

Seasonal Incidence, Foliar Damage and Chemical Control of *Thysanoplusia orichalcea* Fabr. (Lepidoptera : Noctuidae) – A Pest of Sunflower

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ABSTRACT

The semilooper, *Thysanoplusia orichalcea* Fabr., (Lepidoptera : Noctuidae) moult four times and complete its stadial period in 37.79 ± 1.9 days during five instars. The entire eco-physiological experiment on larval period was conducted under 15.0 ± 2.1 (min.), 19.4 ± 2.8 °C (max.) temperatures with $85.0 \pm 2.5\%$ relative humidity at 12 h. of L : D periods. A male larva ingests more of leaves at I and V instars whereas the female has more feeding values on the remaining instar of II, III and IV. The I and II stage larvae consumed 129.67 mg of leaves whereas the consumption has been 8923 ± 2.19 mg per^d for III to V instars. The consumption at two sexes level is different *i.e.*, 9082.36 mg for the male and 8811.61 mg for the female larvae. Thus the total amount of food consumed against per mg of body weight by the larvae observed from I to last instar *viz.*, 2.38, 1.73, 1.75, 1.55 and 0.86 respectively. Four different synthetic pyrethroids *viz.*, Deltamethrin, Cypermethrin, Fenvalerate and Permethrin were tested in order to identify the best chemical for reducing the population of *T. orichalcea*. The results indicated that the LC₅₀ and LD₅₀ for deltamethrin was 0.000095% and 0.03496 µg/g of body weight of third instar larvae respectively. Similarly LC₅₀ for cypermethrin, fenvalerate and permethrin was 0.00027, 0.00095 and 0.00117% respectively whereas LD₅₀ was 0.07878, 0.1196 and 0.1502 µg/g of body weight respectively. The data of LD₅₀ reveals that the deltamethrin is the most toxic and permethrin is least toxic against *T. orichalcea*. The order of relative efficacy based on LT₅₀ values of these insecticides were deltamethrin 0.001%, cypermethrin 0.01%, fenvalerate 0.01% and permethrin 0.05%.

Key words: *Thysanoplusia orichalcea*, seasonal incidence, foliar damage, chemical control, Sunflower.

INTRODUCTION

Sunflower (*Helianthus annuus* Linn.) is cultivated as an important edible oil yielding crop in India. The crop is cultivated over 25,333 h. in Uttar Pradesh state of India