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Title: ECO-FRIENDLY MANAGEMENT OF INSECT PESTS OF MAIZE WITH SPECIAL REFERENCE TO STEM BORER

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Abstract: The field experiment was conducted to study the “Eco-friendly management of insect pests of maize with special reference to stem borer” on maize variety HQPM-1 during kharif 2010 in the research farm of Birsa Agricultural University, Ranchi. The five pests were observed i.e. stem borer, leaf folder, grasshopper, termite and cob borer. The maximum infestation of stem borer (19.6%), leaf folder (8.6%), dead heart (2.6%) and termite (4.6%) was recorded at research farm BAU and grasshopper (5.3%) at khunti and cob borer (3.2%) at Manatu, respectively. The first infestation of insect was noticed on 3rd August 2010 (31st std. wk.) which increased to the level of 6.9 per cent on 17th August 2010 (33rd std. wk.) and thereafter declining trend was noticed and its infestation came down to the level of 2.7 per cent on (40th standard week). The similar trend was noticed in the case of dead heart and leaf folder. The maximum temperature was significant and positive correlation with stem borer infestation (0.707**) and dead heart (0.700**) as well as leaf folder (0.601*) infestation. The maximum relative humidity showed significant and negative effect on stem borer infestation (-0.641*), dead heart (-0.606*) and leaf folder (-0.638*) damage. Out of 25 genotypes screened, 15 genotypes were found to be less susceptible. The rest 10 genotypes were grouped into moderately susceptible category. The 14 genotype had mean tunnel length below 10.0cm and the rest genotypes had mean tunnel length above 10.0cm. The six genotypes had mean exit hole above five while rest genotypes were having exit hole below five. The highest reduction in dead heart was recorded in treatment T7 Karanj oil+Imidacloprid (2.8%) followed by T5 Neem oil+Imidacloprid (3.9%) and T3 Imidacloprid (4.5%). The mean plant infestation was recorded to be lowest with Karanj oil+Imidacloprid (14.1%) followed by Neem oil+Imidacloprid (24.2%). The highest reduction in stem tunneling (2.7%) was recorded in T7 Karanj oil+Imidacloprid @ 10ml+2ml/L water followed by T5 Neem oil+Imidacloprid @ 10ml+2ml/L water (5.4), T6 Neem oil+Bt (6.3) and T3 Imidacloprid @ 2ml/L water (7.5). The mean number of exit hole/plant was recorded to be lowest with T7 having Karanj oil+Imidacloprid treatment (0.6) followed by T5 Neem oil+Imidacloprid treatment (1.5). The treatment Karanj oil+Imidacloprid was found effective in reducing dead heart, showing minimum plant infestation, stem tunneling and exit holes. The maximum yield was recorded in Karanj oil +Imidacloprid (39.5 q/ha) closely followed by Neem oil +Imidacloprid (37.5q/ha). The highest cost benefit ratio was recorded in the combination of Karanj oil+Imidacloprid @ 10ml+2ml/L water followed by Neem oil+Imidacloprid @ 10ml+2ml/L water.

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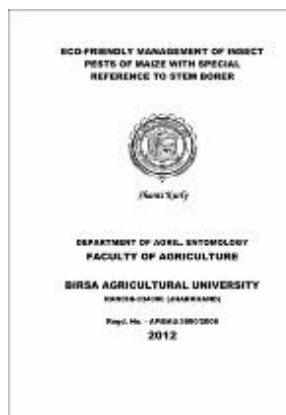
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