

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

(*Leucinodes orbanalis* Gunee)

BY

**NADARAJAH SOORIYARAJAH**

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*S. Raveendranath*

39432

*T. Mahendran*

SUPERVISOR  
DR. S. RAVEENDRANATH  
(SENIOR LECTURER)  
DEAN /  
FACULTY OF AGRICULTURE  
EASTERN UNIVERSITY  
CHENKALADY  
SRI LANKA

HEAD/ DEPARTMENT OF  
AGRONOMY  
DR. (MRS). T. MAHENDRAN  
(SENIOR LECTURER)  
FACULTY OF AGRICULTURE  
EASTERN UNIVERSITY  
CHENKALADY  
SRI LANKA

HEAD  
Dept. of Agronomy  
Faculty of Agriculture  
Eastern University, Sri Lanka.

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DATE: *05/01/2001*

## 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* Gurnee, 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 (0.2 $\mu$ ml /200 ml diet), Deltamethrin (0.0532 $\mu$ ml/ 200 ml diet), Cyfluthrin (0.884 $\mu$ ml/ 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 4<sup>th</sup> day after treatment, Cyfluthrin treated diet showed 0% survival in 5<sup>th</sup> day after treatment. In the Carbaryl treated diet showed 45.83% survival on 7<sup>th</sup> 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 7<sup>th</sup> 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 Esfenvalerate, 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* Gunea under laboratory condition. Water extract of Neem seeds showed the antifeedant and growth disruptant effect on *Leucinodes orbanalis* Gunea. Carbaryl was not very effective treatment compared to pyrethroid insecticides. Water extract of *Eucalyptus* leaves was not an effective treatment in controlling *Leucinodes orbanalis* Gunea.

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