

The Efficacy of Gamma BHC (E.C.) in the control of Early Shoot Borer (*Chiloitraea infuscatellus* Snell.) of Sugarcane *

by

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Synopsis: A three year trial for the control of early shoot borer was laid out in a randomised and 4 times replicated pattern with different insecticides. Of all the treatments Gamma BHC (E.C) 5 lb. chemical dissolved in 100 gallons of water and sprinkled over the setts at the time of planting using a gardener's can, has proved superior.

Introduction: The early shoot borer (*Chiloitraea infuscatellus* Snell.) is an important pest of Sugarcane in South India causing serious damage to the crop in the early stages. The pest is widely distributed occurring in all sugarcane growing tracts of the State and is mostly prevalent during the hot period of the year viz., March to May when the crop is 1 to 4 months old. It has been recorded to damage upto 75% of the early shoots in some parts of the country. Hence the vital need for evolving a suitable economic method for controlling this serious pest of sugarcane is evident. The present paper deals with the result of a three year trial conducted with four insecticides viz., D.D.T. endrin, aldrin and gamma BHC at Central Sugarcane Research Station, Cuddalore.

Previous work done: Attempts have been made by a number of workers to control this pest by using cultural, mechanical, chemical and biological methods. Parthasarathy (1959) has advocated trash mulching but the value of this method for controlling the pest has not been established. Partial earthing up of plants as advocated in Madras State (Anon. 1949) is also effective to some extent for bringing down the incidence of the pest but the method may not be economically feasible due to want of labour in many tracts. Biological control of this pest with the egg parasite *Trichogramma* has been discontinued after experiments in various parts to the country. Among the synthetic insecticides three rounds of endrin 0.1% spray (Venkataraman 1960) or DDT 0.25% spray (Basheer *et al* 1954) given at tri-weekly intervals commencing from the early sign of the pest attack was noted to be effective in controlling this pest. Encouraging results have also been obtained in minimising the borer attack by soil treatment with BHC dust at 5 lb. actual ingredient per acre at Lucknow (Gupta 1953).

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Materials and methods: A three year trial for the control of early shoot borer using different insecticides was laid out in a randomised and replicated plot design. The trial commenced from 1959-'60 and ended in 1961-'62 cropping seasons. A fairly susceptible variety Co. 449 which is also the most popular variety grown in the area was planted for the experiment. In all the trials, the plantings were taken up in March—April to synchronise with the peak period of pest incidence. Of the four insecticides tried the following formulations viz., 1. DDT 0.25%, 2. Endrin 0.1% and 3. Aldrin 0.1% were used as sprays. Three sprays at tri-weekly intervals were given commencing from the early sign of the pest incidence. The fourth treatment was with gamma BHC 20% (E.C.) 5 lb. of the chemical per acre dissolved in 100 gallons of water and poured over setts in furrows at the time of planting with a gardner's watering can. Plots without any treatment were maintained as control for comparison. The size of the plots was 2.5 cents with four replications. Counts of the pest attack was recorded in the middle two rows on tiller basis and the intensity of pest attack was assessed in each treatment.

Results and Conclusion: The average incidence of early shoot borer in each treatment for each year was worked out and the data are furnished below:

Intensity of attack of early shoot borer in experimental plots

Treatments	Average percentage of incidence of early shoot borer			General Average	% reduction of early shoot borer attack over control
	1959-'60	1960-'61	1961-'62		
DDT 0.25%	42.2	34.5	20.5	32.4	25.2
Endrin 0.1%	30.7	13.5	17.0	20.4	52.9
Aldrin 0.1%	54.0	22.8	17.6	31.5	27.2
Gamma BHC (E. C.)	25.7	17.7	5.7	16.4	62.1
Control	45.8	59.3	24.7	43.3	...

Statistical Analysis:

Main treatment : S. E. 5.94 C. D. 14.55

Sub treatment : S. E. 7.25 C. D. 14.21

S. E. for interaction: 12.59

Result: 4 2 3 1 5

The experiment has revealed that the chemical gamma BHC 20% (E. C.) 5 lb. dissolved in 100 gallons of water applied over the setts in furrows at the time of planting controls the early shoot borer to a very great

extent. The pest attack in the plots treated with gamma BHC was reduced to 62.1% over the control and this was the highest reduction of incidence in all the treatments.

Endrin, aldrin and DDT are also effective. The application of the chemical gamma BHC (E. C.) solution only once while planting with an ordinary watering can will make the operation easier for the farmers. Further this method of treating the setts with gamma BHC will greatly help to minimise the incidence of termites in sandy soils in infested tracts as reported earlier by Siddiqui *et al.* (1959).

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