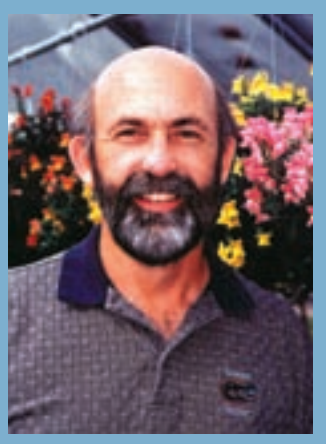
ask us

About Plant Growth Regulators

By
Joyce Latimer
PGR — Perennials
jlatime@vt.edu

Joyce Latimer is professor and extension specialist for greenhouse crops in the Department of Horticulture, Virginia Tech University, Blacksburg, Va. Jim Barrett is professor of floriculture at the University of Florida, Gainesville, Fla., and GPN's consulting editor.

By
Jim Barrett
PGR — Annuals
jbarrett@ufl.edu



Q **Can I use liner dips or drenches for growth regulation of herbaceous perennials?**

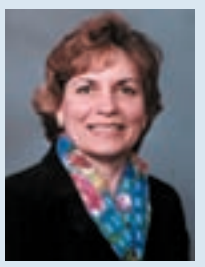
A Yes, definitely! Liner dips are applied by soaking the plug root ball in a solution of a soil-active PGR like paclobutrazol or uniconazole. The same effect can be obtained by drenching the liner tray to root-zone field capacity. Liner dips provide excellent early control of vigorous perennials and can be effective on hard-to-control crops. While spray applications have been generally ineffective, we have seen good control with liner dips of ornamental grasses like miscanthus 'Gracillimus' and calamagrostis 'Karl Foerster' at rates of 1- to 2-ppm Concise (uniconazole). Coreopsis 'Sweet Dreams' has been very responsive to 0.5- to 1-ppm Sumagic (uniconazole) or 2- to 4-ppm Paczol (paclobutrazol). Notice that these rates may actually be lower than the recommendations for some of the vegetative annuals. These are applied by dipping plug trays when the plugs are ready for irrigation. The dip may last from 30 seconds to two minutes (establish your own consistent procedure). The beauty of the liner dip is that it provides baseline control on vigorous crops, delaying or even eliminating the need to apply additional PGRs by spray or drench techniques later. I want to make one other note on drenches as we get into the spring season. We are seeing more PGRs being applied to herbaceous perennials through the irrigation systems — watering in or drenching. We have identified multiple cultivars of daylilies (hemerocallis) that are very sensitive to paclobutrazol or uniconazole applied as drenches. While the vegetative growth is not overly stunted, flower stalk development is severely stunted (9 to 14 weeks after treatment). Flower stalk stunting occurred consistently with rates as low as 4-ppm Bonzi (paclobutrazol) or 0.5-ppm Sumagic, each applied at a drench volume of 10 fluid ounce per trade gallon pot.

Q **What is the sprench application method and when do I use it on annuals?**

A The word "sprench" is a combination of the words spray and drench and infers that the growth regulator is applied in a way that is a hybrid between spray methods and drench methods. Sprench is not a technical or legal term, and you may or may not find it specifically spelled out on a chemical label. A sprench application is used only with those chemicals that are active through the media: ancymidol, flurprimidol, paclobutrazol and uniconazole. These chemicals have considerably more activity in the media than when applied as a spray to the above-ground plant shoots. It is not used with products that have little or no activity through plant roots: Cycocel (chlormequat chloride), daminozide, Fascination (cytokinin/gibberellic acid) and Florel (ethephon).

With the media active chemicals, the volume of water applied in a spray application is 2-3 quarts per 100 square feet of bench area. This is designed to cover plant stems and provide some runoff of the spray solution into the media. In the case of young plants where the foliage does not cover the media, some of the spray solution lands directly on the media surface. These chemicals are widely used successfully in spray applications. A sprench application would be using the same equipment and applying a volume of 5-8 quarts per 100 square feet with the objective of getting more chemical into the media. You might think of this as a low-volume drench using spray techniques. Compared to spray applications, a sprench provides better activity and more uniformity. The sprench technique is used when spray applications are easier to do than higher-volume drench applications. This can be on plugs either early during or just after germination or later before transplanting. It can be used on liners before transplanting. A sprench is also useful on newly transplanted flats or pots that are still spaced pot-to-pot. It is important to adjust the concentration (ppm) of chemical in the solution for a sprench to compensate for the higher volume compared to a spray. As a general example, 10 ppm of a chemical used in a spray of 2 quarts per 100 square feet would compare to a 3-ppm sprench at 6 quarts per 100 square feet for a starting point in testing the procedure. GPN

For some special attention from our panel of experts, send your disease, pest or growth-control questions to the appropriate person, and look for the answer in an upcoming issue of GPN.



A.R. Chase
Diseases
archase@chaseresearch.net

Jim Bethke
Insects
jabethke@ucdavis.edu