



PGR Drench Guidelines

A PGR drench is an application of a relatively large volume of a PGR solution at a low concentration to the growing media. Learn more about which chemicals are appropriate for drenches as well as the right drench volumes and appropriate rates.

By Erik Runkle

Plant growth regulators (PGRs) can be applied in numerous ways, including as a media spray, foliar spray, sprench, drench, liner dip and bulb/tuber/rhizome soak. A PGR drench is an application of a relatively large volume of a PGR solution at a low concentration to the growing media. Drenches are often applied to serve one of two purposes: to inhibit stem extension for a long period of time beginning soon after transplant or to “stop” stem extension once a plant reaches its final desired height.

A drench can provide a long-lasting response because the PGR is retained by media components and is available to plant roots over a period of time. The chemical is absorbed by plant roots and translocated to the plants’ growing points where it inhibits subsequent elongation.

Drenches may be more desirable than sprays because they are typically applied once, whereas sprays are often applied multiple times. In addition, sprays applied late in the crop can delay flowering, whereas drenches typically do not.

Chemicals And Volumes

Products containing the active ingredient paclobutrazol (Bonzi, Paczol and Piccolo) or uniconazole (Concise and Sumagic) are commonly used as drenches, although ancymidol (A-Rest), flurprimidol (Topflor) and chlormequat chloride (Cycocel) also are effective.

Regardless of chemical, a standard volume of PGR solution should be applied to each pot or finish flat to achieve a uniform drench response. Suggested volumes are 2 oz. per 4-inch pot, 3 oz. per 5-inch pot, 4 oz. per 6-inch pot, 15 oz. per 10-inch hanging basket and 20 oz. per 606 or 1801 flat. Drenches should be applied to moist (but not wet) media, and none should run through the pot.

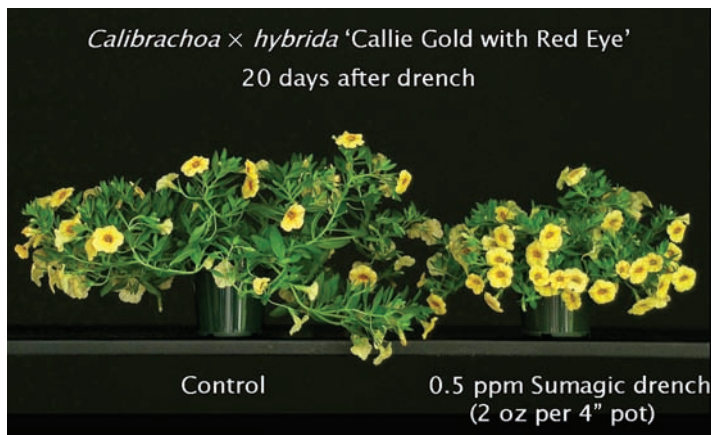
Using Appropriate Rates

Appropriate drench rates depend on the chemical, the species/cultivar, the magnitude of the response desired, the production stage when a drench is applied and the environmental conditions. Some growers develop two drench rates: one to be used early in the finish stage and a second higher rate if needed to “hold” plants, often referred to as a “stop rate.”

When producing plants that consumers will likely plant outdoors, I strongly discourage the use of drench stop rates. The reason is that high drench rates applied late in the crop can have a long-lasting effect, and consumers planting these crops outdoors can experience slow growth and thus have an unfavorable experience. Stop rates are more appropriate for crops that will likely remain in their containers, such as poinsettias, chrysanthemums and hanging baskets.

In the past several years, we’ve performed numerous PGR trials at Michigan State University to identify appropriate rates of paclobutrazol and uniconazole applied to bedding plants and perennials during mid- to late-spring conditions. For example, a single drench of Sumagic (uniconazole) applied 7-14 days after transplant into 4-inch pots was effective at one-fourth to one-half ppm for calibrachoa, one-half ppm for scaevola and 2 ppm for more aggressive species like petunia and verbena. Higher drench rates of paclobutrazol products are often used on aggressive bedding plants, typically ranging from 1 to 4 ppm. These rates will need to be adjusted based on your desired response and climate. **GPN**

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Sumagic (uniconazole) on calibrachoa. (Photo: Cathy Whitman)

Additional Drench Guidelines

- Drenches at low rates delivered 7-10 days after transplant are generally the most cost-effective drench application strategy.
- Drenches delivered by subirrigation generally require a lower (25-50 percent) rate than drenches applied to the top of the media.
- Bark (especially pine bark) can strongly bind some chemicals and, thus, usually slightly higher rates are required when growing in a media containing at least a moderate amount of bark.
- Review the chemical labels for more information.
- Conduct your own drench trials on a small scale to determine appropriate rates for your crops and conditions.

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