



Full Length Research Article

PREFERENTIAL DISTRIBUTION PATTERN OF THE YELLOW MITE, *POLYPHAGOTARSONEMUS LATUS* (BANKS) ON CHILLI

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ABSTRACT

Investigation on the spatial distribution of yellow mite, *Polyphagotarsonemus latus* (Banks) was studied at the Department of Entomology, GKVK, Bangalore during 2008-09. The mite population comprising of eggs as well as active stages were more abundant on leaves in the top canopy (165.69/leaf) of the chilli plant compared to the leaves in the middle canopy (111.18/leaf). Terminal leaves in a shoot of top canopy harbored maximum number of eggs (28.25) as well as active stages (29.8) compared to the corresponding leaves in the shoot in middle and bottom canopy (with 16 & 14, 12.4 & 12.8 eggs and active stages, respectively).

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INTRODUCTION

Polyphagotarsonemus latus (Banks) commonly known as broad mite, yellow mite etc is an important polyphagous pest with a very wide host range including many cultivated crops like chilli, potato, french beans, sweet pepper, bell pepper, chrysanthemum, cotton, dahlia etc. Its severe damage on under surface of chilli leaves leads to bronzing hence called tambera disease which causes significant reduction in yield in India (Nandi halli et al, 1996; Chakravarthy et al, 1998) except the reduction in yield no literature is available as distribution of mites on chilli plant, which is required for reliable sampling and precise estimation of crop loss.

MATERIALS AND METHODS

To study the distribution of the mite, 45 days old chilli crop (Var. *Byadgi kaddi*) in farmer field at Bankapura of Haveri district infested by the yellow mites was selected. 120 mite infested plants were selected at random and from such plant three shoots, one shoot from the top canopy (with fine leaves), middle canopy (with five leaves) and the bottom canopy

(with five leaves) were sampled and brought to the laboratory in separate polythene bags. The number of eggs and active stages (nymphs and adults) on all the leaves was counted under a stereobinocular microscope. The data on number of eggs, active stage per leaf was used to compare the abundance of the mite on leaves at different canopy levels as well as on different leaves in a shoot. Relationship between the number of eggs or active stages on individual leaves and the total population (eggs and active stages) on the entire leaf was also studied.

RESULTS AND DISCUSSION

The mite population comprising of eggs as well as active stages were more abundant on leaves in the top canopy (165.69/leaf) of the chilli plant compared to the leaves in the middle canopy (111.18/leaf). It is apparent that the mites preferred top position of the plant and cause serve damage. Terminal leaves in a shoot of top canopy harbored maximum number of eggs (28.25) as well as active stages (29.8) compared to the corresponding leaves in the shoot in middle and bottom canopy (with 16 & 14, 12.4 & 12.8 eggs and active stages, respectively). Also irrespective of the canopy level the terminal leaves of the shoots was more preferred by the mite compared to the middle/lateral leaf both for laying eggs and feeding (Table1). At both the canopy levels, the correlation

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Table 1. Preferential abundance of yellow mite, *Polyphagotarsonemus latus* on chilli

Shoots	mean number of eggs per 6 leaf	Correlation co-efficient	Mean number of active stage per 6 leaf	Correlation co-efficient	Mean number of eggs + active stages 6 per leaf	Correlation co-efficient
			Top canopy leaves			
Terminal	28.25	0.84**	29.8	0.83**	58.05	0.88**
Lateral	16.00	0.91**	14.0	0.90**	30.00	0.94**
Bottom	12.40	0.84**	12.8	0.84**	25.20	0.81**
			Bottom canopy leaves			
Terminal	11.4	0.68**	12.10	0.72**	23.5	0.77**
Lateral	7.4	0.79**	8.5	0.81**	15.9	0.82**
Bottom	6.6	0.71**	7.6	0.83**	14.2	0.80**

** Significant.

between the number of mites on the individual leaf and the total number of mites on the corresponding leaf was highly significant for both eggs as well as the active stages. This shows distinct relationship between the number of the mites on the leaves and the total number on the corresponding leaves. As the total number of mites on terminal leaves increased, the number of mites on corresponding leaves, especially on the terminal leaves also increased. It is suggested that the terminal leaves from the shoots at the top canopy shall be sampled for more precise and reliable estimation of mite population on chilli plant. Mann *et al.* (1920) observed prominent damage by yellow mite on top leaves of potato plants which resulted withering of foliage commencing from the tip of the plant.

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