Thrips

David Cappaert, Bugwood.org

Main problem Species:

Onion thrips: *Thrips tabaci*. Western flower thrip: *Frankliniella occidentalis*

Lifecycle:

Adult, Egg, nymph1, nymph2, pre-pupae, pupae.
The egg is deposited inside the leaf tissue, pre-pupal and pupal stages occur on the ground, adults live for about 7 weeks.

Egg to egg:

9 days at 30°C, 40 days at 15°C,
No development below 10°C or above 35°C.

Tomato Spotted Wilt Virus (TSWV):

Thrips are a known viral vector of tomato spotted wilt virus. Once infected, plants do not recover. Symptoms include apical bud dieback, necrotic leaf spots, ring spotting on tomatoes, and eventually plant death.

Selection of TSWV resistant varieties in troublesome areas is the best control measure. Best virus management practice includes weed control (TSWV carried in all solanaceous plants), careful removal of any suspect plants and effective thrips management.

Scouting tips:

Thrips are attracted to sticky traps so trap observation is a key tool.
Thrips hatch marks on leaves are easily visible, and often gently blowing into a flower disturbs adults that can then be seen moving around.

What do I do?

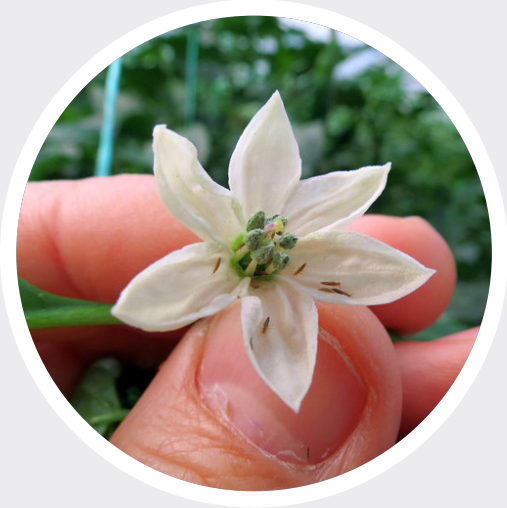
Just a few:
If a few adults are observed on traps be vigilant. Infestations usually begin by the doorway, main path, and window rows. Infestations begin in a small area and then colonise the greenhouse. If you have not introduced *Stratiolaelaps scimitus* as part of your IPM strategy this is your last chance, they will predate on any thrips pupae in the media or on the ground.

Doing damage:
If the small beginning population was not scouted/treated and the infestation is large, you are limited to spraying options. Sublethal chemical treatments induce egg laying, and chemical resistance is common. Egg hatch time is 5-7 days so weekly treatments with a well applied physical mode of action sprays can achieve control. This is difficult due to the adults habit of hiding in the flowers and pupae occurring on the ground. The 1st and 2nd stage nymphs are the most vulnerable and can be found in the top 1/3 of the plant.
The other spray option is the application of nematodes. Once sprayed on they actively seek out thrips and kill them.

Ongoing Issue:
Once a greenhouse has been infested, the thrips will hide everywhere within the structure waiting for the new crop. This can be catastrophic if combined with TSWV (select a variety with TSWV resistance). Once the crop is completed all plant matter must be removed, and the entire structure washed. If all vents are closed and the sun is allowed to heat the glasshouse this is beneficial because it can kill the thrips by heat, or force the eggs to hatch in the absence of food. General good hygiene suggests spraying a 5m wide strip of barren ground between the glasshouse and any other green matter.

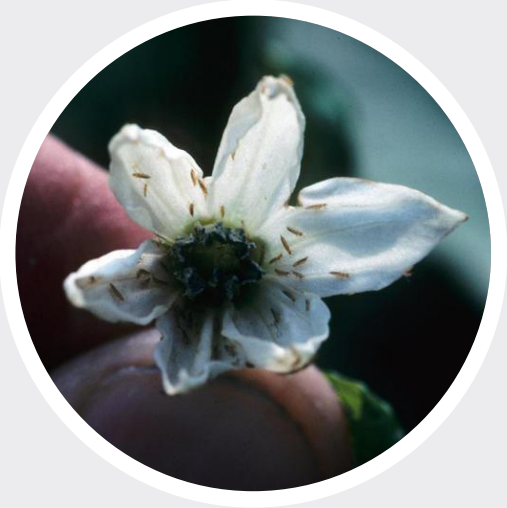
Thrips

What you'll observe:



Low infestation

Metin GULESCI, Leaf Tobacco, Bugwood.org



Heavy infestation

Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo, Bugwood.org

Thrips marks

Professor William Kirk, janeperrone.com

A LIGHTER TOUCH BIO FORCE TomatoesNZ

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