

## Effect of top shootborer (*Cydia hemidoxa*) infestation on young vines of black pepper (*Piper nigrum*)

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The top shootborer [*Cydia hemidoxa* (Meyrick)] (Lepidoptera : Tortricidae) is a major pest of black pepper (*Piper nigrum* L.) in young plantations (Devasahayam *et al.* 1988). The larvae of the moth bore into tender terminal shoots of vines, resulting in their drying (Fig 1). Though repeated attack of terminal shoots leads to stunting of affected vines (Visalakshi and Joseph 1965), no information is available on the exact retardation in growth caused by the pest infestation and its effect in the production of more number of terminal branches, which would be of advantage. Hence a trial was undertaken at the Experimental Farm at Peruvannamuzhi (district Calicut, Kerala) during 1991 to study the effect of infestation of top shootborer on young vines of black pepper.

The trial was conducted on 1-year-old vines ('Panniyur 1') during July-December 1991, which is the main growth period of the crop and during which pest population is also high in the field (CPCRI, Kasaragod 1983). The vines were trailed on madre tree [*Gliricidia sepium* (Jacq.) Steudel] standards and normal agronomic practices were followed. Completely randomized design was adopted and there were 4 treatments, comprising 4 categories of infestations, viz T<sub>1</sub>, the control (no infestation); T<sub>2</sub>, 1 infestation, T<sub>3</sub>, 2 infestations; and T<sub>4</sub>, 3 infestations (general-

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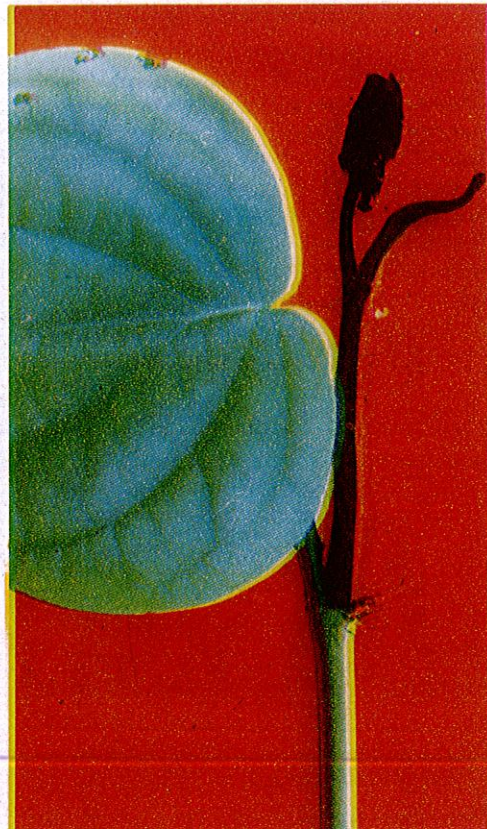


Fig 1 Terminal shoot of black pepper vine damaged by top shootborer

ly up to 3 successive infestations could occur on a vine during July-December). There were 25 replications per treatment. The number of infestations on the experimental vines was maintained at the desired levels by spraying

monocrotophos 0.05% at appropriate periods. At the end of the experimental period (December) the height of the vine and the number of leaves and terminal branches present were recorded and the data were statistically analysed.

The treatments showed significant differences for height and number of leaves present on the vines (Table 1). The height of vines was maximum in the control (166.6 cm) and minimum in vines with 3 infestations. The infestation reduced the vine growth significantly, ie by 16.6, 35.0 and 57.0% respectively in 1, 2 and 3 infestations. The retardation was mainly due to delayed production of a new shoot from an axillary bud, subsequent to drying of the old shoot due to the pest infestation. This retardation in growth during its main growth period in 1-year-old vines is crucial and may affect its establishment in the main field. The number of leaves was also significantly different in various treatments; maximum being in the control (23.8) and minimum in the vines with 3 infestations (10.1). There was no significant difference in the number of terminal branches produced in various treatments. Hence the pest infestation does not help in the production of more number of terminal branches.

Table 1 Effect of top shootborer infestation of young vines of black pepper

Treatment	Height (cm)	Reduction in height (%)	Leaves/vine	Branches/vine
Control	166.6		23.8	1.8
1 infestation	140.0	16.6	21.0	2.1
2 infestations	108.0	35.0	15.0	2.2
3 infestations	72.2	57.0	10.1	2.0
CD (P = 0.05)	10.7		1.6	NS

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