

## Summary Research Programme: 2022 –'23

**Program Area** : Pest Management  
**Sub-program** : Insect Pest and Rodent Management  
**Program Performing Unit** : **Entomology Division**

Proj. no.	Title Project / Experiment	Name of PL, PI & CI	Duration	Year of initiation	Objectives (General/specific)	Experiment		Budget (lakh Tk.)	Source of budget
						Season	Location		
1.	<b>Project: Survey &amp; Monitoring of Rice Arthropods.</b>	PL: SSH			To determine the incidence and abundance patterns of insect pests and their natural enemies at BRRRI farm and in different AEZ's for better management of rice pests.				
	1.1 Pest monitoring in BRRRI farm.	PI : MPA CI: SA	Long term	1972 (contd.)	To study the insect pests and their natural enemy incidence at BRRRI farm and to create a database to develop a forecasting system.	Aus T.Aman Boro	Gazipur	1.5	GOB
	1.2 Insect pests and natural enemy in light trap.	PI: SA CI: MPA	Long term	1972 (contd.)	To study the pest and their natural enemy incidence patterns in rice fields and to create a database to develop a forecasting system.	Aus T.Aman Boro	Gazipur and all R/S	1.5	GOB
	1.3 Survey and monitoring of rice arthropods and yield loss estimation.	PI: MNB CI: All Entomol -ogist	Long term	2020	To know the present status of insecticide application. To reduce insecticide application in rice production. To assess the yield loss due to infestation of rice insect pests.	Aus T.Aman Boro	Barisal Rangpur Habiganj	2.0	GOB
2.	<b>Project: Bio-Ecology of Rice Insect Pest and Natural Enemy.</b>	PL: SSH			To study the ecology and development of insect pest of rice.				
	2.1 Behavioral adaptation of RLR in different weather condition.	PI: FN CI: MPA	Mid term	2019	To identify the effects of temperature on life cycle of rice leaf roller.	Aus T.Aman Boro	Gazipur	2.0	GOB

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<b>3.</b>	<b>Project: Biological Control of Rice Insect Pests.</b>								
	3.1 Conservation of natural enemies through eco-engineering	PI: MNB CI: FN	Mid term	2019	To conserve natural enemies through ecological engineering approaches. To reduce insecticide application in rice production. To save environment from insecticidal pollution.	T.Aman Boro	Gazipur Barisal Rangpur	2.0	GOB
	3.2 Study on entomogenous fungi to control BPH.	PI: FN CI: QSAJ	Mid term	2019	To isolate the fungi from naturally infected insects. To explore suitable media for mass production of the entomogenous fungi and its use in BPH management.	Aus T.Aman Boro	Gazipur	2.0	GOB
	3.3 Study on the biology of green mirid bug an egg predator BPH	PI: MMH	Mid term	2022	To know the biology and life cycle of green mirid bug.	T.Aman Boro	Gazipur	1.0	AFACI
<b>4.</b>	<b>Project: Crop Loss Assessment.</b>	PL: SSH			To determine relationship between pest damage levels and yield losses.				
	4.1 Stem borer species abundance, assessing yield losses & management in rice.	PI: MSH CI: ABMAU MMMK	Mid term	2022 (New)	To study the relative abundance of different species of rice stem borers and to determine the yield loss due to their damage.	Aus T.Aman Boro	Gazipur, Rajshahi, Barishal	1.5	GOB
<b>5.</b>	<b>Project: Evaluation of Chemicals and Botanicals against Rice Insect Pests.</b>	PL: SSH			To evaluate the effectiveness of different botanicals and determine efficacy of different insecticides against major rice insect pests.				
	5.1 Test of different insecticides	PI: MPA CI: FN	Long term	1972 (contd.)	To evaluate the effectiveness of commercial	Aus T.Aman Boro	Gazipur	3.0	GOB

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	against major insect pests.				formulations of different insecticides against major insect pests of rice.				
	5.2 Use of nanoparticle to control rice insect pests.	PI: MPA CI: FN SA	Mid term	2019	To develop nano-particle based pest management in rice To reduce chemical pesticide load in environment.	T.Aman Boro	Gazipur	3.0	GOB
	5.3 Effect of insecticides on natural enemies of rice insect pests.	PI: MSH CI: FN	Mid term	2018	To identify relatively safer insecticides for using (if needed) in IPM program.	Aus T.Aman Boro	Gazipur	1.0	GOB
	5.4 IRAC susceptibility test method for BPH and WBPH adult	PI: MMH	Mid term	2022	To evaluate the efficacy of selected insecticides group against BPH/WBPH.	T.Aman Boro	Gazipur And Sirajganj (Tarash)	2.0	AFACI
<b>6.</b>	<b>Project: Insecticide Toxicology</b>	PL: SSH			To detect insecticide residue in rice.				
	6.1 Residue analysis of different insecticide in rice by using LCMS.	PI: MPA CI: MNB FN, SA	Long term	2020	To detect insecticide residues in rice hull, bran and polished rice. To establish monitoring and guidance on safe use of insecticide in rice field.	T.Aman Boro	Gazipur	5.0	GOB
	6.2 Development and validation of analytical methods for multiple pesticide residue determination in rice grain using Liquid Chromatography with Tandem Mass Spectrometry (LCMS/MS).	PI: MNB CI: MPA, FN, SA	Long term	2022 (New)	To develop and validate a multi-residue analytical method for the analysis of chlorantraniliprole, thiamethoxam and imidacloprid in rice grain using QuEChERS (Quick, Easy, Cheap, Effective, Rugged and Safe) extraction coupled to LC-MS/MS.	T.Aman Boro	Gazipur	5.0	GOB
	6.3 Development and validation	PI: MNB CI:	Long term	2022 (New)	To develop and validate a multi-residue analytical	Aus, T.Aman Boro	Gazipur	5.0	GOB

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	of analytical methods for multiple pesticide residue determination in rice husk and rice bran using Liquid Chromatography with Tandem Mass Spectrometry (LCMS/MS).	MPA, FN, SA			method for the analysis of chlorantraniliprole, thiamethoxam and imidacloprid in rice husk and bran by using QuEChERS (Quick, Easy, Cheap, Effective, Rugged and Safe) extraction coupled to LC-MS/MS.				
<b>7.</b>	<b>Project: Host Plant Resistance.</b>	PL: SSH			Identification of resistant sources against rice insect pests.				
	7.1 Screening of rice germplasm, advance line against BPH, WBPH, GLH.	PI: MSH CI: SA	Long term	1972 (Contd.)	To identify resistant rice germplasm against major insect pests.	Aus T.Aman Boro	Gazipur	4.0	GOB/ TRB
	7.2 Development of BPH resistance rice introgression lines through marker assisted selection.	PI: SA CI: MRA	Mid term	2020	Development of elite donor for BPH resistance breeding program. Development of new breeding lines for BPH resistance.	Aus, T.Aman Boro	Gazipur	4.0	GOB
	7.3 Identification of BPH resistant sources from rice germplasm.	PI: SA CI: MSH	Mid term	2018	To characterize BPH resistant germplasms using BPH resistant linked markers.	Aus T.Aman Boro	Gazipur	4.0	GOB/ TRB
	7.4 Suppression of serotonin synthesis in rice using CRISPR Cas9 for insect control.	PI: MPA CI: SAI	Mid term	2019	To develop insect resistant rice variety To reduce insecticide dependency.	Boro	Gazipur	5.0	GOB
	7.5 Resistance mechanism in BRRI dhan33 to gall midge	PI: MPA	Mid term	2021	Identify the gall midge resistance gene in BRRI dhan33. Identify polymorphisms in parental lines, BRRI dhan33 and BRRI dhan49 and isolate the responsible gene	Aus T. Aman Boro	Gazipur	2.0	GOB

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					by genetic linkage analysis.				
	7.6 Pyramiding three BPH resistance genes (Bph2, Bph20, & Bph32) using marker-assisted selection in BRRI dhan89	PI: MPA CI: SA, MRA	Mid term	2021	Develop three/two gene pyramiding lines using marker assisted breeding. Evaluate the effects of BPH-resistant lines carrying different R genes after infestation with BPH.	Aus T. Aman Boro	Gazipur	4.0	GOB
<b>8.</b>	<b>Project: Molecular Biology of Rice Insect Pests.</b>	PL: SSH			To dissect the genomic diversity of rice arthropods.				
	8.1 Molecular characterization of stem borer in Bangladesh based on COI analysis	PI: MPA CI: SAK, SAI MPA	Mid term	2020	To assess a gene diversity of stem borer in Bangladesh. To know the impact of geographic location in stem borer genomic structure.	Aus, T.Aman Boro	Gazipur	2.0	GOB
	8.2 Gene drive to control <i>Nilaparvata lugens</i> .	PI: MPA CI: SAK	Mid term	2020	To assess a gene drive strategy to control the insect pest that threatens the staple food production in Bangladesh.	Aus, T.Aman Boro	Gazipur	5.0	GOB
	8.3 Isolation and identification of sex pheromone of stem borer.	PI: MPA CI: HBS, NB, SAI	Mid term	2022 (New)	Identification of sex pheromone of rice stem borer. Development of pheromone based stem borer management in rice field. Reduction of chemical insecticide dependency.	Aus, T.Aman Boro	Gazipur	15.0	GOB
<b>9.</b>	<b>Project: Integrated Pest Management</b>	PL: SSH			Reduction of chemical pesticide and safe food management.				
	9.1 Use of sex pheromone in corporation with other IPM tools to control leafroller and stem borer.	PI: MPA CI: FN	Mid term	2018	To test the efficacy of sex pheromone against leafroller in rice field. To control rice leaf roller without insecticide.	T.Aman	Gazipur	1.0	GOB

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10.	<b>Project: Vertebrate Pest Management</b>	PL: SSH			Management of rat in the rice field.			3.0	
	10.1 Evaluation of available rodenticides against rice field rats.	PI: MSH CI: MMH	Mid term	2019	To find out effective dose of rodenticide to control rat.	Aus T.Aman Boro	Gazipur	2.0	GOB
	10.2 Use of Watching Tower to manage rice rats	PI: MMH CI: MSH	Long term	2018	Sustainable management of rat facilitating owl watch tower for predation	All seasons	Gazipur	1.0	GOB
	10.3 Testing birth control medicine/botanicals to rice field rat	PI: MMH CI: Veterinary surgeon	Mid term	2022 (New)	To reduce birth rate of rice field rats	All seasons	Gazipur	2.0	GOB

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