

Entomology Division

Proposed Research Programme 2018-2019

Project No.	Title Project / Experiment	Objectives (General/specific)	Budget (lakh Tk.)
1.	Project : Survey & Monitoring of Rice Arthropods	To determine the incidence and abundance patterns of insect pests and their natural enemies at BIRRI farm and in different AEZ's for better management of rice pests.	
	1.1 Pest monitoring in BIRRI farm.	To study the insect pests and their natural enemy incidence at BIRRI farm and to create a database to develop a forecasting system.	1.5
	1.2 Insect pests and natural enemy in light trap.	To study the pest and their natural enemy incidence patterns in rice fields and to create a database to develop a forecasting system.	1.5
	1.3 Construction of epidemiology information interchange system for migratory disease and insect pests of rice.	Establishment of a sustainable multinational collaboration network for the management of migrating rice planthoppers and associated viruses to reduce their incidences below the threshold level in Asian countries.	7.0
	1.4 Survey of rice insect pests in selected AEZ's of Bangladesh.	To find the incidence patterns of major insect pests and their natural enemies in different Agro-ecological zones (AEZs) to examine the relationship between biotic and abiotic factors on their abundance.	2.0
	1.5 Development of bioclimatic models to forecast the dynamics of rice insect pests.	To develop, validate, demonstrate and assist rice growers to adopt an integrated system for the management of rice insect pests.	2.0
	1.6 Survey of gall midge incidence in selected areas.	To know the incidence pattern of gall midge.	2.0
2.	Project: Bio-ecology of rice insect pest and natural enemy	To study the ecology and development of insect pest of rice.	
	2.1 Response of insect pests to elevated salinity in soil and aquatic condition.	To know the effects of salinity on insect pests incidence of rice plant.	2.0
	2.2 Behavioral adaptation of RLR against global warming.	To identify the effects of temperature elevation on life cycle of rice leaf roller.	2.0
	2.3 Impact of Climate Change on Ecosystem Services (Pest Control and Rice Production).	Understand the impact of climate change on pest control and rice production services vulnerable to future climate change.	4.0
	2.5 Identification of gall midge biotype(s) in Bangladesh.	To identify available gall midge biotype(s).	2.0
3.	Project: Biological control of rice insect pests		
	3.1 Conservation of natural enemies through ecological engineering approaches.	To conserve natural enemies through ecological engineering approaches.	2.0
	3.2 Functional response of predator (carabid beetle/ spider/frog) against planthoppers.	To predict mechanisms underlying predator-prey behavior to improve the practical predictive potential of predator candidates for biological control.	2.0

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		To evaluate effectiveness of predators against target pest.	
	3.3 Study on entomogenous fungi to control BPH.	To isolate the fungi from naturally infected insects. To identify the mechanism/ pathogenicity of entomogenous fungi against BPH. To explore suitable media for mass production of the entomogenous fungi and its use in BPH management.	2.0
4.	Project : Crop Loss Assessment	To determine relationship between pest damage levels and yield losses.	
	4.1 Relationship between gall midge damage and yield loss.	To determine the yield loss potential of different rice varieties against gall midge damage.	2.0
5.	Project : Evaluation of chemicals and botanicals against rice insect pests	To evaluate the effectiveness of different botanicals and determine efficacy of different insecticides against major rice insect pests.	
	5.1 Test of different insecticides against major insect pests.	To evaluate the effectiveness of commercial formulations of different insecticides against major insect pests of rice.	3.0
	5.2 Effect of selected botanicals (neem and mahogany) on major rice pests.	To identify effectiveness of eco-friendly plant materials (Mahogany and Neem) against major rice insect pests (SB, RLR and BPH).	1.0
	5.3 Fumigation action of botanical oils against rice stored grain insects.	To find out the effective plant-derived insecticidal compounds against stored grain pests.	1.5
	5.4 Farmers perception in pesticide use.	To evaluate small-scale farmers' practices and knowledge with regard to pesticide use To identify the determinants of their behavior.	1.5
6.	Project: Host plant resistance	Identification of resistant sources against rice insect pests.	
	6.1 Screening of rice germplasm, advance line and F ₂ materials against major insect pests.	To identify resistant rice germplasm against major insect pests.	4.0
	6.2 Hybridization for the development of planthopper resistant rice variety.	To develop BPH resistant rice variety.	5.0
	6.3 Identification of BPH resistant sources from local germplasm.	To identify BPH resistant germplasm. To characterize BPH resistant germplasms using BPH resistant linked markers.	4.0
	6.4 Identification of resistant sources against gallmidge.	To identify GM resistant germplasm. To characterize GM resistant germplasms using GM resistant linked markers.	4
7.	Project: Integrated pest management	Reduction of chemical pesticide and safe food management.	
	7.1 Use of solar light trap for insect pests management in crop field.	To test the efficacy of BRRI solar light trap for insect pest management in rice and vegetable fields.	3.0
	7.2 Use of sex pheromone to control rice leafroller, <i>C. medinalis</i> .	To test the efficacy of sex pheromone against leafroller in rice field To control rice leaf roller without insecticide.	1.0

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	7.3 ধানের ফলন বৃদ্ধিতে কীটতন্ত্র গবেষণাগার আধুনিকায়ন	<p>১। ধানের পোকামাকড় গবেষণায় আধুনিক ও উন্নতমানের যন্ত্রপাতি সংগ্রহকরণ।</p> <p>২। ক্ষতিকর রাসায়নিক কীটনাশকের ব্যবহার কমিয়ে ধান উৎপাদন।</p> <p>৩। কীটতন্ত্র বিভাগের গ্রীণ হাউসের উন্নয়ন ও আধুনিকায়ন।</p> <p>৪। জলবায়ু পরিবর্তনের ফলে পোকামাকড়ের আক্রমণ ও ক্ষতির মাত্রা সম্পর্কিত পূর্বাভাস মডেল তৈরী করণ।</p> <p>৫। নতুন উন্নত জাত উদ্ভাবনের জন্য বাদামি গাছফড়িং (ইচএ) প্রতিরোধি দেশীয় ধানের জাত ও জিন সনাক্ত করণ।</p>	৭৫৫.০
8.	Project: Vertebrate pest management	Management of rat in rice field.	
	8.1 Eco-friendly rodent management through owl conservation.	To study the bio-ecology of available owl species and their mass rearing techniques. To upscale the developed techniques and buildup public awareness on owl conservation for sustainable rat management.	49
	8.2 Test of efficacy and modification of different rat management options.	To develop effective and eco-friendly rice rat management techniques.	2