



# Know Your Application Techniques

By Erik Runkle

Be sure to select the proper PGR application technique to achieve your desired crop size.

One of the most frequently asked questions I get from growers is about plant growth regulators (PGRs). There are many different ways to apply PGRs to inhibit stem length and thus produce more compact plants. Most commonly, chemicals are sprayed on crops at a rate of 2-3 qt. per 100 sq.ft. However, some growers are switching to sprenches (a heavy overhead spray applied so the top one-half to 1-inch of the media is moistened) or drenches applied from the top or the bottom of the pot.

Most PGRs are absorbed by the roots, stems and leaves. Some exceptions are PGRs with the active ingredients daminozide (B-Nine, Chemtura Corp., and dazide, Fine Americas) and ethephon (Florel, Monterey Chemical), which are absorbed primarily by the leaves. Therefore, media applications with these products are ineffective.

Products containing paclobutrazol (Bonzi, Syngenta Professional Products; Paczol, Chemtura Company; and Piccolo, Fine Americas), uniconazole (Sumagic, Valent USA Corp.), flurprimidol (Topflor, SePRO Corp.) and ancymidol (A-Rest, SePRO Corp.) are all effective as sprenches and drenches.

## Sprenc/Drench Effectiveness

Sprencs and drenches have a longer period of activity than sprays. Therefore, fewer applications are required. This can reduce the labor needed to keep a crop at a desired height. In addition, much lower rates are used with sprenches and drenches than with sprays because the volume of the application is greater.

With sprays, multiple applications are usually needed to keep many crops under control. One advantage to using sprays is you have more opportunities to evaluate whether or not growth needs to be suppressed. This will help determine whether or not a spray application is required. This also provides a better opportunity to fine tune your crop height. Unfortunately, it does require more time and labor.

Sprencs and especially drenches give growers opportunities to apply chemical products fewer times and still produce plants of a desired height. In addition to potential labor savings, drenches can also have fewer negative side effects

than sprays. In my research experiences, I have observed that sprays have a greater potential to delay flowering and reduce flower size compared to drenches. For example, when I applied Sumagic as a spray or drench to bedding plants, I saw a delay in flowering on some long-day crops when a spray was used. No such delay was observed when I used a lower rate — and a higher volume — as an overhead drench.


In poinsettia production, I have observed similar effects with sprays and drenches. Late sprays of PGRs can delay flowering and produce small bracts. A drench at a much lower rate — as low as .10 ppm of paclobutrazol soon after pinch — can produce a high-quality poinsettia crop. Only one or two light drenches at low rates may be required during the entire crop to produce plants at a desired finish height without a significant reduction in bract size.

Sprencs are usually applied more than once to a crop but not as often as sprays. They provide a balance between ability to control plant height and the number of applications required. Some of the best bedding plant crops I have seen were produced by using several sprenches, especially on aggressive crops.

## Exercise Care

One of the drawbacks to sprenches and especially drenches is you have to be much more careful with your rate and application volume. If a drench or sprench is applied at an excessive rate or volume, it can take a long time for the crop to metabolize the PGR and grow to a desired size. Therefore, growers have to be more cautious about the rates and volumes they use.

Growers who have little experience with drenches may want to start using sprenches first to gain experience with the longer residual effect. They should also err on the side of caution when applying drenches by using rates at the low end of those recommended by researchers, extension agents or growers. Many bedding plants can be produced in the Midwest and Northeastern United States using a single one-half- to 2-ppm drench of Sumagic or a 4- to 8-ppm drench of paclobutrazol soon after transplant.

Be sure to conduct your own trials on a small scale to determine appropriate rates and volumes of PGRs to apply to your crops. For example, a 4-ppm drench of Bonzi on pansy will be too much. A drench with one-quarter ppm may be all that is needed for a desired response. 

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*Erik Runkle is assistant professor and floriculture extension specialist in the Department of Horticulture at Michigan State University, East Lansing, Mich. He can be reached at [runkleer@msu.edu](mailto:runkleer@msu.edu) or (517) 355-5191.*