Entomology Division

Research Programme: 2021 –'22

Sl no.	Program Area/ Project (Duration)	Major Objective (s)	Budget (lakh Tk.)
1.	**Project:** Pest monitoring in BRRI farm. **Duration:** Long term	To study the insect pests and their natural enemy incidence at BRRI farm and to create a database to develop a forecasting system.	1.5
2.	**Project:** Insect pests and natural enemy in light trap. **Duration:** Long term	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
3.	**Project:** Survey and monitoring of rice arthropods and yield loss estimation. **Duration:** Long term	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.	2.0
4.	**Project:** Fall Army worm (FAW) monitoring in rice. **Duration:** Short term	To determine the incidence pattern of FAW in rice.	3.0
5.	**Project:** Impact of lighting period on the trapping of insect. **Duration:** Short term	To find out effective lighting period for maximum insect trapping. To find out suitable insect catching time. To reduce the trapping of natural enemies.	1.0
6.	**Project:** Behavioral adaptation of RLR in different weather condition. **Duration:** Mid term	To identify the effects of temperature elevation on life cycle of rice leaf roller.	2.0
7.	**Project:** Behaviour and biological parameters of Fall Armyworm when feeding rice. **Duration:** Mid term	To find out the impact of non-host rice food on the demographic parameters of fall armyworm To understand the management strategy of fall army worm in rice field	2.0
8.	**Project:** Conservation of natural enemies through eco-engineering **Duration:** Mid term	To conserve natural enemies through ecological engineering approaches.	2.0

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9.	**Project:** Study on entomogenous fungi to control BPH. **Duration:** Mid term	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.	2.0
10.	**Project:** Effect of deadheart and whitehead on rice grain yield caused by stem borer (DHB, YSB) & ETL validation. **Duration:** Mid term	To determine the compensation abilities of different rice varieties against yellow stem borer damage. To know the relationship between YSB damage and yield loss.	1.5
11.	**Project:** Test of different insecticides against major insect pests. **Duration:** Long term	To evaluate the effectiveness of commercial formulations of different insecticides against major insect pests of rice.	3.0
12.	**Project:** Use of nanoparticle to control rice insect pests. **Duration:** Mid term	To develop nano-particle based pest management in rice To reduce chemical pesticide load in environment.	3.0
13.	**Project:** Effect of insecticides on natural enemies of rice insect pests. **Duration:** Mid term	To identify relatively safer insecticides for using (if needed) in IPM program.	1.0
14.	**Project:** Residue analysis of different insecticide in rice. **Duration:** Mid term	To detect insecticide residues in rice hull, bran and polished rice. To establish monitoring and guidance on safe use of insecticide in rice field.	5.0
15.	**Project:** Evaluation of pesticide residue in candidate rice samples. **Duration:** Long term	To detect insecticide residues (if any) in candidate rice samples.	10.0
14.	**Project:** Screening of rice germplasm, advance line against BPH, WBPH, GLH. **Duration:** Long term	To identify resistant rice germplasm against major insect pests.	4.0
15.	**Project:** Development of BPH resistance rice introgression lines through marker assisted selection.	Development of elite donor for BPH resistance breeding program. Development of new breeding lines for BPH resistance.	4.0

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	Duration: Mid term		
16.	**Project:** Identification of BPH resistant sources from rice germplasm. **Duration:** Mid term	To characterize BPH resistant germplasms using BPH resistant linked markers.	4.0
17.	**Project:** Suppression of serotonin synthesis in rice using CRISPR Cas9 for insect control. **Duration:** Mid term	To develop insect resistant rice variety To reduce insecticide dependency.	5.0
18.	**Project:** Resistance mechanism in BRRI dhan33 to gall midge. **Duration:** Mid term	Identify the gall midge resistance gene in BRRI dhan33. Identify polymorphisms in parental lines, BRRI dhan33 and BRRI dhan49 and isolate the responsible gene by genetic linkage analysis.	2.0
19.	**Project:** Pyramiding three BPH resistance genes (Bph2, Bph20, & Bph32) using marker-assisted selection in BRRI dhan89. **Duration:** Mid term	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.	4.0
20.	**Project:** Genome sequencing of yellow stemborer. **Duration:** Mid term	To provide a complete and accurate genome sequence of rice hispa.	8.0
21.	**Project:** Molecular characterization of *Nilaparvata lugens* in Bangladesh based on COI analysis. **Duration:** Mid term	To assess a gene diversity of BPH in Bangladesh. To know the impact of geographic location in BPH genomic structure.	2.0
22.	**Project:** Gene drive to control *Nilaparvata lugens.* **Duration:** Mid term	To assess a gene drive strategy to control the insect pest that threatens the staple food production in Bangladesh.	5.0
23.	**Project:** Use of sex pheromone to control rice leafroller and yellow stemborer.	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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	Duration: Mid term		
24.	**Project:** Evaluation of different rodenticide against rice field rats. **Duration:** Mid term	To find out effective rodenticide to control rat.	2.0