1. MANAGEMENT OF YELLOW STEM BORER IN SUMMER RICE

Economic aspects behind the story

- The yellow stem borer [*Scirpophaga incertulas* (Walker)] is a major pest of irrigated rice in West Bengal including Howrah district, an important rice growing district.
- The pest can cause upto 19% yield loss in early planted rice crops and 38% to 80% yield loss in late-planted rice crops as reported in the district.
- As this pest can complete three generations in a year in West Bengal condition, it is a serious threat for rice production especially in rice-rice cropping system which is common in Howrah district.

Brief description of the technology

A number of technologies are available to manage the pest population e.g. cultural control measures including proper timing of planting and synchronous planting, harvesting the crop at ground level, removing the stubbles and volunteer rice, ploughing and flooding, handpicking and destroying the egg masses, maintaining the proper height of irrigation water, cutting the leaf tops before transplanting, split application of nitrogenous fertilizer etc. biological control measures, the use of resistant varieties and chemical control measures. However, application of granular insecticides like Phorate and Carbofuran (in maximum areas) and Fipronil (in some areas) in transplanted fields as well as spraying infected plants with insecticides such as Triazophos, Endosulfan and synthetic pyrethroids are common in this district. Keeping the view of lower efficacy of Triazophos, non availability of Endosulfan and problems of secondary pest outbreak in case of synthetic pyrethroids, a newer technology has been demonstrated in the affected areas. Howrah KVK started Front Line Demonstration (Component Demonstration) since 2009-10 for controlling the pest. The technology provided to the farmers is: ***Protective measures against yellow stem borer through application of cartap hydrochloride 4G @ 7.5 kg/acre at 18-21 days after transplanting.***

How the practice may effectively address the particular problem issue

KVK has done FLD in 15.87 ha of area since 2009-10 covering 152 farmers of three blocks of the district (Jagatballavpur, Amta-I and Udaynarayanpur). The yield has been increased upto 18.87% in the demonstrated plot through providing granular insecticide application only. The Benefit Cost Ratio is also higher in demonstrated plots (1.90) than in check plots (1.53). The farmers are quite impressed with the management potentiality as well as the eco-friendly nature of the insecticide.

Fig. 1: White ear head caused by Yellow Stem Borer

Fig. 2: Demonstrated plot

2. MANAGEMENT OF BLAST DISEASE OF SUMMER RICE

Economic aspects behind the story

- Blast (c.o. *Pyricularia oryzae*) is considered a major disease of rice not only in Howrah district but also in entire rice growing areas because of its wide distribution and destructiveness under favourable conditions.
- Although blast is capable of causing very severe losses of up to 100%, reports said that it can cause 5 to 14% yield loss in the district. Among different symptoms, panicle blast causes maximum loss of the crop.
- Because of extended dew periods in winter season, blast is an important factor for yield loss in summer rice of Howrah district.

Brief description of the technology

A number of technologies are available to combat the disease starting from cultivation of blast resistant hybrid varieties, efficient use of nitrogenous fertilizers, soil amendment with silica, flooding the field if possible, early planting if possible up to the application of fungicides including seed treatment and protective spraying. However, spraying infected plants with fungicides such as carbendazim and edifenphos (in maximum areas), and hexaconazole and tricyclazole (in some areas) are common in this district. Keeping the view of lower efficacy as well as the higher cost due to 2 to 3 rounds of spraying of those fungicides, a newer technology has been demonstrated in the affected areas. Howrah KVK started Front Line Demonstration (Component Demonstration) since 2009-10 for controlling the disease. The technology provided to the farmers is: ***Protective measures against blast through seed treatment with tricyclazole @ 1.2 g/kg of seed and spraying with the same blasticide @ 0.6 g/l of water.***

How the practice may effectively address the particular problem issue

KVK has done FLD in 15.63 ha of area since 2009-10 covering 82 farmers of the district (Jagatballavpur Block). The yield has been increased up to 15.38% in the demonstrated plot through providing fungicide only. The Benefit Cost Ratio is also higher in demonstrated plots (1.87) than in check plots (1.31). The farmers are quite impressed with the management potentiality as well as the cost effectiveness of the technology.

Fig. 1: Symptom of panicle blast

Fig. 2: Demonstrated plot