

# GROWERTALKS

Paul's Pointers

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## Scouting: Essential & Therapeutic

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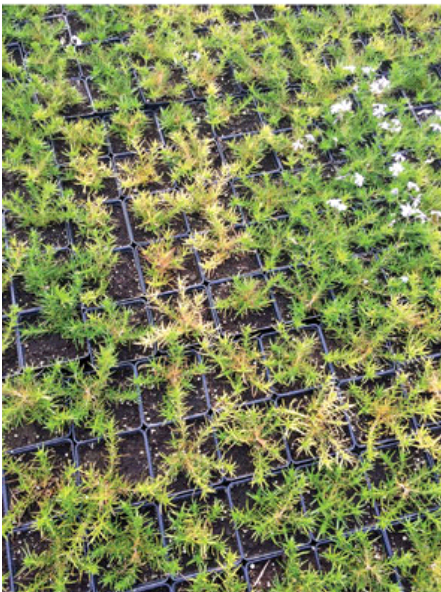
As I've visited with growers from across the country over the years, I'm amazed at the variance in the intensity and range of the scouting programs growers and nurseries practice. I estimate that nearly 25% of the growers have very thorough and sophisticated (sometimes over-the-top) scouting programs, 50% implement scouting to a reasonable and respectable degree, and 25% have little to no scouting programs in place.

Regardless of the types of crops being grown or the size of the operation, scouting is essential to any company that produces plants. This important routine shouldn't only be viewed as a necessary task to detect pest and disease problems, but as an opportunity to get intimate with the plants in a manner that really lets you observe the plants closely and provides a great indication of how healthy they really are.



*Pictured top: This echinacea is covered with Botrytis. The spore masses are from the pathogen and not the plant, therefore the spore masses are referred to as a sign, not a symptom. The symptom is the dead plant tissue.*

*Pictured below: The yellow symptoms these phlox plants are expressing are in a random pattern, suggesting a biotic disorder is likely the cause—Thielaviopsis, in this case.*



This may sound a little strange, but I find scouting to be quite therapeutic. Not in a “being one with nature” way, but as a safe space where I can observe, discover and think freely. I enjoy taking in the wonders of plants and have always been fascinated with how they live and grow. Rather than being burdened with the task of identifying and managing cultural problems, I see it more as a quest to help the plant finish its journey. From start to finish, I thoroughly enjoy the entire process and welcome scouting as if it were a leisurely walk through a botanical garden.

### **A holistic perspective**

Most growers have a limited perspective with how they approach scouting, and for the most part, limit scouting to the detection and monitoring of insects and mites. Sure, these growers also observe the presence of diseases, but I can’t recall a grower ever telling me that they have a threshold of three powdery mildew colonies per plant before they’ll implement management strategies. However, for the context of this article, let’s assume that the growers who do scout look for both insects and diseases.

That already seems like a lot, but for me, scouting is much bigger than just insects and diseases. When I scout, I look at everything from the big picture down to the very small details. Scouting entails observing everything from below the ground to the environment the plant is growing

in.

### **Below the surface**

I encourage all growers to routinely look at the root systems. Without a healthy root system, it’s unlikely the top growth will be healthy or free of issues. For example, when root rots are present, above-ground symptoms such as wilting, chlorosis and nutritional deficiencies are also commonly observed. However, when looking only at the symptoms on the leaves and stems, growers will likely miss the fact that the problem is occurring in the root zone.

Root evaluations don’t stop with pathogens. A white root system is a great indication there are no pathogens present, but is it enough to indicate the plant is healthy and optimizing plant growth? One of my main objectives of observing the roots is to determine if the plant is growing on schedule. In other words, does the rooting meet my expectations?

After planting, my goal is to obtain:

1. Roots to the edge of the container within seven to 10 days.
2. Roots to the bottom of the container within 14 to 21 days.

### 3. Roots wrapping within a month.

If these objectives aren't being achieved, there could be a root pathogen present, but it usually indicates something is off with the physical properties of the growing media and/or there are fertility issues (too much or too little).

### **Top growth**

The top growth is where most growers make most of their observations. Scouts can obtain a lot of information when observing the stems, leaves and flowers of plants. This is where many insect pests and mites can be physically observed. Signs and symptoms are clues that can be observed to help determine what problems the plants are experiencing.

When observing signs or symptoms, look for any patterns, as this will help narrow down the possible causes. Random patches within a block of plants often indicate biotic (living) disorders caused by insects or diseases. Biotic disorders are considered infectious and spread over time.

If the symptoms are uniformly distributed and aren't spreading throughout the crop, there's likely an abiotic (non-living) disorder present. Examples of abiotic disorders include frost damage, hail injury, chemical phytotoxicity and nutrient deficiencies, to name a few. Although abiotic disorders don't spread, the severity of the symptoms may develop over time.

### **The growing environment**

Scouting doesn't stop with looking at the crops themselves. A good scout also observes the area around the crops. This also can provide important clues to solving diagnostic challenges that often occur during production. Look for things like low spots with standing water and holes in the greenhouses, and observe that the equipment is functioning (horizontal air flow fans, furnaces, etc.). Simply stepping back and taking a holistic view of the production area often solves problems you can't see when only looking closely at the plants.

### **The present, future and beyond**

As you can see, scouting is very useful and necessary during crop production to detect and manage cultural issues that can arise. Not only do I use the time I spend scouting for insect and disease detection, but while looking at the individual crops, I also evaluate the need for plant growth regulators and determine their nutritional status. Admittedly, this type of multitasking has become easier with experience, but I find it takes less time than when performing these evaluations separately from the scouting. These simultaneous actions also provide me with a clearer picture about the true health and well-being of the plants being grown.

I'm not complacent and consider myself to be a forward thinker. As a result, I find that my brain isn't only observing the current status of the crops, but is always thinking about ways to improve production in the future. This includes confirming that the current production plans and strategies are working and should be continued in the future, as well as identifying areas such as scheduling or the PGR strategy that could benefit from some future modifications. I've found this to be more useful than when trying to remember these details at the end of the growing season.

As I mentioned above, scouting is therapeutic for me. Being within the crops each week, looking for current issues, taking steps to keep the crops healthy, implementing production plans to maximize growth, plant quality and profitability are self-fulfilling to me. Knowing that I played a role in the current crops and looking for ways to simplify how I grow plants or to decrease problems, improve plant quality and/or reduce plant losses in the future are indeed very rewarding and therapeutic.

I've always said, "The plants are talking—are you listening to what they're telling you?" Don't just do drive-by

scouting, as I guarantee you'll miss what the plants are really trying to say. Rather, dedicate some time each week and observe the plants, both above-ground and below the surface, and you'll quickly hear what they're trying to tell you. Then step backward and take a look around the plants and see if you agree with what they're telling you. The clues are almost always right in front of you. Stop, look and listen!

### **Some definitions ...**

**Symptoms** are the plant's response to stress and are expressed as visible abnormalities of the plant itself. This could include chlorosis, discoloration, mottling, stippling, leaf spots, deformed leaves, galls, root rots, wilts and stunting.

**Signs** aren't part of the plant, but are actual parts of an insect or pathogen. Examples of signs include mycelium, pustules, egg masses, frass and exoskeletons. **GT**

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