

Bangladesh Rice Research Institute
Regional Station Rangpur
Proposed Research programme, 2025-2026

Sl. No.	Programme area/project (Duration)	Major Objective(s)	Expected output	Budget (Thousand)
A. Varietal Development Program (VDP)				
01.	Development of Second Generation Rice (SGR) Principal investigator: Md. Rokebul Hasan Co-investigators: RJ Promee and KM Iftekharuddaula Initiation of the program: June, 2019 Termination of first phase: 2026			
1.1	Germplasm collection and Hybridization	To introgress genes from diverse genetic background	Development of high yielding (≥ 8.0 t/ha for T. Aman and ≥ 10.0 t/ha for Boro) rice varieties with improved modified plant type and accompanied with tolerance to drought/cold, resistance to major biotic stresses (insect and diseases) and acceptable grain quality.	30
1.2	F1 Confirmation	To confirm as true F1s'		20
1.3	Observational Yield Trial (OYT)	Evaluation of promising breeding lines for their homogeneity, phenotypic acceptability and initial yield potentials.		100
1.4	Advanced Yield Trial (AYT)	Selection of promising advanced breeding lines for their homogeneity, phenotypic acceptability and high yield potentials in replicated ways.		50
1.5	Regional Yield Trial (RYT)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition		200
			Total	400
2.0	Breeding for Basmati Rice Principal investigator: Md. Rokebul Hasan Co-investigators: RJ Promee and KM Iftekharuddaula Initiation of the program: June, 2019 Termination of first phase: 2026			
2.1	Germplasm collection and Hybridization	To introgress genes from diverse genetic background	Development of high yielding (≥ 6.0 t/ha for T. Aman and ≥ 8.0 t/ha for Boro) rice varieties	10
2.2	F1 Confirmation	To confirm as true F1s'		10
2.3	F2 Population	To advance segregating		50

		generation	with improved modified plant type giving the thrust is to develop short duration varieties from diverse genetic background for tolerant to drought/cold, sturdy stem, resistance to major biotic stresses (insect and diseases) and international standard basmati grain quality.	
2.4	Pedigree nurseries	To advance segregating generation		50
2.5	Observational Yield Trial (OYT)	Evaluation of promising breeding lines for their homogeneity, phenotypic acceptability and initial yield potentials.		30
2.6	Advanced Yield Trial (AYT)	Selection of promising advanced breeding lines for their homogeneity, phenotypic acceptability and high yield potentials in replicated ways.		50
2.7	Regional Yield Trial (RYT)	To evaluate specific and general adaptability of the advance breeding lines as compared with standard checks in on-station condition		200
2.8	Advanced Line Adaptive Research Trail (ALART)	1. To evaluate the performance and adaptability of the advanced genotypes at farmers' field in different agro-ecological zones. 2. To get feedback about the genotypes from farmers and Extension personnel. 3. To select suitable genotype(s) for proposed variety trial (PVT).		400
			Total	800
3.0	Development of Jasmine type rice variety Principal investigator: RJ Promee Co-investigators: Md. Rokebul Hasan and KM Iftekharuddaula Initiation of the program: June, 2025 Termination of first phase: 2030			
3.1	Germplasm collection and Hybridization	To introgress responsible genes from diverse	Development of high yielding	20

		genetic background	(≥6 t/ha for T. Aman and ≥8 t/ha for Boro) fragrant Jasmine type rice varieties with improved modified plant type giving the thrust is to develop short duration varieties accompanied with tolerance to drought/cold, resistance to major biotic stresses (insect and diseases) and acceptable grain quality.	
3.2	F1 Confirmation	To confirm as true F1s'		10
3.3	F2 Population	To advance segregating generation		70
			Total	100
B. CROP-SOIL-WATER MANAGEMENT				
1.1	Optimization of rate and application time of Paclobutrazol for lodging management in rice PI: M S Zahan CI: M L H Mondol, R J Promee, M M Rashid and M R Hasan	To find out the optimum rate and application time of paclobutrazol for rice. To find the management to prevent lodging and increase rice yield.	Optimum rate and application time of paclobutrazol reduces plant height and increase stem strength and prevent lodging	50
1.2	Effect of Urea Fertilizer Rate and Split Application Time on Nitrogen Use Efficiency for Long Duration Boro Rice Varieties under different Thermal Regimes in the Northern part of Bangladesh PI: M L H Mondol CI: M M Roshid, M S	To evaluate the effect of different urea fertilizer rates and split application timings on the growth and yield of BRRI dhan102 under different temperatures. To assess the effect of different urea split-application schedules on nitrogen uptake, growth and yield. To examine the	Enhances cold tolerance through improved nitrogen use efficiency, builds fertilizer guidelines specific for BRRI dhan102 in Boro season,	50

	Zahan, MR Hasan and MR Islam	interaction between urea rate and timing under cold stress		
1.3	Effect of Different Phosphorus Levels on Growth, Yield, and Nutrient Uptake of Rice in Potato-Growing Regions of Northern Bangladesh. PI: M L H Mondol CI: M M Roshid, M S Zahan, MR Hasan and MR Islam	Determine the optimal P fertilizer rate that maximizes rice productivity and minimizes costs in potato-rice systems. Assess the effects of varying P levels on rice growth parameters and yield. Evaluate P uptake, nutrient use efficiency, and overall P dynamics in rice under different application rates.	Identification of an adequate Phosphorus-based nutrient management strategy for Potato-Growing Regions of Northern Bangladesh	50
1.4	Optimizing the Management of BRRI dhan98 as a Late Boro Variety in the Northern Region of Bangladesh PI: M M Rashid CI: M L H Mondol, R J Promee, M S Zahan, and M R Hasan	To find out the suitable seeding time and fertilizer dose for late planting of BRRI dhan98	Suitable seeding time and fertilizer dose for late Boro planting of BRRI dhan98	50
1.5	Integrated Potassium and Elemental Sulfur-Based Nutrient Management for Cold-Stress Mitigation in Irrigated Boro Rice in Northern Bangladesh PI: M M Rashid CI: M L H Mondol, R J Promee, M S Zahan, and M R Hasan	To evaluate the effect of integrated potassium and sulfur application on the growth and yield of Boro rice under cold stress conditions.	Identification of an adequate potassium- and sulfur-based nutrient management strategy to mitigate cold stress in irrigated Boro rice.	50
			Total	250
			Grand Total	1550