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Seasonal population of cardamom thrips (*Sciothrips cardamomi* (Ramk.) on three cultivar types of cardamom (*Elettaria cardamomum* Maton)

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Abstract

The seasonal population of cardamom thrips (*Sciothrips cardamomi*) and its damage to capsules was assessed on three cultivar types (Malabar, Vazhukka and Mysore) of cardamom (*Elettaria cardamomum*) at Saklespur (Karnataka, India) during 1990-92. Thrips population was high during pre-and post-monsoon periods in all the cultivar types. There were significant differences in thrips damage on the capsules in the three cultivar types. There was no significant correlation between abiotic factors and thrips population. The cultivar type Malabar, mainly grown in Karnataka, recorded about 50% less damage than the other cultivar types. Mean thrips damage on capsules during the three years of study in Malabar, Vazhukka and Mysore cultivars types were 28.44%, 57.92% and 62.55%, respectively.

Key words : cardamom, cultivars, *Elettaria cardamomum*, population, *Sciothrips cardamomi*, thrips.

Introduction

The cardamom thrips (*Sciothrips cardamomi* (Ramk.) (Thysanoptera: Thripidae) is a major, persistent pest of cardamom (*Elettaria cardamomum* Maton) in India. Infestation by thrips affects the quality and quantity of the produce. The affected capsules are malformed, shrivelled and may lose their aroma. The three cultivar types (Malabar, Mysore and Vazhukka) show varying degrees of susceptibility to thrips infestation and hence, the present study was carried out to study the seasonal population and damage to capsules by thrips on these three cultivar types.

Materials and methods

A field trial was laid out in a RBD at Indian Cardamom Research Institute Farm at Saklespur (altitude 976 m

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above MSL, longitude 75 48'38" and latitude 12 56'30") during 1990-92 and thrips population and damage on three cultivar types of cardamom (Malabar, having prostrate panicles; Mysore, with erect panicles and Vazhukka, with semi-erect panicles) were recorded. There were 12 plants per treatment and 7 replicates. The plants were 7-8 years old. The plots were maintained without pesticide application. The number of larvae and adults of thrips on all the leaf sheaths of five tillers per clump were recorded at monthly intervals for 3 years. Thrips damage on capsules was estimated at different harvests. Temperature (minimum and maximum) and rainfall were also recorded during the study period and correlations between thrips population and these abiotic factors worked out.

Results and discussion

Thrips population

The population of thrips occurred throughout the year with two peaks, the first peak during pre-monsoon period (February to April) and the second peak during post-monsoon period (September to November) in all the three cultivar types during all the 3 years of study (Fig. 1) supporting the earlier observations of Chakravarthy *et al.* (1993) and Singh *et al.* (1995 & 1996). Even though there was no significant difference among the cultivar types for thrips population, the cultivar type Malabar harboured relatively less thrips than the other cultivar types as reported earlier by Chandrasekar & Balu (1993).

Thrips population did not show significant correlation with rainfall and temperature in all the three cultivar types. However, the negative correlation with rainfall and number of rainy days indicated that with increase in rainfall, the thrips population decreased, as reported earlier (Krishnamurthy *et al.*, 1989; Chakravarthy *et al.* 1993; Singh *et al.* 1995).

Thrips damage

The differences in thrips damage on capsules was significant among the three cultivar types. The average thrips damage on capsules during the 3 years of study in the cultivar types Malabar, Vazhukka and Mysore was 28.44%, 57.92% and 62.55%, respectively (Table 1). Thus the cultivar type Malabar, is about 50% less susceptible to thrips than the other two cultivar types.

The disposition of panicles and capsules and their chemical constituents may be partly responsible for the differential thrips damage in the three cultivar types.

Table 1. Assessment of damage by thrips on three cultivar types of cardamom

Cultivar type	Year			Mean
	1990	1991	1992	
Malabar	16.84	41.02	27.45	28.44
Vazhukka	32.80	82.50	58.45	57.92
Mysore	51.25	84.46	51.94	62.55
CD (P = 0.05)	4.48	4.93	2.59	1.99
CV (%)	11.44	6.10	4.83	3.44

Values indicate thrips infestation in % age

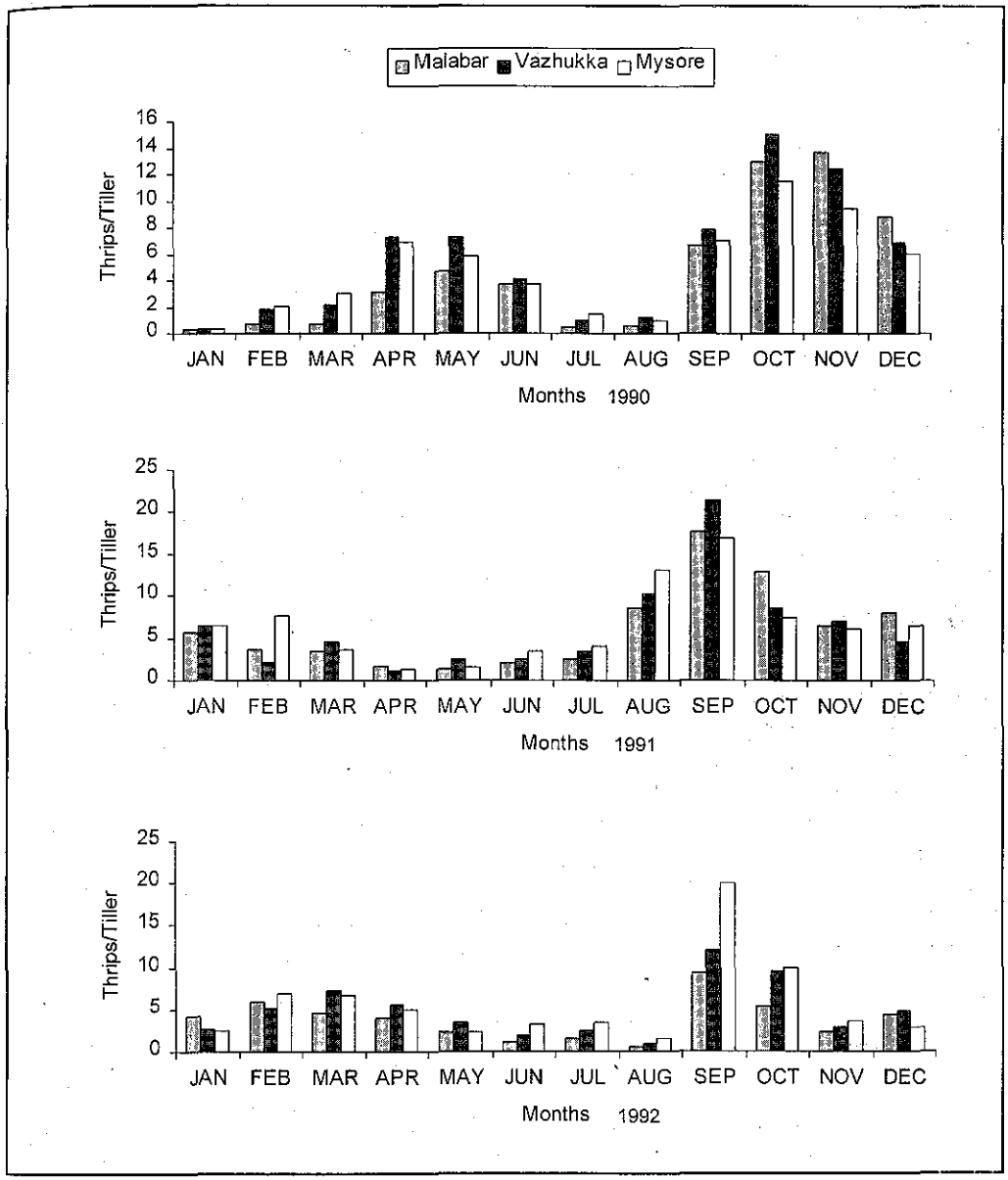

Fig. 1. Seasonal population of thrips in three cultivar types of cardamom

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