

## Frequency of Granulosis Virus Application for the Control of Sugarcane Shoot Borer, *Chilo infuscatellus* Snellen

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The sugarcane shoot borer, *Chilo infuscatellus* Snell., is a serious pest in the early stages of sugarcane crop growth. It is widely distributed in India and causes heavy loss in yield (Avasthy and Tiwari, 1986). A granulosis virus was found to infect the larvae of shoot borer (Easwaramoorthy and David, 1979) and was highly pathogenic in laboratory and field conditions (Easwaramoorthy, 1984). The present study was conducted to find out the optimum number of applications of granulosis virus (GV) required for effective control of shoot borer.

The virus was multiplied and semi purified as per the method described by Easwaramoorthy and Santhalakshmi (1988). An experiment was conducted with the sugarcane variety Co 8021 in a farmer's field at Sathiamangalam, Periyar District, Tamil Nadu during 1990-91, in a randomised block design with five treatments (Table 1) and four replications. The plot size was 80m<sup>2</sup>. The treatments included application of virus @ 10<sup>7</sup> inclusion bodies (IB)/ml at different periods along with an untreated check. The virus was applied with 0.05 per cent teepol in all the treatments.

Counts were made five times on dead-hearts and total number of shoots at 15 days interval from 35 days after planting (DAP). The data over the periods were pooled and transformed to arc sine percentage for further analysis. At harvest, cane yield was recorded. The data were subjected to analysis of variance and the means compared with L.S.D.

The data showed that the shoot borer infestation ranged from 5.2 to 26.6 per cent in

different treatments while it was 39.8 per cent in the untreated check plots. The infestation was significantly less in plots which received four rounds of granulosis virus (5.2%) followed by three rounds (5.6%) and two rounds (5.8%) and these three were on par. The results clearly indicated that spraying GV (10<sup>7</sup> IB/ml) twice, on 35 and 50 DAP was sufficient while Easwaramoorthy and Santhalakshmi (1988) reported that four rounds were required for the effective control of the pest. All the treatments gave significantly higher cane yield and among the treatments, a similar trend as that of the infestation was observed.

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Table 1. Evaluation of different frequency of GV application for the control of sugarcane shoot borer

Treatments	Mean % dead hearts	Cane yield (t/ha)	Yield increase over control (t/ha)
GV 10 <sup>7</sup> IB/ml on 35, 50, 65 and 80 DAP	5.20 <sup>a</sup>	138.00 <sup>a</sup>	11.87
GV 10 <sup>7</sup> IB/ml on 35, 50, and 65 DAP	5.60 <sup>a</sup>	137.94 <sup>a</sup>	11.81
GV 10 <sup>7</sup> IB/ml on 35 and 50 DAP	5.80 <sup>a</sup>	137.06 <sup>a</sup>	10.93
GV 10 <sup>7</sup> IB/ml on 35 DAP only	16.60 <sup>b</sup>	130.94 <sup>b</sup>	4.81
Untreated check	39.80 <sup>c</sup>	126.13 <sup>c</sup>	

Means followed by same letters are not different significantly (P = 0.05) by L.S.D.

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**KEY WORDS :** *Chilo infuscatellus*, granulosus virus, frequency of application, sugarcane

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