TECH TRAINING:
PLANT GROWTH REGULATORS – GIBBERELLIN-BASED PRODUCTS

Gibberellins—including gibberellic acid (GA)—are natural plant hormones that stimulate cell elongation, seed germination and flowering. In commercial production, GA-based PGRs such as Florgib, ProGibb T&O, Fresco and Fascination are often used to promote stem elongation when crops are stunted and to overcome PGR overdose. Additionally, GA can be used to promote flowering in some species, increase stem length in cut flowers and manipulate canopy structure in tree-form potted crops. These tools must be applied with precision, as overuse or overapplication can result in excessive stretch, long internodes and poor canopy structure.

Tip 1: Know When to Use GA

- GA is a natural plant hormone that promotes stem elongation and flowering in some species. Use GA for the following:
    - When crops are *not* sizing up or are over-regulated.
    - To enhance flower size, number, speed or uniformity.
    - To grow tree forms of potted crops.
    - To elongate cut flower stems.
    - To break dormancy in some crops.
- Applications can "re-start" growth when plants have stalled from PGR overdose.

Fig 1. Dianthus grown with (right) and without (left) a GA spray.

Tip 2: Right Rate, Right Time, Right Place

- Because GA can have such a strong effect on growth, *spray uniformity* is essential.
    - Spray rates can range from 1 to 1000 ppm depending on crop and desired outcome, so use the product label and *GrowerTalks* Annual and Perennial PGR guides.
    - To promote growth, start with low rates at 1 to 5 ppm.
- Application response takes 7 to 10 days, so be patient before deciding to reapply GA to a crop.

Fig 2. GA can help overcome stunting from PGR overdose.

Tip 3: Understand the Risks

- Overapplication can cause excessive internode stretch, weak stems and poor canopy structure.
    - Once stems have stretched, the only way to reduce size is a physical pinch or trim. Switching back to a GA inhibitor can yield undesirable growth.
- Efficacy varies by crop, variety, growth stage and environmental conditions—so trialing is essential.
- GA-based products should be seen as a corrective or finishing tool, *not a routine production input.*

Fig 3. High GA applications can cause excess internode stretch.

DEEPER DIVE: THE WHY

GA Basics: Gibberellic acid (GA) is a naturally occurring plant hormone best known for promoting stem elongation. Growers often focus on GA inhibitors to control stretch and maintain compact growth, but there are times when increasing internode elongation is desirable. GA is available in different forms with different levels of efficacy. PGRs such as Florgib and ProGibb T&O use GA_3, stimulating elongation and overall growth. Other products, including Fresco and Fascination, combine GA_{4+7} with benzyladenine to produce similar effects. GA-based products are valuable tools in situations where plants are not sizing up appropriately and plants are delayed.

GA Uses: GA-based products are often applied when crops are too small, delayed or over-regulated by previous PGR applications. For example, if a GA biosynthesis inhibitor like paclobutrazol was applied at too high of a rate, GA applications can help crops resume normal growth and development. GA may also be applied to enhance flowering size, number, speed or uniformity in specific crops like geraniums. Besides stem elongation, GA can also be used to enhance flower size, number, speed or uniformity in certain crops—including cut flowers, grow tree forms of potted crops, elongate cut flower stems or even to break dormancy in certain crops.

Making GA Applications: The typical rate range for GA to promote growth is 1 to 25 ppm, but it is best to start with rates around 1 to 3 ppm. GA_3 is more active than GA_{4+7}, so lower rates should be used with GA_3. Overapplication is a serious risk with GA, so it's important to start with a low rate to prevent excessive stem elongation and development of weak stems. Application rates for cut flowers and tree-form potted crops may be much higher in the range of 50 to 1000 ppm depending on the desired outcome and crop. Always read the label and use resources like the *GrowerTalks* Annual and Perennial PGR guides to select effective rates. GA is typically applied as a foliar spray and is easily absorbed and translocated throughout the plant. It is essential to apply sprays uniformly and with sufficient coverage to yield a uniform response.

Risks and Limitations: While effective, GA-based PGRs must be used carefully. Overapplication can result in excessive stretch, weak stems and poor canopy density, leading to unsaleable crops. Responses vary depending on crop species, cultivar and environmental conditions, making small-scale trials essential before use. GA applications for growth promotion should be considered a corrective tool rather than a standard operating practice. They are particularly useful as a rescue application when PGRs have been overapplied or when crops need an extra push for height and uniformity.

Environmental and Cultural Considerations: Successful GA applications depend on favorable growing conditions. Plants should be actively growing, with adequate nutrition, water and moderate temperatures. Applications made under stress such as low fertility, drought or other environmental extremes may yield inconsistent or undesirable results. Before applying GA, growers should evaluate the entire production program, including prior PGR use, crop health and the target market window, to ensure GA will provide the intended benefit without compromising quality.

For more information, check out these additional resources:

GrowerTalks:* *2025-26 Plant Growth Regulator Guide for Annuals
GrowerTalks:* *2024-25 Growth Regulators for Containerized Herbaceous Perennial Plants
GPN:* *Using a GA to Increase Plant Height
GrowerTalks:* *The Doctor is In: Controlling Stem Elongation