



By Erik Runkle



How to Avoid GA Carryover

Gibberellins are plant hormones that are commonly used to increase plant height, overcome a plant growth regulator overdose and, for GA₄₊₇, inhibit lower-leaf yellowing. There are several GA products available for commercial floriculture producers that contain GA₃ or GA₄₊₇. Fascination and Fresco contain GA₄₊₇ as well as benzyladenine. Products that contain GA₃ and are registered for floriculture use include FlorGib, Gibberellic Acid and ProGibb T&O. GA₃ is about twice as effective in increasing plant height when compared to an equivalent rate and volume of GA₄₊₇, but GA₃ is not as effective at inhibiting lower-leaf yellowing.

Gibberellins are labeled for use as a foliar spray; thus, at an application volume of 2 quarts per 100 square feet, usually little or no chemical makes contact with benches or floors. However, if plants are moved and GA is applied repeatedly in a treatment area (such as spraying Easter lilies prior to shipping), GA can accumulate in that area. In addition, some growers have been experimenting with drench applications of GA, which increase the likelihood of contact with benches and floors. At least a few growers have reported excessive plant elongation when sensitive crops were grown on a concrete floor after a crop was treated with a GA drench or sprayed with GA₄₊₇ prior to shipping (Figure 1).

Like other chemicals, including some PGRs, GA can bind to plastic and concrete. At a later date, it can then be available to plants grown on those surfaces, potentially causing excessive growth, especially in GA-sensitive crops.

Firsthand Research

To confirm this, our greenhouse research technician Mike Olrich sprayed a small section of our greenhouse concrete floor with GA₄₊₇. Two days later, crops were placed on the GA-treated floor as well as an untreated floor (control). We observed additional elongation of seed impatiens within five days after plants were placed on the GA-treated floor compared to control plants, which grew normally. Other test crops showed smaller but noticeable GA effects, including larger leaves on geranium.

GA is water soluble, especially when the pH is above 5. While washing the growing surface with water after moving a treated crop should rinse away most of the GA, there are reports of excessive elongation of seed geranium growing on a concrete floor even after flooding the floor for two hours. If a particularly large volume or high rate of GA was used on a previous crop, growers may want to apply a solution of 500-ppm sodium



Figure 1. Geranium that was grown on the floor following a crop that had received a drench of GA (right) showed elongation when compared to plants grown in a control environment. A subsequent trial at MSU confirmed that GA₄₊₇ can bind to concrete and later be absorbed by crops, causing sensitive plants to stretch.

bicarbonate (baking soda). The baking soda binds to the GA, making it unavailable to plants. In our MSU trial, a few days after the GA application, we applied a baking soda and water solution at five times the concentration of the GA spray. This served as a third treatment. Crops grown on the floor treated with GA and then baking soda grew normally, without any apparent GA effect.

The Take-Home

GA products labeled for greenhouse use are very safe to use. They are effective at increasing plant height and, in some crops, preventing lower-leaf yellowing. However, if GA reaches a growing surface and is not removed before crops are placed on the bench or floor, sensitive crops such as seed impatiens, geranium and begonia can pick up the compound through the roots, resulting in unwanted elongation. ☒

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