Update: Early Drenches on Poinsettias

The latest techniques for adjusting rate according to vigor.

By Jim Barrett

Applying PGRs as a drench early in the production of poinsettias provides better control, is often easier than sprays and has less effect on bract development. More important, is that early drenches can be applied safely after the spray cutoff dates.

The past couple of years, an increasing number of growers have been looking at this technique, with positive reactions coming from both Northern and Southern growers. "Poinsettias: Early PGR Drench?", which appeared in the August 2004 issue of *GPN*, was some of the first published information on this concept. (If you have 2-3 years of old magazines taking half of your desk space and still can't find that issue, you can search for the article at www.gpnmag.com under the Poinsettia Zone.) But it only sparked the need for more detailed research.

Figure 1. Four groups of 'Monet Twilight' plants were given different PGR treatments. All groups received a B-Nine/Cycocel spray at 1,500/1,250 ppm on Sept. 30. In addition: Group 2 received early Paczol drenches at 0.1 ppm on Oct. 7, Oct. 21 and Nov. 4 and a late Paczol drench at 1.0 ppm on Nov. 18; Group 3 received an early Paczol drench at 0.2 ppm on Oct. 7 and a late Paczol drench at 1.0 ppm on Nov. 18; and Group 4 received an early Paczol drench at 0.3 ppm on Oct. 7 and late Paczol drenches at 0.5 ppm on Nov. 18 and Nov. 27.

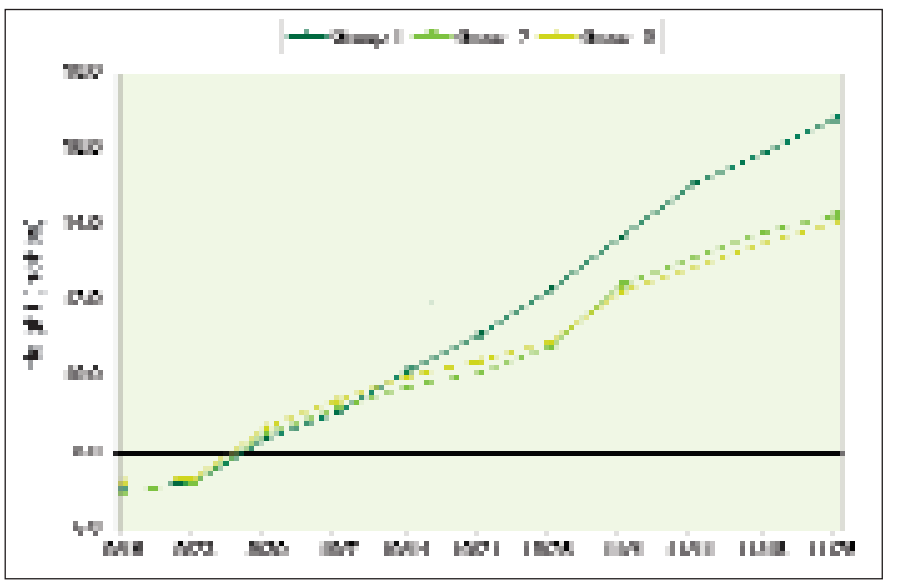
These plants left to right are from 'Monet Twilight' Groups 1 and 2 described in Figure 1, above.

EARLY DRENCH BASICS

As a review of the early drench strategy: the rate used is **much** lower than what is used for a late drench — about 10-20 percent of the late drench rate. The early drench is applied as needed using the same decision process as currently used for making PGR spray decisions. The early drench can replace either some or all of the sprays. There is not a cutoff date for early drenches, so they can be applied in late October. While early drench applications are safer than sprays done at the same time, like all PGR applications they can cause problems if the amounts used are too high.

The work presented in this article is a look at different rates on varieties with varying levels of vigor. The early drenches with Paczol (paclobutrazol, Crompton Corp.) are used as needed in combination with B-

Figure 2. Three groups of 'Red Velvet' plants were given different PGR treatments. All groups received a B-Nine/Cycocel spray at 1,500/1,250 ppm on Sept. 30. In addition: Group 2 received early Paczol drenches at 0.1 ppm on Oct. 7 and Nov. 4 and a late Paczol drench at 1.0 ppm on Nov. 18; Group 3 received early Paczol drenches at 0.15 ppm on Oct. 7 and Nov. 4 and a late Paczol drench at 0.5 ppm on Nov. 18.



These plants left to right are from 'Red Velvet' Groups 1 and 2 described in Figure 2, above.

Nine/Cycocel (Daminozide, Crompton Corp/Chlormequat Chloride, ➧ OHP) sprays and late Paczol drenches. In evaluating the results shown in this article, it is important to recognize that the weather in fall 2004, when these trials were conducted, was cooler with lower light levels than normal, by Florida standards. This resulted in lower PGR requirements. Graphical tracking lines are not shown in the figures here but were used to decide when to make drench applications, just as one would with sprays.

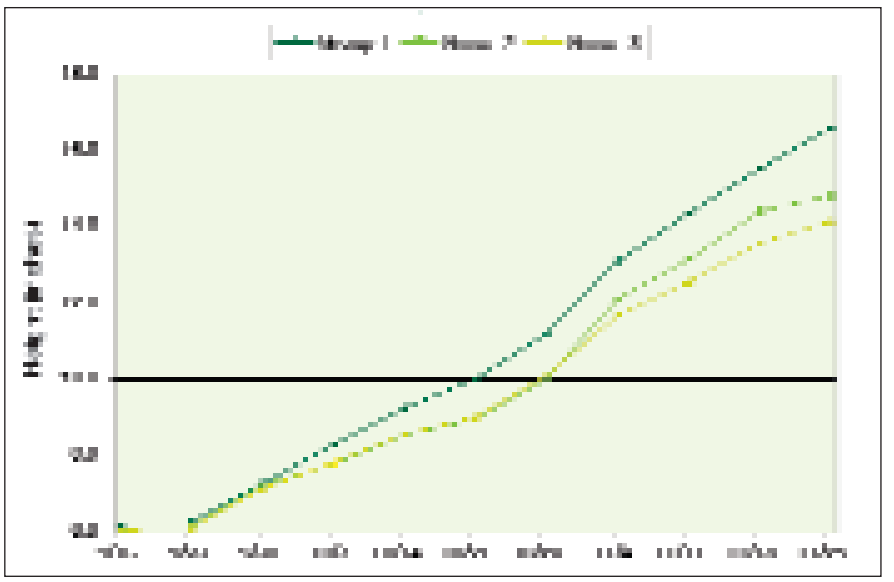
Again, as with most PGR situations, using the best rate for a variety is important. Last year's article had illustrations where just one early drench was used as the only PGR application. However, the serious problem with that approach is it does not allow for changes in growth due to weather or cultural situations. The better option is to use lower rates that allow for making 2-3 early drenches, depending on what the crop does.

CROP EXAMPLES

'Monet Twilight' is one of our most difficult varieties for height control, as it is vigorous and is not very responsive to PGRs. In Figure 1, page 78, three different approaches are shown for producing a crop with a 14- to 15-inch target height. Group 2 received three early drenches at 0.1 ppm. Where 0.2 ppm was applied, only one application was needed in this cooler year. For the 'Monet Twilight' shown in last year's article three applications of 0.2 ppm was required. Our experience from previous work with 'Monet Twilight' is that 0.1 ppm is not high enough. With difficult varieties like 'Monet Twilight' 0.2 ppm will probably be the best starting point, and then applications or rates can be adjusted as needed.

'Red Velvet' is about as vigorous as 'Monet Twilight', but it responds better to a PGR application, as can be seen in Figure 2, page 78. Two approaches are shown for producing a 14- to 15-inch crop. First (Group 2), a spray at two weeks after pinch, two early drenches at 0.1 ppm and then a late drench at 1.0 ppm. Second (Group 3), a spray at two weeks, two early drenches at 0.15 ppm and a late drench at 0.5 ppm. For 'Red Velvet' early drench rates of 0.1 or 0.15 ppm appear to work well and allow flexibility. Many growers will look at the 'Red Velvet' photo on

Figure 3. Three groups of 'Freedom Red' plants were given different PGR treatments. Group 1 received no PGRs. Group 2 received early Paczol drenches at 0.075 ppm on Sept. 30 and Nov. 4 and a late Paczol drench at 1.0 ppm on Nov. 18 Group 3 received an early Paczol drench at 0.1 ppm on Sept. 30 and a late Paczol drench at 1.0 ppm on Nov. 18.



These plants left to right are from 'Freedom Red' Groups 1 and 2 described in Figure 3, above.

Suggested starting rates for early drenches with paclobutrazol

Vigorous varieties
like 'Monet Twilight' . . . . . 0.2 ppm

Medium vigor
like 'Freedom Red' . . . . . 0.1 ppm

Very low vigor varieties
like 'Chianti' . . . . . 0.05 ppm

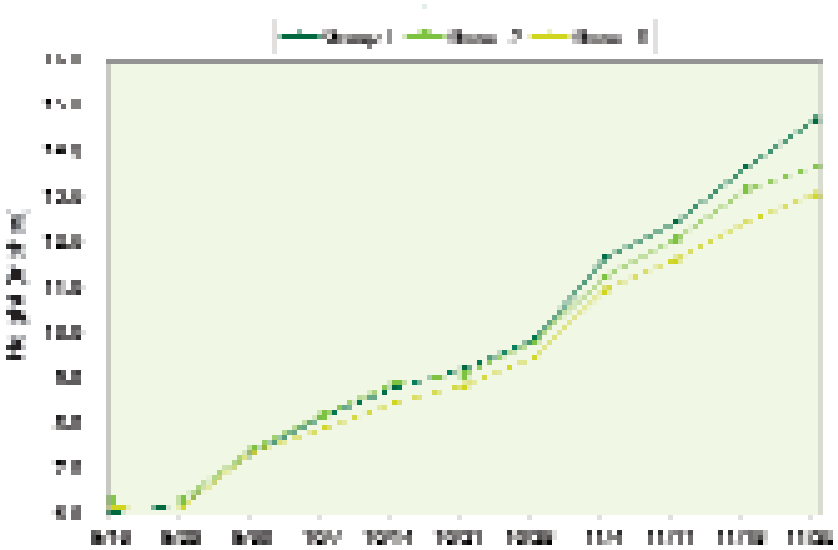
page 78 and think that the 17-inch plant, which was not drenched, looks better than the treated plant. This is the nature of 'Red Velvet'. It makes a great larger plant but is not as good in smaller formats.

'Freedom Red' has moderate vigor, and you need to avoid over stunting it early in the crop. It can, however, stretch late and often needs a late drench. In Figure 3, left, plants in Group 3 were given an early drench at 0.1 ppm and then did not need another early drench. Notice how this is similar to the 0.2-ppm treatment (Group 3) for 'Monet Twilight' in Figure 1, page 78. An early drench rate of 0.1 ppm seems to be good for 'Freedom Red'. In warmer years additional applications would be used.

'Chianti' has very low vigor. It requires little PGR and can easily be stunted. The 'Chianti' target height was 13-14 inches. Figure 4, page 82, shows that the 0.05-ppm rate (Group 2) had very little affect, and five weeks after the treatment there was less than an inch difference between the treated and nontreated plants. Plants in Group 3 were drenched with 0.075 ppm, and the effect was almost too much for this cool year. Low vigor varieties like 'Chianti' are more tricky and care is needed to adjust the treatments based on factors affecting growth. While the 0.05 rate is so low it will not affect a crop like 'Freedom Red', it is a good starting point for varieties like 'Chianti'.

The picture of 'Visions of Grandeur' (see page 82) shows plants from three different crops that were part of a challenge I made to the students in my class last fall. This is a new variety that is a strong grower, and we have found that it is a little difficult to control with sprays. I made the PGR decisions for the plant on the left, which finished at 17 inches. It was given three sprays and a late drench. Students did the other two plants, and I told them they could only use drenches — no sprays. Their target was 14-16 inches. The students who grew the crop in the middle hit the low end of the target with three early drenches at 0.1 ppm. The students who did the crop on the right used three drenches at 0.2 ppm, and the crop was well short of the target height. Given the amount of growth the students were seeing in the crops being sprayed, it does not surprise me that they over did it a little. However, notice in the picture how much better bract develop there is on the plants

Figure 4. Three groups of 'Chianti' plants were given different PGR treatments. Group 1 received no PGRs. Group 2 received an early Paczol drench at 0.05 ppm on Sept. 30 and a late Paczol drench at 0.5 ppm on Nov. 18. Group 3 received an early Paczol drench at 0.075 ppm on Sept. 30.



These 'Visions of Grandeur' were planted Aug. 30, pinched Sept. 13 and grown under natural days. The plant on the left is 17 inches tall and received B-Nine/Cycocel sprays on Sept. 20 and 28, a Cycocel spray on Oct. 12 and a late Paczol drench at 0.5 ppm on Nov. 9. The plants in the middle and on the right measure 14 inches and 12½ inches, respectively. They both received early Paczol drenches on Sept. 20, Oct. 4 and Oct. 18 — the middle plant at 0.1 ppm, the right plant at 0.2 ppm.

that were controlled with the early drenches. 'Visions of ➧ Grandeur' appears to be easy to control with drench treatments, and the 0.1 rate looks like a good starting point.

RECOMMENDATIONS

The illustrations shown here were all from Florida-grown plants. The typical situation is that PGR rates that work best in cooler climates are about half of the best Florida rates. However, for the early drenches we are not trying to get all the control with one treatment and are varying the number of applications. In discussing the procedure with those who are doing it in cool climates, their best rates are not that much different from the Florida rates. Growers will need to do trials with this new technique to determine the optimum rates and strategies in their own situation.

I will end with a warning. It is easy to mix up 1.0 ppm and 0.1 ppm; be careful with terminology and calculations. I have already seen the situation where the head grower wanted to do a 0.1-ppm drench in mid-October but the worker thought he meant 1.0 ppm, since that is the drench rate from previous years. GPN

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