

TECH TIP: Outdoor Finishing of Fall Pansy & Viola Crops

To make sure that your plants finish uniformly and on time, follow these key steps to ensure strong take-off and growth this fall.

Feeding pansy and viola plugs:

Feed plugs *before* planting with 150+ ppm from 20-10-20 or other pansy fertilizer. At 200 ppm, the optimum micronutrients, nitrogen and phosphorus will be around the roots ensuring the plants will take off and grow rapidly.

Planting and then feeding doesn't result in uniform fertilization to all the roots, due to the "umbrella effect" that occurs when you water after planting. Make sure that the fertilizer is *in* the plug not *around* the plug.



Applying boron:

The photo to the right shows boron (B) deficiency (tip abortion) and calcium (Ca) deficiency (crinkled foliage).

Irrigation water should have at least 0.5 ppm Boron with every watering to make sure that boron is not limiting. Be sure to check your irrigation water for the amount of B, as levels higher than 1.5 ppm can be toxic. Applying extra boron during periods of high relative humidity and warm nights {>70F} will make sure that boron is not limiting. When boron is limiting, tip abortion can occur.



Outdoor growing-on fertilizer:

During periods of high relative humidity and warm nights, apply calcium and boron fertilizers since Ca and B are not absorbed during hot humid conditions. The 6-packs pictured show inadequate Ca and B in the first weeks after transplant.



Use fertilizers with high Ca levels and low ammonia levels (such as 15-0-15 or 14-0-14) after the initial feed if the water quality allows. Most fertilizers do not have sufficient B. The recommended rate in the fertilizer solution is 0.5 ppm. Supplementing with B from solubor or borax is needed to prevent distorted growth.

If B deficiency symptoms appear, apply a one-time application of 4-6 ppm B to prevent further distorted growth. Multiple applications at high rates can cause herbicide like symptoms.

Fungicide treatments:

Rapid plant collapse, lower leaf yellowing and black roots are all symptoms of potential Thielaviopsis infections.

A thiophanate- methyl fungicide, like Cleary's 3336 (1lb/100 gallons), applied every 7-14 days during rainy periods will reduce the chance of Thielaviopsis outbreaks.

Your plugs were treated within 14 days of shipping, so a follow-up application is needed within *one week* of receipt to protect plants from infection.



Holding plugs:

When plugs are held prior to planting for more than three days, feed with 100 ppm N from a pansy fertilizer (such as 13-2-13 or 14-4-14) with additional boron to prevent stalling of plugs after transplant. Whenever we observe uneven and stalled growth, a lack of fertilizer prior to transplant has occurred.

Stunted plugs:

If stunted plants (like those pictured) will not resume growth after fertilizing, run a trial with Fascination (0.5-1 ppm) to determine if Fascination can restart shoot growth. In some situations, multiple applications are required to resume growth. **(Important: Conduct small scale trials before applying to entire crop as Fascination can cause rapid uncontrolled elongation.)**

