

crop cultivation

Poinsettia

VIGOR and GROWTH

Control

What you don't know can hurt you!

By Roger C. Styer

Now that we are in the latter part of October, most poinsettia growers figure their job is finished and are just waiting for the plants to color up so they can be shipped. But this is the most critical time for last-minute adjustments to height control, which determines if you make your specs, and your sale, or not. What complicates this job is the wide range of poinsettia varieties we currently grow. Some of these varieties grow slower than Freedom, while others grow faster. This is what is called poinsettia vigor. And it is something you need to take into consideration 1) when you are selecting varieties to grow; 2) when you schedule your crop; 3) when you stick or pot cuttings; 4) when you decide how to pinch them; 5) when you select a graphical tracking model; 6) when you growth regulate them; and 7) when you're ready to finish them.

I see more and more growers having problems adjusting to the lower vigor of many of the newer varieties on the market. Remember, it was just a few years ago when we were growing 'Annette Hegg', V-17, V-14 and V-10, all of which were vigorous. When Freedom came into the market, it was considered a low-vigor variety. Now, Freedom is considered a medium-vigor variety, which means we are losing more high-vigor varieties and gaining more low-vigor varieties.

I have listed some poinsettia varieties in the sidebar (page 34) based on their vigor ratings from the University of Florida trials. For those of you in the North, these vigor ratings may be even lower due to cooler temperatures. However, the relationship between the different varieties will be the same. If you grow a series (red and colors, such as Freedom), the colors will typically be the same vigor as red. However, some colors may be lower



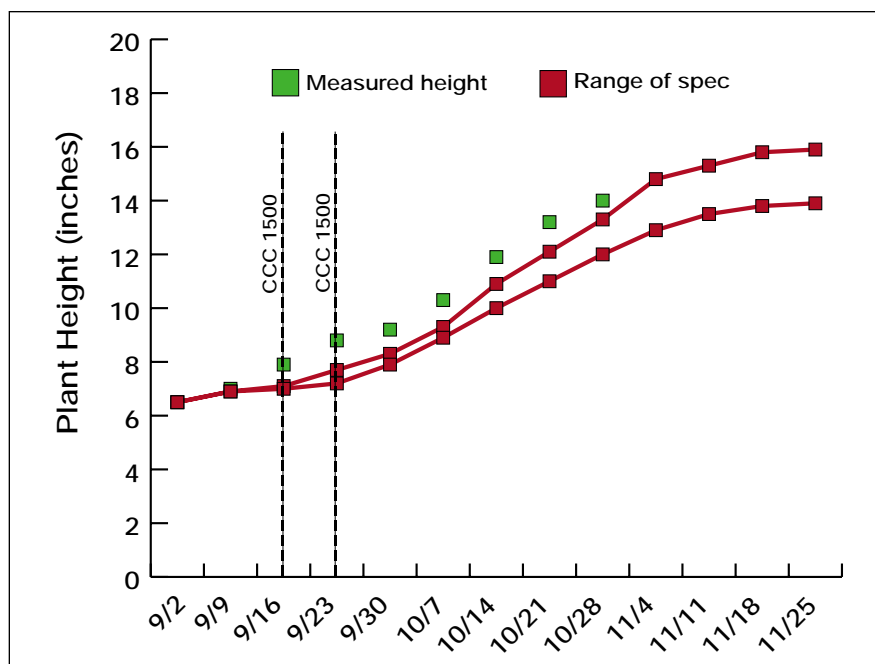
The source and size of the cutting can affect vigor. (Photo courtesy of Roger Styer)

vigor than red (e.g., 'Freedom Salmon', Bright Red and Fireworks). If you change varieties of the same color, don't expect them to be the same vigor ('Snowcap' to 'Whitestar', 'Amazone Peppermint' to 'Da Vinci', 'Plum Pudding' to 'Cortez Burgundy').

FACTORS INFLUENCING VIGOR

Besides the genetic potential of the variety, there are a number of other factors, both cultural and environmental, that affect the vigor and final size of the plant. First and foremost, the source and size of the cutting greatly affects poinsettia vigor. A smaller and thinner cutting will take a little longer to root out and grow. Called a European cutting, these small cuttings will not finish as vigorous as a thicker, bigger cutting. If you do not want to use much growth regulators, these small cuttings are for you. Splitting your orders between different suppliers means you will probably get different-size cuttings. ▶

Figure 1. Novelty (Monet Twilight, pot size 6 inches) standard curve.

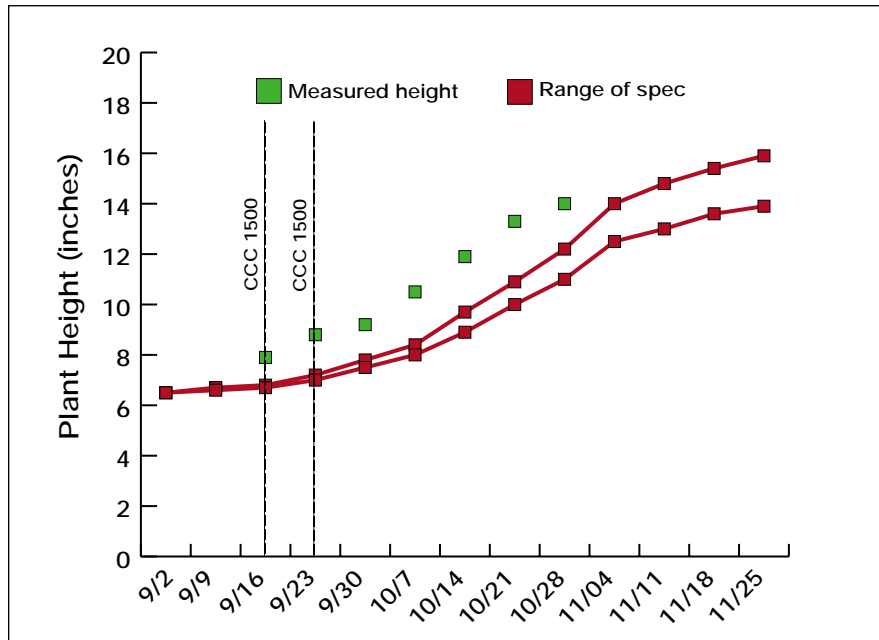


POINSETTIA ZONE

For more about poinsettia performance and ratings, visit GPN's Poinsettia Zone at www.gpnmag.com, where you can also find a list of poinsettia FAQs, web exclusive information not previously presented in the magazine and an "Ask the Experts" area.

crop cultivation

Figure 2. Novelty (Monet Twilight, pot size 6 inches) late curve.

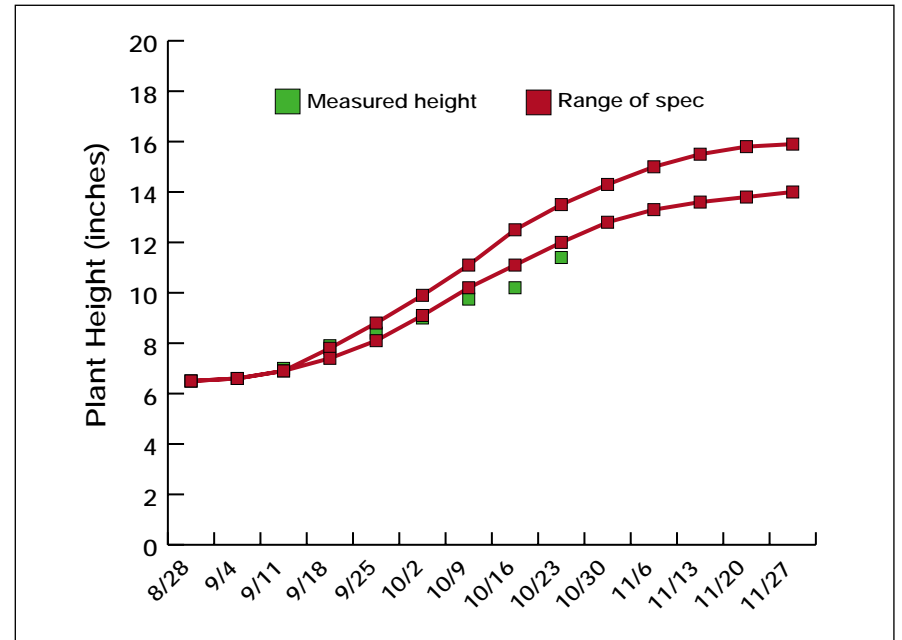


Scheduling can become more complicated when dealing with different vigors. The low- and very low-vigor varieties need longer crop time between potting (or direct-sticking) and initiation date. We typically give 1-3 weeks longer than Freedom timing, which is usually earlier than most varieties that initiate around September 25. These low-vigor varieties need more time to root out and branch out after pinching. If you want to make your height specs, make the necessary adjustments in your schedule, regardless of pot size.

Pinching needs to be done differently by variety and not just for height or number of nodes. I recommend growers use a soft pinch with leaf removal on low- and very low-vigor varieties. The harder the pinch, the smaller the finished plant will be. For medium- to very high-vigor varieties, you can use a medium to hard pinch and not need leaf removal. Remember, you still want to pinch to the desired number of nodes for the pot size.

Pushing the feed to poinsettias early in the crop cycle is a must. Normally,

Figure 3. Novelty (Holly Point, pot size 6 inches) standard curve.

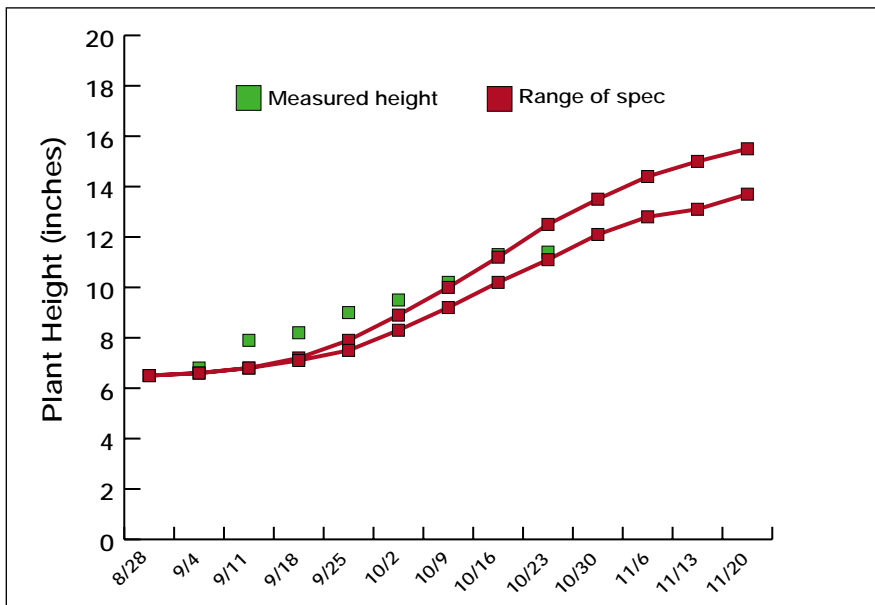


growers use 250-300 ppm nitrogen from the time they pot cuttings until they get into October. If you use slow-release fertilizers in your mix, don't expect them to release for the first 1-2 weeks. This means you need to liquid feed during this time. If using pine bark in your mix, increase feed by 50 ppm nitrogen. Failure to feed enough during the early stages of growth will affect leaf size and color and how fast the breaks come out and expand. Light-green-leaf varieties need more feed than dark-green-leaf varieties, about 0.5 EC higher. You might expect lower fertility to affect the more vigorous varieties the most. Symptoms seem to show better on those varieties, but the most damage to overall growth is to the lower-vigor varieties. You can correct the feed levels and get the higher-vigor varieties to respond quicker than you can with the lower-vigor varieties.

Growing temperatures during August, September and October are very important to getting low-vigor varieties up to size. Dropping temperature too soon in late October for Freedom varieties that are coloring up will

crop cultivation

Figure 4. Novelty (Holly Point, pot size 6 inches) late curve.



adversely affect size and coloring of mid-season, low-vigor varieties such as Sonora, Winter Rose, Cortez Burgundy and 'Holly Point'. Typically, October temperatures in the North cool down a lot. Keep an average daily temperature (ADT) of 68° F for best bract expansion, but an ADT of 70-75° F is best for vegetative growth earlier. Remember, leaf-unfolding rate is directly relat-

ed to ADT, but the number of leaves per lateral is directly related to time between pinch and initiation date. You can only go so far with increasing temperature to make up for not enough crop time early.

GROWTH CURVES AND GROWTH REGULATORS

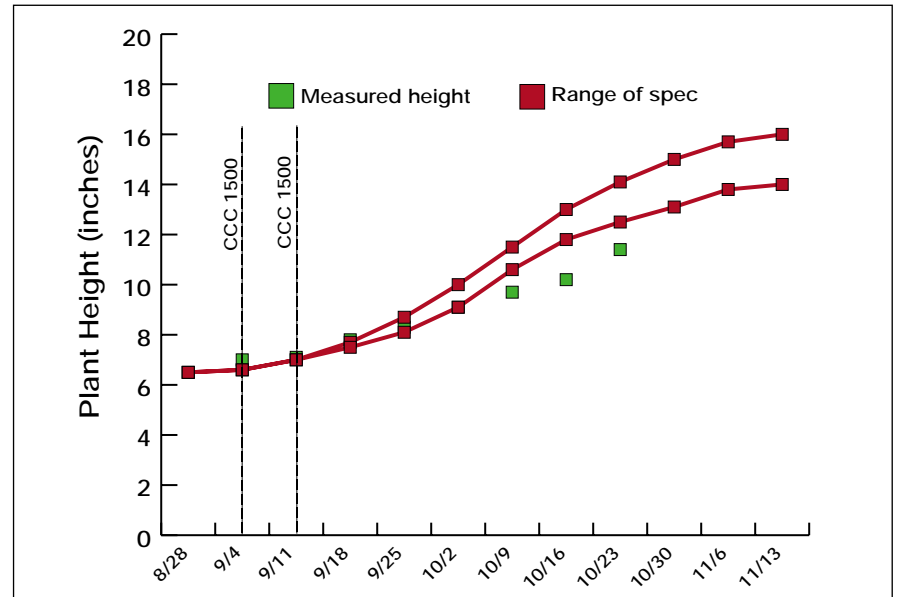
One of the best tools to come along in the past few years is graphical tracking for poinsettias. I recommend every poinsettia grower use graphical tracking for each variety in each pot size. These growth curves typically start with the pinch date and end with the ship date. You can put in your own specs, variety, initiation date, response time and weekly height measurements. What you get back is a road map of where you are and where you need to go. By also putting in what growth regulators were applied and when, you can determine if your growth control program is sufficient or not.

Paul Fisher from University of New Hampshire is primarily responsible for developing, refining and making this tool available, for free, from Ecke Ranch's Web site. You have your choice of no-pinch, standard, late and custom curves. Most growers use the standard curve. The late curve should be used:

- For Freedom or other late-stretching varieties after showing color.
- For pot sizes less than 5 inches, as their specs are shorter and need to be controlled early.
- For close spacing (less than 12 inches for 6-inch pots), as they will stretch late.
- For warm climates where there is a big positive DIF and no negative DIF (most Southern growers).
- When there is too much time between pinch and initiation, as there will

crop cultivation

Figure 5. Standard red (Freedom Red, pot size 6 inches) late curve.



be more leaves on the laterals, causing shading and stretch.

Figures 1-4 show what happens when you graphically track two different vigor varieties with a standard and a late curve. 'Monet Twilight' is a very high-vigor variety and tends to out-grow the growth curve early. Using a standard curve (see Figure 1, page 30), you can see the plants are only 1 inch above spec by the end of October and were not sufficiently controlled by the two early sprays of Cycocel. It is too early to put on a late Bonzi drench, as there is no color showing yet. Applying Bonzi before color shows will delay and reduce bract size. You could spray the plants with a low rate of Cycocel (500-750 ppm), avoiding too much bract reduction. Or you could use a negative DIF to control the height. But if you were using the late curve (see Figure 2, page 32), you would be panicking by now, as the plants are 2 inches above spec. Monet Twilight is not a late stretcher unless the plants are crowded. So, be careful which growth curve you use and how you react to the measurements.

On the other hand, Holly Point is a very low-vigor variety. The standard curve (see Figure 3, page 32) shows that plants are about 1 inch below spec, while the late curve (see Figure 4, page 33) shows that plants are within spec. The key thing to remember about this variety is the low vigor, which means it will not stretch late and may not be able

Figure 6. Vigor ratings.

| | Very Low | Low | Medium | High | Very High |
|------------------------|--------------|-----|--------|------|-----------|
| CULTIVAR | VIGOR RATING | | | | |
| Pepride Red | X | | | | |
| Orion Red | | | X | | |
| Freedom Red | | | X | | |
| Freedom Bright Red | | X | | | |
| Festival Red | | | X | | |
| Olympia | | X | | | |
| Christmas Cookie | | X | | | |
| Santa Claus Red | | | | | X |
| Elegance Red | | | X | | |
| Prestige Red | | | X | | |
| Red Velvet | | | | X | |
| Spotlight Dark Red | | | | X | |
| Victory Red | | | X | | |
| Sonora Red | | X | | | |
| Cortez Red | | X | | | |
| Jingle Bells 4.0 | | X | | | |
| Sonora White Glitter | | X | | | |
| Whitestar | | X | | | |
| Snowcap | | | | | X |
| Enduring Pink | | X | | | |
| Maren | | X | | | |
| Freedom Fireworks | | X | | | |
| Jester Red | | X | | | |
| Silverstar Pink | X | | | | |
| Cranberry Punch | | | | X | |
| Winter Rose Dark Red | | X | | | |
| Carousel | X | | | | |
| Da Vinci | | X | | | |
| Amazon Peppermint | | | | X | |
| Monet Twilight | | | | | X |
| Plum Pudding | | | | X | |
| Cortez Burgundy | | X | | | |
| Strawberries and Cream | X | | | | |
| Holly Point | X | | | | |
| Freedom Salmon | | X | | | |
| Marblestar | | X | | | |
| Puebla | | X | | | |


* Based on 2002 University of Florida Poinsettia National Variety Evaluation Trial

to be easily pushed with higher temperatures. However, I would encourage the grower to keep his temperatures up and sufficient for bract expansion, maybe crowd the plants together more and keep a close eye on the next measurement. Pushing plants with higher feed levels or more NH₄ at this late stage usually does not help, especially if the weather is cool. Finishing about 1 inch below specs is not bad, but any lower could be trouble. Remember, you cannot push low-vigor varieties easily this late, so watch your growth control early as well as time of potting.

Finally, Figure 5 (left) shows Freedom Red graphed on a late curve, which is needed for Freedom as this variety tends to stretch late when showing color, especially under warmer conditions. As of the late date in October, the plants were 1½ inches below specs. Should you worry? If you are a Northern grower, maybe. Cooler temperatures will not help push up the growth. Plants are almost showing color. Unless the plants are crowded, they may not make specs. Watch your temperature more closely for bract expansion and some more height. If needed, you could use a low spray rate of gibberellic acid (GA) to get some more height (3-5 ppm Pro-Gibb). The primary cause of being below specs at this late date was the two early applications of Cycocel.

Freedom varieties do not need that much control in most conditions. Now, if you are a Southern grower, no need to panic. Just continue to let the plants come up with the naturally warmer temperatures you get, and you should hit the bottom of the spec by ship date. If you push Freedom, or any poinsettia variety, with too much temperature once bracts come out, you get a soft plant with too much distance between bracts — in other words, an ugly plant that falls apart!

Remember, knowing the vigor of the various poinsettia varieties you are growing means understanding how to schedule, plant, grow, control and graphically track them. Give the low-vigor varieties more time before initiation, pinch them softer with leaf removal, pay close attention to feeding and growing temperatures, and use the right graphical track to get the spec you want. It is nearly impos-

sible to grow low- and high-vigor varieties in the same zone with the same crop time and expect them all to make the desired spec. Group your varieties by vigor as well as response time, and hit the target every time! 

Dr. Roger Styer is president of Styer's Horticultural Consulting, Inc., Batavia, Ill. He can be reached by phone at (630) 208-0542 or E-mail at carleton@voyager.net.

LearnMore

For more information related to this article, go to www.gpnmag.com/LM.CFM/gp100302