

Research Paper :

Bioefficacy of some botanicals and in combination with insecticide against *Leucinodes orbonalis* (Guenee) in brinjal under Allahabad agro-climatic condition

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SUMMARY

In order to determine the bioefficacy of some botanicals (NSE 5%, BLE 5% Neem oil 2%) and in combination with Endosulfan 0.035% and alone 0.07%, against brinjal shoot and fruit borer, *Leucinodes orbonalis*, field trial was conducted during *Kharif* season 2009-10 at Allahabad (U.P.). The insecticides were used at their field recommended doses along with an untreated control. The effective treatment was Endosulfan (0.07%) followed by NSE (5%) + Endosulfan (0.035%), Neem oil (2%) + Endosulfan (0.035%), BLE (5%) + Endosulfan (0.035%) were found effective in reducing shoot and fruit borer whereas NSE 5%, BLE 5% and Neem oil 2% existed in middle order. The maximum yield was obtained in Endosulfan (0.07%), followed by NSE + Endosulfan, (0.035%), BLE (5%) + Endosulfan (0.035%), Neem oil (2%) + Endosulfan 0.035, whereas all the treatments were significant to over control.

Key words :

Botanicals, Shoot
and fruit borer,
Endosulfan,
Insecticide,
*Leucinodes
orbonalis*

Brinjal or egg plant is considered as one of the most important vegetable crops due to its rich source of vitamin B, calcium, phosphorus and iron is grow throughout the country. Brinjal shoot and fruit borer, *Leucinodes orbonalis* (Guenee) is known to cause 18.8 to 80 per cent damage (Peshwani and Lal, 1964 and Mehto *et al.*, 1979). Brinjal fruit in India is a limiting factor in successful cultivation of the crop. The larva confines its feeding activities on shoot in the early stage of crop and later on, on fruits, which become unfit for human consumption. A large number of insecticides have been tried against this borer (Singh and Kavadia, 1989; Roy and Pande, 1994) with varying degrees of control. The incorporation of botanicals and bio-pesticides in pest management programme is gaining importance in recent years pertaining to environment and health hazard posed by synthetic insecticides.

MATERIALS AND METHODS

The trial was conducted in *Kharif* season 2009-10 at the research farm, Sam Higginbottom Institute of Agriculture, Technology and Sciences, (Formerly Allahabad Agricultural Institute, Deemed-to-be

University), Allahabad (U.P.). Trial was laid out in a randomized block design consisting of eight different insecticide formulations with one recommended concentration and thus, the total number of treatments was eight. Each treatment was replicated thrice, plot size (3x2 = 6 m²) and brinjal variety Neelam was used for study. After observing a sufficient level of insect population, spraying was undertaken. Five spray operations were given at 15 days interval. Observations on number of larvae per plant (shoot and fruit) were recorded. An average was taken of three replications of five randomly selected plants. The data were subjected to statistical analysis. The yield per plot was also recorded and expressed as tons per hectare.

RESULTS AND DISCUSSION

The data presented in Table 1 reveal that, all the treatments were significantly superior over control (plot T₈). The minimum infestation was recorded 9.66 treated with Endosulfan 0.07% on shoot, 17.24 on number basis and 16.59 on weight basis and it was significantly superior over all the treatments. Temurde *et al.* (1992) reported that Endosulfan treatment gave better performance against the shoot and

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