

New “Invasive Pest” (*Thrips parvispinus*)

Rachamalla Ravi Teja

Department of Vegetable Science, College of Horticulture Rajendranagar-500030, Sri Konda Laxman Telangana State Horticultural University (SKLTSU), Mulugu, Telangana, India.

ARTICLE ID: 34

Earlier, *Scirtothrips dorsalis* and *Thrips hawaiiensis* had been the common insects affecting chilli crop, but the new species of insect called ‘*Thrips parvispinus*,’ which originated in Indonesia and was first seen in India in 2015, has made a resurgence in several States, affecting chilli crop in nearly 9 lakh acres in Telangana and Andhra Pradesh.

Red chilli could turn out to be spicy hot this year as its production is likely to be affected with a new “invasive pest” (*Thrips parvispinus*) infesting the crop in a few districts in Telangana and Andhra Pradesh. The infection is affecting the plants at the flowering stage and stunting the growth of fruits.

Thrips Parvispinous from Indonesia is rapidly spreading across the State for the past few weeks, destroying chilli crop and catching farmers as well as scientists off-guard.

Taxonomy

Domain: Eukaryota

Kingdom: Metazoa

Phylum: Arthropoda

Subphylum: Uniramia

Class: Insecta

Order: Thysanoptera

Family: Thripidae

Genus: Thrips

Species: *Thrips parvispinus*

The indiscriminate use of pesticides and a cocktail of pesticides is the reason. The pest has developed resistance to the pesticides, making the way for the new attack,

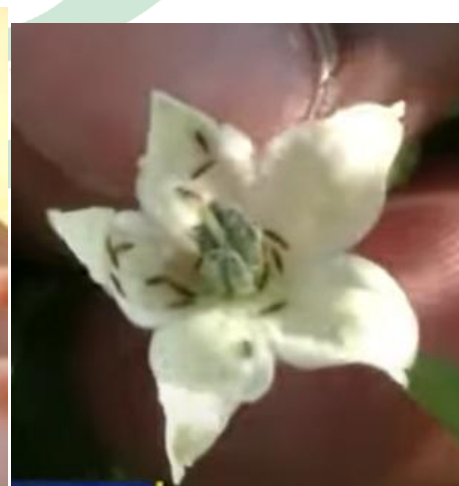
“In 2020, infection of flowers by thrips was noticed in Telangana and Andhra Pradesh in February, while this year (2021) its population flared up as early as October. Both adults

and young ones feed on the ovaries of the flowers and make them unfit for fruiting leading to heavy flower drop and yield losses thereby,”

, 17: 200–207.



1) Adult female *Thrips parvispinus* 2) Adult male *Thrips parvispinus* 3) Female *Thrips parvispinus* forewing



Identification

Females and males differ in size and color. Females are nearly 1 mm long, with brown head and prothorax, yellowish brown meso- and metathorax and black abdomen; forewings are dark, with light colored base the third antennal segment and the base of the fourth and fifth segments are light colored (either yellow or white). Males are 0.6 mm long and evenly yellow.

Each female Thrips lays around 150 eggs through Parthenogenesis (without requiring the male) and sucks the sap of leaf, flower and also the fruit, causing extensive damage to the crop within no time. Damage to chilli crops has been observed between 30 to 70 per cent at various fields in Telangana where the crop has come for harvest.

Hosts and damage

Thrips parvispinus is polyphagous with the preferred hosts varying across its geographic distribution. In regions where the species has been long established, the crops most affected are papaya, peppers, potatoes, eggplants, beans, shallots and strawberries. In Indonesia, field pepper yield losses due to *T. parvispinus* reach 23 percent (Johari *et al.*, 2014). Most damage is produced by direct feeding of larvae and adults on leaves and growing buds, but at least in papaya, tissue damaged by the thrips may be secondarily and independently infected by a saprophytic fungus, *Cladosporium* (Lim, 1989).

Management:

- Nipping and destruction of infested top/apical shoots.
- Erection of blue sticky traps @ 25-30 per acre for mass trapping in thrips infested fields.
- Spraying of botanical based pesticides like Neem Seed Kernel Extract (NSKE) 5% or Neem oil 3% @ 2 ml/L, Pongamia oil @ 3 ml/L, Vitex negundo extract @ 50-80 ml/L, etc. or microbialbased insecticides like *Beauveria bassiana* @ 4.00 g or ml/L (spore load - 1×10^8 cfu/g or ml), *Pseudomonas fluorescence* – NBAIRPFDWD @ 20g/L or *Bacillus albus* – NBAIR-BATP @ 20 g/L uniformly covering whole plant.
- Conserve predators such as predatory mite (*Amblyseius swirskii*) and insidious flower bugs (*Orius insidiosus*) etc.
- Conservation of natural enemies by avoiding spraying of chemical pesticides to the extent possible. Instead, spray botanical based pesticides like Neem Seed Kernel

Extract (NSKE) 5% or Neem oil 3% @ 2 ml/L, Pongamia oil @ 3 ml/L, Vitex negundo extract @ 50-80 ml/L, etc. or microbial based insecticides like *Beauveria bassiana* @ 4.00 g or ml/L (spore load - 1×10^8 cfu/g or ml), *Pseudomonas fluorescence* – NBAIRPFDWD @ 20g/L or Bacillus albus – NBAIR-BATP @ 20 g/L uniformly covering whole plant.

Spraying- Acephate 95 % SG @ 790 gm in 500 litre or Acetamiprid 20 % SP @ 50-100 gm in 500-600 litre or Imidacloprid 70 % WS @ 1-1.5 kg or Spinosad 45 % SC @ 160 gm in 500 litre

Reference

- Johari, A., Herlinda, S., Pujiastuti, Y., Irsan, C., and Sartiami, D. (2014). Morphological and genetic variation of *Thrips parvispinus* (Thysanoptera: Thripidae) in chili plantation (*Capsicum annum* L) in the lowland and highland of Jambi Province, Indonesia. *American Journal of BioScience*, 2: 17–21.
- Lim, W.H. (1989). Bunchy and malformed top of papaya cv. Eksotika caused by *Thrips parvispinus* and *Clodsporium oxysporum*. *Mardi Research Journal*, 17: 200–207