

Research Paper :

Efficacy of biorationals in management of potato shoot borer, *Leucinodes orbonalis* Guenee



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SUMMARY

A field experiment was conducted on potato shoot borer, *L. orbonalis* during *Kharif* 2002 at the Main Agricultural Research Station, University of Agricultural Sciences, Dharwad under rainfed conditions. The effectiveness of biorationals imposed three times at 30, 50 and 70 days after planting against potato shoot borer indicated that Nimbecidine @ 5 ml/l and NSKE @ 5 per cent were proved significantly superior in reducing the shoot infestation after each spray followed by spraying of pongamia oil @ 2 per cent and single application of neem cake @ 240 kg/ha. The significantly higher tuber yields were recorded in Nimbecidine @ 5 ml/l (35.82 q/ha) and NSKE @ 5 per cent (33.38 q/ha) with higher B: C ratios of 4.48 and 6.78, respectively which were followed by pongamia oil @ 2 per cent (30.91 q/ha) and neem cake applied once 240 kg/ha (28.07 q/ha).

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Key words :

Biorationals,
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Potato (*Solanum tuberosum* L.) is used as staple food in other countries but in India, it is used as vegetable rather than staple food. There are many production constraints in potato cultivation, of which occurrence of many pests right from sowing to harvesting is one of the most important reasons. Thirty three species of insects and a species of mite belonging to 9 orders and 23 families were reported on potato from Hassan at different stages of the crop growth (Nandihalli *et al.*, 1996). Among the insect pests, the shoot borer, *Leucinodes orbonalis* Guenee has become a serious pest on potato in recent years and the damage caused by the pest was reported to the extent of 41.87 per cent shoot damage (Niranjanamurthy and Nandihalli, 2003). Farmers depend mainly on chemicals for controlling this pest. The biorationals are cheap, non-phytotoxic, easily biodegradable and do not leave any harmful toxic residues besides conserving natural enemies and have varied insect controlling properties *viz.*, antifeedant, repellent, attractant, reproductive retardant and hormonal regulation etc. (Urs,

1987). As such, chances of pests developing resistance to the botanicals are less likely. Realizing the hazards involved in the use of conventional insecticides and appreciating the need to protect the food crops, the present study was under taken to evaluate the efficacy of the biorationals against *L. orbonalis*.

MATERIALS AND METHODS

A field experiment was conducted on potato shoot borer, *L. orbonalis* during *Kharif* 2002 at the Main Agricultural Research Station, University of Agricultural Sciences, Dharwad under rainfed conditions and was laid out in Randomized Block Design with 9 treatments replicated thrice. The plot size was 3 x 3.6 m. Kufri Chandramukhi, a variety of potato was sown adopting spacing of 60 x 20 cm between rows and plants, respectively. The recommended agronomic practices were followed to raise the crop. Seven biorationals were evaluated against *L. orbonalis* along with carbaryl 50 WP, standard chemical check and untreated control (Table 1). All the treatments were imposed at 30, 50 and 70 days after

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