Effectiveness of practiced management options to control of rice bug

Report

Submitted by

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Investigation issue: Less Rainfall and High temperature Increased rice bug

Model: Effectiveness of practiced management options to control of rice bug**.**

Objectives: To identify sustainable management options for rice bug

Materials & Methods

The experiment was conducted in 3 SAFBIN projects sites namely Paba, Boraigram and Potnitolaupazillas of greater Rajshahi. In each upazilla there was one PVS trial (one for each upazilla).

Cultivar: The variety is BRRIdhan57

Treatment: The experiment was designed with two factors.
Location: The experiment was conducted in 3 locations viz.

i. Paba

ii. Boraigram and

iii. Potnitola

Insecticides: Two types insecticide were used

i. Amritapani + Snail

ii. Malathion

Design The trial was laid out in RCBD with 3 replications. Individual plot size was 6 m x 4 m with 4 border rows alongside the whole experimental field. 21 – 25 days old seedlings were transplanted having 3-4 seedlings per hill with spacing 20 cm X 15 cm.

Fertilizer Mgt: The following fertilizers were used:

Urea: 180 kg/ha applied in 3 equal splits (1^{st} split 10 days after transplanting (DAT) + 2^{nd} split 25 days DAT and 3^{rd} split at the panicle initiation stage.

TSP: 75 kg/ha applied before final land preparation.

MOP: 90 Kg (½ at the basal + ½ with the 2nd top dress of urea)

Gypsum: 60 Kg/ha

Pest Mgt: Perching and judicious pesticide were used. In case of stem borer attack Virtako were applied. When rice bug infestation noticed at the flowering stage then any melathion sprayed avoiding pollination time (10 AM-14 AM). Rat infestation controlled by using bait, watering or put carefully Phostoxin tablet inside hole and blocked hole with mud.

Data Recording: Growth duration (days), rainless days, Plant height, fertile tiller/ hill, number of grain/panicle, yield, pest incidence (harvested 10 m^2 for each treatment and replication).

Data Analysis:Combined analysis was performed for growth duration, fertile tillers, thousand grain weight and yield using SPSS.

Results

Influence of insecticides on yield components of BRRI dhan-57 rice variety grown in three location trails for rice bugs are shown in Table 1. There was no significant difference between two type insecticides with the location interactions. The fertile tiller was increased using amritapan and snail at Paba and baraigram locations but malathion was reduced fertile tiller at Patnitala location. Comparatively, amritapani was suitable to produce fertile tiller than malathion. The total grain weight was significantly differ applied two insecticide with location interaction. The significant number of total grain weight was recorded at patnitalalocation; on the other hand rest of two locations did not showed any significant differences. Between two insecticides, total grain number increased significantly using malathioninsectide at all three locations. There was no significant difference between two insecticides with the location interactions. The yield was increased using malathion insecticide at all locations.

Effect of amritapani (T1) and snail+chemicals (T2) insecticides on rice fertile tiller/hill and affected grain (%) in three locations are shown in Fig.1. BRRIDhan57 was taken long duration at Patnitala location and short duration was taken at Baraigram location. The affected grain varied with the treatment of both insecticides. Between two insecticides, less number of affected grain was found using malathion for all location.

Correlation between rice bugs incidence (%) and yield (ton/ha) using amritapani (A) and snail+chemicals (B) in three locations are presented in Fig.2. By analysis the correlation between yield and dead heart incident of BRRIdhan-57, the yield significantly varied by pest incidence. The yield of this variety was decreased with the increase of dead heart incidence using both the pesticides.

Table 1. Influence of insecticides on yield components of BRRI dhan-57 rice variety grown in three location trails for rice bugs. Data presents mean value with standard error anddifferences within location × insecticide by LSD at 5% level.

Location	Insecticides	Yield components		
		Fertile tiller/hill	Total grain weight (gm)	Yield (ton/ha)
Paba	T1	12.200±0.518 a	18.940±0.149 b	4.245±0.112 a
	T2	12.300±0.518 a	19.030±0.149 b	4.408±0.112 a
Baraigram	T1	11.900±0.518 a	18.890±0.149 b	3.995±0.112 a
	T2	12.200±0.518 a	19.040±0.149 b	4.120±0.112 a
Patnitala	T1	12.800±0.733 a	19.400±0.211 a	4.034±0.158 a
	T2	13.400±0.733 a	19.400±0.211 a	4.210±0.158 a

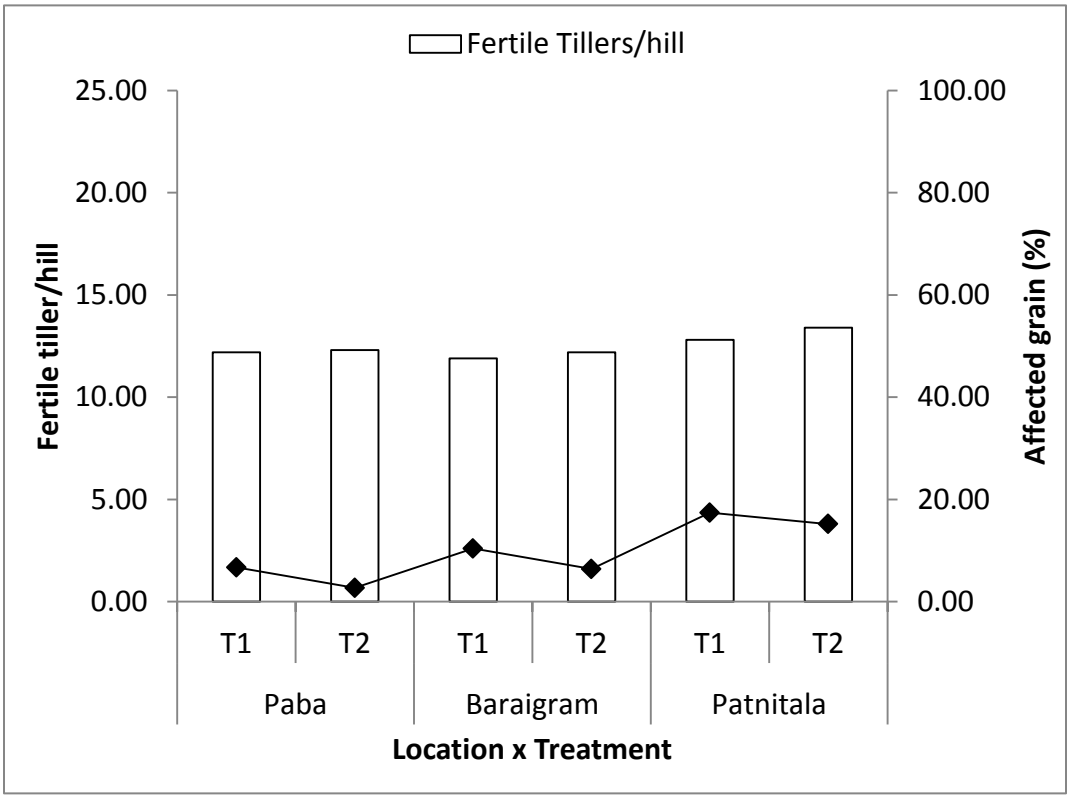

Figure 1. Effect of amritapani (T1) and snail+chemicals (T2)insecticides on rice fertile tiller/hill and affected grain (%) in three locations.

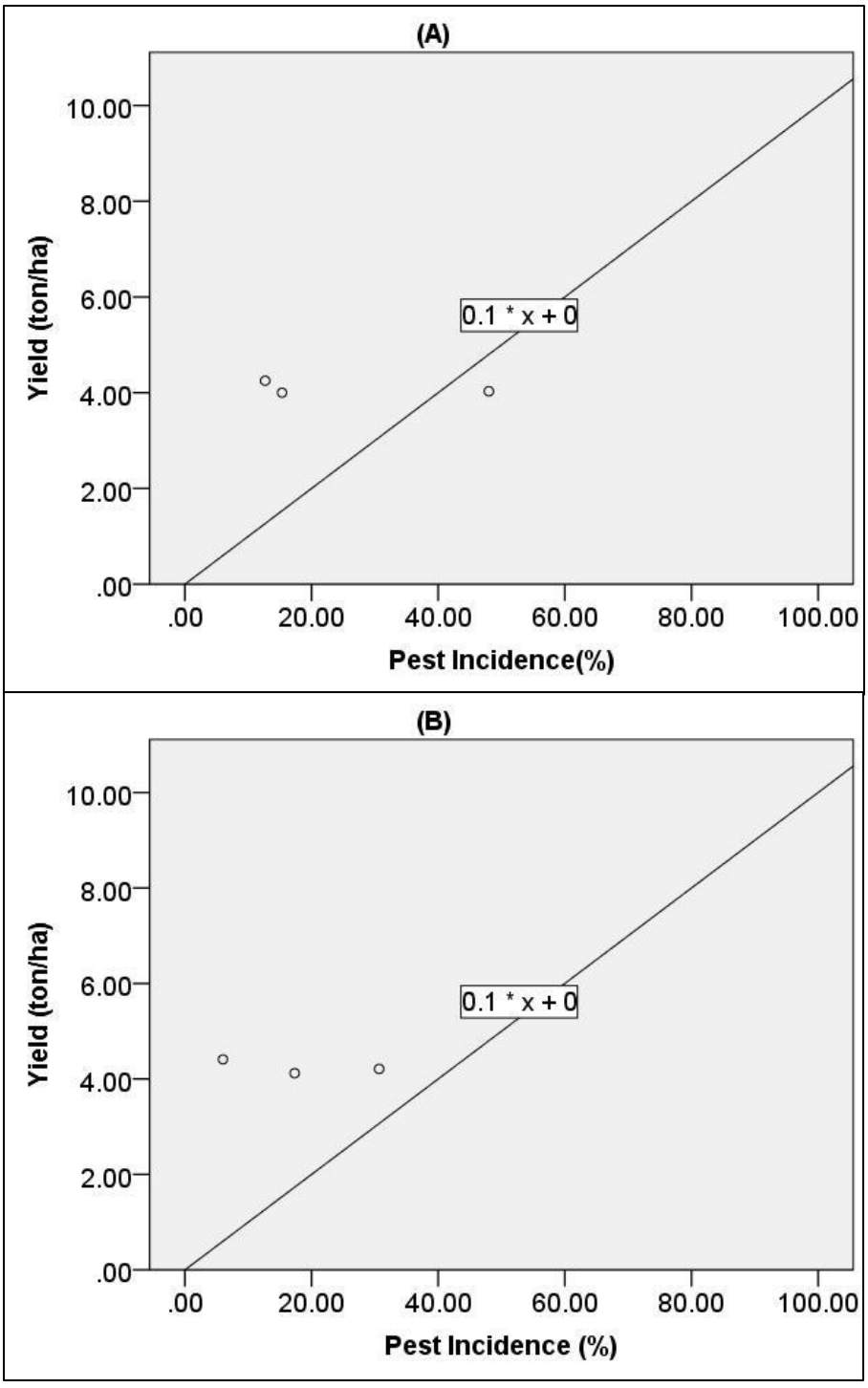

Figure 2. Correlation between rice bugs incidence (%) and yield (ton/ha) using amritapani (A) and snail+chemicals (B) in three locations of Rajshahi Division.