

## Effect of Biopesticides Applied Separately or Together on Nutritional Indices of the Rice Leafroller *Cnaphalocrocis medinalis*

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Laboratory assays were done to evaluate the effect of neem seed kernel extract (*Azadirachta indica* A. Juss), *Vitex negundo* L. (Lamiales: Verbenaceae) leaf extract, and *Bacillus thuringiensis* (Berliner), applied separately or together, on nutritional indices of the rice leafroller *Cnaphalocrocis medinalis* (Guenée) (Lepidoptera: Pyralidae). All three biopesticides suppressed feeding and larval growth and low concentrations affected the larval performance. The combined effect of the three biopesticides resulted in a considerable decrease in nutritional indices, indicating strong deterrence. Dose response relationships were established with respect to frass production and larval growth. The efficiency of conversion of ingested and digested food was considerably reduced.

KEY WORDS: Biopesticides; *Bt*; neem; *Vitex*; *Cnaphalocrocis medinalis*; nutrition; physiology.

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