Podcast with Samuel; Spring Debrief; Mum Nutrition, Pythium

Cultural and Technical Information for Greenhouse Professionals

GROWERTALKS MAGAZINE greenPROFIT MAGAZINE

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COMING UP THIS WEEK:

Podcast with Samuel Di Rito
Nick's Tip: Spring Debrief
Mum Nutrition
Pythium on Mums
New PW in NH
Finish Line ...

NEW PODCAST: 4 Questions for Samuel—a Grower, Retailer & Social Media Manager

The next in my rapidly growing series of Pick 4 podcasts (in which I ask four questions of various industry members) takes us to a third-generation retail greenhouse in Jackson, Georgia. This time, I was excited to be joined by Samuel Di Rito, a grower and social media manager at Collier's Greenhouse & Garden Center. Samuel actually reached out to me and said he was ready to pick four questions and go on the podcast, so of course I said heck, yeah!

IN THIS EPISODE, we discussed two things before jumping into the questions—Samuel's service in the Navy and how it helped prepare him to come back to the family greenhouse, and why he loves being in a family business.

Oh yeah, you might recognize Samuel's name—he was a finalist for the *Green Profit* Young Retailer Award in 2023 and has written articles for the magazine, as well. Or maybe you know him from Instagram (@colliersgreenhouse)!

Here are the four questions Samuel answered:

Q: What was your first exposure to horticulture and how did you feel, react, respond?

Q: What's something about professional horticulture that annoys you and how would you change it?

Q: What advice would you give to a young person considering pursuit of a career in horticulture?

Q: What do you love most about your job?

There are now 248 Tech On Demand podcast episodes in the archive 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.

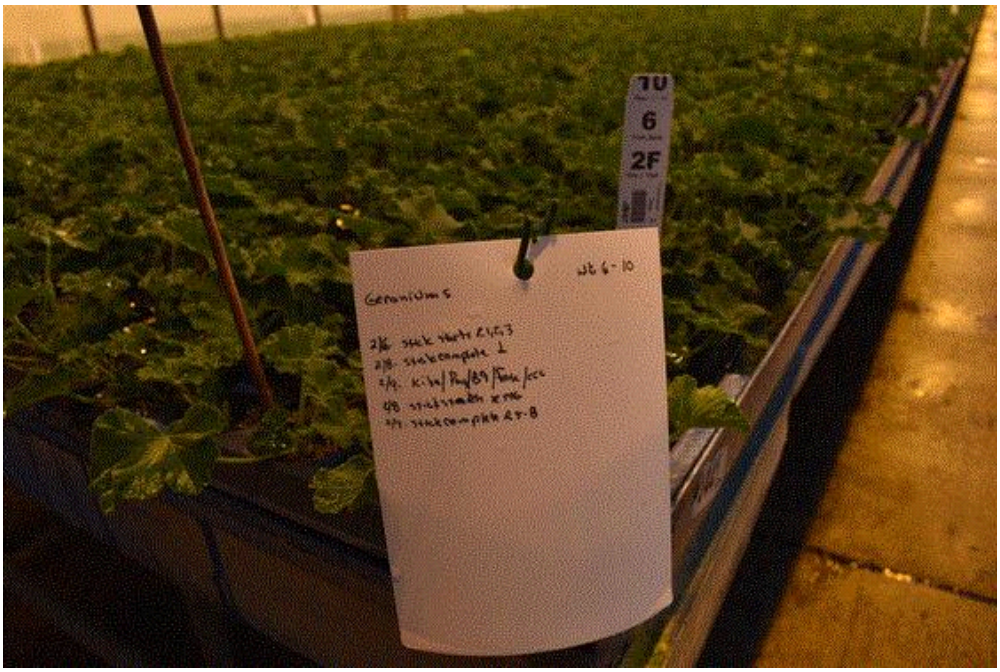
- **APPLE PODCASTS**
- **SPOTIFY**

Thanks to **Prospiant Greenhouses**—leaders in greenhouse design, manufacture and build—for sponsoring this episode!

Nick's Tip of the Week: Spring-Season Debrief

Each week, I'll work with my buddy Nick Flax, a technical services expert at Ball, to share a concern that's come up during one of his numerous calls with growers across North America. This week, he's putting a bow on spring ... actually, he's encouraging you to do a bit of reflection before tying said bow.

PROBLEM: We're past Mother's Day, and now the focus is on shipping finished material and retail sales. It's critical to get plants out the door ASAP, but this time of year it's equally important to take time to reflect upon challenges from the spring growing season. Before mum production really takes off, be deliberate and carve out time to recap and reflect upon your spring crop challenges.



NICK'S TIP: It's easy to get caught up in the retail raucous, move on and miss out on important opportunities to improve for next spring. If I had a nickel for every time a grower told me, "I know this happened last year, but I can't remember why …" I'd have a LOT of nickels!

With everything that can go wrong in the greenhouse, analysis paralysis makes it difficult to decide which crop-related challenges to address first. Rome wasn't built in a day, as the saying goes, so take a step back and look at the issues you encountered at a higher level to set your priorities. Here's my approach:

1. Make a list of five to ten crops that you struggled with this spring.

- Rank them in order of which had the biggest impact on your bottom dollars—things like crop failure, issues that increased cost of production, or poor sell-through.
- The bigger the impact on your bottom dollar, the higher it should be ranked.

2. Take items that can, beyond a shadow of a doubt, be attributed to suppliers (ex. dead plants on arrival, late shipment of inputs, disease/pests shipped to you) and move them to a separate list.

- Type up a quick email to your sales rep(s) and let them know you'd like to discuss how to address similar issues next year.
- Get it off your desk—and your chest—while the info is still fresh. Circle back to it the next time you and your rep(s) sit down to discuss booking future orders.

3. For the remaining crops, do a detailed breakdown for each based on all the knowns and unknowns. The goal is to identify one or two changes (max) that can be made next year to improve crop quality or prevent failure.

Start With Crop Records

This part of the process is "garbage in, garbage out," and it starts with good recordkeeping. If you do not keep records in-season, it will be very difficult to identify the root cause of crop issues and improve your success in subsequent seasons. ***Remember: you do not have to write an essay to summarize how you have grown each crop.***

- Place a clipboard with blank pieces of paper or make a simple template on your computer and print it out to capture key info on each crop throughout the season. If you need to construct this retroactively, do it now while the info is still relatively fresh in your mind.
- Record info like greenhouse or bench designator (so you know where the crop was placed), soil used, date crops were planted, and general cultural and environmental info

like greenhouse temp setpoints, fertilizer (N-P-K and ppm N), irrigation/fertigation frequency, and dates that other inputs were applied to the crop. It's best to write in pencil or industrial ink (non-water-soluble) in case your notes get wet.
- These records can live in the greenhouse and be collected at the end of the season for review, or you can keep a binder (or spreadsheet on a tablet, if you're fancy) that you carry around with you each day as you're managing the greenhouse.

Crop-Specific Breakdown
For each crop on your list, identify the most likely cause(s) that led to crop failure or poor quality. Start with the 5 factors of plant growth (5FPG) and then include pest and pathogen pressure.

Light, water, mineral nutrients, temperature and **gas exchange** are the 5FPG. Plants require all of these in appropriate amounts to grow and develop properly. When one (or more) of these factors is out of optimum range for what the plant needs, issues will occur.

Here are a few examples of how each of the 5FPG can influence crop quality and issues.

- Light—Affects how much plants can photosynthesize. Directly impacts things like total growth/plant size and number of flowers.
- Water—Drives the physical force behind cell expansion (turgor). Affects plants' ability to take up and move nutrients like calcium (Ca) and boron (B).
- Mineral nutrients—Provide the physical building blocks for plant growth.
- Temperature—Controls the rate at which things occur, such as leaf unfolding rate, speed of flower development, and plant-water relations (uptake of water by roots and transpiration).
- Gas exchange—Ability to absorb cardon dioxide affected how much plants can photosynthesize, and oxygen absorption in the rootzone affects respiration (plant's ability to turn stored sugars into usable energy for growth).
- Identify one or two (max) of the factors that you can exert the most direct control over. Be sure to include factors like water, mineral nutrients and temperature when examining pest- and disease-related concerns.

If you're not sure which factors most likely caused the problem, that's okay! Compile your crop culture notes and reach out to your favorite diagnostician (you can reach me and my colleagues **HERE**). And don't be shy—even if you are fairly certain of what caused the problem, it can be helpful to have another perspective on the issue!

Identify the Over-arching Trend(s)
You'll often find that the same cultural or environmental factors cause issues across multiple crops in a given season. In this way, this process of digging into the 5FPG for each crop can help you "see the forest for the trees" and identify problems at a higher level, rather than on an overwhelming crop-by-crop basis.

- However, remember that two or more of these factors can affect the same crop issue.
- For example, plants can become leggy and overgrown due to low light (shade avoidance response), excess turgor (due to overwatering), high DIF (difference between day and night temp), and excessive fertilizer applications (particularly too much phosphorus).
- The common threads across your list of crop challenges are what you should focus on.

Make Action Plans for Each Crop
It can be tempting to change many things at once to solve a problem. New growing media, different fertilizer, water quality adjustments and a new heating system may sound good in concept, but resist the urge. Focus on those one or two underlying factors that most likely caused issues. If you change too many things at once and a new issue arises, it can be even harder to pinpoint the cause. Oftentimes in this situation, growers default to "going back to what they did before" and have to endure another season of the same issue before solving anything.

Make a plan to shore up your (and your growing team's) knowledge in each identified area. Outline specific steps you and/or your team will take to ensure everyone is on the same page, adjust crop culture, and optimize each respective factor of plant growth the next time these crops are on the bench.

For example, if overwatering is a key factor across crop issues that you identify:

- Schedule time during the slow season to go over irrigation and moisture management training with your team.
- Look for local university extension programs on the topic, attend trade shows with educational programming, and seek out online training resources (like the **Tech On Demand YouTube playlist on watering**).
- Set measurable action thresholds for when to water. There are quick and easy ways to do this with strategies like Water By Weight (more info **HERE**).
- Establish a benchmark for success. Metrics like % planted vs % shipped/sold are easy to track. Quantifying total gallons of water applied to a crop, by comparison, is not.

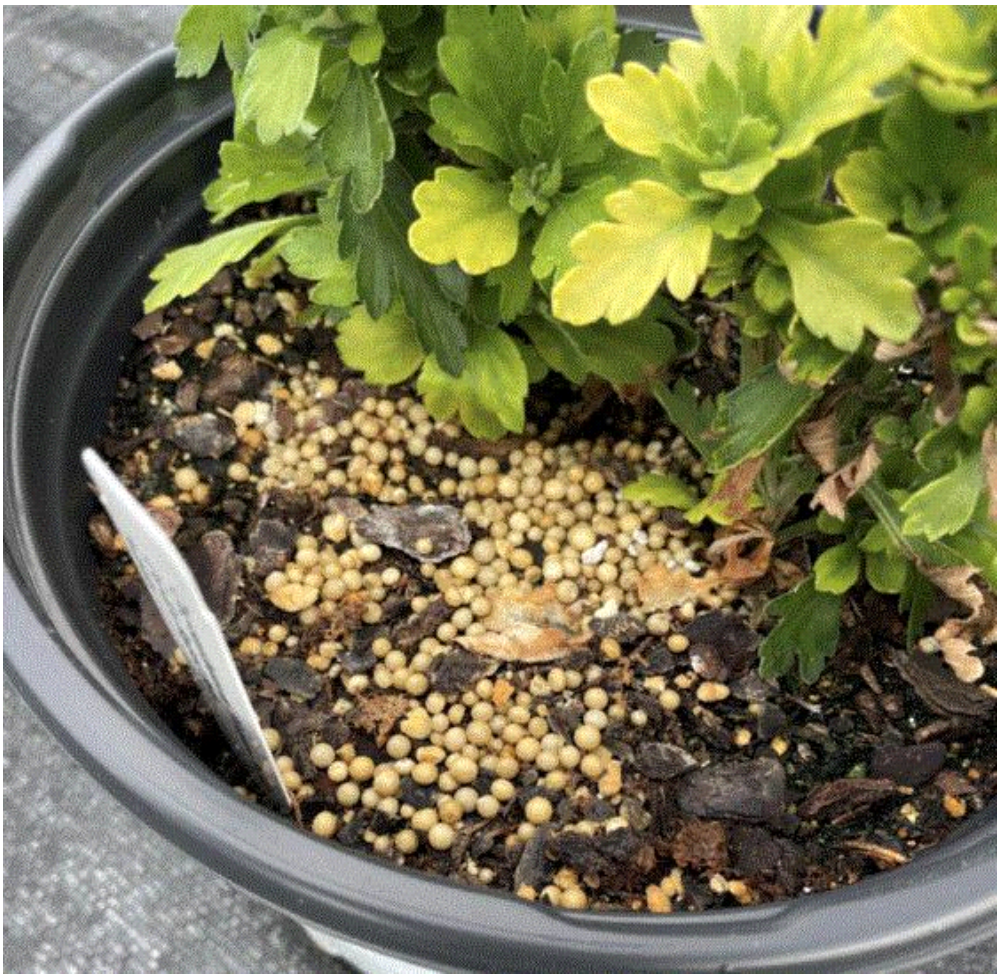
There are *always* new challenges in the greenhouse, and the best way to confront them is now while they are fresh in your mind. Prioritize what will have the biggest economic impact, keep good notes, make conservative adjustments, and use quantifiable metrics to ensure success. *And, as always, don't hesitate to reach out to your favorite technical specialist for help if you need guidance!*

Garden Mums: Fertilizer Fundamentals

(Last week, we kicked off the garden mum season in this newsletter with a tech tip from Nick to get you and your team thinking ahead. For the next few weeks, I'll share more garden mum content from the Tech On Demand team related to specific diseases, common production issues and ways to avoid hassle with the crop. Here's a quick snapshot on nutrition.)

A solid fertilizer strategy is often the difference between a standout garden mum crop and one that falls short at finish. Mums are true heavy feeders, and successful production depends on maintaining consistently higher nutrient levels (compared to most other crops.)

Early in production, pushing feed sets the tone for the entire crop. Watering-in liners with about 300 ppm nitrogen from an ammonia-based fertilizer such as 20-10-20 or 20-20-20 helps drive rapid axillary shoot break and encourages containers to fill quickly with a uniform, "mounded" habit. 20-20-20 can be used—but it shouldn't be applied more than two or three times.



Controlled-release fertilizer (CRF) can be an effective fertilizer strategy, but it's rarely a complete solution on its own. Growers using CRFs should always have water-soluble fertilizer (WSF) available to correct deficiencies if crops begin to run short.

As mums move toward finish, switching from ammoniacal nitrogen to a nitrate-based feed becomes critical. Nitrate formulations help produce firmer, more toned plants as temperatures cool and buds become visible, while excess ammonium late in the crop can leave plants soft, prone to lodging and more vulnerable to weather stress.

Environmental conditions also play a major role in fertilizer management, especially for outdoor crops. Cool nights early in production can trigger premature **CROWN BUDDING**, which is often best corrected with a strong fertilizer push rather than plant growth regulators. (Check out the resource at the link above.) During extended rainy periods, nutrients can be quickly leached from the growing media and should be replenished as soon as conditions allow.

High temperatures may cause CRF to release nutrients too quickly, followed by nutrient loss during heavy rain. Regularly monitoring media EC is essential. If EC levels drop below target, supplement promptly with WSF at 300 ppm nitrogen or higher until nutrient reserves are restored. In extreme conditions, a full transition to WSF may be necessary to carry your crop through to finish.

Garden Mums: Managing Pythium

Garden mums are susceptible to a wide range of diseases each year, but few are as common (or as damaging) as *Pythium* root rot. *Pythium* spores are widespread and can be present in most growing media and, in some cases, irrigation water, particularly when surface water sources such as ponds or creeks are used. Because pathogen exclusion is nearly impossible, prevention is the most effective management strategy. Good sanitation, sourcing media from reputable suppliers and transplanting only into this year's growing media are critical first lines of defense.

Early symptoms of *Pythium* include brown root discoloration and root cortex slippage, where the outer layer of the root peels away, leaving behind a thin, thread-like core. As the disease progresses, plants may exhibit yellowing of lower leaves, stem rot moving upward from the soil line and rapid collapse of the entire canopy. Initially, infected plants may wilt during the day and recover overnight. *Check your roots immediately if this occurs.*

Note: Unlike *Pythium*, *Fusarium* typically causes only partial canopy collapse, which can help distinguish between the two without laboratory testing. But to be safe, always send samples to a lab if in question.

Preventative management should begin early. Apply a root zone protectant 7 to 10 days after planting liners or once roots reach the container sidewalls, and reapply according to label directions to maintain continuous protection. Shorter reapplication intervals may be needed when crops are grown outdoors under persistent rainfall.

Root health plays a major role in disease prevention. Damaged roots provide an easy entry point for pathogens, so regularly inspect roots for desiccation, discoloration and salt injury. Avoid excessive dry-down, monitor soil moisture at least twice daily, and pay close attention to edges and corners of production areas, particularly on south- and southwest-facing sides. Monitor EC levels and leach if needed to prevent salt damage. For drip-irrigated crops, placing emitters on the south side of containers can help reduce heat stress.

Biological controls are most effective when applied preventatively, while traditional chemistries often provide stronger protection under high or persistent disease pressure, particularly when water sources may be contaminated.

Proven Winners New Varieties (in New Hampshire)

A few weeks ago, my fellow Ball Publishing editors Jen Zurko and Chris Beytes visited southern New Hampshire to check out Proven Winners Pembroke (one of the former Pleasant View Gardens locations). They were there for the 2027 New Variety Preview for Proven Winners ... and to start the spring season talking plants with plant people, because our editorial team would always rather be in the field than behind desks …

In the past, Chris and Jen have gone to Michigan to see PW intros, but they decided to change it up this year. They report that the event was fantastic and the new varieties in the annuals and ColorChoice shrubs programs were excellent.

Chris wrote about many of the highlights **IN ACRES ONLINE** but they also made videos so you can really feel a part of the event.

Here are links to the **PW ANNUALS** and **COLORCHOICE SHRUBS** videos.

Finish Line ...

Earlier this week, I had the opportunity to present during the Garden Center Group's GROUPTalk Live session for members on the topic of driving perennial sales at retail—especially in the fall, extending seasons and giving shoppers a reason to make another trip to the garden center. I spoke about perennial plant trends on the professional side of the industry and the emergence of perennials at event like California Spring Trials, which demonstrate the cutting-edge breeding pushing the category forward. I was honored to get the invite and hopefully I dropped some words of wisdom for the group.

At the end of my presentation, I also reminded the group members on the call and watching after the fact to register for Darwin Perennials Day at Ball in West Chicago on June 17. I did shout this out in the newsletter about a month ago (maybe more) but figured I'd remind you again.

Darwin Perennials will host its **ANNUAL PERENNIALS EVENT** and new variety showcase in The Gardens at Ball in West Chicago, Illinois, on Wednesday June 17. Darwin Day has grown over the years and is now one of the premier events for perennial growers in the professional greenhouse and nursery industry.

Attendees range from perennial plant greenhouse producers, nursery growers, landscapers and designers, garden center retailers, botanic garden teams, garden media and just about anyone in commercial horticulture. The reason folks make the trip to Chicagoland for this event is that the Gardens at Ball are blooming with thousands of perennial plants (hundreds of different varieties) in display gardens, trial beds and large containers, as well as endless opportunities to engage with industry peers and product representatives. More than 25 leading perennial plant vendors will be on hand, as well as experts leading educational sessions and opportunities to tour the gardens and Ball Horticultural Company facilities.

The event lasts from 8 a.m. until 2 p.m. and includes lunch. Consider bringing multiple team members because there's a lot to see and do!

REGISTER NOW and mark your calendars—Darwin Perennials Day is truly a can't-miss summer event.

Check out **THIS VIDEO** from last year to get a taste of what to expect.

Until next week … take care!

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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