iron and zinc content along with resistance to major insect pests and diseases and acceptable grain quality high yielding rice variety will be developed

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **12** | **Project 11: Development of Insect Resistant Rice (IRR)**<br>**Project Leader: Md. Ruhul Amin Sarker** | | | | | **15.0**<br>GOB, |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **12.1** | Hybridization | Introgression of genes of BPH, WBPH, GLH and gall midge into high yielding rice genetic background | ~22 well characterized parents will be used | PI: MRAS, CI: MA, NJ, MM, MAR | Gazipur | **PARTNER** |
| **12.2** | Confirmation of $F_1$ | To confirm the crosses as true hybrid | 29 crosses will be grown | PI: MRAS, CI: MA, NJ, MM, MAR | Gazipur | |
| | Quality check (QC) analysis of $F_1$s | | | | | |
| **12.3** | Line Augmentation | Introgression of bph genes (*bph17* and *bph32*) to develop advanced breeding lines | Three $F_1$, crosses will be confirmed and three $BC_1F_1$ seeds will be produced | PI: MRAS, CI: MA, NJ, MM, MAR | Gazipur | |
| **12.4** | FRGA ($F_2$-$F_6$ generation) | Generation Advance | More than 33,566 progenies from 97 crosses will be grown | PI: MRAS, CI: MA, NJ, MM, MAR | Gazipur | |
| **12.5** | Line Stage Testing (LST) | Identification of uniform lines based on good plant type, flowering date and grain type | ~ 5000 breeding line from 23 crosses will be used | PI: MRAS, CI: MA, NJ, MM, MAR | Gazipur | |
| **12.6** | Observational Yield Trial (OYT) | Selection of genetically fixed breeding lines with resistant to BPH/GM, earliness having high yield with good plant type | Selected 778 lines will be evaluated with four checks (BRRI dhan88, BRRI dhan89, BR3 and T27A) | PI: MRAS, CI: MA, NJ, MM, MAR, MMH, MMsH, SSD and R/S | Gazipur, Rangpur, Cumilla, Sirajganj and GQN | |
| | Trait paneling of OYT lines | Assessment of presence/availability of favorable alleles in breeding lines/population | | | | |
| | Grain quality analysis of OYT & AYT lines | To evaluate key economic traits based on consumers preference | | | | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **12.7** | Advanced Yield Trial (AYT) | To evaluate/confirm yield performance of the advance breeding lines as compared with standard checks at multi-locations trials | Selected 156 lines will be used with checks: BRRI dhan88, BRRI dhan89, BR92 and BRRI dhan113 | PI: MRAS, CI: MA, NJ, MM, MAR, and R/S | Gazipur, Rangpur, Cumilla | |
| **12.8** | Screening breeding lines for BPH and GM resistance | To identify new sources of BPH and GM resistance | ~ 500 breeding lines (OYT, PYT, AYT) will be evaluated for BPH and GM resistance | PI: SSH, CI: MMH, MMsH, SA, MRAS, MAR, MA | Entomology Division, BRRI | |
| **12.9** | Maintenance and seed increase of key parents. | To maintain genetic purity of parent materials with seed production | Seeds of 119 key parents for breeding program will be increased and their genetic purity will be maintained | PI: MRAS, CI: MA, NJ, MM, MAR | Gazipur | |

**Expected output:** BPH, WBPH, GLH and Gall midge resistant variety/lines will be developed with better yield potential (7.0-8.0 t/ha)

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **13** | **Project 12: Development of Disease Resistant Rice (BB & Blast)**<br>**Program leader- Mahmuda Khatun** | | | | | **10.0 GOB, PARTNER** |
| **13.1** | Hybridization | Introgression of high yield, lodging tolerance and disease resistance trait for BB & Blast | Crosses will be done using 50 parents for BB, Blast, RTV & False smut | PI: MK CI: AR & NT | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **13.2** | $F_1$ confirmation | To confirm the crosses as true hybrid | 12 crosses for BB, 12 crosses for Blast and eight crosses for RTV will be confirmed | do | Gazipur | |
| **13.3** | Segregating population | Advancement of segregating generations following single seed descent-based RGA method | ~50,000 progenies from 90 crosses for BB and Blast will be advanced through RGA techniques | do | Gazipur | |
| **13.4** | Line Stage Testing (LST) | Identification of uniform lines based on good plant type, flowering date and grain type | ~ 6600 breeding line from 22 crosses will be used | do | Gazipur | |
| **13.5** | Observational Yield Trial (OYT) | Selection of genetically fixed breeding lines with strong plant type, uniformity in heading, good PACP in the field condition and tolerance to disease (BB & Blast) in artificial inoculation condition | ~500 fixed lines for BB & Blast will be evaluated against susceptible & resistant checks BRRI dhan88 (Sus & Std Ck) BRRI dhan89 (Sus & Std Ck) BRRI dhan101 (Res Ck.) | do | Gazipur, Cumilla, Rangpur & Rajshahi | |
| **13.6** | Advanced Yield Trial (AYT) | To evaluate/confirm the yield performance of the advanced breeding lines as compared with standard checks at multi-locations trials | A total of 42 entries for BB & Blast will be evaluated against susceptible & resistant checks: BRRI dhan88 (Sus & Std Ck) | do | Gazipur, Cumilla, & Rangpur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | | BRRI dhan89 (Sus & Std Ck) BRRI dhan101 (Res Ck.) | | | |
| **13.7** | Regional yield Trial (RYT) | Evaluation of agronomic performance, specific and general adaptability under on-station condition | Twenty entries will be tested in the replicated yield trial (RYT#1 for BB (SD), RYT#2 for BB (LD) against susceptible and standard check varieties BRRI dhan88, BRRI dhan89, BRRI dhan92 and resistant check for BB BRRI dhan101 | PI: MK, CI: AR,NT, Plant Pathology Scientists & R/S | All BRRI R/S and Gaz | |
| **13.8** | Maintenance and seed increase of key parents. | To maintain the genetic purity of parent materials with seed production | The seeds of 150 key parents for the breeding program will be increased and their genetic purity will be maintained | PI: MK CI: AR,NT | Gazipur | |

**Expected output:** BB and Blast resistant variety will be developed with better yield potential.

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| 15 | **Project 16: Development of Water Saving Rice** | | | | | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | **Program leader: Sharmistha Ghosal** | | | | | **10.0 GOB** |
| 15.1 | Hybridization | Introgression of low water requiring genes into the high yielding lodging tolerant background | Around 14 crosses will be made using 10 parents | PI: SG<br>CI: SMZ, MMY and KMI | Gazipur | |
| 15.2 | $F_1$ confirmation | To confirm the crosses as a true hybrid | 11 crosses will be confirmed | do | Gazipur | |
| 15.3 | Segregating population | Advancement of segregating generations following single seed descent-based RGA method | A total of 16,412 progenies from 53 crosses will be advanced through RGA techniques | do | Gazipur | |
| 15.4 | LST | To select uniform genotypes in terms of plant height and days to flowering with key target traits | A total of 1,965 fixed breeding lines from 14 crosses will be evaluated | do | Gazipur | |
| 15.5 | Observational Yield Trial (OYT) | Selection of genetically fixed breeding lines with strong plant type, uniformity in heading, good PAcp in the field condition | Around 300 fixed lines will be evaluated against checks | do | Gazipur | |
| 15.6 | Advanced Yield Trial (AYT) | Initial yield evaluation of advanced breeding lines in replicated trials for water saving with short-duration | Around 50 advanced lines will be tested along with checks BRRI dhan58, BRRI dhan88, BRRI dhan89, and BRRI dhan102 | PI: SG<br>CI: SP, ZAR, SM and KMI | Gazipur | |
| | **Irrigation and Water Management Division** | | | | | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| 15.7 | Performance Evaluation of the rice genotypes under different water regimes | To study performance and suitability of rice genotypes under different water regimes | Seed of around 20 Advanced lines and check varieties will be supplied to Irrigation division. | IWM Division<br>PI: MMA<br>CI: JS | Gazipur | |
| 15.8 | Performance Evaluation of the Boro Rice Varieties under different water regimes | To study performance and suitability of the Boro Rice Varieties under different water regimes | Seeds of the Boro Rice Varieties will be supplied to Irrigation division. | IWM Division<br>PI: MMA<br>CI: JS | Gazipur | |

**Expected output:** Low water requiring high yielding and lodging tolerant variety will be developed with better yield potential.

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **Project 16: Development of Transgenic High Beta-carotene Rice and High Iron & Zinc Rice (Healthier Rice)**<br>**Project Leader: Md. Abdul Kader** | | | | | | **Total: 20 lakh (PARTNER)** |
| **A. Golden Rice, Healthier Rice** | | | | | | |
| 16A.1 | Hybridization | Introgression of GR2E gene into high yielding different rice genetic backgrounds | Two crosses will be made with GR2E donor IR 112060 GR2-E:2-7-63-2-96 in BRRI dhan102 and BRRI dhan108 | PI: MAK<br>CI: RRM, SSC & MMBA | Gazipur | |
| 16A.2 | Transgenic gene stacking (Zmpsy1 and ApFer) in elite line, | Introgression of Zmpsy1 and ApFer gene into high yielding different rice genetic backgrounds | Two reciprocal crosses will be made using IR 135160 TR-3-B-19 and IR 112060 GR2-E:2-7-63-2-96 | do | do | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | Healthier Rice, Boro 2025-26 | | | | | |
| 16A.3 | Seed multiplication of Contained Trial (CT) and Confined Field Trial (CFT) | Seed multiplication and preservation of seeds of CT and CFT for varietal evaluation | The seeds of 85 advanced lines of CT in the background of BRRI dhan67, BRRI dhan84, BRRI dhnan89 along with 10 advanced lines of CFT (eight GR2E BRRI dhan28 golden rice and two pure lines of BRRI dhan29 golden rice) will be multiplied. | do | do | |
| 16A.3 | Seed multiplication of BRRI dhan29 Golden rice | Seed multiplication and preservation of seeds of BRRI dhan29 golden rice (IR 112060 GR2-E:2-7-63-2-96) | Seed multiplication of BRRI dhan29 golden rice will be done. The application was done for the release of the variety in 2017 but still waiting for the permission of MoEF. | do | do | |
| | **B. High Iron and Zinc rice, Healthier Rice** | | | | | |
| 16B.1 | $F_1$ confirmation | Confirmation of $F_1$s as true $F_1$s/ backcrosses of the single and back crosses | Two $BC_3F_1$s (BR11712-4R-93 and BRRI dhan98) and one $BC_1F_2$ (BRRI dhan103) and one $BC_1F_1$ (BRRI dhan105) will be confirmed | PI: MAK<br>CI: RRM, SSC & MMBA | | |
| 16B.2 | Pedigree Nursery | Generation Advancement of $BC_3F_3$ generation of BRRI dhan87*4/ IR 135160 TR-3-B-19 | High iron and zinc trait containing progenies will be grown in $BC_3F_3$ generation | do | | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| 16B.3 | Seed multiplication | Multiplication of high iron and zinc materials of CFT materials (CFT completed in Boro 2021-22) | Previously completed CFT of high iron and zinc in the background of BRRI dhan28 will be grown for future use. | do | | |

**Expected output:** High vitamin A and high iron and zinc enriched rice genotypes/varieties will be developed with better yield potential

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **18** | **Project 18: Development of heat tolerant rice<br>Program leader- Mahmuda Khatun** | | | | | |
| **18.1** | Hybridization | Introgression of high yield, lodging tolerance and disease resistance trait for BB & Blast | Crosses will be done using 16 parents for heat tolerant rice | PI: MK<br>CI: AR & NT | Gazipur | **IRRI fund** |
| **18.2** | $F_1$ confirmation | To confirm the crosses as true hybrid | 12 crosses for heat tolerant rice will be confirmed | do | Gazipur | |
| **18.3** | Segregating population | Advancement of segregating generations following single seed descent-based RGA method | ~14,800 progenies from 20 crosses for heat tolerant rice will be advanced through RGA techniques | do | Gazipur | |
| **18.4** | Line Stage Testing (LST) | Identification of uniform lines based on good plant type, flowering date and grain type | ~ 1200 breeding line from four crosses will be used | do | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **18.5** | Observational Yield Trial (OYT) | Selection of genetically fixed breeding lines with strong plant type, uniformity in heading, good PACP in the field condition and tolerance to disease (BB & Blast) in artificial inoculation condition | ~100 fixed lines will be evaluated for heat tolerant rice against Bina dhan14 (Tol Ck), BRRI dhan28 (Sus Ck) BRRI dhan98 (Std Ck) N22 (Tol Ck.) | do | Gazipur, Rangpur & Kushtia | |
| **18.6** | Advanced Yield Trial (AYT) | To evaluate/confirm the yield performance of the advanced breeding lines as compared with standard checks at multi-locations trials | A total of 30 entries will be evaluated for heat tolerant rice against Bina dhan14 (Tol Ck), BRRI dhan28 (Sus Ck) BRRI dhan98 (Std Ck) N22 (Tol Ck.) | do | Gazipur, Kushtia, Rajshahi & Rangpur | |
| **18.7** | Regional yield Trial (RYT) | Evaluation of agronomic performance, specific and general adaptability under on-station condition | Twenty entries will be tested in the replicated yield trial RYT#1 (SD) and RYT#2 (LD) for heat tolerant rice against Bina dhan14 (Tol Ck), BRRI dhan28 (Sus Ck) BRRI dhan98 (Std Ck) N22 (Tol Ck.) | PI: MK, CI: AR,NT, Plant Pathology Scientists & R/S | Gazipur, Kushtia, Rajshahi & Rangpur | |

**Expected Output**: Promising genotypes will be selected after evaluation and will be used as parent materials and also will be included in yield trial

**Acknowledgements with Abbreviation (Not according to seniority):**

KMI=Khandakar Md. Iftekharuddaula, PSB=Partha Sarathi Biswas, MAR=Mohammad Akhlasur Rahman, MAK=Mohammad Abdul Kader, MK=Mahmuda Khatun, MRAS=Md. Ruhul Amin Sarker, SG=Sharmistha Ghosal, MRI=Md. Rafiqul Islam, RRM=Ratna Rani Majumder, MAZ= MD. Anisuzzaman HK=Hasina Khatun, TKH = Tapas Kumer Hore, MA=Md. Adil, MAS=Md. Abu Syed, SM=Sheikh Maniruzzaman, AR=Anisar Rahman, SSC=Sadia Sultana Chaity, SP=Salma Pervin (Pl. Physiology), MSR=M. Sazzadur Rahman (Pl. Physiology), NJ=Nusrat Jahan, MAR=Md. Atiqur Rahman, AAS=Armeen Akhter Setu, STT=Sanjana Tabassum Tuba, MMY=Mahmuda Maliha Yasmin, MMR= Md. Mamunur Rashid (Pl. Physiology), TH=Tuhin Halder (Pl. Physiology), RFD= Ribed Farzana Disha, MM= Maisha Maliha, FA=Faisal Ahamed, MFRP=Md. Ferdous Razwan Khan Prince, MMBA=Md. Mostafa Bin Afzal, NT=Nishat Tamanna , MMH= Md. Mofazzel Hossain (Entomology), MMsH=Md. Mosaddek Hossain (Entomology), SA=Sadia Afrin (Entomology), SSD=Sharifa Sultana Dipiti (GQN), AAS: Afroza Awal Shoily, MHK= Md. Humayun Kabir (ARD), MSA= Mir Sharfuddin Ahmed (GRS), MMA= Md Mahbubul Alam (IWM); JS=Jinat Sharmin (IWM), AI= Aminul Islam (Soil Science), MSI= Md. Saiful Islam (Agril. Economics), MSI= Md. Shafiqul Islam, MDH= Md. Durul Huda (FMPHT), MGKB= Md. Golam Kibria Bhuiyan (WMM), MRI= Md. Rafiqul Islam, concerned scientists of Adaptive Research Division, Regional Stations, others and BRRI authorities

## Summary Research Program for Aus and T. Aman 2026-27

**Program Area (01): Varietal Development Program (VDP)**
**Sub-Program (01): Plant Breeding**

**Summary of RYT, ALART and PVT, T. Aman 2026-27**

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
|---|---|---|---|---|---|
| **Regional Yield Trial (RYT)** | | | | | |
| | **Project-01a: Development of Rice Varieties for Upland (DSR Aus) Ecosystem** | | | | |
| **1** | Regional Yield Trial (RYT) | Evaluation of genotypes to investigate agronomic performance, specific and general adaptability under on station condition | Eight advanced DSR genotypes will be tested along with two checks BRRI dhan65 & BRRI dhan83 | Investigators: Scientists of R/S, MAR, NJ & AAS | Kushtia, Sirajganj, Sonagazi, Rajshahi, Cumilla, Gazipur, Rangpur, Shibchar (Madaripur), Jhenaidah and Faridpur (Charvadrason). |
| | **Project-01b: Development of high yielding *Jhum* Rice** | | | | |
| **2** | Regional Yield Trial (RYT) | To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-farm condition | 8 genotypes along including two checks BRRI dhan83 will be evaluated in Jhum Hotspot | PI: MAR MAR, NJ, AAS, MH & RFD & R/S | Bandarban, Khagrachori and Rangamati (6-8 locations) |
| | **Project 02: Development of Transplanted Aus (T. Aus) Rice** | | | | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
|---|---|---|---|---|---|
| **3-4** | Regional Yield Trial (RYT#1-Favorable & RYT#2-Heat Tolerant) | Evaluation of agronomic performance, specific and general adaptability under on station condition | Total eight (Four entries in RYT#1 for favorable and four entries in RYT#2 for Heat tolerant) entries will be evaluated against different checks: BRRI dhan48 & BRRI dhan98 (RYT#1); BRRI dhan98 & N22 (RYT#2). | PI: MK<br>CI: AR, HAM & Scientists of R/S | BRRI Gazipur, Rangpur, Rajshahi, Kushtia, Cumilla, Sonagazi, Habigonj (RYT#1); BRRI Gazipur, Rangpur, Rajshahi, Kushtia (RYT#2) |
| | **Project-04: Development of Rainfed Lowland Rice, T. Aman** | | | | |
| **5-8** | Regional Yield Trial (RYT#1, 2, 3 & 4) | To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition | A total of 11, 10, 10 and 10 advanced lines will be tested in RYT#1, RYT#2 RYT#3 and RYT#4 along with checks BRRI dhan33, BRRI dhan39, BRRI dhan71, BRRI dhan75, BRRI dhan49, BRRI dhan87, BRRI dhan103 and BRRI dhan112, respectively. | PI: MRAS<br>CI: MA, AA, MM & Scientist of R/S | BRRI Gazipur, Cumilla, Rajshahi, Rangpur, Kustia, Sirajganj, Barishal, Satkhira and Sonagazi |
| | **Project 06: Development of Salt Tolerant Rice** | | | | |
| **9-10** | Regional Yield Trial (RYT#1 & 2) | To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-farm condition | Total 24 (12 entries in RYT-1 and 12 entries in RYT-2) genotypes along with 3 checks will be evaluated in RYT-1 and RYT-2, respectively.<br>Checks: BRRI dhan112, BRRI dhan87 &BRRI dhan73 | PI: MAR<br>MAR, NJ, AAS, MH & RFD & R/S | Gazipur, Sonagazi, Cumilla, Rajshahi, Gopalganj, Satkhira (BRRI farm, Kaliganj & Debhata),<br>(8-10 locations) |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
|---|---|---|---|---|---|
| | **Project-7a: Development of Premium Quality Rice (PQR) for T. Aman** | | | | |
| **11** | Regional Yield Trial (RYT-1_BRRI dhan90 type) | Evaluation of BRRI dhan90 type aromatic genotypes to investigate agronomic performance, specific and general adaptability under on station condition | Total 13 advanced lines will be tested along with checks BRRI dhan34 and BRRI dhan90 | PI: MRI<br>CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gazipur, Rajshahi, Rangpur, Dinajpur, Kushtia, Cumilla, Netrokona, Sirajganj, Barishal, Satkhira |
| **12** | Regional Yield Trial (RYT-2_Katari type) | Evaluation of Katari and Jira type aromatic genotypes to investigate agronomic performance, specific and general adaptability under on-station condition | Total five (5) advanced lines will be tested along with BRRI dhan70 and Kataribhog (Dinajpur) | PI: MRI<br>CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gazipur, Rajshahi, Rangpur, Dinajpur, Kushtia, Cumilla, Netrokona, Sirajganj, Barishal, Satkhira |
| **13** | Regional Yield Trial (RYT-3_Kalijira & Tulshimala type) | Evaluation of Kalijira & Tulshimala type aromatic genotypes to investigate agronomic performance, specific and general adaptability under on station condition | Total eight (8) advanced lines will be tested along with checks BRRI dhan90, Kalijira and Tulshimala | PI: MRI<br>CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gazipur, Dinajpur, Rajshahi, Kushtia, Cumilla, Netrokona, Sirajganj, Barishal, Satkhira, Mymensingh |
| **14** | Regional Yield Trial (RYT-4_Non-Aromatic PQR) | Evaluation of Non-aromatic PQR genotypes to investigate agronomic performance, specific and general adaptability under on station condition | Total five (5) advanced lines will be tested along with checks BRRI dhan90, BRRI dhan75 and BRRI dhan49 | PI: MRI<br>CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gazipur, Rajshahi, Rangpur, Dinajpur, Kushtia, Cumilla, Netrokona, Sirajganj, Sonagazi, Barishal, Satkhira |
| | **Project-11: Development of Zinc Enriched Rice, T. Aman** | | | | |
| **15** | Regional yield Trial (RYT) | Evaluation of agronomic performance, specific and general | A total five entries will be tested against standard check | PI: MAK | Total 9 locations |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
|---|---|---|---|---|---|
| | | adaptability under on station condition | varieties BRRI dhan71, BRRI dhan72 and BRRI dhan103 | CI: RRM, SSC, NJB, SD & Scientist of R/S | |
| | **Project-12: Development of Disease Resistant Rice (BB & Blast)** | | | | |
| **16** | Regional Yield Trial (RYT-BB and RTV) | Evaluation of agronomic performance, specific and general adaptability under on-station conditions | In RYT, six entries will be tested in the replicated yield trial against susceptible and standard check varieties BRRI dhan75, BRRI dhan87, BRRI dhan49 and resistant check IRBB60. | PI: MK<br>CI: AR, HAM & Scientists of R/S | BRRI Farm, Gazipur, Rangpur, Rajshahi, Kushtia, Cumilla, Sonagazi & Sirajganj |
| | **Project-14: Development of Submergence and Water Stagnation Tolerance Rice Varieties** | | | | |
| **17** | Regional Yield Trial (RYT/PVS) | To evaluate the specific and general adaptability of the advanced breeding lines as compared with standard checks in on-farm condition | Four PVS lines with three checks depending on growth will be evaluated. Checks are: BRRI dhan52, BRRI dhan110, BINA dhan11 and BRRI dhan103 | PI: SG<br>CI: SMZ, AR, NR, MMY, KMI and R/S Scientist | Gazipur (2), Rangpur (2), Kurigram, Lalmonirhat, Gaibandha, Dewangang (8 locations) |
| | **Project-15: Development of Drought Tolerant Rice, T. Aman** | | | | |
| **18** | Regional Yield Trial (RYT) | To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition | In RYT#DTR, a total seven advanced lines will be tested along with checks BRRI dhan71, BRRI dhan87 and BRRI dhan103. In RYT#DTR (Tungro) two advanced lines will be tested along with | PI: MAK<br>CI: RRM, SSC, NJB, SD & Scientist of R/S | RYT#DTR: Gazipur, Rajshahi R/S (Tanore, Idulpur, Chapai Nawabganj), Rangpur (Sadar, Nilphamari, Kurigram), Kushtia |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
|---|---|---|---|---|---|
| | | | checks BRRI dhan71 and BRRI dhan103. | | DTR (Tungro): Gazipur, Rajshahi R/S (Tanore, Paba), Rangpur (Sadar, Nilphamari), Kushtia, Cumilla and Barishal |
| | **Project-18: Development of Photosensitive Rice, T. Aman** | | | | |
| **19** | Regional Yield Trial (RYT-1_Gainja Type) | Evaluation of Gainja type and quality low nutrient input genotypes to investigate agronomic performance, specific and general adaptability under on station and on farm condition | A total of 14 Gainja type advanced lines will be tested along with Gainja, Malshira and Naizarshail | PI: MRI<br>CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gaibandha (Tista Riverbed), Kurigram (Dharla Riverbed), Jattarapur (Brahmaputra Riverbed), Bogura (Jamuna Riverbed) Sirajganj (Jamuna/Bangali Riverbed), Sonagazi (Charland) Bhanga (Padma Riverbed), BRRI HQ |
| **20** | Regional Yield Trial (RYT-2_BR22 & BR23 Type | Evaluation of BR22 and BR23 type photosensitive advanced genotypes to investigate agronomic performance, specific and general adaptability under on-station condition | A total of 11 BR22 & BR23 type photosensitive advanced lines will be tested along with standard checks BR22 and BR23 | PI: MRI<br>CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gazipur, Habiganj, Cumilla, Netrokona, Sonagazi, Barishal, Gopalganj, Satkhira |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
|---|---|---|---|---|---|
| **21** | Regional Yield Trial (RYT-3_Photosensitive MS) | Evaluation of medium slender photosensitive advanced genotypes to investigate agronomic performance, specific and general adaptability under on-station condition | A total of 13 advanced lines will be tested along with standard checks BR22, BR23 and BRRI dhan49 | PI: MRI<br>CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gazipur, Rangpur, Habiganj, Cumilla, Netrokona, Sirajganj Sonagazi, Barishal, Gopalganj, Satkhira |
| **Advance Line Adaptive Research Trial (ALART)** | | | | | |
| | **Project 4: Development of Rainfed Lowland Rice (RLR)** | | | | |
| **1** | Advance Line Adaptive Research Trial (ALART) | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability | Three selected lines BR13096-4R-86, BR13473-4R-109 and BR13093-4R-53 will be evaluated with check variety BRRI dhan75 | PI: Scientist of ARD<br>CI: MRAS, MA, AA, MM | 10 locations (Locations will be selected by ARD) |
| | **Project-06: Development of Salt Tolerant Rice** | | | | |
| **2** | Advanced Line Adaptive Research Trial (Re-ALART)- STR (Photosensitive) | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability in different agro-ecological zones (AEZs) to nominate for proposed variety trial (PVT). | In Re-ALART (STR-Photosensitive), two genotypes (BR12465-4R-61, BR12465-4R-231) will be evaluated through BRRI recommended practices with check varieties of BRRI dhan30 and BR22. | PI: Scientist of ARD<br>CI: MAR, NJ, AAS, MH & RFD & R/S | 10 locations throughout the country (will be finalized by ARD) |
| **3** | Advanced Line Adaptive Research Trial ALART (STR Short duration: growth duration range 117-123 days) | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability in different agro-ecological zones | In ALART (STR Short duration), three selected materials (BR12471-4R-98, BR12461-4R-51, BR13111-4R-104) will be evaluated through BRRI recommended | PI: Scientist of ARD<br>CI: MAR, NJ, AAS, MH & RFD & R/S | 10 locations (3 locations at Khulna and Satkhira, 2 locations at Sonagazi, Cumilla, Rangpur, |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
|---|---|---|---|---|---|
| | | (AEZs) to nominate for proposed variety trial (PVT). | practices with check varieties BRRI dhan110 and BRRI dhan112 | | Gazipur, Gopalganj, Rajshahi, Kushtia |
| **4** | Advanced Line Adaptive Research Trial ALART (STR Medium duration) Growth duration range 127-133 days | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability in different agro-ecological zones (AEZs) to nominate for proposed variety trial (PVT). | In ALART (STR Medium duration), three selected materials (BR12462-4R-227, BR12466-4R-167, BR13105-4R-32) will be evaluated through BRRI recommended practices with check varieties BRRI dhan103 and BRRI dhan112 | PI: Scientist of ARD<br>CI: MAR, NJ, RFD | 10 locations (3 locations at Khulna and Satkhira, 2 locations at Sonagazi, Cumilla, Rangpur, Gazipur, Gopalganj, Rajshahi, Kushtia |
| | **Project-7a: Development of Premium Quality Rice (PQR) for T. Aman** | | | | |
| **5** | Advanced Line Adaptive Research Trial (ALART: PQR_BRRI dhan90 type) | On-farm evaluation of BRRI dhan90 type aromatic advanced breeding lines compared to standard checks for testing their specific and general adaptability | A total of three (3) advanced breeding lines (BR13943-3R-95, BR13943-4R-279 & BR13942-5R-20) will be tested along with check BRRI dhan90. | PI: Scientist of ARD<br>CI: MRI, AR, STT and KMI | Locations will be finalized by ARD. Probable 10 locations: Gazipur, Rajshahi, Rangpur, Dinajpur, Kushtia, Sherpur, Bogura, Barishal, Satkhira |
| **6** | Advanced Line Adaptive Research Trial (ALART: PQR_Katari type) | On-farm evaluation of Katari type advanced aromatic breeding lines compared to standard checks for testing their specific and general adaptability | A total two (2) Katari type aromatic advanced breeding lines (BR13943-4R-409 & BR14192-5R-35) will be tested along with check BRRI dhan70. | PI: Scientist of ARD<br>CI: MRI, AR, STT and KMI | Locations will be finalized by ARD. Probable 10 locations: Gazipur, Rajshahi, Rangpur, Dinajpur, Kushtia, |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location |
|---|---|---|---|---|---|
| | | | | | Sherpur, Bogura, Barishal, Satkhira |
| | **Project-18: Development of Photosensitive Rice, T. Aman** | | | | |
| **7** | Advance Line Adaptive Research Trial (ALART: BR22 & BR23 Type Photosensitive) | On-farm evaluation of BR22 and BR23 type photosensitive advanced breeding lines compared to standard checks for testing their specific and general adaptability | A total of two (2) BR22 and BR23 type photosensitive advanced breeding lines (BR11764-5R-124 & BR12847-4R-12) will be tested along with checks BR22 & BR23 | PI: Scientist of ARD<br>CI: MRI, AR, STT and KMI | Locations will be selected by ARD<br>Probable 10 locations:<br>Gazipur, Habiganj, Cumilla, Netrokona, Sonagazi, Barishal, Gopalganj, Satkhira, Sirajganj |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **1a** | **Project-1: Development of Rice Varieties for Upland (DSR Aus) Ecosystems<br>Project Leader: Dr. Md. Akhlasur Rahman** | | | | | |
| **1.1a** | Hybridization | To create variations for the development of new genotypes with high yield, drought tolerant, adaptable to direct seeded condition with acceptable grain quality | 70 parents will be used in hybridization | PI: MAR<br>CI: NJ, AAS | Gazipur | **14.0 PARTNER** |
| **1.2a** | Confirmation of $F_1$ | To confirm the crosses as true $F_1$s and use of the selected $F_1$s to produce $F_2$ seeds | 60 crosses will be grown | PI: NJ<br>CI: MAR, AAS | Gazipur | |
| **1.3a** | Segregating RGA ($F_2$-$F_5$) | Generation Advance | 21,150 progenies will be advanced | PI: MAR<br>CI: NJ | Gazipur | |
| **1.4a** | Line Stage Testing (LST) | To select uniform genotypes in terms of plant height and days to flowering with key target traits | 977 breeding lines will be evaluated | PI: MAR<br>CI: NJ, AAS & RFD | Gazipur | |
| **1.5a** | Observational Yield Trial (OYT) | Selection of superior lines with desired agronomic characters | Total 173 advanced lines will be tested along with checks BRRI dhan83, BRRI dhan65, BRRI dhan43 & Hasikalmi | PI: NJ<br>CI: MAR | Gazipur | |
| **1.6a** | Preliminary Yield Trial (PYT) | Initial evaluation of breeding lines for yield potential in replicated trial | Total 47 advanced lines will be tested along with checks BRRI dhan83, BRRI dhan65, BRRI dhan43 and Hasikalmi | PI: MAR<br>CI: NJ, AAS & RFD | Gazipur, | |
| **1.7a** | Advanced Yield Trial (AYT) | Evaluation of breeding lines for yield potential in replicated trial | Total 21 advanced lines will be tested along with checks BRRI dhan83, | do | Gazipur, Sonagazi, Feni | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | | BRRI dhan65, BRRI dhan43 and Hasikalmi | | | |
| **1.8a** | Regional Yield Trial (RYT) | Evaluation of genotypes to investigate agronomic performance, specific and general adaptability under on station condition | Total 8 advanced lines will be tested along with checks BRRI dhan83, BRRI dhan65 | Investigators: Scientists of R/S, MAR CI: NJ, AAS & RFD | Kushtia, Sirajganj, Sonagazi, Rajshahi, Cumilla, Gazipur, Rangpur, Shibchar, Madaripur | |

**Expected Output:** High yielding rice varieties adaptable to aerobic upland conditions through DSR and dibbling method will be developed.

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **1b** | **Project-1b: Development of high yielding *Jhum* Rice Project Leader: Dr. Md. Akhlasur Rahman** | | | | | |
| **1.1b** | Hybridization | To create variations for the development of new genotypes with drought tolerance at seedling stage with acceptable grain quality | Total 35 hybridization parents will be used | PI: MAR CI: NJ, AAS | Gazipur | **10.0 PARTNER** |
| **1.2b** | Confirmation of $F_1$ | To confirm the crosses as true $F_1$s and use of the selected $F_1$s to produce $F_2$ seeds | Total 64 crosses will be grown | PI: NJ CI: MAR, AAS | Gazipur | |
| **1.3b** | Segregating RGA ($F_2$-$F_5$) | Generation Advance | Total 3253 progenies will be advanced | do | Gazipur | |
| **1.4b** | Advanced Yield Trial (AYT) | Evaluation of breeding lines for yield potential in replicated trial | Total 8 advanced lines will be tested along with checks Ellong dhan and BRRI dhan83 | do | Gazipur, Bandarban, Khagrachori and Rangamati | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **1.5b** | Line Stage Testing (LST) | Identification of uniform lines based on plant type, flowering uniformity and grain type | Total 1040 breeding lines from 6 crosses | PI: NJ<br>CI: MAR, AAS | Gazipur | |
| **1.6b** | Observational Yield Trial (OYT) | Selection of genetically fixed salt tolerant breeding lines with acceptable grain quality having high yield potential with good plant type | Total 169 Lines from LST along with two checks BRRI dhan83, and BRRI dhan71 will be Evaluated | PI: NJ<br>CI: MAR, AAS | Gazipur | |
| **1.7b** | Preliminary Yield Trial (PYT) | Initial yield evaluation of advanced lines compared to standard checks in replicated trial | Total 47 genotypes along with two checks BRRI dhan83, and BRRI dhan71 will be Evaluated | PI: NJ<br>CI: MAR, AAS | Gazipur | |
| **1.8b** | Regional Yield Trial (RYT) | To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-farm condition | Total 8 genotypes along with two checks BRRI dhan83, and BRRI dhan71 will be Evaluated | PI: NJ<br>CI: MAR, AAS | Bandarban, Khagrachori and Rangamati | |
| **1.9b** | Maintenance of parents | Maintenance of parent for future use in the hybridization or in the experiment as check variety | Total 120 advanced line and landraces will be grown<br>-maintaining 384 diverse panel | do | Gazipur | |

**Expected Output:** High yielding rice varieties adaptable to hill tracts for *jhum* cultivation will be developed for *Jhum* Rice

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Tk.) |
|---|---|---|---|---|---|---|
| **2** | **Project-02: Development of Transplanted Aus (T. Aus) Rice**<br>**Project leader: Dr. Mahmuda Khatun** | | | | | **10.0**<br>**GOB** |
| **2.1** | Hybridization | Introgression of earliness, pre-harvest sprouting tolerance and tolerance to high temperature with acceptable grain quality | Total 35 parents will be grown in three different sets at 7 days interval to synchronize flowering. | PI: MK<br>CI: AR | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Tk.) |
|---|---|---|---|---|---|---|
| **2.2** | Growing of $F_1$ populations | To confirm the crosses as true hybrid | ~28 single crosses will be confirmed and $F_2$ seed will be produced | do | Gazipur | |
| **2.3** | Segregating population | Advancement of segregating generations following single seed descent-based RGA method | 20 $F_2$, 35 $F_3$, 10 $F_4$ and 25 $F_5$ populations will be advanced through RGA techniques | do | Gazipur | |
| **2.4** | LST | Screening of genetically fixed breeding lines for homogeneity, plant type, grain yield potential, grain quality and other attributes | ~6000 breeding lines from 19 crosses will be grown in LST nursery | do | Gazipur | |
| **2.5** | Observational Yield Trial (OYT) | Selection of homogeneous breeding lines with acceptable grain quality having high yield with good plant type | More than 1152 test entries along with 4 checks (BRRI dhan48, BRRI dhan85, BRRI dhan83 and BRRI dhan98) will be evaluated under OYT following sparse testing model of genomic selection. | PI: MK<br>CI: AR & Scientists of R/S | BRRI Gazipur, Rajshahi, Cumilla, Sonagazi, Kushtia, Habigonj & Rangpur | |
| **2.6** | Advanced Yield Trial (AYT#1 & AYT#2) | To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks under on station condition | A total of 16 high temperature tolerant advanced lines in AYT#1 (short duration) and 10 non-saline tidal condition advanced lines in AYT#2 will be evaluated along with the check varieties: BRRI dhan98 & BRRI dhan48 (AYT#1); BRRI dhan27, BRRI dhan106, and Gota IRRI (AYT#2) | do | BRRI Gazipur, Rajshahi, Rangpur and Kushtia (AYT#1); BRRI Gazipur & Sonagazi (AYT#2) | |
| **2.7** | Regional Yield Trial (RYT#1-Favorable | Evaluation of agronomic performance, specific and | Total eight (Four entries in RYT#1 for favorable and | do | BRRI Gazipur, Rangpur, Rajshahi, | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Tk.) |
|---|---|---|---|---|---|---|
| | & RYT#2-Heat Tolerant) | general adaptability under on station condition | four entries in RYT#2 for Heat tolerant) entries will be evaluated against different checks: BRRI dhan48 & BRRI dhan98 (RYT#1); BRRI dhan98 & N22 (RYT#2). | | Kushtia, Cumilla, Sonagazi & Habigonj (RYT#1); BRRI Gazipur, Rangpur, Rajshahi, Kushtia (RYT#2) | |
| **2.8** | Maintenance and seed increase of key parents | To maintain genetic purity of parent materials with seed production | Seeds of 76 key parents for the breeding program will be increased and their genetic purity will be maintained | PI: MK<br>CI: AR | BRRI Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **3** | **Project -3:** Development of Rice for Shallow Flooded and Deep-Water Environments<br>**Project Leaders: Dr. K M Iftekharuddaula** | | | | | |
| **3.1** | Hybridization | Generation of genotypes in combination with slow elongation, high yield, and submergence tolerance for shallow flooded water sub-ecosystem (flood water depth 0.5-1.0 m) | 18 parents will be utilized to make 29 single crosses | PI: SMZ,<br>CI: SG, NR, MMY and KMI | Gazipur, Deep water tank, Habiganj and Gopalgonj | **10.0 PARTNER 2** |
| **3.2** | $F_1$ confirmation | Confirmation of crosses with introgression of genes for slow elongation, high yield and submergence tolerance for shallow flooded deep water sub-ecosystem (flood water | A total of 20 single crosses will be confirmed | do | do | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | depth 0.5-1.0 m) into improved genetic background | | | | |
| **3.3** | Segregating population | Advancement of segregating generations following single seed descent-based RGA method | A total 61 crosses comprising 19,400 progenies from F2 to F5 will be grown | do | do | |
| **3.4** | Line Stage Testing | Screening of genetically homozygous lines for homogeneity, grain quality, grain yield potential | 639 breeding lines of 13 single crosses (elite x elite) will be grown | do | do | |
| **3.5** | Observational Yield Trial (OYT) | Evaluation of tall breeding lines | A total 76 genotypes will be evaluated against three check varieties under shallow flooded conditions | do | do | |
| **3.6** | Advanced Yield Trial (AYT) | Yield evaluation of advanced breeding lines in replicated trials for shallow flooded sub-ecosystem | A total of 52 advanced breeding lines along with two checks varieties BRRI dhan91 and BRRI dhan111will be evaluated under shallow flooded conditions | do | do | |
| **3.7** | Maintenance and seed increase of land races | Maintenance of seed purity and seed increase of land races | A total of 528 landraces adaptable under shallow flood and deep-water ecosystems will be grown and maintained | do | Gazipur | |

**Expected Output:** Shallow flooded rice varieties will be developed with better yield target (4.5-5.0 t/ha)

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **4** | **Project 04: Development of Rainfed lowland Rice<br>Project leader: Dr. Md. Ruhul Amin Sarker** | | | | | **25.0 GoB/PARTNER/LSTD/RCGS** |
| **4.1** | Hybridization | Introgression of genes from diverged genetic background into rice varieties/lines for the improvement of standard T. Aman varieties. | ~40 crosses will be made using 30 parents | PI: MRAS<br>CI: MA, AA, MM | Gazipur | |
| **4.2** | Confirmation of $F_1$<br>Quality check (QC) analysis of F1s | To confirm the crosses as true hybrid | Total 59 $F_1$ s will be grown | do | Gazipur | |
| **4.3** | Maintenance of Parents | To ensure seed safety of different quality genotypes and for future use in the hybridization or in the experiment as check variety | Around 92 genotypes will be grown to maintain their genetic purity | do | Gazipur | |
| **4.4** | FRGA | Generation Advance | Total 121crosses of $F_2$-$F_5$ generations comprising ~42,461 progenies | do | Gazipur | |
| **4.5** | Line Stage Test (LST) | Identification of uniform lines based on plant height, flowering date and grain type | ~6571 breeding lines from 27 crosses | do | Gazipur | |
| **4.6** | Observational Yield Trial (OYT) | Selection of genetically fixed breeding lines with acceptable grain quality having high yield potential with good plant type | ~970 lines will be evaluated in OYT along with BRRI dhan75, BRRI dhan49, BRRI dhan87, BRRI dhan103 and BRRI dhan112 | do and R/S | Gazipur and 10 Regional Stations | |
| **4.7** | Advanced Yield Trial (AYT#1 & AYT#2, AYT#3) | Confirmatory yield evaluation of advanced lines compared to standard checks | A total of 146 genotypes will be tested in AYT#1 and AYT#2 along with BRRI dhan71, BRRI dhan75, BRRI dhan49, BRRI dhan103, BRRI dhan110 and BRRI dhan112 | do & R/S | Gazipur, Rangpur Cumilla Rajshahi and Barishal | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **4.8** | Regional Yield Trial (RYT#1, RYT#2, RYT#3, RYT#4) | To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-farm condition | A total of 11, 10, 10 and 10 advanced lines will be tested in RYT#1, RYT#2, RYT#3 and RYT#4 along with checks BRRI dhan33, BRRI dhan39, BRRI dhan71, BRRI dhan75 BRRI dhan49, BRRI dhan103, BRRI dhan110 and BRRI dhan112, respectively. | PI: MRAS<br>CI: MA, AA, MM & Scientist of R/S | BRRI Gazipur, Cumilla, Sirajganj, Rangpur, Rajshahi, Kustia, Satkhia, Barishal and Sonagazi | |
| **1.5b** | Advanced Line Adaptive Research Trial (ALART) | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability | Three selected lines BR13096-4R-86, BR13473-4R-109 and BR13093-4R-53 will be evaluated with check variety BRRI dhan75 | PI: Scientist of ARD<br>CI: MRAS, MA, AA, MM | 10 locations (Locations will be selected by ARD) | |

**Expected Output:** Short duration varieties (105-115 days) with 5.0-6.0 t/ha yield potential and medium duration (116-130 days) varieties with 6.0-7.0 t/ha yield potential will be developed

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **6** | **Project 06: Development of Salt Tolerant Rice<br>Project Leader: Dr. Md. Akhlasur Rahman** | | | | | |
| **6.1** | Hybridization | Introgression of salinity tolerant genes in elite background of advanced genotypes | 80 parents will be used | PI: MAR<br>CI: NJ | Gazipur | |
| **6.2** | Confirmation of $F_1$<br>Quality check (QC) analysis of F1s | To confirm the crosses as true hybrid | 84 $F_1$s will be grown | PI: MAR<br>CI: NJ, AAS RFD | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **6.3** | FRGA and GRGA | Generation Advance | Two hundred Crosses comprising ~ 55800 progenies | PI: NJ<br>CI: MAR | Gazipur | **40.0 GOB, IRRI-NARes Network Trial & PARTNER** |
| **6.4** | Line Stage Test (LST) Trial | Identification of uniform lines based on plant type, flowering uniformity and grain type | >8294 breeding lines from 27 crosses | PI: MAR<br>CI: NJ, AAS RFD | Satkhira/ Gazipur | |
| **6.5** | Observational Yield Trial (OYT) | Selection of genetically fixed salt tolerant breeding lines with acceptable grain quality having high yield potential with good plant type | ~760 Lines from LST along with five checks BR10, BR23, BRRI dhan30, checks BRRI dhan73, and BRRI dhan54 will be evaluated | PI: MAR<br>CI: NJ, AAS RFD, MMR & R/S | Gazipur, Satkhira and Khulna | |
| | Trait paneling of OYT lines | Assessment of presence/ availability of favorable alleles in breeding lines/population | Total 760 Lines | PI: NJ<br>CI: MAR | Out Sourcing | |
| | Grain quality analysis of PYT, AYT & RYT lines | To evaluate key economic traits based on consumers preference | Total 267 lines | PI: SSD<br>CI: NJ, MAR | GQN | |
| **6.6** | Screening genotypes for salinity tolerance | To identify salt tolerant breeding lines through hydroponic systems | Total 600 lines | PI: Scientist of Plant Physiology<br>CI: NJ, MAR | Plant Physiology Div | |
| **6.7** | Preliminary Yield Trial (PYT1 ,2 &3) | Initial yield evaluation of advanced lines compared to standard checks in replicated trial | 113 genotypes along with five checks BR10, BRRI dhan73, BRRI dhan30 and BR23 and BRRI dhan54 | PI: MAR<br>CI: NJ, AAS RFD & MMR | Gazipur, Satkhira and Khulna | |
| **6.8** | Advanced Yield Trial (AYT#1&2) | Confirmatory yield evaluation of advanced lines compared to standard checks | 93 genotypes along with five checks BR10, BRRI dhan73, BRRI dhan30 and BR23 and BRRI dhan54 | PI: MAR<br>CI: NJ, AAS RFD&TA | Gazipur, Satkhira and Khulna | |
| **6.9** | Regional Yield Trial (RYT#1,2) | To evaluate specific and general adaptability of the advance breeding lines as compared with | Total 24 (12 entries in RYT-1 and 12 entries in RYT-2) genotypes along with 3 checks | PI: MAR | Gazipur, Sonagazi, Cumilla, | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | standard checks in on-farm condition | will be evaluated in RYT-1 and RYT-2, respectively. Checks: BRRI dhan54, BRRI dhan103 & BRRI dhan112 | CI: NJ, AAS, RFD, MMR, & R/S | Rajshahi, Gopalganj, Satkhira (BRRI farm, Kaliganj & Debhata), (8-10 locations) | |
| **6.10** | Line augmentation | To develop diverse pre-breeding materials with combination of multiple alleles of desired/important traits | • 122 fixed lines with *xa5, xa13* and *Xa21* combination will be evaluated in forward breeding trial.<br>• Trait paneling breeding lines with Pikh, Pi21and Pi9 alleles | PI: MAR CI: NJ, AAS,RFD, | Gazipur | |
| **6.11** | Advanced Line Adaptive Research Trial Re-(ALART)-STR (Photosensitive) | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability in different agro-ecological zones (AEZs) to nominate for proposed variety trial (PVT). | In Re-ALART (STR-Photosensitive), three selected materials (BR12465-4R-61, BR12465-4R-231, BR12459-4R-113) will be evaluated through BRRI recommended practices with check varieties BRRI dhan30 and BR23 | PI: Scientist of ARD CI: MAR, NJ, AAS RFD | 10 locations (3 locations at Khulna and Satkhira, 2 locations at Sonagazi and Companiganj , Noakhali, Cumilla, Rangpur, Gazipur, Gopalganj, Barishal/ Patuakhali | |
| **6.12** | Advanced Line Adaptive Research Trial ALART (STR | On-farm evaluation of advanced breeding lines compared to standard checks for testing their | In ALART (STR Short duration), three selected materials (BR12471-4R-98, | PI: Scientist of ARD | 10 locations (3 locations at Khulna and | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | Short duration) Growth duration range 117-123 days | specific and general adaptability in different agro-ecological zones (AEZs) to nominate for proposed variety trial (PVT). | BR12461-4R-51, BR13111-4R-104) will be evaluated through BRRI recommended practices with check varieties BRRI dhan103 and BRRI dhan112 | | Satkhira, 2 locations at Sonagazi and Companiganj, Noakhali, Cumilla, Rangpur, Gazipur, Gopalganj, Barishal/ Patuakhali) | |
| **6.13** | Advanced Line Adaptive Research Trial ALART (STR Medium duration) Growth duration range 127-133 days | On-farm evaluation of advanced breeding lines compared to standard checks for testing their specific and general adaptability in different agro-ecological zones (AEZs) to nominate for proposed variety trial (PVT). | In ALART (STR Medium duration), three selected materials (BR12462-4R-227, BR12466-4R-167, BR13105-4R-32) will be evaluated through BRRI recommended practices with check varieties BRRI dhan95 and BRRI dhan103 | PI: Scientist of ARD | 10 locations (3 locations at Khulna and Satkhira, 2 locations at Sonagazi and Companiganj, Noakhali, Cumilla, Rangpur, Gazipur, Gopalganj, Barishal/ Patuakhali | |
| **6.14** | Maintenance breeding | Maintenance of donors/local and elite parents for future use in the hybridization or in the experiment as check variety | 100 parents will be grown | PI: NJ CI: MAR, AAS, RFD | Gazipur | |

**Expected Output:** Salt tolerant variety(ies) for farmers, consumers and miller's preference will be developed with better yield potential (7.5-8.0 t/ha)

a) Salt tolerant variety(ies) with salt tolerance at seedling stage (12 dS/m) and reproductive stage tolerance (EC = 8.0-10.0 dS/m) will be developed based on different stakeholders' demand such as farmers, consumers, miller's preference of target region

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **7** | **Project-7a: Development of Premium Quality Rice (PQR) T. Aman**<br>**Project leader: Dr. Khandakar Md. Iftekharuddaula** | | | | | |
| **7.1a** | Hybridization | Introgression of genes quality traits (national grade) with aroma into high-yielding elite genetic background | 35 hybridization parents will be utilized to make single crosses, and 11 backcrosses will be continued from the previous year | PI: MRI<br>CI: AR, STT and KMI | Gazipur | **18.0 PARTNER**<br>**12.0 LSTD** |
| **7.2a** | Confirmation of $F_1$ | To confirm the crosses as a true hybrid through 10 SNP QC genotyping and progeny test | 22 single crosses & Six (6) backcrosses under PARTNER; and 21 Single crosses & Six (5) backcrosses under LSTD will be confirmed | do | Gazipur | |
| **7.3a** | Pedigree nursery ($F_2$ to $F_5$ generation advanced through FRGA) | Advancement of national grade aromatic progenies with improved plant type, earliness, premium quality grain, and high yield potential | 16952 progenies of 56 crosses will be advanced through FRGA under PARTNER & LSTD funding | do | Gazipur | |
| **7.4a** | Line Stage Testing (LST) | Selection of genetically fixed and homozygous national grade aromatic lines based on GEBV, pBLUP, better plant type and disease (blast & BLB) resistance score and grain quality | 1500 fixed breeding lines of 20 crosses will be grown under PARTNER & LSTD funding. | do | Gazipur | |
| **7.5a** | Observational Yield Trial (OYT) | Evaluation and selection of genetically fixed national grade aromatic lines based on GEBV, pBLUP, better plant type, disease (blast & BLB) resistance score & grain quality | A total of 1000 advanced lines will be tested under PARTNER & LSTD funding at four locations by following sparse genomic selection model with | do | Gazipur, Dinajpur, Rajshahi & Kushtia | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | | 325 genotypes per site along with eight checks ACI dhan2, BRRI dhan90, BRRI dhan70, BRRI dhan80, BRRI dhan75, Kalijira, Tulshimala & Kataribhog | | | |
| **7.6a** | Advanced Yield Trial (AYT-1_BRRI dhan90 and Jira Type) | Advanced performance evaluation of BRRI dhan90 type national grade aromatic advanced lines based on pBLUP & gBLUP, better plant type and disease (blast & BLB) resistance score & grain quality | A total of 30 advanced lines will be tested along with checks BRRI dhan34, BRRI dhan90 following Alpha lattice design under PARTNER funding | do | Gazipur, Dinajpur, Kushtia & Rajshahi | |
| **7.7a** | Advanced Yield Trial (AYT-2_Katari Type) | Advanced performance evaluation of Katari type national grade aromatic advanced lines based on pBLUP & gBLUP, better plant type and disease (blast & BLB) resistance score & grain quality | A total of 45 advanced lines will be tested along with checks BRRI dhan70 & Kataribhog (Dinajpur) by following Alpha lattice design under PARTNER funding | do | Gazipur, Dinajpur, Kushtia & Rajshahi | |
| **7.8a** | Advanced Yield Trial (AYT-3_Kalijira & Tulshimala Type) | Advanced performance evaluation of Kalijira & Tulshimala type national grade aromatic advanced lines based on pBLUP & gBLUP, better plant type and disease (blast & BLB) resistance score & grain quality | A total of 20 advanced lines will be tested along with checks BRRI dhan90, Kalijira & Tulshimala by following RCB design under LSTD funding | do | Gazipur, Dinajpur, Kushtia & Rajshahi | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **7.9a** | Advanced Yield Trial (AYT-4_No Aromatic) | Advanced performance evaluation of Non-aromatic BRRI dhan49 and Katari type advanced lines based on pBLUP & gBLUP, better plant type and disease (blast & BLB) resistance score & grain quality | A total of 11 advanced lines will be tested along with checks BRRI dhan49, BRRI dhan70 and BRRI dhan90 by following RCB design under LSTD funding | do | Gazipur, Dinajpur, Kushtia & Rajshahi | |
| **7.10a** | Regional Yield Trial (RYT1_BRRI dhan90 type) | Evaluation of BRRI dhan90 type aromatic genotypes to investigate agronomic performance, specific and general adaptability under on station condition | Total 13 advanced lines will be tested along with checks BRRI dhan34 and BRRI dhan90 | PI: MRI CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gazipur, Rajshahi, Rangpur, Dinajpur, Kushtia, Cumilla, Netrokona, Sirajganj, Barishal, Satkhira | |
| **7.11a** | Regional Yield Trial (RYT2_Katari type) | Evaluation of Katari and Jira type aromatic genotypes to investigate agronomic performance, specific and general adaptability under on-station condition | Total five (5) advanced lines will be tested along with BRRI dhan70 & Kataribhog (Dinajpur) | PI: MRI CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gazipur, Rajshahi, Rangpur, Dinajpur, Kushtia, Cumilla, Netrokona, Sirajganj, Barishal, Satkhira | |
| **7.12a** | Regional Yield Trial (RYT3_Kalijira & Tulshimala type) | Evaluation of Kalijira & Tulshimala type aromatic genotypes to investigate agronomic performance, | Total eight (8) advanced lines will be tested along with checks BRRI dhan90, Kalijira & Tulshimala | PI: MRI CI: Scientist of concern BRRI R/S, | Gazipur, Dinajpur, Rajshahi, Kushtia, Cumilla, | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | specific and general adaptability under on station condition | | AR, STT and KMI | Netrokona, Sirajganj, Barishal, Satkhira, Mymensingh | |
| **7.13a** | Regional Yield Trial (RYT4_Non-Aromatic PQR) | Evaluation of Non-aromatic PQR genotypes to investigate agronomic performance, specific and general adaptability under on station condition | Total five (5) advanced lines will be tested along with checks BRRI dhan90, BRRI dhan75 & BRRI dhan49 | PI: MRI CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gazipur, Rajshahi, Rangpur, Dinajpur, Kushtia, Cumilla, Netrokona, Sirajganj, Sonagazi, Barishal, Satkhira | |
| **7.14a** | Advanced Line Adaptive Research Trial (ALART: PQR_BRRI dhan90 type) | On-farm evaluation of BRRI dhan90 type aromatic advanced breeding lines compared to standard checks for testing their specific and general adaptability | A total of three (3) advanced breeding lines (BR13943-3R-95, BR13943-4R-279 & BR13942-5R-20) will be tested along with check BRRI dhan90. | PI: Scientist of ARD CI: MRI, AR, STT and KMI | Locations will be finalized by ARD. Probable 10 locations: Gazipur, Rajshahi, Rangpur, Dinajpur, Kushtia, Sherpur, Bogura, Barishal, Satkhira | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **7.15a** | Advanced Line Adaptive Research Trial (ALART: PQR_Katari type) | On-farm evaluation of Katari type advanced aromatic breeding lines compared to standard checks for testing their specific and general adaptability | A total two (2) Katari type aromatic advanced breeding lines (BR13943-4R-409 & BR14192-5R-35) will be tested along with check BRRI dhan70. | PI: Scientist of ARD CI: MRI, AR, STT and KMI | Locations will be finalized by ARD. Probable 10 locations: Gazipur, Rajshahi, Rangpur, Dinajpur, Kushtia, Sherpur, Bogura, Barishal, Satkhira | |
| 7.16a | GWAS assisted Genomic Selection PQR Panel for Genotyping and Phenotyping of Maintenance breeding materials | Phenotyping and 30X coverage whole genome sequencing of national grade aromatic local germplasm for trait discovery and future use in core breeding program | A total of 300 national grade aromatic local germplasm will be grown under PARTNER and LSTD funding by following | do | Gazipur | |

**Expected Output:** National grade Premium Quality Rice (PQR) with aroma for T. Aman season will be developed with potential yield target (4.0–5.5 t/ha)

| | **Project-10: Development of Antioxidant enriched Rice, T. Aman**<br>**Project leader: Dr. Sharmistha Ghosal** | | | | | |
|---|---|---|---|---|---|---|
| **SN** | **Experiments** | **Specific Objective(s)** | **Materials & Method** | **PI and CI** | **Location** | |
| **10.1** | Hybridization | Introgression of plant compounds with antioxidant properties including anthocyanin with or without aroma | 20 parents along with high C3G enriched lines will be utilized to make 23 crosses | PI: SG CI: SMZ, MMY and KMI | Gazipur | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | into high yielding genetic background. | | | | |
| **10.2** | Confirmation of $F_1$ | Confirmation of F1s as true crosses and selection of promising ones. | 29 crosses will be confirmed | do | Gazipur | |
| **10.3** | Pedigree nursery (advanced through FRGA) | Advancement of progenies with improved plant type, earliness, premium quality grain, high anthocyanin content, and high yield potential | 16,138 progenies from F2 to F5 progenies of 51 crosses will be advanced | do | Gazipur | |
| **10.4** | Line Stage Testing | Selection of uniform pigmented genotypes in terms of uniformity in flowering, plant height, amylose content with higher predicted yield with key target traits. | 4288 fixed breeding lines of 15 crosses will be grown and homozygous lines with high yield potential will be selected | do | Gazipur | |
| **10.5** | Observational Yield Trial (OYT) | Selection of materials with better phenotypic acceptance, homogeneity in the population, shorter growth duration, high anthocyanin content and higher yield potentials with higher nutraceutical value than the standard check varieties. | A total of 118 advanced lines will be tested with four checks varieties i.e. proposed BRRI dhan103, BRRIdhan75, BRRI dhan118 and BRRI dhan70 | do | Gazipur | |
| **10.6** | Advanced Yield Trial | Advanced evaluation anthocyanin enriched genotypes for shorter growth duration, higher yield potentials with with higher nutraceutical value than the standard check varieties. | A total of 60 genotypes along with four checks varieties ie proposed BRRI dhan103, BRRIdhan75, BRRI dhan118 and BRRI dhan70 | do | Gazipur | |
| **10.7** | Maintenance of Parents | Maintenance and purification of high anthocyanin content advanced genotypes, landraces and germplasm for future use in the hybridization or any other breeding program | A total of 120 C3G-enriched advanced lines and landraces will be grown and maintained | do | Gazipur | |

Expected Output: Pigmented Rice for Nutraceutical Properties enriched high yielding varieties will be developed (6.0 -7.0 t/ha)

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **11** | **Project-11: Development for Zinc Enriched Rice, T. Aman**<br>**Project leader: Dr. Md. Abdul Kader** | | | | | |
| **11.1** | Hybridization | Development of new genotypes with high zinc and iron content along with resistance to major insect pests and diseases, abiotic stress tolerance and acceptable grain quality | Total 25 single crosses will be made with 21 parents | PI: MAK<br>CI: RRM, SSC, NJB, SD | Gazipur | **24.0 GOB** |
| **11.2** | Confirmation of $F_1$ | To confirm the crosses as true $F_1$s and use of the selected $F_1$s to produce $F_2$ seeds and in different types of crosses | Total 16 crosses will be confirmed and $F_2$ seed will be produced | do | Gazipur | |
| **11.3** | Maintenance of Parents | To ensure seed safety of different quality genotypes and for future use in the hybridization or in the experiment as check variety | Around 40 genotypes will be grown to maintain their genetic purity | do | | |
| **11.4** | Pedigree nursery ($F_2$-$F_4$ generation) (advanced through FRGA) | Generation advancement | Total 55 crosses comprising ~ 19,903 progenies | do | Gazipur | |
| **11.5** | Line Stage Test (LST) Trial | Identification of uniform lines based on plant height, flowering date and grain type | Total 12,360 breeding lines of 45 crosses | do | Gazipur | |
| **11.6** | Observational Yield Trial (OYT) | Selection of homogeneous breeding lines with desirable agronomic characters with less or no unproductive tiller, intermediate plant height, short growth duration, acceptable | Total 542 genotypes will be evaluated against BRRI dhan62, BRRI dhan71, BRRI dhan72 and BRRI dhan103 in two OYTs (In OYT#1 258 lines and in OYT#284 lines) | do | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | grain quality and high yield potential | | | | |
| **11.7** | Advanced Yield Trial (AYT) | Confirmatory yield evaluation of advanced lines compared to standard checks | A total of 39 genotypes will be tested in AYT along with BRRI dhan39, BRRI dhan62, BRRI dhan71, BRRI dhan72, BRRI dhan87 and BRRI dhan103. | do & R/S | Gazipur, Rangpur and Cumilla | |
| **11.8** | Regional yield Trial (RYT) | Evaluation of agronomic performance, specific and general adaptability under on station condition | Best entries will be selected from five entries tested against standard check varieties BRRI dhan71, BRRI dhan72 and BRRI dhan103 | do & R/S | Total 9 locations | |

**Expected Output:** High yielding Zn enriched rice varieties with >7.0 t/ha yield potential will be developed.

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **12** | **Project 12: Development of Insect Resistant Rice (IRR)**<br>**Project Leader: Dr. Md. Ruhul Amin Sarker** | | | | | **24.0** GOB, PARTNER |
| **12.1** | Hybridization | Introgression of genes of BPH, WBPH, GLH and gall midge into high yielding rice genetic background | Total 18 well characterized parents will be used for ~30 crosses | PI: MRAS, CI: MA, AA, MM, MAR, NJ | Gazipur | |
| **12.2** | Confirmation of $F_1$<br>Quality check (QC) analysis of $F_1$s | To confirm the crosses as true hybrid | Total 36 crosses will be grown | do | Gazipur | |
| **12.3** | Line Augmentation | Introgression of bph genes (*bph17* and *bph32*) to develop advanced breeding lines | Three $F_1$, six BC1F1crosses will be made | do | Gazipur | |
| **12.4** | FRGA | Generation Advance | More than 22135 progenies from 90 crosses ($F_2$-$F_5$ generations) will be grown | do | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **12.5** | Line Stage Testing (LST) | Identification of uniform lines based on good plant type, flowering date and grain type | ~ 2597 breeding line from 19 crosses will be used | do | | |
| **12.6** | Observational Yield Trial (OYT) | Selection of genetically fixed breeding lines with resistant to BPH/GM, earliness having high yield with good plant type | Selected 826 lines will be evaluated with four checks (BRRI dhan33, BRRI dhan49, BRRI dhan87 and BRRI dhan103) | PI: MRAS, CI: MA, AA, MM, MAR, NJ, MMH MMsH, SSD and Scientists of R/S | Gazipur, Rangpur, Cumilla and GQN | |
| | Trait paneling of OYT lines | Assessment of presence/availability of favorable alleles in breeding lines/population | | | | |
| | Grain quality analysis of OYT, PYT & AYT lines | To evaluate key economic traits based on consumers preference | | | | |
| **12.7** | Advanced Yield Trial (AYT) | To evaluate/confirm yield performance of the advance breeding lines as compared with standard checks at multi-locations trials | Selected 90 lines (AYT#1=68 and AYT#2=22) will be evaluated with checks: BRRI dhan33, BRRI dhan49, BRRI dhan87 and BRRI dhan103 | PI: MRAS, CI: MA, AA, MM, MAR, NJ and R/S | Gazipur, Rangpur, Cumilla | |
| **12.8** | Screening breeding lines for BPH resistance | To identify new sources of BPH resistance | ~ 500 breeding lines (OYT and AYT) will be evaluated for BPH resistance | PI: MMsH CI: MMH, MRAS, MA, AA, NJ | Entomology Division, BRRI | |
| **12.9** | Maintenance and seed increase of key parents. | To maintain genetic purity of parent materials with seed production | Seeds of 119 key parents for breeding program will be increased and their genetic purity will be maintained | PI: MRAS, CI: MA, AA, MM, MAR, NJ | Gazipur | |

**Expected output:** BPH, WBPH, GLH and Gall midge resistant variety will be developed with better yield potential (6.0-7.0 t/ha). Promising genotypes will be selected after evaluation and will be used as parent materials as well as included in yield trial.

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **13** | **Project-13: Development of Disease Resistant Rice (BB, Blast & RTV)**<br>**Program leader- Dr. Mahmuda Khatun** | | | | | **10.0 GOB, TRB-BRRI** |
| **13.1** | Hybridization | Introgression of high yield, lodging tolerance and disease resistance trait for BB, Blast & RTV | Crosses will be done using 15 parents for BB, Blast & RTV | PI: MK<br>CI: AR, HAM | Gazipur | |
| **13.2** | $F_1$ confirmation | To confirm the crosses as true hybrid | A total of 27 crosses for BB, Blast and RTV will be confirmed | do | Gazipur | |
| **13.3** | Segregating population | Advancement of segregating generations following single seed descent-based RGA method | ~66250 progenies from 116 crosses for BB and Blast will be advanced through RGA techniques | do | Gazipur | |
| **13.4** | Line Stage Testing (LST) | Identification of uniform lines based on good plant type, flowering date and grain type | ~ 4800 breeding lines from 16 crosses will be used | do | Gazipur | |
| **13.5** | Observational Yield Trial (OYT) | Selection of homogeneous breeding lines with acceptable grain quality having high yield with good plant type | A total of 200 entries for BB will be evaluated against susceptible & standard checks: BRRI dhan87 and BRRI dhan49. | PI: MK<br>CI: AR, HAM & Scientists of R/S | BRRI Farm, Gazipur, Rangpur, Rajshahi & Cumilla. | |
| **13.6** | Advanced Yield Trial (AYT) | To evaluate/confirm the yield performance of the advanced breeding lines as compared with standard checks at multi-location trials | A total of 20 entries for BB will be evaluated against susceptible & standard checks: BRRI dhan87 and BRRI dhan49. | PI: MK<br>CI: AR, HAM & Scientists of R/S | BRRI Farm, Gazipur, Rangpur, Rajshahi & Cumilla. | |
| **13.7** | Regional Yield Trial (RYT-BB and RTV) | Evaluation of agronomic performance, specific and general adaptability under on-station conditions | In RYT, six entries will be tested in the replicated yield trial against susceptible and standard check varieties BRRI dhan75, | PI: MK<br>CI: AR, HAM & Scientists of R/S | BRRI Farm, Gazipur, Rangpur, | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | | BRRI dhan87, BRRI dhan49 and resistant check IRBB60. | | Rajshahi, Kushtia, Cumilla, Sonagazi & Sirajganj | |
| **13.8** | Maintenance and seed increase of key parents. | To maintain the genetic purity of parent materials with seed production | The seeds of 90 key parents for the breeding program will be increased and their genetic purity will be maintained | PI: MK<br>CI: AR, HAM | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **14** | **Project-14: Development of Submergence and Water Stagnation Tolerance Rice Varieties**<br>**Program leader: Dr. K M Iftekharuddaula** | | | | | |
| **14.1** | Hybridization | Introgression of submergence and medium stagnant water tolerant genes into the modern genetic background with high yield potential, short/long growth duration, weakly/strongly photoperiod sensitivity, grain quality etc. | 26 parents will be utilized to make 33 single crosses and backcross. | PI: SG<br>CI: SMZ, MMY, AR and KMI | Gazipur | **27.0 PARTNER** |
| **14.2** | $F_1$ confirmation | Confirmation of crosses with introgression of genes for submergence tolerance (particularly *SUB1*) and water stagnation tolerance into improved genetic background | A total of 18 crosses will be confirmed | do | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **14.3** | Segregating population advanced through FRGA | Advancement of segregating generations following single seed descent-based rapid generation advanced techniques | A total of 24,814 progenies from F2 to F5 of 96 crosses will be grown and advanced | do | Gazipur | |
| **14.4** | Line Stage Testing | Screening of genetically homozygous lines for homogeneity, grain quality, grain yield potential and *SUB1*-specific SNP markers | 2291 fixed breeding lines of 27 crosses (elite x elite) will be grown and selected based on uniformity and trait of interests | do | Gazipur | |
| **14.5** | Observational Yield Trial#1 and OYT#2 | Initial evaluation of the genotypes with tolerance against controlled submergence, rainfed, and flood prone farmers' field conditions | A total of 151 (131sub+20 stg) breeding lines will be evaluated in two OYT under rainfed and controlled conditions using six check varieties (BRRI dhan52, BRRI dhan79, BRRI dhan110, BRRI dhan103, BINA dhan11 and IRRI 119) | do | Gazipur (2), Rangpur (2), Kurigram, Lalmonirhat (6 locations) | |
| **14.6** | Advanced Yield Trial | Advanced evaluation of yield and survivability of promising breeding lines in a replicated trial under controlled submergence and flash flood-prone farmers' field. | A total of 80 sub +10 stg breeding lines will be evaluated under flood-prone areas of farmer's fields and rainfed & controlled on-station conditions against six standard checks (BRRI dhan52, BRRI dhan79, BRRI dhan110, BRRI dhan103, BINA dhan11 and IRRI 119) | do | do | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **14.7** | Regional Yield Trial (RYT/PVS) | To evaluate the specific and general adaptability of the advanced breeding lines as compared with standard checks in on-farm condition | Four PVS lines with three checks depending on growth will be evaluated. Checks are: BRRI dhan52, BRRI dhan79, BRRI dhan110 and BRRI dhan103 | PI: SG<br>CI: SMZ, AR, NR, MMY, KMI and R/S Scientist | Gazipur (2), Rangpur (2), Kurigram, Lalmonirha, Gaibandha, Sherpur (8 locations) | |
| **14.8** | Maintenance of submergence and Stagnant flood tolerant genotypes | To ensure seed safety of submergence tolerant genotypes | Around 180 genotypes for will be grown to maintain their genetic purity. | do | Gazipur | |
| **14.9** | Screening and evaluation of Core parental material for submergence tolerance | Screening of Core parental material for submergence tolerance | Around 250 advanced line and land races along with five checks will be screened for submergence tolerance | do | Gazipur | |

**Expected Output:** Submergence and Water Stagnation Tolerant varieties will be developed with yield target 6.0 to 6.5 t/ha

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **15** | **Project 15: Development of Drought Tolerant Rice<br>Project leader: Dr. Md. Abdul Kader** | | | | | **25.00<br>PARTNER** |
| **15.1** | Hybridization | Introgression of drought tolerance gene into high yielding rice genetic background | Thirteen recipient and donor parents will be used for making 20 crosses. At the same time 10 backcrosses will be made using drought tolerant donors | PI: MAK<br>CI: RRM, SSC, NJB, SB | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **15.2** | Confirmation of $F_1$ | To confirm the crosses as true hybrid | Total 11 $F_1$ s will be grown | do | Gazipur | |
| | Quality check (QC)analysis of F1s | | | | | |
| **15.3** | Maintenance of Parents | To ensure seed safety of different quality genotypes and for future use in the hybridization or in the experiment as check variety | Around 68 genotypes will be grown to maintain their genetic purity. | do | | |
| **15.4** | FRGA | Generation Advance | Total 50 crosses comprising ~ 20,090 progenies | do | Gazipur | |
| **15.5** | Line Stage Test (LST) Trial | Identification of uniform lines based on plant height, flowering date and grain type | Total 8,315 breeding lines of 25 crosses | do | Gazipur | |
| **15.6** | Observational Yield Trial (OYT) | Selection of homogeneous breeding lines with fine grain properties having high yield with good plant type. | A total of 165 genotypes will be tested in OYT#1 and OYT#2. In OYT#1, 83 genotypes along with BRRI dhan71, BRRI dhan75 and BRRI dhan87 and in OYT#2, 84 genotypes along with BRRI dhan49 and BRRI dhan87 will be evaluated. | do | Gazipur, Rangpur and Rajshahi | |
| **15.7** | Advanced Yield Trial (AYT) | Confirmatory yield evaluation of advanced lines compared to standard checks | A total of 51 genotypes will be tested in AYT. In AYT#1, 26 genotypes along with BRRI dhan71, BRRI dhan75 and BRRI dhan87 and in AYT#2, 25 genotypes along with BRRI dhan49, BRRI | do & R/S | Gazipur, Rangpur and Rajshahi | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | | dhan71 and BRRI dhan87 will be grown | | | |
| **15.8** | Regional Yield Trial (RYT) | To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-farm condition | In RYT#DTR, a total seven advanced lines will be tested along with checks BRRI dhan71, BRRI dhan87 and BRRI dhan103. In RYT#DTR (Tungro) two advanced lines will be tested along with checks BRRI dhan71 and BRRI dhan103. | Do & R/S | RYT#DTR: Gazipur, Rajshahi R/S (Tanore, Idulpur, Chapai Nawabgan), Rangpur (Sadar, Nilphamari, Kurigram), Kushtia DTR (Tungro): Gazipur, Rajshahi R/S (Tanore, Paba), Rangpur (Sadar, Nilphamari), Kushtia, Cumilla and Barishal | |
| **15.9** | Multi-location Trial of drought tolerant germplasm in | Evaluation and characterization of reproductive stage drought response traits of germplasm under | A total of 420 germplasm with six check varieties will be tested along with checks | Do & R/S | Gazipur, Rajshahi (Tanore and Godagari) | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | hotspot and controlled drought condition, Feed the Future Innovation Lab for Climate Resilient Cereals (CRCIL)-Drought | hotspot and controlled drought condition and GWAS study | | | | |

**Expected Output:** Drought Tolerant Varieties will be developed with potential yield target (5.5 – 6.5 t/ha)

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **17** | **Project 17: Development of Transgenic High Beta-carotene Rice and High Iron & Zinc Rice (Healthier Rice)**<br>**Project leader: Dr. Md. Abdul Kader** | | | | | |
| | **A. Golden Rice, Healthier Rice** | | | | | **25.00 PARTNER (T. Aman)** |
| **17.1a** | $F_1$ confirmation | To confirm the $F_1$s as true hybrid with GR2E gene | Two crosses with GR2E gene will be confirmed in the background of BRRI dhan102 and BRRI dhan108. At the same time gene stacking of GR2E along with high iron and zinc gene will be confirmed in the $F_1$ plants | PI: MAK<br>CI: RRM, SSC, NJB and SD | Gazipur | |
| **17.2b** | Seed multiplication of Contained Trial (CT) and | Seed multiplication and preservation of seeds of CT and CFT for varietal evaluation | The seeds of 37 advanced lines of CT in the background of BRRI dhan48, BRRI dhan98 along with 12 advanced lines of CFT (seven GR2E BRRI | do | Gazipur | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | Confined Field Trial (CFT) | | dhan49 and five GR2E BRRI dhan62) will be multiplied. | | | |
| | **B. High Iron and Zinc rice, Healthier Rice** | | | | | |
| **17.1a** | Backcross nursery | Introgression of high iron and zinc gene into high yielding different rice genetic backgrounds | Two $BC_2F_1$ (BRRI dhan103 and BRRI dhan105 background) will be made upon $BC_1F_1$ confirmation | do | Gazipur | |
| **17.2b** | Pedigree Nursery | Generation ddvancement of high iron and zinc rice lines | High iron and zinc trait containing progenies will be grown in two $BC_3F_2$ generation (BR11712-4R-93 and BRRI dhan98 background) and one $BC_3F_4$ (BRRI dhan87 background) will be grown | do | do | |

**Expected Output:** GR2E and High Iron and Zinc enriched rice varieties will be developed with potential yield target (> 6.0 t/ha)

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| **18** | **Project-18: Development of Photosensitive Rice, T. Aman**<br>**Project leader: Dr. Khandakar Md. Iftekharuddaula** | | | | | |
| **18.1** | Hybridization | Introgression of region specific medium and strongly photosensitive trait alone with drought tolerance, submergence tolerance and anaerobic tillering ability from Gainja, Naizershail, Malshira, Jira Badam, BR22 and BR23 into high-yielding elite genetic background | 35 elite and local hybridization parents will be utilized to make single crosses | PI: MRI<br>CI: AR, STT & KMI | Gazipur | **13.22 LSTD** |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
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| **18.2** | Confirmation of $F_1$ | To confirm the crosses as a true hybrid through 10 SNP QC genotyping and progeny test | 22 single crosses and 7 backcrosses will be confirmed | do | Gazipur | |
| **18.3** | Pedigree nursery ($F_2$ to $F_5$ generation advanced through FRGA) | Advancement of medium and strongly photosensitive segregating progenies with high yield potential | 9469 progenies of 54 crosses will be advanced through FRGA | do | Gazipur | |
| **18.4** | Line Stage Testing (LST) | Selection of genetically fixed and homozygous medium and strongly photosensitive breeding lines based on GEBV, gBLUP, better plant type, disease (BLB) and insect resistance score | 1218 fixed breeding lines of 20 crosses will be grown at four locations under LSTD funding. | do | Gazipur, Jattarapur & Shariakandi | |
| **18.5** | Observational Yield Trial (OYT) | Evaluation and selection of genetically fixed region specific medium and strongly photosensitive breeding lines based gBLUP/pBLUP, BLUE, better plant type, disease (BLB) and insect resistance score | A total of 51 advanced lines will be tested along with checks BR22, BR23, Gainja, Malshira, Naizershail, Guti Swarna, BRRI dhan49 & BRRI dhan94 by following Augmented RCB design | do | Gaibandha (Tista Riverbed), Jattarapur (Brahmaputra Riverbed), Bogura (Jamuna Riverbed) Sirajganj (Jamuna/Bangali Riverbed), BRRI HQ | |
| **18.6** | Advanced Yield Trial (AYT-1_Gainja Type) | Advanced yield evaluation of genetically fixed region specific medium and strongly photosensitive advanced breeding lines for charland (riverbed) with higher yield potential and better plant type | A total of 40 advanced lines will be tested along with checks Ganza, Malshira, Naizarshail | do | Gaibandha (Tista Riverbed), Jattarapur (Brahmaputra Riverbed), Bogura (Jamuna | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
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| | | | | | Riverbed) Sirajganj (Jamuna/Bangali Riverbed), BRRI HQ | |
| **18.9** | Advanced Yield Trial (AYT-2_BR22 & BR23 type) | Advanced yield evaluation of genetically fixed region specific medium and strongly photosensitive advanced breeding lines for stagnant lodging central, southern and eastern region with higher yield potential and better plant type | A total of 18 advanced lines will be tested along with BR22 and BR23 | do | BRRI HQ, Habiganj and Cumilla | |
| **18.10** | Advanced Yield Trial (AYT-3_Photosensitive-MS) | Advanced yield evaluation of genetically fixed medium slender photosensitive advanced breeding lines for stagnant lodging central, southern and eastern region with higher yield potential and better plant type | A total of 17 advanced lines will be tested along with BR22, BR23, BRRI dhan49 | | BRRI HQ, Habiganj and Cumilla, Netrokona | |
| **18.11** | Regional Yield Trial (RYT-1_Gainja Type) | Evaluation of Gainja type and quality low nutrient input genotypes to investigate agronomic performance, specific and general adaptability under on station and on farm condition | A total of 14 Gainja type advanced lines will be tested along with Gainja, Malshira and Naizarshail | PI: MRI CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gaibandha (Tista Riverbed), Kurigram (Dharla Riverbed), Jattarapur (Brahmaputra Riverbed), Bogura (Jamuna Riverbed) 18Sirajganj | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
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| | | | | | (Jamuna/Bangali Riverbed), Sonagazi (Charland) Bhanga (Padma Riverbed) BRRI HQ | |
| **18.12** | Regional Yield Trial (RYT-2_BR22 &BR23 Type | Evaluation of BR22 & BR23 type photosensitive advanced genotypes to investigate agronomic performance, specific and general adaptability under on-station condition | A total of 11 BR22 & BR23 type photosensitive advanced lines will be tested along with standard checks BR22 and BR23 | PI: MRI CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gazipur, Habiganj, Cumilla, Netrokona, Sonagazi, Barishal, Gopalganj, Satkhira | |
| **18.13** | Regional Yield Trial (RYT-3_Photosensitive MS) | Evaluation of medium slender photosensitive advanced genotypes to investigate agronomic performance, specific and general adaptability under on-station condition | A total of 13 advanced lines will be tested along with standard checks BR22, BR23 and BRRI dhan49 | PI: MRI CI: Scientist of concern BRRI R/S, AR, STT and KMI | Gazipur, Rangpur, Habiganj, Cumilla, Netrokona, Sirajganj Sonagazi, Barishal, Gopalganj, Satkhira | |
| **18.14** | Advance Line Adaptive Research Trial (ALART: BR22 & BR23 Type Photosensitive) | On-farm evaluation of BR22 and BR23 type photosensitive advanced breeding lines compared to standard checks for testing their specific and general adaptability | A total of two (2) BR22 and BR23 type photosensitive advanced breeding lines (BR11764-5R-124 & BR12847-4R-12) will be tested along | PI: Scientist of ARD CI: MRI, AR, STT and KMI | Locations will be selected by ARD Probable 10 locations: Gazipur, Habiganj, | |

| SN | Experiments | Specific Objective(s) | Materials & Method | PI and CI | Location | Budget (Lakh Taka) |
|---|---|---|---|---|---|---|
| | | | with checks BR22 & BR23 | | Cumilla, Netrokona, Sonagazi, Barishal, Gopalganj, Satkhira, Sirajganj | |
| **18.15** | GWAS assisted with Genomic Selection photosensitive Panel for Genotyping and Phenotyping of Maintenance breeding materials | Purification and maintenance of elite breeding lines and local germplasm parents for future use in core breeding program | A total of 150 advanced lines and landraces will be grown | do | Gazipur | |

**Expected Output:** Region specific medium and strongly photosensitive rice variety for T. Aman season will be developed with high potential yield target (4.5-5.5 t/ha)

PI=Principal Investigator, CI=Co-investigator, KMI=Khandakar Md. Iftekharuddaula, PSB=Partha Sarathi Biawas, MAR=Mohammad Akhlasur Rahman, MK=Mahmuda Khatun, MAK=Mohammad Abdul Kader, MRAS=Md. Ruhul Amin Sarker, SG=Sharmistha Ghosal, MRI=Md. Rafiqul Islam, RRM=Ratna Rani Majumder, MA=Md. Adil, MAZ=Md. Anisuzzaman, HK=Hasina Khatun, TKH=Tapas Kumer Hore, MAS=Md. Abu Syed, SP=Salma Pervin (Pl. Physiol), MSR=Md. Sazzadur Rahman (Pl. Physiology), AR=Anisar Rahman, NJ=Nusrat Jahan, URS=Urmi Rani Shaha, AAS=Armeen Akhter Setu, AR=Atiqur Rahman, SSC=Sadia Sultana Choiti, STT=Sanzana Tabussum Tuba, NR=Nayema Rupa, AA=Afroja Akhter, NJB=Nusrat Jahan Bristy, MMH=Md. Mahmudul Hasan, SD=Sudipto Das, MM=Maisha Maliha, HAM=Hammadulla Al Masuk, RFD=Ribed Farzana Disha, MMH=Md. Mofazzel Hossain (Entomology), MMsH=Md. Mosaddek Hossain (Entomology), SSD=Sharifa Sultana Dipti (GQN), MMY=Mahmuda Maliha Yesmeen, AWS=Afroza Awal Shoily, Scientists of Adaptive Research Div., Regional Station, RCGS=Rapid Cycle Genomic Selection Project, HRP=Healthier Rice Project