

Note on the effect of insecticides on the slug caterpillar, *Contheyla rotunda* Hampson (Lepidoptera: Eucleidae), a minor pest of coconut palm

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Sporadic and epidemic outbreak of the slug caterpillar, *Contheyla rotunda* Hampson, usually a minor pest of coconut palm, resulting in extensive damage to the coconut cultivation, was reported from different places of Kerala. In cases of severe infestation the caterpillars feed not only on the lamina of the leaflet but also on all the green parts of the crown, including the petiole, spathe and nut, resulting in the drooping and shedding of leaves, buttons and nuts. The affected plants present a scorched appearance. Spraying the infested palms with lead arsenate (Ayyar, 1917) and 0.1 per cent DDT (Nirula *et al.*, 1954) were recommended for its control. The present note sums up the results of laboratory and field trials using DDT, BHC and carbaryl.

Concentrations of 0.01, 0.025, 0.50, 0.075, 0.1 and 0.2 per cent of the chlorinated hydrocarbons DDT and BHC and the carbamate carbaryl (sevin) were tested in the laboratory against the final-instar caterpillars of *Contheyla rotunda*. Five test caterpillars were caged in specimen tubes 8 cm × 2.5 cm and allowed to establish on fresh coconut leaflets introduced into the cages. Then 2 ml water suspensions of the required concentration of the insecticides were sprayed under the Potter's tower at a pressure of 0.84 kg per cm² on the leaflets with the caterpillars, 2 to 3 hr after establishment. Observations on normalcy, paralysis and mortality of the caterpillars were recorded for 7 days at 24-hr intervals. Probit

analysis of the data of 5 replications gave the LC₅₀ values as 0.001, 0.004 and 0.032, respectively, for carbaryl, DDT and BHC.

BHC 0.1 per cent and carbaryl 0.05 per cent (doses which could effect maximum mortality in laboratory trials) in comparison with DDT 0.1 per cent were tried in a severely infested coconut garden at Thottapally (Alleppey district) in May 1969 on 300 palms (100 palms for each treatment). Monthly sprayings were continued up to October. Observations were recorded of 10 per cent sample palms at random for total leaves, attacked leaves and the larval, pupal and adult pests present on 10 per cent sample of attacked leaves. Pre-treatment observation was recorded in May 1969, and post-treatment observations at monthly interval were continued up to April 1970. An analysis of the data of 12 rounds of observations (by the analysis of variance technique) revealed that after successive sprays there was reduction in pest population in the 3 treated plots. But the difference in the reduction of pest population between the treatments was not significant. DDT, BHC and carbaryl proved equally effective in the control of *Contheyla*. The population of the pest was highest in May (during the onset of the experiment). By October (after 6 rounds of spraying) the pest subsided below the level of economic injury and the population decreased to 1.5, 0.7 and 1.8 per cent of the initial level, for DDT, BHC and carbaryl.

The quantity of insecticide required for the treatment of 100 palms works out to 450 g, 450 g and 225 g per 225 litres

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water and the cost Rs 2.50, 0.90 and 2.84, respectively, for DDT, BHC and carbaryl.

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Note on the immediate toxicity of six insecticides used for the control of the adults of *Stephanitis typicus* Distant (Heteroptera: Tingidae), a pest of coconut foliage

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The control of *Stephanitis typicus* Distant, a pest of coconut foliage, assumed importance in arresting the spread of root (wilt) disease of coconut in the field ever since Shanta *et al.* (1964) brought out its additional role as aerial vector of the disease. The immediate toxicity of 6 insecticides tried against the adults of this tingid bug is reported here.

Adults of *Stephanitis typicus* Distant, freshly collected from coconut palms from the farm attached to the institute, formed the material for bioassay tests. The test insects were first established on coconut leaflets in the laboratory. After 24 hr they were sprayed with 1-ml suspension or emulsion of the insecticides in water at different concentrations, ranging from 0.0000125 to 0.1 per cent at a pressure of 843.68 g per cm². The range of concentrations required to produce 20-100 per cent mortality of the test

insects was, however, different with the insecticides used, viz. 0.0000125-0.00005 for isobenzan (1, 3, 4, 5, 6, 7, 8, 8-octachloro-3a, 4, 7, 7a-tetra hydro-4, 7-methanophthalan) as 15 per cent emulsion concentrate, 0.000025-0.001 for carbaryl (1-naphthyl-N-methyl carbamate) as 50 per cent water-dispersible powder, 0.0025-0.05 for methyl-0-demeton (dimethyl-ethyl-mercapto-ethyl-thiophosphate) as 100 per cent emulsion concentrate, 0.0003125-0.0025 for DDVP as 100 per cent emulsion concentrate, 0.00025-0.05 for BHC as 50 per cent water-dispersible powder, and 0.0125-0.1 for DDT as 50 per cent water-dispersible powder. There were 5 replications with 25 insects per replication. The control was sprayed with water alone. Observations on mortality of the test insects were recorded at 24-hr interval till all insects in each treatment were dead. The correction for natural mortality was made according to the Abbott's formula. The data of mortality after 24 hr were subjected to probit analysis.

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