GROWERTALKS

Paul's Pointers

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The Importance of Trialing

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Trials of various types have played an important role in my 30-plus year horticultural career. Recently, I had the opportunity to travel to California and assist one of our independent researchers, Buzz Uber, Crop Inspection Service, with four of our UpTake Pro wetting agent trials. It was nice to get back in the trenches wearing my researcher cap.

I can't recall how many times I've been asked to trial something over the years. My first thoughts in the past often were: "I'm a grower and if you want me to use your product you should have already performed the research." Or "I'm a production facility and not set up to conduct trials." However, I've learned over the years how incredibly valuable performing trials within my own production systems can be.

Types of trials

You can literally trial almost anything with the purpose of verifying that improvements and benefits can be obtained if put into practice:

- New plant varieties or cultivars
- Propagation and growing mixes
- Fertilizers
- Efficacy trials with insecticides or fungicides
- Plant growth regulators for height reduction
- Plant growth for branching
- Crop safety (phytotoxicity)
- Biosolutions approaches versus conventional methods
- Propagation methods
- Rooting compounds

- LED lighting
- New containers
- Marketing
- Order pulling methods

Although these examples cover a wide range of areas that are commonly trialed, this is likely just the tip of the iceberg, as I'm sure there are a wide range of other specific trials growers can implement.

How trials have helped me

I've conducted hundreds of trials throughout my career. Most of them showed me something, even if the take-home message was what not to do, they had value and were worthwhile performing. There are several trials or series of trials that have helped me to grow better plants or to solve other problems. Here's three of them.

Growing mixes. Dozens of trials with growing substrates taught me how important the particular sizes of the components are and how they play an important role with the physical properties. As a result of these trials, I was able to design growing mixes for perennials that not only result in quicker rooting, better establishment and healthier plants, I was able to grow crops 25% faster than was achieved with the previous growing mix. This reduction in production time allowed me to turn the greenhouse space faster, and because I'm in Michigan, this also resulted in a significant energy savings (lower gas bills) for each crop.

Controlled-release fertilizers. A new employer of mine at the time was already using controlled-release fertilizers, but I began looking at different formulations to try to obtain a more consistent release and better plants. I learned an incredible amount about fertility over the course of these trials. The results of the trials allowed me to reduced high ECs that were occurring at the beginning of the crop, provide a more even source of nutrients over the entire life of the crops while unexpectedly experiencing a 20% reduction in fertilizer costs—the formulation matters.

Pyraclostrobin. I was fortunate as an independent researcher to be involved in numerous trials with BASF validating the plant health benefits fungicides containing pyraclostrobin offer. Results I observed verified this fungicide could be used to help plants more successfully navigate through various stress events, such as transplant shock and frost/freeze events. Perhaps the most consistent results from these trials were the stress management and rooting benefits pyraclostrobin provides when it's used in propagation. Many propagators are using pyraclostrobin in propagation, so much so that they consider it an industry standard or practice. I'm proud to have been one of the researchers to work with validating pyraclostrobin's plant health claims.

These trials and several others have helped improve various aspects of producing plants for me and numerous others in the industry. I've observed the benefits of trials firsthand and encourage you to consider performing trials at some level at your facilities to explore improvements in your production systems.

A few trial tips

Grower trials don't necessarily have to be complex or done in a scientific manner (replicated studies using statistics on the results) to be valid. In many cases, they can be very simple demonstrational trials where you're just comparing something new with your existing practices. Most growers implement demonstrational trials where their main intention is to make visual observations between treated and untreated plants rather than collecting various

types of data. Here are a few tips and guidelines to help you along the way:

- Every trial should have an objective or a statement describing what idea or problem you're testing.
- Trials should have a protocol. The protocol is the gameplan or blueprint for the trial containing the steps for initiating, implementing and evaluating the trial. Keep it simple and easy to follow.
- Every trial should have some type of evaluation. Evaluations can occur at various points throughout the trial period and/or at the completion of the trial. They can contain various types of data points, such as subjective visual ratings or quantitative measurements like plant height, number of branches and so on.
- Always include a control treatment or some plants that haven't been treated. This allows you to compare the results of the treatment(s) to the normal, untreated population. Many growers test a few plants or several trays of plants within their production blocks.
- Try to conduct trials in the same environments (temperature, humidity, light levels, etc.) as the actual crops will be grown in. Trials can be conducted in the offseason when things are slower; however, just be aware that the growing conditions will likely differ from how those future crops will be grown. This could alter the trial results when implemented to actual crops in the future.
- Label all the trial plants and the untreated plants so they don't disappear. I can't tell you how many times trial plants end up getting shipped before the final evaluations are made. Show your staff and shipping crews how trials are labeled or flagged, and train them not to move or ship trial plants.
- Make a commitment to the trial. Have a designated person who'll follow the trial(s) from start to finish. Allow them time to manage the trial(s) and to evaluate them even when times are busy.
- Take good notes and pictures. I encourage you to develop a format where trial notes are taken at various points throughout the trial (perhaps weekly or every two weeks). These will be helpful when analyzing the results or will provide records in case something happens to the trial plants.
- Evaluate the trial results to determine if additional trials would be beneficial or if you liked what you observed enough that you'll implement the results into production.

I encourage all growers to always be looking for better ways of doing things. Being open to and conducting trials has helped me to make improvements to the plants being produced, and helped the bottom line, as well. **GT**

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