



RESEARCH ARTICLE

Infestation and Damage Level of Chilli Thrips, *Scirtothrips dorsalis* on Chilli *Capsicum annuum* Crop

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ABSTRACT

Damage to Chilli crop, *Capsicum annuum* caused by chillithrips, *Scirtothrips dorsalis* (Hood) (Thysanoptera: Thripidae) was noticed under net house conditions at D.S college in District Aligarh. Severe infestation by chillithrips on chilli crop was seen in the month of May- June 2015. We observed the adult thrips and its larvae fed on various plant parts (twig, leaf, flower, and fruit) in the form of deformities. Prolonged feeding by chillithrips reduced photosynthesis of the plant results were obtained in the form of abscission of leaves and flowers causing economic loss in agricultural yields. Thrips fluctuations recorded up to 30-35/flower at regular intervals (7-9days and fortnightly). So, the level of damage increases up to 85-90%. There were no controlled method (biological /chemical) applied to minimize the impact (damage and infestation) of thrips on chilli crop.

Key words: *Scirtothrips dorsalis*, Infestation, Damage Level, Chilli

INTRODUCTION

Chilli, *Capsicum annuum* is the primary vegetable of routine food. It consumes at large scale in India. India is the second largest exporter of chilli. It is a rich source of vitamins (C, A, B and Oleoresin). It contains red pigment 'Capsaicin'. It is beneficial for gastric secretions and normal physiology of human beings.

Thrips, *Scirtothrips dorsalis* damage to chilli crop in the form of various deformities viz; disfigured plant parts, tender leaves, buds become brittle and major cause is yield loss (SEAL et al., 2006). Thrips show thigmotactic behaviour, so it is very difficult to detect in fresh vegetation. Thrips are a vector of many plant viruses viz; Chilli Leaf Curl (CLC), Peanut Necrosis Virus (PBNV) (Mound and Palmer 1981). Thrips are polyphagous in nature and its potential economic hosts are Banana, Bean, Cashew, Castor, Citrus, Cocoa, Corn, Mango, Melon, Peanut, and Strawberry (Venette and Davis 2004). We are reporting in this investigation the the infestation and damage level caused by chillithrips, *Scirtothrips dorsalis* on chilli *Capsicum annuum* crop.

OBJECTIVES

1. To determine spatial distribution of *Scirtothrips dorsalis* within host plant (leaf, flowers and fruits) chilli, *Capsicum annuum*.
2. To evaluate the infestation and damage level of thrips, *Scirtothrips dorsalis* on chilli, *Capsicum annuum*.

REVIEW AND LITERATURE

To check the seasonal abundance of most prevalent species *Thrips hawaiiensis* and *Scirtothrips dorsalis* on commercial and control mango orchard during the flowering season of December 2008 -2009. (Aliakbarpouret. al., 2012).

The chillithrips, *Scirtothrips dorsalis* Hood mostly a leaf thrips has recently become a serious pest on rose flowers in India. Under laboratory conditions, the egg, first, second instar larvae, pre-pupal and pupal periods ranged from 3-5, 1-2.25 to 3.75, 0.75-1.50 and 3.25-4.75 days.

Pupation occurred on the curled portion of the flower petals. (Duraimurugan and Jagdish, 2009).

MATERIAL AND METHODS

Chilli plants trial were established on Net House of D.S. College, Aligarh. Plant samples (leaves, flowers and fruits) were collected in poly bag at different time intervals in the month of May-June in order to know the infestation and damage level of *Scirtothrips dorsalis* under favorable climatic conditions. Collection should be avoided in rainy season. The net house has been kept free from weeds and grasses. We also measured the densitites of thrips, *Scirtothrips dorsalis* per plant. We also applied Tapping method to check its abundance (nymph, larvae, adult)/twig.

OBSERVATIONS

We observe the serious damage in the form of reducing fruiting and undesirable tissue feeding with the help of piercing and sucking mouth parts. Thrips can reduce the value of chilli crop by using them as food and oviposition (egg laying under leaf litter) above the soil surface. Yield loss solely dedicated to chillithrips, *Scirtothrips dorsalis* damage can range between 61-74% (BH PATEL et al., 2009). Heavy infestation of chillithrips caused abscission of leaves and flowers and reduced the rate of fruiting up to 30-80%. In continuous feeding reduce the rate of photosynthesis of chilli plant cause shedding of young leaves and flowers and also stunt the growth of plant. The leaf cell has been punctured by *Scirtothrips dorsalis* and also sucks the cellular fluids result in the form of curling of leaves. Air often partially fills the damaged cells giving damaged areas results silver scars that is often visible near the veins of leaves and petals of chilli flowers

PREVENTION AND CONTROL

The measures to prevent the infestation of *Scirtothrips dorsalis* are;

1. We should reduce the use of pesticides so that the natural enemies of the pest in order to survive in natural environment.
2. Keeping records of the severity, frequency and cost of managing pests over time will be in a better position to make decisions about its control in favour of biodiversity.

RESULT

Infestation and damage caused by *Scirtothrips dorsalis* starting at first week of planting through suck the cell sap of leaves under favorable climatic conditions.

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