GROWERTALKS

Features

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Utilizing PGR Best Practices

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Today, there's a wealth of plant growth regulator (PGR) options available to growers. A grower's toolbox includes products that control excessive plant growth or stretch, promote branching, prevent lower leaf yellowing and inhibit flower development, if desired.

Growers must set their growth management plans to fit the plants/cultivars they're planting to successfully produce the crop. However, growers have to be prepared to make decisions to tweak programs in response to changing conditions and market timings. PGRs are an integral part of both the overall plan and those adjustments that have to be made during production.

Companies like Fine Americas, Inc. constantly strive not only to improve their product lines, but also their understanding and use of the products they already have in the marketplace. Through continuing research on PGRs, research/extension leaders in university systems across the United States help in the ongoing process of keeping the industry updated on the latest advancements and product announcements.

To help give a broad overview of PGRs and best practices in using them efficiently, Fine Americas asked university researchers who work regularly with growth regulators to give their perspectives and expert advice in various areas of PGR usage, such as an improvement to production of a particular crop with a PGR, how to address problems/issues encountered and/or advice on improving the use of PGRs.

This month's article—the first in a series of three featured in *GrowerTalks*—will focus on perennials and bulb crops.

PGRs for Perennials

Joyce Latimer, Virginia Tech University

One of the truly niche fits for Configure (BA or benzyladenine) is in the production of echinacea (commonly known as purple coneflower). Configure has become a regular tool used by many echinacea producers to improve the basal branching and pot fill of this popular crop. Nearly every cultivar and hybrid tested has been responsive to Configure. Typically, one foliar application of 300 to 600 ppm of Configure doubles the number of basal branches, which improves early pot-fill and marketability.

Applying Configure to actively growing (two to four leaves), well-rooted plants in the liner flat and again within a week after potting results in a greater number of branches. Application rates vary from 200 to 600 ppm for Configure. Some spotting and leaf crinkling, not consistent with the cultivar, was observed with some applications at the higher rates, but these have not been evident on finished plants. Growers should use the recommended spray application volume (1 gal./200 sq. ft.) to thoroughly wet leaves. Good coverage is critical since Configure is primarily taken up by the leaves and, for echinacea, via the buds in the basal crown.

Be sure to allow two weeks between Configure applications to avoid phytotoxicity issues. For summer production, additional applications may be made through the bulking period, again at two-week intervals.

PGR Use in Flower Bulbs

Bill Miller, Cornell University

Most potted bulb crops benefit from a PGR application for height control. Over the years, ethephon sprays (Collate, Florel, Ethrel) have been the mainstay for narcissus and hyacinth height management. Interestingly, height management in these crops is more for the retail chain and final consumer than for the grower, as these crops are reasonably compact when they leave the greenhouse.

It's only in the low-light retail or home environment that excessive stretching happens. In the last several years, Cornell University research has shown positive results with Collate substrate drenches. Hyacinths and narcissus both respond excellently, with strong growth control lasting through the home consumer phase.

More recently, Cornell research focused on adapting Collate for tulip growth control. While paclobutrazol or flurprimidol drenches generally work well, they're less effective at reducing retail and home upper stem stretch, a major issue for tulips. Collate use on tulips is much more difficult than with hyacinth or daffodil, as small tulip flowers can be susceptible to ethylene.

As the flower bud develops in the greenhouse, it gradually becomes less sensitive. In fact, ethephon has long been a component of certain cut tulip post-harvest treatments, where it reduces elongation of the top internode. (To note, it can be used safely due to the loss of ethylene sensitivity by the time the stem is cut.) Cornell research shows promise for using late-crop Collate sprays to reduce upper stem elongation in pot tulips, which would be of benefit for retailers and consumers. Additionally, Cornell researchers have grown excellent tulip crops using Collate drenches, although the timing of these, relative to bud development, needs further study.

In conclusion

Planning PGR usage to fit both the crop being grown, as well as the growing conditions, is key. Growers who develop a growth management plan before planting are much more likely to obtain the results they desire, which results in less loss and greater profitability. Additionally, PGRs provide great tools for growers to prevent excessive growth/stretch, increase branching and more accurately time/stage plants.

Rates will vary by the plant type and cultivar, so growers should refer to recommendations that are provided by the plant breeder for the correct rate. When making applications of PGRs, growers should always read and follow label directions for the product(s) they're applying.

Remember to watch for the next two issues of GrowerTalks for more helpful insights and advice from leading university researchers concerning the use of PGRs. **GT**

> *For additional information on PGRs, contact your local Fine Americas sales representative or visit www.fine-americas.com.*

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