STUDIES ON THE EFFICACY OF INSECTICIDES AND BOTANICALS AGAINST LARVAE OF BRINJAL SHOOT AND FRUIT BORER

(*Leucinodes orbanalis* Gunee)

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ABSTRACT

Efficacy of different insecticides, Esfenvalerate (Sumicidin Super), Deltamethrin (Decis), Carbaryl (Sevin 85 WP) and Cyfluthrin (Baythroid), and botanicals such as water extract of Neem seeds and water extract of *Eucalyptus* leaves were tested against *Leucinodes orbanalis* Gunee, on artificial diet under laboratory condition in the Agricultural biology laboratory of Eastern university Sri Lanka during the period between October to November 2000.

Artificial diet, composed of Beet armyworm (*Spodoptera exigua*) diet, dried brinjal powder, agar, distilled water and antibiotic (Streptomycin), prepared according to the Asian Vegetable Research Center (AVRDC) was used on this study. The larvae were reared on 50ml artificial diet contains in 100ml plastic container.

In the study insecticides were applied at the concentration Esfenvalerate (0.2µml /200 ml diet), Deltamethrin (0.0532µml/ 200 ml diet), Cyfluthrin (0.884µml/ 200 ml diet), Carbaryl (0.884 mg/ 200 ml diet), and water extract of Neem seeds (3ml/200 ml diet) and water extract of *Eucalyptus* leaves (5ml/ 200 ml diet)

All the treatments significantly ($P<0.01$) reduced the survival and weight of *Leucinodes orbanalis* larvae over control. The larvae introduced to Esfenvalerate (Sumicidin Super) and Deltamethrin (Decis) treated diet showed 0% survival in 4th day after treatment, Cyfluthrin treated diet showed 0% survival in 5th day after treatment. In the Carbaryl treated diet showed 45.83% survival on 7 th days after

treatment. Among the botanicals water extract of Neem seeds and water extract of *Eucalyptus* leaves showed 12.49% survival and 70.83% of survival respectively on 7th day after treatment. The water extract of Neem seeds showed 16.66% of abnormal pupation from immature larvae (larvae formed very thin light colour cocoon around it) on seventh day after treatment.

All the treatments significantly reduced the weight of the larvae over control. Even though Esfenvalarate, Deltamethrin, and Cyfluthrin significantly reduced weight of the larvae than other treatments.

Therefore based on this study Esfenvalerate (Sumicidin super), Deltamethrin (Decis), Cyfluthrin (Baythroid), and water extract of Neem seeds were effective in controlling *Leucinodes orbanalis* Gunee under laboratory condition. Water extract of Neem seeds showed the antifeedant and growth distruptant effect on *Leucinodes orbanalis* Gunee. Carbaryl was not very effective treatment compared to pyrethroid insecticides. Water extract of *Eucalyptus* leaves was not an effective treatment in controlling *Leucinodes orbanalis* Gunee.

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