

GROWERTALKS

Columns

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Taking the Stress Off of Fall Pansies ... and Those Who Grow Them!

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For many regions, fall pansies are a landscape staple, providing impressive color through the fall and winter. Few crops can compete with the performance of pansies and violas during this time of year. In more northern areas, pansies provide fresh fall color and can overwinter to provide an early burst of color in the spring. Breeders have seen to it that there's a lot to enjoy: myriads of colors, flower sizes and new plant habits. From the grower perspective, pansies also provide a welcome profit center independent of spring.

Even with improved genetics, pansies are still a cool-season crop. Fall-flowering crops are typically started when the weather is quite warm, even hot, and therein lies the challenge. Success comes from taking steps to mitigate the stress and keep the pansies hitting on all cylinders until the weather is more to their liking.

The root system

Getting pansies off to a good start goes back to long before the first plugs arrive from the specialists. Selecting the correct plug size is an important first step. Tray counts in the 288 to 384 range provide substantial root systems, adequately sized to support summer production. Schedule plug shipments in manageable sizes to avoid holding them in trays for more than three to four days, as quality declines more rapidly in the summer heat.

Pansies have a fibrous root system; take care when extracting them from the plug trays. If you don't have a plug popper, take steps to ensure the plugs are pushed up from the bottom to keep the root systems intact and minimize stress to the crown.

Resist the urge to plant pansies deeply to compensate for a plug that stretched during holding. Proper use of PGRs can help to mitigate minor stretching in plugs and result in a nicely shaped plant.

Many growers start fall pansies under cover. Light is not the limiting factor this time of year, so reducing the heat with shade is the priority. Early crops (those started mid-September and earlier) should be started with shade for the first two to three weeks. Remove shade as soon as temperatures moderate, as continued use of shade will result in soft, stretched growth. Shade cloth also protects crops from heavy rains. This protection is critically important in the first seven to 10 days. In areas prone to storms and heavy rains, with crops started

on pads without a hoop structure, crops might benefit from the use of row cover fabric for seven to 14 days to take the edge off of the sun and reduce the chance of a summer thunderstorm washing out or burying the plugs.

Growing the crop off the ground is preferred, as the media will drain more rapidly and uniformly. Benches are ideal; however, inverted flats or 1-in. PVC pipes under the flats will serve the purpose.

Much of what's been discussed thus far protects the root system from stress to support rapid establishment. Pansy roots should be bright white and fluffy with root hairs, quickly filling the containers. Within three to four days of transplant, roots should be penetrating into the surrounding media. Roots tips should reach the edge of pots within seven days and approach the bottom of the pot within 14 days. Regularly scout the root systems during the entire crop cycle for signs of disease or poor performance and address problems promptly.

Fertility

Careful attention to culture and media moisture levels will generally help to avoid most root problems, though diseases can still strike the roots. Diseases can also impact the foliage, though nutritional problems are often a bigger problem.

Proper fertility is key for quality pansy crops and regular soil tests are important for growers to keep a finger on the pulse of the crop. Begin fertilizing at the time of transplant with a constant feed of 100 to 125 ppm. Don't be afraid to supply some of the nitrogen in the ammoniacal form, especially early on.

Maintaining media pH in a range of 5.3 to 5.8 is crucial for success. The availability of iron and boron are enhanced in this range and there are even implications for disease control that will be discussed later.

Iron is an immobile element. Under deficiency, the lower leaves cannot give up iron to supply the younger leaves. This causes easily recognized interveinal chlorosis to develop in the youngest leaves. The remedy is to adjust media pH to the ideal range and drench with a chelated iron product. Always rinse foliage following any application of iron to prevent a pitting burn.

Distorted or misshapen leaves in the growing tip may have their origin in a deficiency of either calcium or boron. Both calcium and boron require good transpiration to be moved up through the plant, so under hot and humid conditions, deficiencies may appear even though media levels appear to be sufficient. Saturated media reduces root function and further exacerbates the problem. Avoid saturated media, maximize airflow over the growing tips and be prepared to make foliar applications of calcium, if needed.

Pansy fertilizers are popular with many growers because of boosted levels of boron and iron; however, most are basic formulations. Growers with water sources high in alkalinity may need a different strategy to maintain proper media pH; contact your supplier for help in creating a fertilizer program for pansies based on water quality. Finally, outdoor production can be leached to the point of deficiency by heavy rains. Be quick to restore proper fertilizer levels after rain events, even if it means fertilizing before pots dry out.



Avoiding disease

Two diseases of the root and crown earn mention for being particularly challenging for fall pansy production. Thielaviopsis, also known as Black Root Rot, is a devigorating disease of pansies that's inhibited at a soil pH below 5.8. Warning signs include roots that darken and are reluctant to grow out of the original plug. Infestations are often random in appearance, with stunted pansies growing right alongside plants that are thriving. Unless you have a microscope and can identify Thielaviopsis spores in the roots, suspicious plants should be sent to a plant diagnostic lab for a positive identification.

Pictured: Thielaviopsis-infected roots struggle to grow out of the plug.

Curing an active Thielaviopsis infection isn't possible and infected plants cannot be salvaged. However, fungicide treatments are important to protect adjacent healthy plants. Given the susceptibility of pansies and the environmental stresses early in production, we recommend a preventative drench soon after transplanting. Products that provide effective protection against Thielaviopsis also provide curative and preventative control of Rhizoctonia. Strong sanitation strategies must be employed following an outbreak of Thielaviopsis, as the spores are very persistent. Contact your supplier for effective products and instructions to eliminate spores.

Phytophthora is a disease that's seldom found in winter/spring-grown pansies, but can cause substantial losses in late summer and early fall crops. Watch for sudden stem constriction and collapse at the crown. Warm temperatures and abundant splashing water favor this fast-moving disease. Earlier, the importance of keeping pansies up off the ground was emphasized. One reason is that the zoospores (swimming stage) of Phytophthora can readily move about and enter healthy plants via the drain holes in pots and flats.

There are effective fungicides that can be applied, but to be successful, it's important to reduce the risk for spread and learn to identify the early symptoms, as well as the conditions that make disease expression more likely. Consider incorporating a preventative product at planting. While Phytophthora is a water mold, similar to Pythium, not all products treat both diseases. Therefore, be sure to consult your supplier for a list of products with curative and preventative activity against Phytophthora.

Of course, always read and follow all label directions. Not all products are registered for use in all states or for all crops. Products other than those mentioned may also be safe and effective. **GT**

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