

RESEARCH IS NEEDED TO PREVENT "SUMMER PANSY STALL"

Changes In Plug Production And Weather Raise More Questions

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It's true, many pansies are being very capricious this fall season. They just don't seem to want to grow and now it looks to many growers like they are never going to sell them. This problem is happening to many growers across the state. Symptoms are usually described as plants where the roots have not grown out of the plug. The plants are not growing, are chlorotic and do not respond to fertility. Dr. Thomas and I are going to call this problem "Summer Pansy Stall." Now that it has a nice name, let's explore the possible causes.



To understand the reasons behind this growth inhibition, we need to look at the starting point, the plug, and the unfortunate weather we experienced this summer and fall. From this and the field data we have collected, we have a hypothesis. We need your help to prove or disprove this hypothesis. Again, this is only a hypothesis...which means we have only an educated guess based on observations collected right now.

The weather has been hot, dry and sunny. Growers were transplanting plugs in August and had to irrigate often because of the heat, lower than normal humidity and sunny weather. Plants were grown otherwise as usual, except that many more plants this year were plugged (transplanted) directly outdoors or quickly shifted outdoors after transplant. Only two reported stalls occurred in plants growing 100% of the time in a greenhouse. Low levels of fertility were initially used as is recommended.

Outdoors or in, the fertility was likely being washed out quickly, lime was likely reacting quickly in the soil, and the heat stress was likely reducing carbohydrates in the plugs. It is also likely that growers reporting these problems had not tested the soil pH, checked the fertility levels or consulted with Extension or consultants until after the crop had stalled out, turned chlorotic and/or missed the first or second turn shipping windows. But this is just part of the problem and in many cases, a production improvement in the industry may have caused this problem to appear more severe.

Did your plugs come from the plug producer looking better than ever this year? We heard this comment over and over. There is a reason. A few plug companies have been employing an apparently much improved toning process, a logical strategy to better ship pansy plugs. The standard toning practice is to reduce nutrition in the last 5 to 10 days of production and change other factors to harden the plug tissue and prevent the young plants from rapidly growing and stretching while they are in the shipping box....in transit. In doing so, they produce a tight plug, well-prepared to take the rigors of

shipping and to arrive in your greenhouse in prime condition for transplanting. Do this well, and you got yourself an excellent "toned pansy plug." So far, so good.

Except the plug is very hungry, its growth is slowed and it's about to be planted in 95+ degree heat, under high light and high irrigation frequency, under our usual hostile Georgia and South Carolina outdoor growing conditions!

The problem is that no one has explained to the grower how to handle the new, improved, toned plugs under high heat and light. We asked every grower that received plugs from a company that tones their plugs. Many growers did not know their company was shipping toned plugs...they just noticed the plugs looked really great! Lack of such important information costs money.

We think toning is a great idea. It is a GOOD thing to buy a toned plug...if you know it's toned.

But how did growers treat this stealth-toned plug? By planting it directly outdoors? With no shade or little shade? With low fertility and lots of irrigation. In the meantime, while it struggled to get growing, the pH likely rose (as it did in all the samples we pulled) and the plants became chlorotic. The stresses plants then had trouble taking up nutrition when stress conditions were reduced as irrigation was cut back and fertility increased. Growers do use low fertility the first few weeks to prevent stretching in the transplant stages. That is what we recommend. Good idea? Maybe not if we purchase toned plugs for outdoor production and experience extended hot weather. In following the tried and true without knowledge of the plug nutrition status, growers may have inadvertently stressed certain pansy cultivars further than anyone intended and they likely "froze" in a suspended state of stress and poor nutrition.



A stunted 4" 12 week pansy

This scenario matches the observations and information we have collected so far. As you might expect, there are some growers who fed heavy and early, who have seen no such problems in their pansies, despite the plugs being toned. There are also a few growers with the same "stall" symptoms that did not purchase plugs from the companies that are toning them...their symptoms are less severe and very spotty, but we suspect that the early stress, high pH and low fertility was the cause here too. Some growers suspect that the drought and heat induced plug growers to use more PGR's....which caused the growth to cease. This may also be true, but we have no such evidence. We suspect "toned plug" users just saw the heat/fertility stress sooner or to a greater extent than non-toned plugs. We won't rule out PGR's, but it is an unlikely scenario.

Sadly, growers who missed the opportunity to increase fertilize when the weather was warm are running out of luck if trying to push their pansies. The weather has cooled and the previously stressed plants just seem not grow out of the stress fast enough. We suspect the roots are not well and may not be taking up fertility. Many growers have tried to push them with very high fertility (300 ppm N!) and have run into all kinds of trouble with diseases and over fertilization. Not to mention the fact that their pH is probably not where they think it is.

And to top it all, if you get the pansies back on track, you still can't sell them! We found with our first attempts to correct this problem that it still takes 4 to 6 weeks to get decent growth once they were fertilized more aggressively. This is not a good situation, adds to labor costs and eventually may lead to the crop being worth more in inputs than you intended to sell it at. Many growers have dumped

thousands of "turn-one" and some early "turn two" flats this last week. This is hurting profits. (Note: "turn-three" seems to not have any symptoms at all....it didn't see any heat stress!)

Our best bet for preventing this from happening next year is to re-examine the monitoring of pansy soil fertility, pH and watering practices. Getting the fertility on early, and at proper levels, especially if your plug producer tones their plugs, seems to also be essential. You might also ask your producer to tell you how they handle plugs. If in doubt, you can also test your newly arrived plugs for their nutritional status. We'll write about that next issue.

A toned plug is a good plug...you just need to know so you can adjust your management practices accordingly. We need to do a few trials to prove that this is the case next summer so we have facts by August. Dr. Thomas and I can get a project going to test the toned plug response to different fertility regimes under high heat and light once we get more information on how you actually grew your plugs this year. We can then try to replicate, as closely as possible, the conditions you had to grow in. The floriculture team is ready to help...will you join us? Let us know what you experienced this summer.

We strongly recommend growers purchase the new Pansy Production Manual that covers in great detail the "state of the art" production practices for pansies. You may do so by contacting the Georgia or North Carolina Flower Growers. (See the contents page of SEF). If you, the grower, can help us by sharing your experiences this summer, perhaps we will be writing another chapter in that manual, and you'll put more money in your pocket next December.

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