e-GRO Alert

Dan Gilrein
dog1@cornell.edu

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Much Ado About (a) Thrips

Managing this new pest partly depends on recognizing it and choosing effective controls, informed by data from recent research specifically targeting this insect.

Readers have doubtless been hearing news about 'pepper thrips,' *Thrips parvispinus*, an invasive plant pest first found in the US in Florida in 2020 making serious trouble for greenhouse (and some outdoor) crop growers. Hoya, Dipladenia, Mandevilla, Gardenia, Anthurium, Schefflera, peppers, and snap beans are among the most affected crops are, though the known host list is much longer and likely to grow. This 'new' thrips has been notable for causing unexpected and substantial damage to plants and for being difficult to manage. Though it also damages flowers, foliage is often most affected with severe stunting, scarring and distortion quite similar to that caused by chilli thrips and, in some cases, broad mite. So far it's not been implicated here in transmission of plant viruses or associated with other plant diseases in greenhouse production (the Pest Alert cited in References below notes an association with Cladosporium in papaya). Thanks to extremely informative presentations, research and on-line information by staff at Univ. of Florida, USDA, Florida Dept. of Agriculture and Consumer Services, and Ontario Ministry of Agriculture (listed in References) for raising our awareness of the situation for greenhouse growers and providing critical management information.

Vinca showing scarring and distortion from *T. parvispinus*

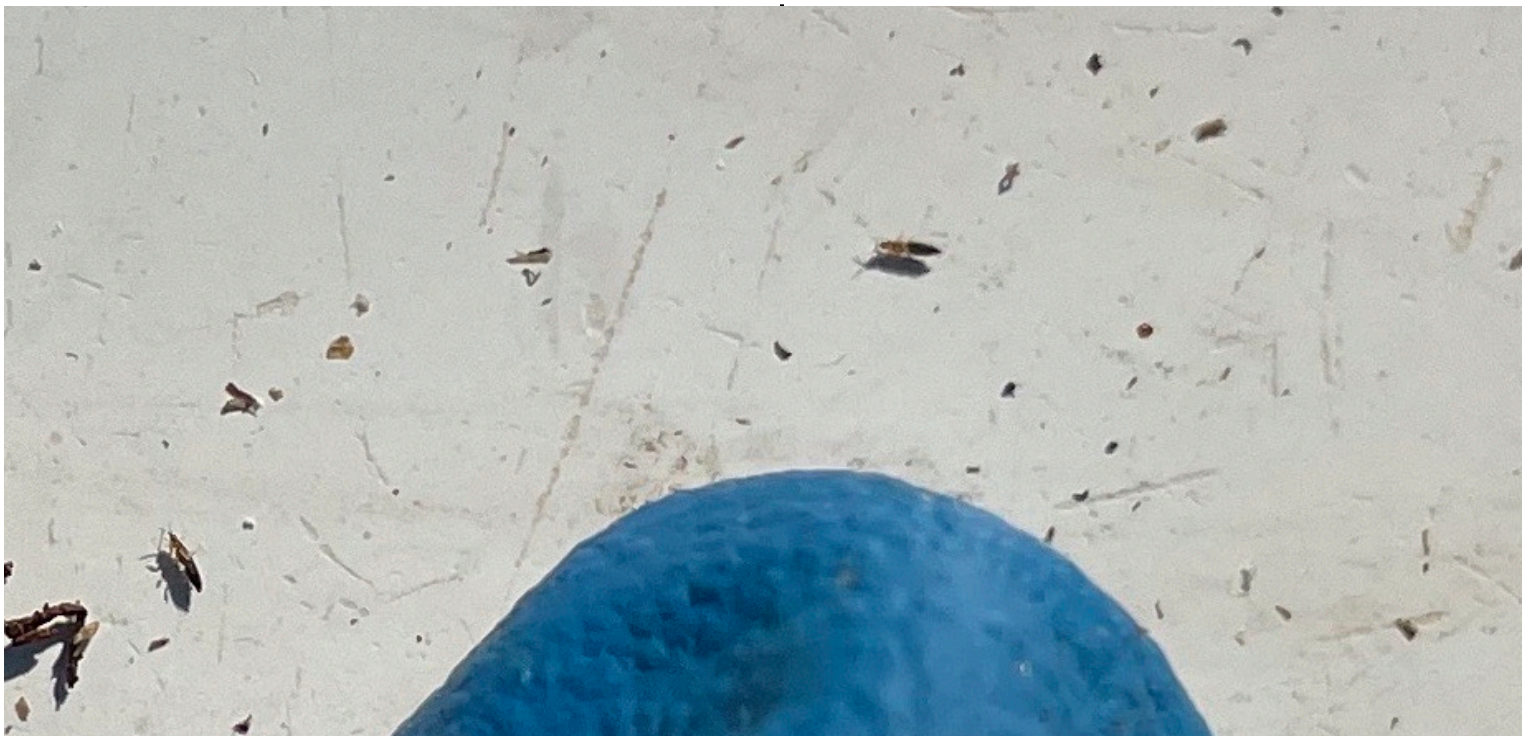
Our first confirmed encounter with this insect was on Anthurium plant samples submitted in 2023. Foliage was showing odd symptoms of scarring, similar to Dr. Soto-Adames's images on the Florida DOACS Pest Alert. Our Associate Entomologist Jared Dyer found several adult thrips in the unrolled leaf whorls and keyed them to *T. parvispinus*. They're noticeably smaller than western flower thrips (*Frankliniella occidentalis*) and colored differently. Some have noted their similarity with Japanese flower thrips (*Thrips setosus*) which we've seen on one occasion in New Guinea impatiens, but the two can be distinguished under high magnification by examining the setae ('hairs') on the forewings: there are two complete rows in *T. parvispinus*, but several are missing in the first (front) row in *T. setosus* (see link to wing image in References). Note these features aren't diagnostic for either species, but just help separate the two. Excellent clear images of all three species can be seen at https://www.thrips-id.com/en/. The grower noted some Anthurium cultivars appeared to be much more susceptible to damage (or attractive to these thrips) than others.

A second case sent to our Diagnostic Lab earlier this year of *Vinca major* had high numbers of very small pale thrips and a range of damage symptoms (bronzing/flecking under leaves, leaf stunting, distortion, and scarring). We quickly recognized the thrips as males; a large number is sometimes characteristic of *T. parvispinus* populations. We visited the range, inspected for symptoms, and surveyed plants for thrips by brushing foliage sharply over a white tray to dislodge the insects onto the surface where they could be more easily seen. We collected the darker-colored females, used for identification, which we determined were *T. parvispinus*.

Brushing plants over a white tray to dislodge and detect thrips

Scarring under leaf from *T. parvispinus*

Distortion and scarring on sweetpotato vine from *T. parvispinus*



T. parvispinus on wh*T. parvispinus* on white tray. A second thrips is also shown to the left.

Beside the vinca, we also found damage and thrips on sweetpotato vine (especially a purple-leaved cultivar), but interestingly none on the vegetative New Guinea impatiens growing in the same area. Thanks to laboratory studies reported in the Ataide, et al. reference below we were able to identify control options likely to be most effective. We suggested a rotation of several treatments to the grower, who elected to apply Conserve (active ingredient spinosad), Pylon (chlorfenapyr), and Overture (pyridalyl) in sequence several days apart (several other insecticides also appeared very effective in the report), including to other plants in the range. We sampled plants before and after treatment, brushing foliage sharply over a white tray to dislodge thrips. We were glad to see the treatments worked extremely well and foliage recovered nicely. We showed staff the monitoring technique and how to collect thrips samples for submission - the tiny insects are picked up with a small artist brush wet with rubbing alcohol, then dipped back into a vial of alcohol to release them. The growers are continuing to monitor by checking plants directly and posting yellow sticky cards (blue also works well for this thrips).

Dr Sarah Jandricic, Greenhouse Floriculture IPM Specialist for the Ontario Ministry of Agriculture, Food & Rural Affairs, and others have been seeking more effective biocontrols and other strategies for managing this pest, such as cutting dips and use of trap plants highly attractive to pepper thrips that can be collected and bagged (or possibly treated) to take out a significant part of the thrips population. Read more about Dr. Jandricic's work at the Ontario Floriculture website https://onfloriculture.com/thrips-parvispinus-resources/ and check her interesting recent article on trap plants for T. parvispinus in GrowerTalks: https://www.growertalks.com/Article/?articleid=26666.

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CONTRIBUTORS

Dr. Nora Catlin
Floriculture Specialist
Cornell Cooperative Extension
Suffolk County
nora.catlin@cornell.edu

Dr. Chris Currey
Assistant Professor of Floriculture
Iowa State University
ccurrey@iastate.edu

Dr. Ryan Dickson
Greenhouse Horticulture and
Controlled-Environment Agriculture
University of Arkansas
ryand@uark.edu

Dan Gilrein
Entomology Specialist
Cornell Cooperative Extension
Suffolk County
dog1@cornell.edu

Dr. Chieri Kubota
Controlled Environments Agriculture
The Ohio State University
kubota.10@osu.edu

Heidi Lindberg
Floriculture Extension Educator
Michigan State University
wolleage@anr.msu.edu

Dr. Roberto Lopez
Floriculture Extension & Research
Michigan State University
rglopez@msu.edu

Dr. Neil Mattson
Greenhouse Research & Extension
Cornell University
neil.mattson@cornell.edu

Dr. W. Garrett Owen
Sustainable Greenhouse & Nursery
Systems Extension & Research
The Ohio State University
owen.367@osu.edu

Dr. Rosa E. Raudales
Greenhouse Extension Specialist
University of Connecticut
rosa.raudales@uconn.edu

Dr. Alicia Rihn
Agricultural & Resource Economics
University of Tennessee-Knoxville
arihn@utk.edu

Dr. Debalina Saha
Horticulture Weed Science
Michigan State University
sahadeb2@msu.edu

Dr. Beth Scheckelhoff
Extension Educator - Greenhouse Systems
The Ohio State University
scheckelhoff.11@osu.edu

Dr. Ariana Torres-Bravo
Horticulture/ Ag. Economics
Purdue University
torres2@purdue.edu

Dr. Brian Whipker
Floriculture Extension & Research
NC State University
bwhipker@ncsu.edu

Dr. Jean Williams-Woodward
Ornamental Extension Plant Pathologist
University of Georgia
jwoodwar@uga.edu

Cooperating Universities

Cornell CALS College of Agriculture and Life Sciences

Cornell Cooperative Extension Suffolk County

UTIA Institute of Agriculture, The University of Tennessee

Iowa State University

College of Agricultural & Environmental Sciences, University of Georgia

UConn

University of Arkansas Division of Agriculture, Research & Extension

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