GROWERTALKS

Features

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Grouping Crops in Propagation for Success

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To register for the Plug & Cutting Conference—being held in Orlando, Florida, September 22-24—go to http://americanhort.org/plug.

Many growers will produce their own rooted liners by buying in unrooted cuttings, sticking them in some sort of rooting media, putting them in a mist area and then growing them on further without mist until ready for transplanting. However, one of the biggest problems I see growers have is trying to root too many different crops in the same propagation area without consideration of mist requirements, light levels, fertilizer needs, diseases to control and growth control. Once growers understand that some crops have different needs in propagation, then they can group them accordingly.

First, the basics

Generally, what's needed for successful propagation would include the following factors:

- Start with a clean mist area.
- Stick quality cuttings with a proper sanitation protocol to prevent disease spread.
- Get them into a mist area that's controlled by sensors and/or timers.
- Use rooting hormone on cuttings that have some difficulty rooting.
- Reduce light levels to 1,500 footcandles or 5 to 10 moles/day daily light integral (DLI).
- Maintain a root zone temperature range of 70 to 74F (21 to 23C).
- Foliar-feed cuttings under mist with 50 ppm N from 15-5-15 or 17-5-17 with added micronutrients daily.
- Once off of mist, feed with 100 to 125 ppm N from the same fertilizers with added micronutrients each time you water.
- Use chemical growth regulators, such as B-Nine, Cycocel, Bonzi, Florel, Sumagic or a tank mix of B-Nine + Florel, whenever needed.

Understanding these factors is one thing; adjusting them based on the particular crop you're rooting is another. For spring production, most bedding plant growers produce a wide range of annuals and perennials. Some crops don't want as much mist as other crops. Cuttings with fuzzy leaves should have less mist, such as Helichrysum Licorice. Herbs, such as lavender and rosemary, are sensitive to too much mist and can then have big disease problems. Total crop time under mist, as well as time to transplant, can vary widely and will change as the spring season progresses.

The type of rooting media will affect how much mist or watering is needed. Use a media that's well drained, but that matches up to how you mist and water in propagation. Compressed media, like in Ellepots, will not need as much water as Oasis wedges. Loose-filled trays will need a week longer crop time than any Ellepot or stabilized substrate.

Also, do you know what cuttings need a rooting hormone and how much? Or do you just use rooting hormone on everything and hope for the best? Some growers won't use any rooting hormone at all. So, what is the correct method?

The right amount to mist and feed

Most growers over-mist their cuttings, which results in more disease, slower and uneven rooting, longer rooting times, loss of growth control and nutritional problems. I try to get growers to monitor the moisture still evident on the leaves to determine when cuttings should be misted again. During the first week after sticking, you need some free moisture on the leaves to reduce the stress and get cuttings to rehydrate again. But you don't need to keep them soaking wet to accomplish this process. With cloudy days, wait longer to mist. With sunny days, mist more often, but also take a look at your light levels to make sure you have enough shading. Finer mist particles work better than coarse mist, resulting in more even moisture on leaves and less soaking of the rooting media.

I see a lot of growers not adjusting the growth regulators due to the vigor differences between varieties of the same crop. And every year, there are new varieties coming into the market, which many growers haven't had a chance to grow. In the northern areas, very low winter light levels cause problems rooting in the desired time. Adding HID lights to get DLI up to 5 moles/day will increase photosynthesis, resulting in faster rooting and better branching. Waiting to feed cuttings until they're off of mist can delay rooting and growth. Misting leaches out nutrients from the leaves and some cuttings may be from stock plants that may not be as well fed as needed. The longer time under mist, the more likely the cutting runs out of nutrients needed for photosynthesis and growth. Calibrachoa and petunia cuttings have a tendency to show upper yellow leaves within a week or so of sticking. They need more iron in the feed program and media pH lower than 6.5. Foliar feeding cuttings as described above, along with adjusting mist properly, will overcome these problems.

Even when cuttings are off of mist, growers tend to keep them right next to cuttings still being misted. The result is stretched and soft rooted cuttings, and generally more disease problems, such as Botrytis, Rhizoctonia, bacterial and fungal leafspots, etc. More applications of growth regulators are then needed, which makes more work for growers and increases the chances of spray overdose on crops that are

sensitive next to crops that need the growth regulator application.

Another problem I see growers have is too much rooting time on cuttings such as dahlia. When rooting crop time is too long, dahlia cuttings don't want to branch, which affects the finished product. Furthermore, dahlia liners should be lit until Week 13 to prevent tuber formation and premature flowering. Knowing the lighting requirements of long-day or short-day crops will determine how you group crops on the bench, since most growers have limited lighted areas in their propagation zone, if they have any lights at all.

Finally, growers may face shipments arriving on different days of the week, which results in different days to stick and place under mist. Reserving space for three different stick days of the same type of crop is difficult to do when you're sticking so many cuttings in a week and you have to get them under mist ASAP. The result is a jigsaw puzzle of different ages of rooted cuttings all mixed on the same bench.

So when do you move them off of mist? How do you treat them differently for best results? Come hear how at the 2014 Plug & Cutting Conference in Orlando. **GT**

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