Predatory Mites (Generalists); Short-Day Crops; TC Terminology

Cultural and Technical Information for Greenhouse Professionals

GROWERTALKS MAGAZINE greenPROFIT MAGAZINE

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TECH ON DEMAND brought to you by GROWERTALKS

COMING UP THIS WEEK:

Cut Flower Pest Video & Podcast
Type III Predatory Mites
Josh's Tip: Short-day Light Mgmt.
TAKE THE $$ SURVEY!
Substrate Webinar
Finish Line ... TC Terms

NEW PODCAST & VIDEO! Cut Flower Pests

Pests and diseases can wipe out a cut flower crop fast—and the biggest mistake growers make is waiting too long to notice them. Ball's cut flower specialist Dave Dowling breaks down the pests and diseases that hit cut flower farms the hardest, and the scouting habits that can save an entire season before damage becomes irreversible.

Dave spent more than two decades growing cut flowers before moving to the supply side, and he brings that field-tested perspective to everything from low-cost startup advice to the realities of selling top-quality stems. If you're thinking about adding cuts to your operation, or you've already planted them and want to protect your investment, **INSECT & DISEASE ISSUES IN CUT FLOWERS (AND HOW TO TREAT THEM)** gives you the practical playbook. Click the link to watch the full video.

Some of what Dave covers in this 30-minute discussion includes:

- How to spot aphids, thrips, Japanese beetles, lily leaf beetles, tarnished plant bugs, spider mites and cabbage moths before they take over.
- Why certain crops like gladiolas, dahlias, zinnias, lilies, peonies, ranunculus and chrysanthemums are especially vulnerable.
- What actually works for control, from neem and horticultural oils to beneficial insects, Bt and labeled chemical options.
- The difference between prevention and rescue, especially when dealing with powdery mildew, *Botrytis*, root rots and viruses.
- Why crop rotation, airflow, drainage and relentless scouting matter more than most growers realize.

Dave also breaks down the hidden traps that catch new growers off guard, like introducing beneficial insects too late, using Japanese beetle traps in the wrong place, or overlooking early damage that won't show up until weeks later—when blooms are ruined and the crop is lost. Dave explains how small decisions at the start of the season can determine whether you harvest a clean, salable crop or lose your crop and your profits.

*Like we often do, this presentation is also available as a **PODCAST** for those of you who prefer the audio version. There are now 270 Tech On Demand podcast episodes in the archives, covering a huge range of topics related to the professional greenhouse, garden center, landscape, nursery and CEA markets. Jump back in to get caught up or take a minute to subscribe—that way you'll never miss an episode.*

- **APPLE PODCASTS**
- **SPOTIFY**

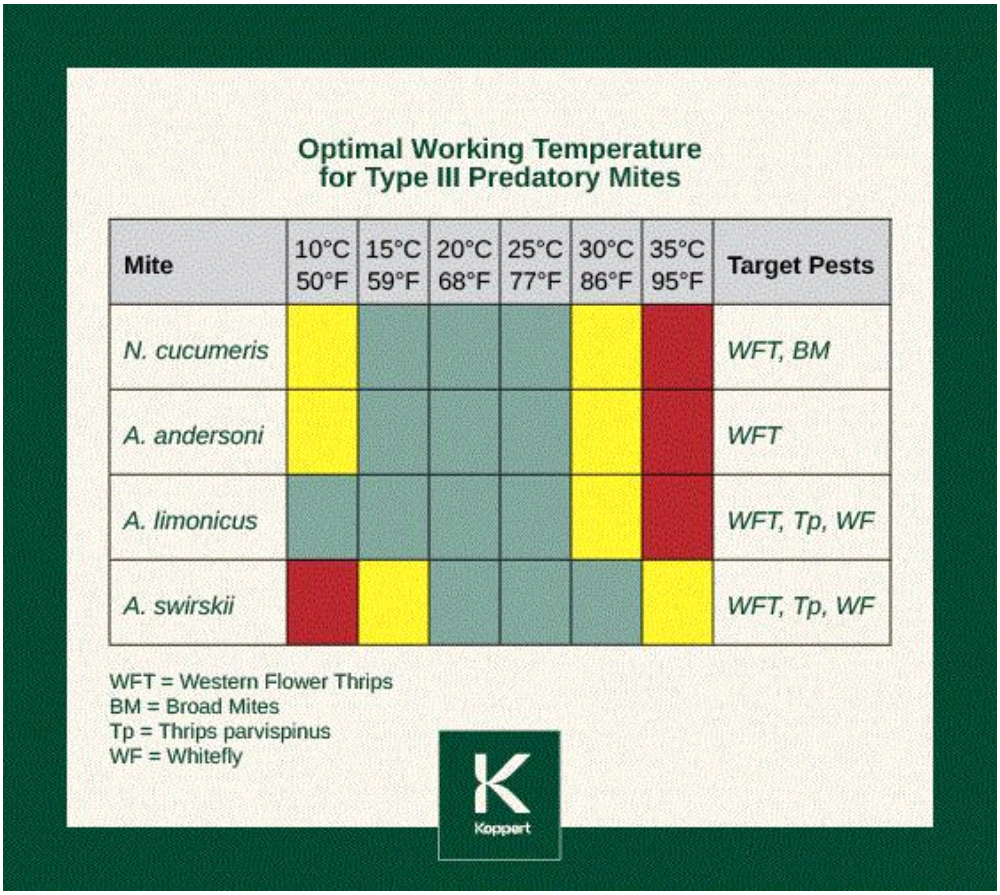
Koppert Corner: Type III Predatory Mites—The Generalists

Each month I connect with my friend Heidi Doering, a technical services expert at Koppert, and she shares tips and technical information that she runs across during her many visits to client sites across the nation. This week, she's detailing different species of generalist predatory mites. Be sure to check out the resources she lists at the end.

Type III mites are known as generalists, as they can attack and survive on more than just one type of insect pest. While thrips are their preferred food source, they can also subsist on other

small insect pests, mites and pollen.

All Type III predatory mite species are able to attack Western flower thrips (WFT) *(Frankliniella occidentalis),* pepper thrips *(Thrips parvispinus)* and onion thrips (*Thrips tabaci)*. However, they differ in their effective temperature ranges. Some work better in warm to hot conditions, while others perform best under moderate to cool temperatures.



Key Species

Amblydromalus limonicus (**Limonica**) has strong reproductive capabilities and the ability to attack both the first and second larval stages of thrips. She also attacks whitefly eggs, crawlers and larvae. Koppert's internal R&D trials confirm Limonica as the most versatile mite for year-round production. She can effectively reproduce at temperatures ranging from 50 to 86F and tolerates the seasonal swings in daily day/night temperatures that occur in some regions of the country.

Amblyseius swirskii (**Swirski-Mite**) reproduces most effectively on a diet of thrips. However, she also attacks whitefly eggs and first- and second-instar whitefly larvae. She prefers *warm* and tolerates *hot* working conditions. While she's typically put to work during warm to hot summer/fall months, Swirski-Mite is also the predatory mite of choice for winter-grown crops requiring average daily temperatures (ADT) above 68F.

Neoseiulus cucumeris (**Thripex-V**) is an effective tool to manage WFT and broad mites when growing spring annual crops. As spring turns to summer and daytime temperatures regularly rise above 77F, efficacy of this species decreases.

Amblyseius andersoni (**Anso-Mite**) effectively protects winter/spring holiday crops and perennials when the primary pest target is WFT and the ADT will be below 68F.

While Anso-Mite and other generalist predatory mites covered above are also able to attack two-spotted spider mite eggs/young instars, they strongly prefer thrips (and whitefly, in the case of Swirski-Mite and Limonica), so it's best to add a spider mite-focused Type I or II predatory mite

when specifically targeting spider mites.

Want to take a deeper dive? Let Koppert's compendium of biocontrol, **KNOWING AND RECOGNIZING**, be your guide. Want a quick reference? Check out Koppert's **WHITEPAPER** on choosing the right predatory mite.

Don't want to go it alone? Contact a Koppert Technical Consultant who can assist you in selecting the right Type III predatory mite for your specific production situation.

Josh's Tip of the Week: Fall Short-Day Photoperiod Management

Usually, I work with my buddy Nick Flax, a technical services expert at Ball Seed, to share a concern that's come up during one of his numerous calls with growers across North America. This week, he's following up on a common topic of late—challenges that arise when temps go up in summer production. This time, he's discussing photoperiod management at this time of year.

PROBLEM: Several key greenhouse crops rely on short days and long, uninterrupted nights to initiate flowering. Common examples include poinsettias, chrysanthemums, kalanchoe, celosia and holiday cacti, all of which use changes in day and night length as signals to begin reproductive development. As natural days become shorter in late summer and fall, understanding critical photoperiods, geographical influences, light contamination and blackcloth management can help ensure uniform flowering and predictable crop timing. While photoperiod management often appears straightforward, small mistakes can delay flowering, reduce uniformity or create significant production challenges.

Light meters can help detect areas of light leakage.

JOSH'S TIP: Let's take a deep dive into some of the factors you and your teams should understand when producing short-day crops.

Critical Photoperiod: Short-day crops initiate flowering when daylength falls below a species- or variety-specific threshold known as the *critical photoperiod*. While growers often think in terms of calendar dates, plants are responding to changes in daylength—or more specifically, night length. Some crops and varieties have specific (obligate) photoperiod requirements, while others are more flexible in their response. Understanding these differences is the foundation of successful photoperiod management.

Crop Scheduling: Successful short-day crop production starts with understanding the crop's flowering response time *and* target sales date. Once the critical photoperiod is known, you can determine when natural daylengths in your geographic region will reach that threshold or when blackcloth may be needed to provide critical daylength sooner.

In contrast, supplemental lighting strategies (including night interruption) can be used to keep short-day plants vegetative for bulking or delaying flower initiation. Working backward from the desired flowering date allows you to establish the appropriate start date for short-day treatment and build your entire production schedule around that target. Since daylength varies with latitude, the same crop will initiate at different dates depending upon location.

Light Contamination: Short-day crops specifically respond to long, uninterrupted nights rather than short days. Even brief exposure to light during the dark period can disrupt flower initiation by causing the plant to perceive a shorter night. Common sources of light contamination include parking lot lights, illuminated exit signs, office windows, vending machines, vehicles and lighting from adjacent greenhouse bays. Light leaking through blackout curtain seams, doors and ventilation openings can also interfere with flowering. Light meters can be useful tools for identifying problem areas and verifying that dark periods are sufficient. Light levels should generally remain below 1 to 2 µmol m^{-2} s^{-1} (5 to 10 foot-candles) during the dark period, but some species are more sensitive to lower light levels.

Blackcloth: Blackcloth systems allow you to create consistent short-day conditions regardless of natural photoperiod. Success depends on schedule consistency and complete exclusion of light. Curtains should open and close on schedule every day and should be inspected regularly for gaps, tears and mechanical failures. Temperatures beneath the cloth should also be monitored.

Temperature: Photoperiod is only one factor regulating flowering. Temperature can influence both flower initiation and flower development. Some short-day crops respond poorly when temperatures are excessively high, while cool temperatures can delay flowering response in others. Once initiation occurs, temperature often becomes one of the primary factors affecting the development rate.

Reversion Risk: Short-day treatment should not be discontinued prematurely to ensure crops completely initiate flowering and do so uniformly. During the early stages of flower initiation, interruptions to photoperiod management can delay or disrupt flowering. As reproductive development progresses, crops generally become less sensitive to photoperiod. However, responses vary among species and varieties, so following crop-specific scheduling recommendations remains important.

For more information, check out these additional resources:

- Tech On Demand Video Series: **Mastering Photoperiod**
- Michigan State University: **Grower 101: Controlling Photoperiod**
- UMASS: **Photoperiod Control Systems for Greenhouse Crops**

It’s Salary & Benefits Survey Time

Now available for you to fill out and benefit from is *GrowerTalks*/*Green Profit* and AmericanHort’s annual **SALARY & BENEFITS SURVEY**, in partnership with Industry Insights (who will be crunching the data for us). The survey is open until September 30.

Once again, we’re partnering with AmericanHort on this decades-old survey to help us provide you a high-level and more useful tool. Companies like yours that take the survey can better understand salary and benefit trends and see how your business compare to other survey participants. The survey includes company demographics, staffing, and benefits and salary data on multiple job titles across full-time, part-time and seasonal employees.

But in order for us to provide the best data to you, we need you to participate!

You don’t have to be an AmericanHort member to participate and benefit—all survey respondents will get the full report prepared by Industry Insights. And you don’t have to be a certain-size operation—anyone and everyone can participate! Also, if you’ve participated in taking the survey in previous years, some data will automatically be populated for you, saving you time.

Other benefits to taking the survey:

- You’ll gain stronger hiring and retention strategies.
- It will help you develop improved planning and better budgeting.
- Access to a personalized company compensation comparison report, which is free for eligible AmericanHort Premium members who complete the survey.

As always, key parts of the data will be published in the December issue of *GrowerTalks* (January for the retail report in *Green Profit*).

CLICK HERE to fill out the survey (which is confidentially collected and maintained by Industry Insights’ professional data team and securely stored).

Again, the survey is open until September 30, so don’t delay!

FREE WEBINAR! Substrate Selection for Retail Sell-through

Register now and mark your calendar for a livestreamed panel discussion hosted by *GrowerTalks* bossman Chris Beytes and guest moderator Jack Bobo from Berger.

GROWING PLANTS FOR RETAIL SUCCESS is scheduled for 1 p.m. Eastern/Noon Central on Wednesday September 30.

Joining Chris and Jack will be Andrew Butler of Green Valley Greenhouses in Ramsey, Minnesota, and Mike Busch of Meyers Farms in Niagara-on-the-Lake, Ontario. The conversation will explore how today’s substrate choices—including mixes incorporating wood fiber—can strengthen root development, improve moisture management and enhance overall plant resilience.

The hosts and panelists will share practical insights drawn directly from their own production systems, highlighting what works, what doesn't and how these materials behave from propagation all the way through retail. You'll come away with real-world strategies for growing plants that hold their quality long after they leave your greenhouse.

Shout out to the team at Berger for sponsoring this Livestream!

LEARN MORE AND REGISTER HERE.

Finish Line … TC Terminology

Fall crops are shipping and holiday crops are actively growing, which means it's time to start thinking about spring ... or least preparing your team to begin thinking about 2027 …

One area of our industry that's rapidly expanding is propagation from tissue culture (TC). As I wrote in a *GrowerTalks* article titled **TISSUE CULTURE: THE NEXT FRONTIER** way back in 2023, "More and more crops are being offered from TC, and greenhouse professionals are gravitating to this type of young plant input for many advantageous reasons. Some of these include a desire for disease-free plants; the reduced need for greenhouses full of stock plants to produce on a commercial scale, allowing for the storage of viable plant genetics for many years; increased production speed and many more."

If TC plantlets are scheduled to arrive at your greenhouse in the next few months, consider sharing some resources (see below) with your team, including this list of terms they should become familiar with:

Acclimation/Hardening: The process of adjusting plants to a different environment by controlling light, temperature, humidity, air movement and nutrition.

Agar/Media: Liquid, or more usually a semi-solid substance, in which plantlets are grown. It may contain nutrients, carbohydrates, plant hormones and other substances to steer plant growth.

Deflasking: The removal and sticking process of tissue culture plantlets.

Ex Agar: Without agar; plants can be shipped in containers that do not contain agar.

Flask/Vessel/Bag: Containers used to house and produce plantlets. These may also be used to ship plantlets.

In Vitro: The process of growing a plant in a container outside or apart from its living, original

plant.

Micropropagation: The process or method of propagation for tissue culture with small plant parts, usually shoot tips in a lab setting.

Plantlet: A plant grown from tissue culture that has a growing tip, petioles and stem; it may also (but not always) have leaf blades, callus and roots.

Stage 3 Tissue Culture: The most commonly available input; another name for plantlets that usually have roots.

Subculture: The process of cutting a clump of shoots into smaller clumps or individual shoots during tissue culture production.

Vitrified: The water-soaked appearance of leaves is often seen when plants have been covered in agar.

Water Roots: Roots that have grown in agar. These roots may not take up water well but can continue to grow and develop root hairs after deflasking.

And if you want to binge on a few TC videos, check out this seven-part **TISSUE CULTURE PRODUCTION PLAYLIST**.

Don't let me stand between you and implementation of all the important info shared in the Week 37 newsletter! I'll talk to you next week …

Please feel free to send your comments, constructive criticism and topic ideas to me at bcalkins@ballhort.com.

Bill Calkins
Editor—*Tech On Demand*

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