Scouting & Controlling Two-Spot Cotton Leafhopper

subscribe

Pest Talks

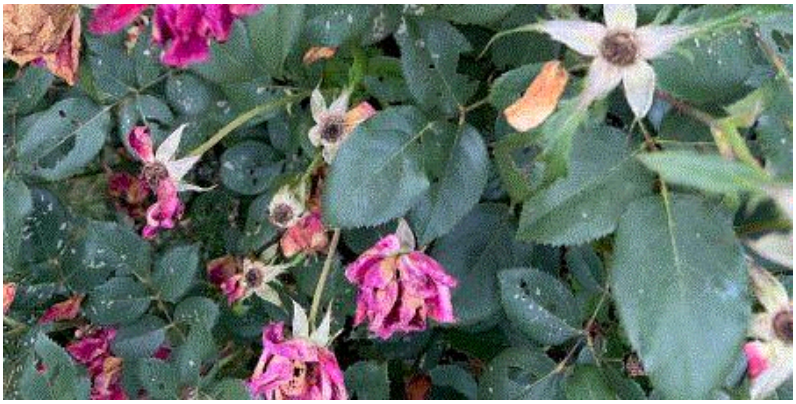
COMING UP THIS WEEK:

What the ... ?
Scout for TSCL
Research on TSCL
Cultivate's Pest Workshop
Caterpillar vs. Sawfly

What the ... ?

Alejandro Del Pozo-Valdivia—the newly minted associate professor, and turf and ornamental extension specialist at Virginia Tech's Hampton Roads Agricultural Research & Extension Center—shared a picture with me last week. The picture showed a rose bush planted in a garden. Leaves of the rose bush were quite severely damaged! Some of the feeding damage looks like windowpanes, indicating that the critters hadn't completely chewed through the leaves. Some are holes in the middle of the leaf veins.

What critter could be causing this damage?

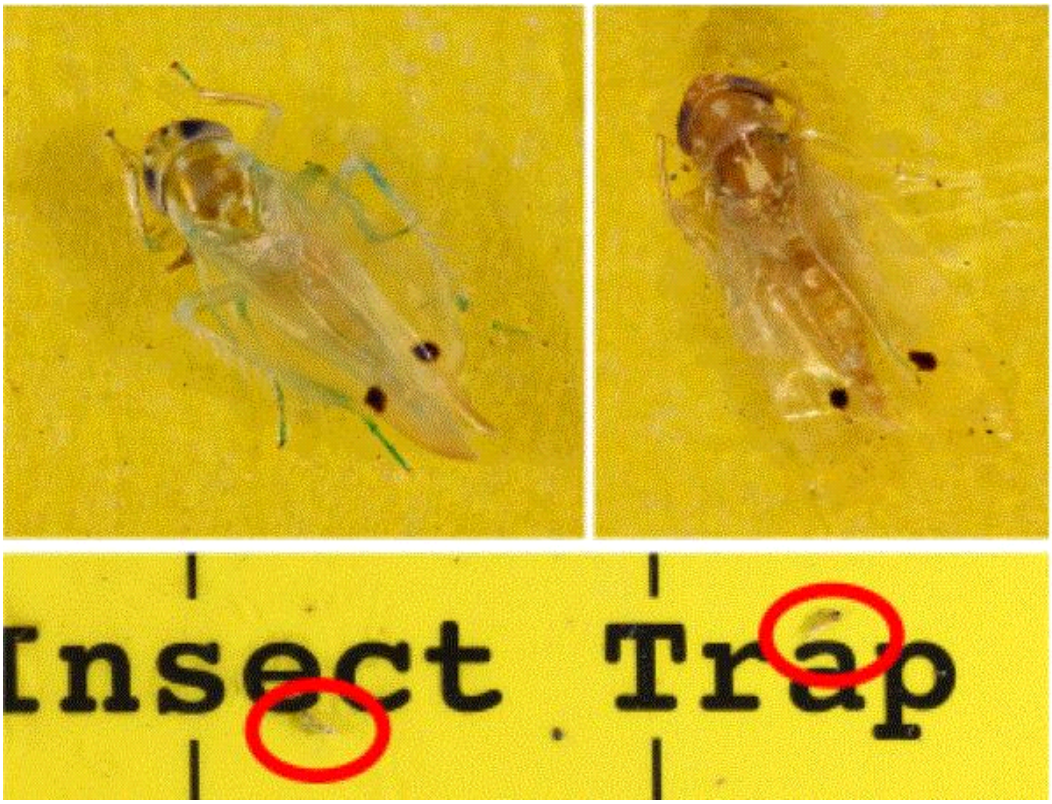


Start Scouting for Two-Spot Cotton Leafhoppers

It's warm out there. Dry, too, in my neck of the woods. Perfect weather for mites and some insects. One bug happy about this weather is the two-spot cotton leafhopper (TSCL). This is still a regulated pest in some states, such as Texas, therefore, you should scout for this pest regularly and control them immediately so that you aren't prevented from shipping your hibiscus crops to Texas or other states.

I introduced this invasive leafhopper species to y'all in this newsletter in 2025. I also talked about how to scout or monitor TSCL populations or infestations. Even though TSCL can feed on many plant species, members of *Malvaceae*—particularly hibiscus (any species)—should be the focus of your scouting efforts because hibiscus is most severely damaged by hopperburn among nursery crops and TSCL infestation on hibiscus is regulated. Learn how to distinguish hopperburn from nutritional issues because the symptoms can be quite similar.

You could place yellow sticky cards over the plant canopies and check on them regularly. TSCL adults are small, but they aren't hard to see on the yellow sticky cards or to identify. (Look for the two black dots at the end of the wings.)



Adult two-spot cotton leafhoppers trapped on a yellow sticky card (circled in red). The two black spots on the wings make it easy to identify this invasive species. (Photo credit: Paul Langlois, USDA.)

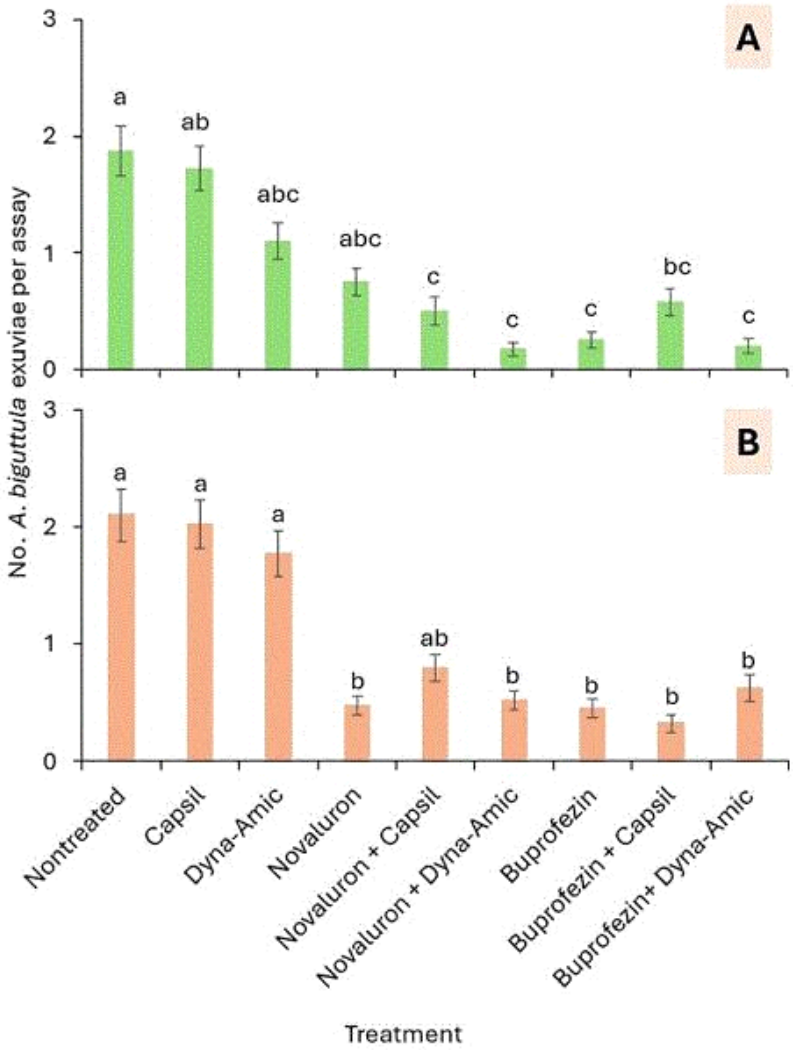
Alternatively, you could sample plants that are showing or suspected of hopperburn by bagging or sampling with a beat sheet. Bagging is easy to do: Over a terminal with a ziplock or plastic bag, gently tap the terminal with your hand to dislodge the leafhoppers into the bag. Or you can place a white sheet or tray under the terminal and tap gently to dislodge insects. If you use a tray, I suggest spraying the tray with some alcohol or soap solution so that the insects are stuck to the wet surface, making them easy to collect and identify.

Start scouting soon if you grow or ship hibiscus plants and start treatment as soon as TSCL is found.

New Research on Controlling TSCL

Since its detection in 2024, researchers have been working hard to decipher the biology, ecology and control of TSCL. Several research papers on how to manage TSCL have been published recently. Let's see what we can learn from them ...

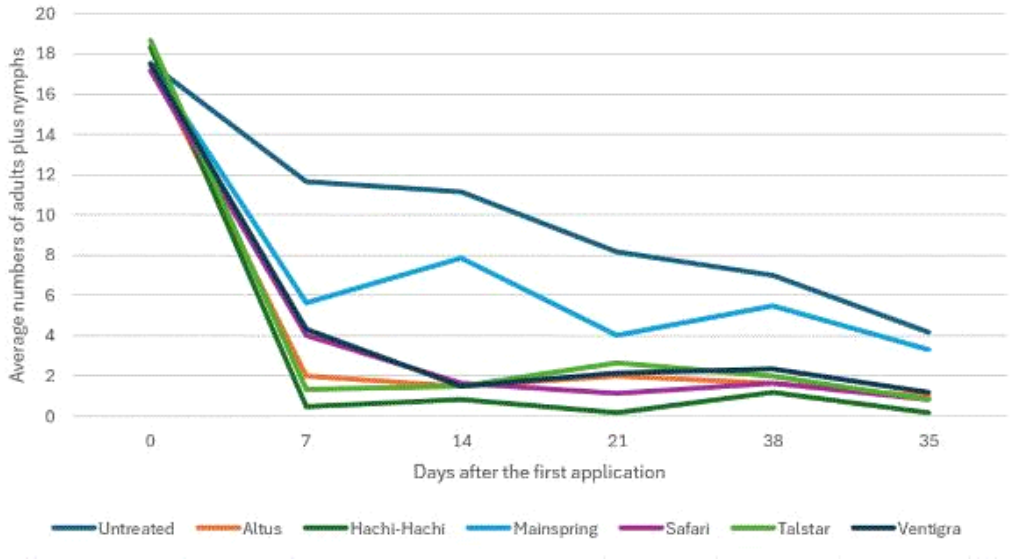
Sabrine Attia and Shimat Joseph at the University of Georgia are publishing a paper where they compared four insect growth regulators (IGR) for their efficacy against TSCL nymphs and adults in a series of laboratory bioassays. The IGRs tested were: azadirachtin (Azatin O at 16 fl. oz. per 100 gal.), buprofezin (Talus 70 DF at 12 oz. per 100 gal.), novaluron (Pedestal at 8 fl. oz. per 100 gal.) and pyriproxyfen (Fulcrum at 12 fl. oz. per 100 gal.). The IGRs were applied with or without surfactants (Dyne-Amic or Capsil).



Average number of TSCL nymphs successfully molted (thus leaving behind shed skins or exuviae) after treatment with Talus (buprofezin) or Pedestal (novaluron) with ot without surfactants (Dyne-Amic or Capsil). (Graph from Attia and Joseph 2026, *PLoS ONE* 21(6): e0350736.)

Talus and Pedestal stood out as the most effective and fastest-acting products against TSCL. Within 24 hours of application, Talus and Pedestal reduced survival of nymphs, and (interestingly) Talus reduced survival of adults, even when the products weren't tank-mixed with surfactant. The time to elimination by Talus and Pedestal was as early as three days for first- to fifth-instar nymphs and three (Talus) or four days (Pedestal) for adults. I didn't see a strong benefit of adding surfactants from the research data, but I think adding surfactants, particularly Dyne-Amic, to the spray solution gave a tiny boost to the efficacy of both Talus and Pedestal.

Nisha Yadav, Peilin Tan and Zee Ahmed at Clemson University published a report on the efficacy of afidopyropen (Ventigra at 5.9 fl. oz. per 100 gal.), bifenthrin (Talstar Professional at 16.25 fl. oz. per 100 gal.), cyantraniliprole (Mainspring GNL at 5 fl. oz. per 100 gal.), dinotefuran (Safari 20 SG at 6 oz. per 100 gal.), flupyradifurone (Altus at 8.75 fl. oz. per 100 gal.) and tolfenpyrad (Hachi-Hachi SC at 26.5 fl. oz. per 100 gal.) against TSCL on hibiscus plants in an outdoor nursery pad. Two applications were made 28 days apart. All insecticides reduced the numbers of adults and nymphs within seven days of application, with Altus, Hachi-Hachi SC and Talstar P providing the fastest knockdown. These products, as well as Safari and Ventigra, also provided residual suppression of the TSCL population.



Average numbers of live TSCL (adults and nymphs combined) on hibiscus plants treated twice (at 28-day intervals) with selected insecticides. (Graph generated based on data from Yadav et al. 2026, *Arthropod Management Tests* 51(1): tsag019.)

In a follow-up study, Nisha, Peilin and Zee dug deeper into the acute and residual toxicity of bifenthrin (Talstar P at 2.6 to 12.8 fl. oz. per 100 gal.), flupyradifurone (Altus at 1.5 to 12.8 fl. oz. per 100 gal.) and tolfenpyrad (Hachi-Hachi SC at 10.2 to 64 fl. oz. per 100 gal.) against TSCL on hibiscus in laboratory bioassays. Note that the labeled application rates for leafhoppers are 10.8 to 21.7 fl. oz. per 100 gal. for Talstar P, 7 to 10.5 fl. oz. per acre for Altus (label recommends spray volume of 50 to 100 gal. per acre) and 21 to 32 fl. oz. per 100 gal. for Hachi-Hachi SC.

In this study, bifenthrin (even at below-label rate) caused mortality as early as 24 hours after application in the acute bioassay. In residual bioassay, all products and application rates caused 100% mortality within 72 hours. Unsurprisingly, higher application rates killed insects faster and adults were harder to kill than nymphs. Now, even though Nisha and her colleagues showed that low application rate can also work against TCSL, I suggest y'all use the labeled application rates to achieve the best results and prevent insecticide resistance development.

In Florida, Alexandra Revynthi and her colleagues at the University of Florida and the University of California-Riverside discovered two parasitic wasp species attacking TSCL eggs. The parasitic wasps have been identified via morphological characteristics and molecular techniques as *Anagrus vulneratus* and a closely related, but yet-to-be named, *Anagrus* species. These are native species that appear to have switched from a local host to attacking TSCL eggs. It's unknown how widespread these parasitic wasps are and it's too early to tell if these parasitoids will be useful as biological control agents.

Insect & Disease Workshop at Cultivate

I received my hotel confirmation for Cultivate last Friday. Will I see you at Cultivate?

I enjoy going to Cultivate. Perhaps because of my background and my job, I find Cultivate enjoyable because it's one of the trade shows with plenty of educational or technical sessions. I don't go to educational sessions as religiously as I used to because I'm regularly scheduled to stay at the booth, but I try to find out ahead of time which sessions pique my interest and make a reminder to go.

Just like in years past, Cultivate'26 is chock full of educational opportunities on growing and managing crops, pests, people, time, business, etc. You can find more information by going HERE.

I want to draw your attention to a particular session called "Grower Insect & Disease Workshop." This is a full-day (8:30 a.m. to 4:30 p.m. Eastern) workshop on how to do pest management more effectively and efficiently. Here's a description of the workshop, lifted directly from last week's *Nursery & Landscape Insider* (penned by our own Jeb Fields and much better than what I can do):

For those of you who are planning to come to Columbus in about a month for Cultivate, I wanted to highlight this all-day workshop for growers wanting to learn more about pest management. On Saturday, July 11, you can join the Insect & Disease Grower Workshop and build core skills to help you master any insect or pest problem you might encounter. The workshop lasts from 8:30 a.m. to 4:30 p.m., so you need to be prepared for a full day of learning.

The morning session starts with insect and mite identification. Any pest management specialist will tell you the first step is to ID your problem, and this workshop will teach you how to identify the different common pests so you can instantly recognize when you spot them. Then you'll dive into control strategies—both chemical and biological applications—to arm you with all the tools you need to keep pests at bay.

After lunch, the session will shift to diseases. Similar to pests, you'll start off with identification and understanding which pathogens you can feel comfortable and confident diagnosing in house, and what instances you might want to call in an expert or send samples to a lab for identification. You'll also get some strategies for minimizing and combating diseases and spread.

Four well-seasoned and highly knowledgeable teachers will guide this session, including: Julie Graesch, a Technical Services Manager at BioWorks, Inc.; Marielle Berto, an IPM Specialist with Costa Farms; Matthew Krause, the Field Solutions Director at Lallemand Plant Care; and Suzanne Wainwright-Evans of Buglady Consulting. Together this team will give you the tools you need to take immediate action against greenhouse and nursery pests. The session is an add-on and you'll have to purchase access in your registration.

I'll see y'all at Cultivate!

Answer to "What the ... ?"

What caused the holes on the rose bush in the "What the … ?" segment?

Red-headed flea beetle? Could be. The redhead-headed flea beetle causes both the windowpane and through-hole kind of foliar damage, and it attacks roses. But I haven't seen any redheaded flea beetle on roses (or any other plant species, for that matter) planted in landscapes. The only time I'd seen redheaded flea beetles on landscape plants was on a Drift Rose that was transplanted only a week earlier. I think the beetles emerged from the media, not from the soil in or around the garden.

Slugs? That's also a suspect. Slugs cause holes between the leaf veins. I've seen plenty of slug damage on hosta or other species in the shade, but roses grown in full sun aren't major hosts of slugs. Well, at least I haven't seen it.

How about rose slugs? That's what I think it is. What is a rose slug, you ask? It isn't a slug, despite what its name may imply. It's a passionate rose lover, but the American Rose Society will never make it an honorary member!

Rose slug, or more correctly roseslug, isn't a mollusk, but a sawfly. (And a sawfly isn't a fly, but a wasp. Ah, the wonderful world of common names and compounded words.) Roseslugs look like caterpillars, but, again, they're actually sawflies. They usually have a yellow-green body and an orange or brown head.

There are two common species: the roseslug and the bristly roseslug, with the latter having short

bristles over the body. I don't know which species caused the damage in this case since I couldn't see any of the insects. Both species skeletonize rose leaves in the same way. Adults of both species are small, shiny black wasps.

From left to right: A roseslug (*Endelomyia aethiops*), a bristly roseslug (*Caldius pectinicornis*) and an adult roseslug sawfly (*E. aethiops*). (Photo credit: Yurika Alexander, bugguide.org.)

The good news when it comes to control is that the roseslugs have only one generation per year. Adults emerge and lay eggs in the spring. You'll start seeing roseslugs by early May and they'll hang around until mid- to late June. The immature stage is the management target, so y'all can make insecticide applications at any time during May and June.

Many insecticides are registered specifically for sawfly management, so you'll have some choices. Some examples are carbaryl, organophosphates (acephate and chlorpyrifos), pyrethroids (bifenthrin, cyfluthrin, lambda-cyhalothrin, permethrin and pyrethrins), neonicotinoids (acetamiprid, dinotefuran, imidacloprid and thiamethoxam), spinosad, abamectin (landscape only), diflubenzuron, chlorantraniliprole, azadirachtin, insecticidal soap and horticultural oil.

I don't have first-hand experience in controlling roseslugs. Well, mostly because I don't grow roses. Folks I talked to reported that carbaryl, acephate, any of the pyrethroids and spinosad worked well. Usually, one application will do the trick. But it wouldn't hurt to keep an eye on the rose bushes after treatment and decide if a second application will be needed.

By the way, want to sound knowledgeable and interesting at a party? Try this trivia: How can you tell a caterpillar from a sawfly larva? They look remarkably similar, but caterpillars have five or fewer pairs of prolegs (these are freshy false legs on the abdomen) and sawfly larvae have six or more pairs of prolegs. Don't believe me? Go find a caterpillar and a sawfly larva and see for yourself.

You don't know how this trivia is going to make you a star? Well, obviously you've gone to the wrong party!

See y'all later!

JC Chong

Editor-at-Large
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