



Greenhouse Chemical Trends 2006

PGR Trends: New & Novel

This year's plant growth regulator update focuses on post-patent and experimental products as well as the PGR application evolution.

By Jim Barrett

Post-patent products, new experimental products and an evolution in how chemicals are applied are the topics in this year's look at plant growth regulator (PGR) trends. All of our registered growth regulators are older chemicals and no longer patented. Even the newest commercial product, Topflor (flurprimidol), is off-patent. This situation has resulted in the introduction of several new products, and we now have multiple products for most of the active ingredients (see Figure 2, right). In the short term, this is causing a little confusion because it is difficult to keep all of these new products straight and we are not accustomed to referring to PGRs by the active ingredient. Though, the many competing products are causing some reductions in PGR costs.

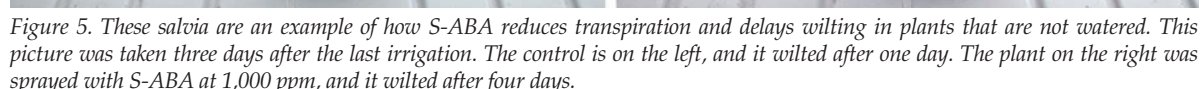
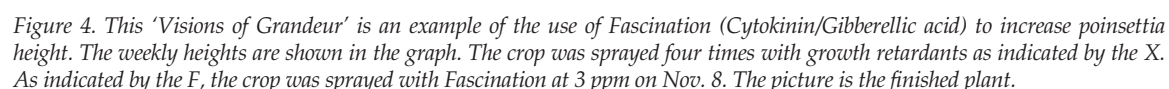
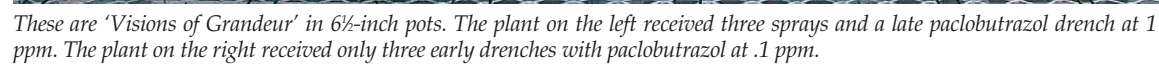
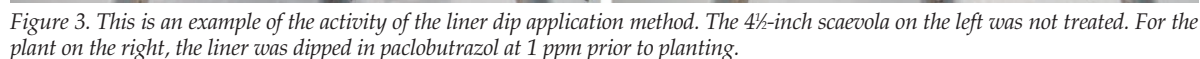
It is common to get the question about which products a grower should use. Some progressive chemical companies are investing in new product development and new use information and are delivering this information to growers. Some are supporting the industry by sponsoring field days and other industry events. My personal suggestion is to



Figure 1. These are 'Supertunia Royal Velvet' in 6-inch pots. Picture was taken seven weeks after planting. Liners were pinched at planting. The treatments were A, Control; B, paclobutrazol drench at 4 ppm applied day 28; C, daminozide spray at 2,500 ppm day seven and paclobutrazol drench day 28; and D, Florel at 500 ppm day seven and paclobutrazol drench day 28.

Floriculture Crop PGRs		
Active ingredient	Product	Company
Anti Gibberellic Acid		
Ancymidol	A-Rest	SePRO
Chlormequat chloride	Cycocel Chlormequat E-Pro	OHP Etigra
Flurprimidol	Topflor	SePRO
Daminozide	B-Nine Dazide	Chemtura Fine Americas
Paclobutrazol	Bonzi Downsize Paczol Piccolo	Syngenta Greenleaf Chemical Chemtura Fine Americas
Uniconazole	Concise Sumagic	Fine Americas Valent
Others		
Ethephon	Florel Brand Pistill	Monterey AgResources
Gibberellins A ₄₊₇ and 6-benzylaminopurine	Fascination Fresco	Valent Fine Americas
Gibberellic Acid (GA ₃)	Florgib ProGibb	Fine Americas Valent

Figure 2: This is a partial list of PGRs for floriculture crops. The chemicals are listed by active ingredient.



While we are on poinsettias, the other significant change in the use of PGRs on poinsettias is Fascination (cytokinin/gibberellic acid) to promote elongation. Figure 4, left, is an illustration of this effect on a 'Visions of Grandeur' poinsettia crop that was about 2 inches short three weeks before finish. Growers throughout the country have been successful with Fascination. For increased height, the earlier it is used, the better the final plants look. If you add 2-4 inches of growth to a plant, the more nodes it is spread over, the better. For increasing bract size, the strategy is to use Fascination 10 days or so before the crop is finished when there is little increase in height that can occur. Erik Runkle (Michigan State University) and his group published a good article on this topic in the September 2005 issue of *GPN* (search for it at www.gpnmag.com). ♦

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Three PGRs In Development

There are some novel PGRs currently being developed. The first I want to mention is S-ABA, which is the naturally occurring plant hormone that causes stom-

atal closure and stops transpiration when a plant undergoes drought stress. Valent Biosciences is developing and evaluating S-ABA on floriculture crops. The first application will be to plants at the time of shipping to reduce

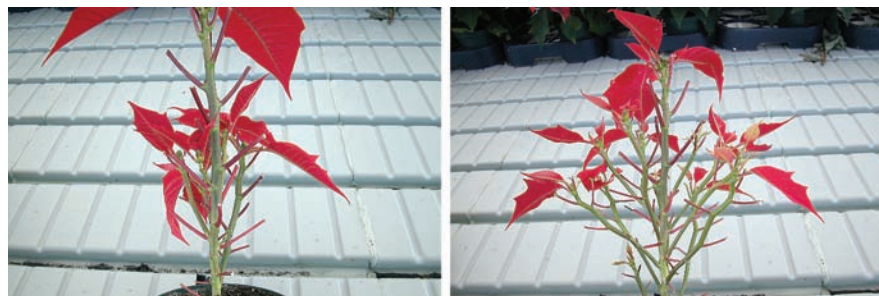


Figure 6. The leaves were removed from these unpinched poinsettia plants to show development of the lateral branches. The one on the right was treated with a experimental product that is being evaluated for its ability to promote branching.



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the frequent drought stress that occurs in retail. The effectiveness of S-ABA can be seen on salvia in Figure 5, page 27, where the treated plant went four days before wilting compared to one day for untreated plants.

Prohexadione (GWN-6010) is an anti-gibberellin that is well established in the tree, fruit and turf markets. While we seem to have a glut of anti-gibberellin chemicals, prohexadione is interesting because it is highly mobile in the plant and not active through the media. Thus, it should have the advantages of being easy to use as a spray and not having residue problems. The Gowan Company is evaluating GWN-6010 at three universities, and these trials should give us an idea of how well it fits our needs in floriculture.

The last chemical to mention is an interesting situation. This chemical stimulates growth of lateral branches as shown in the poinsettias in Figure 6, above. There is an obvious need for a product that promotes branching. Because of the competition in the PGR market, the company working on this product does not want to reveal any information during development. It will be registered first for use on woody nursery crops, which may occur in 2007. For herbaceous crops, it has proven more difficult to achieve success, and we have to work on different application strategies. Time will tell if we can make this work. **GPN**

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