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COMING UP THIS WEEK:

What the ... ?
New Biosolutions Guide
Mum Season Starts
Viral Disease
Thrips Management

The Fall IPM Tool Kit



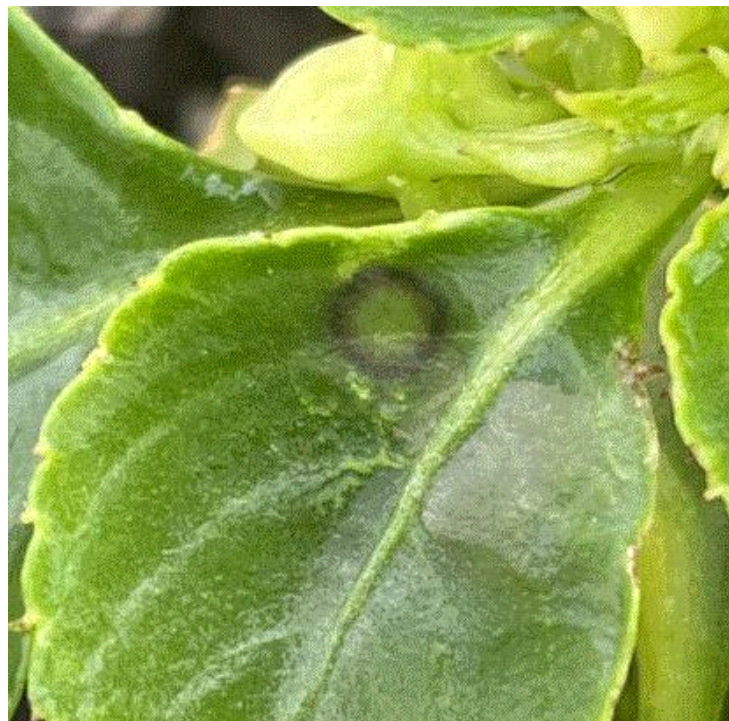
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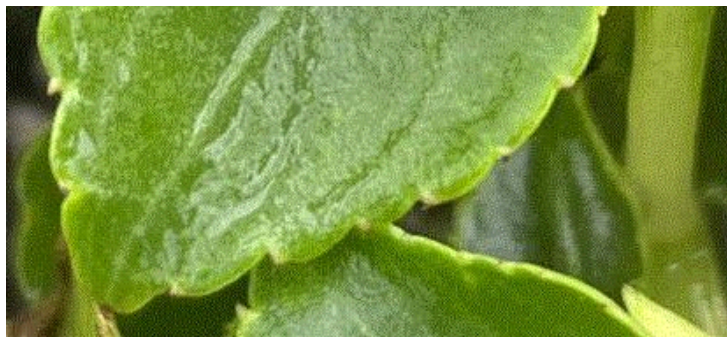
K
Koppert

What the ... ?

I bought plugs of seven bedding plant species to run a series of crop safety and efficacy trials about a month ago. The plugs looked clean so I transplanted them into 4-in. pots soon after receiving them. But I noticed some dark rings appeared on some impatiens within a week of transplant.

Here's a shot of those dark rings. What could they be?





The New Biosolutions Guide is Now Available

The 2026 Biosolutions Guide is hot off the press and will accompany the June issue of *GrowerTalks* in the mail. Or go [HERE](#) to get a digital copy.

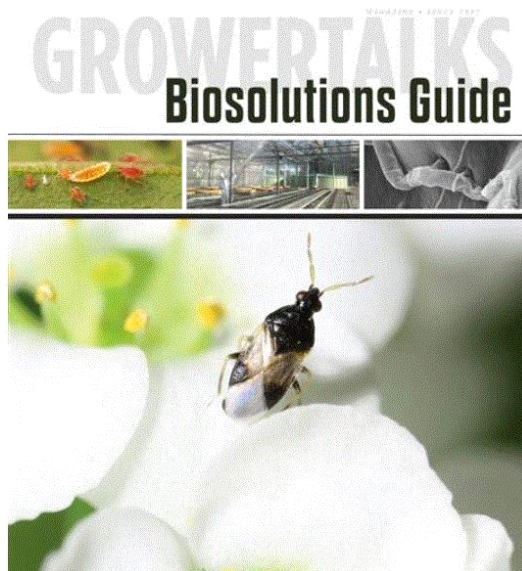
This is the fourth edition of the useful guide, where bioinsecticides and biofungicides are listed. Well, actually, better than listed. Their efficacies are also noted so that y'all can select the most effective tools for the pests and diseases you're dealing with.

As with the other *GrowerTalks'* guides, the Biosolutions Guide also contains many informative articles from experts in the field. Michael Brownbridge of BioWorks explains the differences between types of biofungicides and biostimulants (spoiler: They don't do the same things!).

Lowell Halvorson, who covers the breeding community for *GrowerTalks*, retells success stories of using biopesticide and biostimulants. Jeremy Webber of Koppert lays out the values of entomopathogenic fungi to strengthening pesticide resistance management and simplifying rotation programs. Suzanne Wainwright-Evans, using real-life examples, provides tips and guidelines on how to incorporate biological controls in a holistic pest management system. And, finally, Paul Pilon explains why sanitation is so important to the success of biological control programs.

I'm not going to spill all the beans for y'all here. It's so much fun to find nuggets of useful information on your own. Go [HERE](#) to get a copy of the 2026 Biosolutions Guide.

If there's one negative thing I can say about this guide, it's that, to my horror, I saw my picture appearing in one of the accompanying ads. Almost made me spill my coffee!



It's Mum Season Again

The mum season has started for some folks in the South. I want to direct you, no matter where you are in the process, to a couple of resources that can make this season a bit easier.

First, Nick Flax of Ball provided a few tips for getting a strong start on this year's garden mum crop in last week's *Tech on Demand* newsletter. Some of the before-transplant tips include not pre-filling the pots too early, making sure the liners are well-hydrated (ideally irrigate or fertigate the afternoon before transplant), knowing what to do with "oddball" and uneven liners, making sure the team knows what to do from Day 1 of the crop, and getting all the supports, supplies and pesticides ready because you never know when an issue may pop up and need to be dealt with.

Nancy Rechcigl of Syngenta contributed an article to this month's *GrowerTalks*. Nancy talks about the value of having a clean start to the crop and plan for pest management proactively. Proper site selection, sanitation and water management go a long way in making sure the crops aren't stressed or predisposed to various pests and diseases.



Do you know how this mum met its demise? Getting to know your pests and diseases, and getting management tools ready before transplant will make this season so much easier.

Know the problematic bugs and diseases, which may include aphids, mites, thrips, caterpillars, Fusarium, Pythium, Rhizoctonia, Botrytis and rust, to name a few. Early diagnosis will help make rapid management responses more effective. Understanding conditions that trigger pest infestation and disease infection can help devise cultural practices that avoid plant stresses, injuries and problems. A holistic management program that accounts for production practices, environmental conditions, scouting, available tools (including pesticide rotation) and preventive applications will likely result in

better performance than a reactive program.



Answer to "What the ... ?"

You and I are on the same track when we have the formula of "ringed spots + impatiens = impatiens necrotic spot virus (INSV)." Some ringed spots turned necrotic and young leaves distorted since the picture was taken, giving more weight to the suspicion of INSV.

I know better than to just make a definitive disease diagnosis based on symptoms, especially for viral diseases. After all, hosts of and symptoms from INSV can look identical to those from a related tospovirus, tomato spotted wilt virus (TSWV). So my research associate tested the symptomatic plants with a **ImmunoCombo** test kit for INSV, TSWV and tobacco streak virus (TSV). Sure enough, it's INSV. (Check out Bill Calkins' *Tech On Demand* newsletter from last week for in-house test kits you should have on hand and Chris Currey's cover story in this month's *GrowerTalks* for gear you need to survive in the greenhouse.)

Go **HERE** for a pictorial guide on common INSV symptoms from Nora Catlin and Margery Daughtrey of Cornell Extension, just in case you want to know how to spot the symptoms and get ahead of the trouble.



I can't say for sure whether the plugs were infected before I received them or they were infected in my research greenhouse, which had a low density of western flower thrips and a few scattered onion thrips. (I'm an entomologist so, as all entomologists do, I keep a few bugs as pets.) The time to symptom expression can be anywhere from a few days to more than a month, depending on plant species and health. It's hard to determine a source when I noticed symptoms on the highly susceptible impatiens within a week.

Now, here's an observation that makes me think the viruses may not be vectored by my pet thrips. I had New Guinea impatiens, sunpatiens, vinca, snapdragon, pansy and zinnia in the same shipment. I also had petunia, calibrachoa, coleus, marigold and geranium from an earlier experiment in the same greenhouse. None of these species, even the highly susceptible ones like petunia, expressed any symptom over two months. So were these not already infected? Viral tests on New Guinea impatiens, petunia and zinnia came back clean.

I don't know. Finding out the source of the virus is simply an exercise to satisfy my curiosity. Management is a moot point when viruses have already invaded; there's no cure for them. I ran the experiments with asymptomatic impatiens plants, but I also kept in mind that whatever distortion I see on these plants may not be the results of phytotoxicity, but viral infection. The uncertainty is kind of annoying. If I was a grower, I'd just throw out the block of impatiens instead of dealing with it.

Although there's no cure for INSV (or TSWV), that doesn't mean we can't do anything about it. As my story demonstrated, watch for infection coming in via propagated materials. I already mentioned sanitation or culling infected crops is a must in preventing spread. Both viruses are carried or vectored by thrips, particularly western flower thrips, so thrips management should be a constant practice.

Tips on Thrips Management

I yack about thrips and their management relatively frequently in this newsletter. That's because thrips is one of the most damaging pests we have.

A major source of thrips are weeds, crops or just any other plants grown in the fields surrounding the greenhouse. I often advise folks to get to know their neighbors and watch what these neighbors are doing. Cutting hay or harvesting crops can send thrips flying and many of them can be carried by wind into the greenhouse, so get ready for an influx based on neighbors' activities. Screening out incoming thrips can be useful, but you must match the mesh size to thrips size. Also, you need to compensate for reduced airflow due to the small screen size necessary for intercepting thrips.

Another major source for some folks is incoming plant material, such as cuttings and young plants. Folks have success in getting a clean start by dipping incoming plant material in a solution of *Beauveria bassiana*, horticultural oil (0.1%) or insecticidal soap (0.5%). Sure, the crops may be infested with invading thrips later on, but dips may buy you a few weeks of low-infestation time when biological control and other "softer" options may work.

There are quite a few biological control options, from microbes that you can spray or drench to predatory insects and mites that can be released on the plants, the media or the floor. Every supplier of biological control agents has their offerings specifically targeting thrips—some are stand-alone options and some are complimentary combos or programs of different agents.

A couple of things I would say about biological control against thrips are: 1) start early in a crop; and (2) use biological control regularly and as part of a program. "Trying" it once or twice won't tell you if a biocontrol program is working and worth committing to.

A common question I get about thrips is, "What color should I use?" By color, it's the color of sticky cards. To be honest, I don't really care. I don't mean I don't care if you trap. Yes, you should and you must monitor thrips presence and hot spots. I just don't have a strong opinion on what color to use because dozens of research papers make contradicting conclusions on the most effective trap color or wavelength. Yellow, white, blue—use whichever color you like. You aren't using sticky cards as mass trapping devices; you use them as monitoring tools. So the most important criterion may be which color makes trapped thrips easiest to see so that you can start the spray program on time.



I had success using a systemic insecticide drench to reduce thrips damage on leaves. The same success, unfortunately, didn't translate to protecting flowers. That means y'all still need to spray to protect flowers. Also, drenching can be expensive and time consuming if you can't chemigate. Despite these shortcomings, drenching can be an efficient option since one drench can provide weeks of protection to foliage.

Sprays are needed to protect flowers and leaves from thrips damage. I've seen good efficacy with abamectin + bifenthrin (Avid + Talstar; IRAC 6 + 3A), acetamiprid (Tristar; 4A), chlorfenapyr (Pylon; 13), cyantraniliprole (Mainspring; 28), cyantraniliprole + flonicamid (Pradia; 28 + 29), flonicamid (29), isocycloseram (Vykenda; 30), pyridalyl (Overture; UC), spinosad (Conserve; 5), spinetoram + sulfoxaflor (XXpire; 5 + 4C), and tolfenpyrad (Hachi-Hachi SC; 21A). Some folks complained about resistance to Conserve, but this active ingredient is still effective in my neck of the woods. Pylon and Overture are for greenhouse use only.

The addition of an organosilicone or non-ionic surfactant to the spray solution and a higher application volume help achieve better spray coverage and efficacy. Repeated applications may be needed to protect flowers that have opened since the last application because these flowers aren't covered and protected by insecticide residues.

The American Floral Endowment's (AFE) [Thrips & Botrytis Research Library](#) is a good place to visit if you want to find more information on thrips management. There are webinars to watch and factsheets to download. I'll be partnering with Somaiyeh Ghasemzadeh of the University of Vermont on an AFE Grow Pro webinar about thrips management on July 28. Go [HERE](#) to find more information and register for the webinar.

Good luck fighting thrips this season! Let me know if I can help refine your program.

See y'all later!



JC Chong
Editor-at-Large
PestTalks

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