Taming the Beasts!

Getting vegetative annuals from cutting to retail can seem like a battle for supremacy — but not with the right PGR techniques.

By Roger C. Styer

Top: A perfect Wave petunia basket ready to ship. Bottom: Repeated Florel applications will create heavily branched verbena like this one. (Photos this page courtesy of Roger Styer)

Now that the spring season is behind everyone, it's time to look back at how well you were able to grow vegetative annuals. I know I have written about growth control of these plants before, but I think this is a good time to reiterate what was previously written, as well as emphasize some new techniques you can use to tame the wild beasts we call vegetative annuals. So, whether you grow for wholesale and ship long distances or grow for your own retail sales, let's review what is needed to give the consumer a consistent quality product.

THE PROBLEMS

As most of you already know, growing a wide assortment of vegetative annuals requires knowledge of their vigor, as well as flowering times and specific cultural needs. Not all varieties of vegetative petunias, calibrachoas, verbena or ipomoea need the same amount of chemical growth regulators. Sometimes, getting cuttings or liners from different suppliers of the same variety may result in different growth habits. With this in mind, the first thing you need to do is understand how vigorous any variety will be. Once you put that variety into a pot-tight situation or in a combo with other plants, you can lose control of the growth in a hurry. When growing combos it is very difficult to apply a growth regulator drench to control the vigorous plants without adversely affecting less vigorous plants.

I have seen a wide range of vigor in spreading petunias, with the situation only getting more complicated. Within the Wave series, Purple and Misty Lilac are the most vigorous. But if you also grow Easy Waves you need to back down on the drench concentration, or you'll stunt the plants. And if you grow Tidal Waves, you need to hit them over the head with a 2 x 4 to control them. On top of all this, vegetative petunias have a wide range of vigor as well. The trick is to recognize the vigor differences early and establish different drench rates or timing for all of them. But how many growers really do this?

With more emphasis on growing vegetative annuals in pots close together, recognizing vigor differences and controlling them properly becomes extremely important, especially if sales are slow due to weather. Do you really want to trim pots when they get overgrown? If you are a small grower, maybe so. But growers who have large acreage are not likely to do this. I think many growers have been surprised at how fast some plants get out of control when grown pot-tight. Some crops are insidious creepers, such as Purple Wave petunia and bacopa, sneaking into their neighbors pots before you know it. Other crops grow tall once they touch each other. I often see overgrown pots ➧

Figure 1. Vegetative crops responsive to Florel

Bacopa	Lantana
Bidens	Lavandula
Brachycome	Lobelia
Calibrachoa	Lysimachia
Coleus	Nemesia
Diascia	Osteospermum
Evolvulus	Petunia
Fuchsia	Plectranthus
Geraniums,	Purslane
ivy and zonal	Salvia
Helichrysum	Scaevola
Herbs	Snapdragons
Ipomoea	Verbena
Lamium	Vinca Vine

because growers were too busy with other things during the main spring season. Growth control of pot-tight crops should be a high priority every week of spring.

Another problem area I see all too often is overgrown hanging baskets. If you grow for wholesale and have to ship on carts, you need to control the growth at a point where the basket is full and in color but not so overgrown that you cannot ship it without a lot of damage. I know that the box store buyers want big baskets, but they do not want half the branches busted off when they receive their shipments. So, no matter whether you sleeve baskets or not, you need to make sure they make it in one piece. I have seen different ways of shipping hanging baskets, but they all have to go on carts of some sort. So, get a growth regulator drench on baskets before they get too big. I recommend growers drench baskets when 1) they get tall enough to touch the tag hanging down or two-thirds up to the bottom of the hanger, 2) they touch each other when hanging up in the greenhouse or 3) they trail halfway down the basket.

If you grow hanging baskets for retail sales, you can probably get away with waiting longer before drenching, but don't avoid drenching altogether. Consumers really like their hanging baskets to look full and with lots of flowers, not stringy and overgrown. If you don't believe me, try this test next spring. Drench some calibrachoa baskets at the right stage and rate and not others, and see which ones consumers pick up first. You can try this with vegetative petunias, verbena or any other crop that gets straggly looking. Remember, your customers also have to get them into their vehicles and home in one piece. So, do them a favor and drench.

The biggest problem area is mixed containers. If you use ipomoea (sweet potato vine), vinca vine, verbena or some other vigorous plant in your combos, you know what I am talking about. Those vigorous plants soon take over the combo, sometimes smothering out the other plants. The situation is especially critical when you plant combos from liners and plugs. Growing them that long only allows the vigorous plants more of a chance to take over. I recommend growers plant their mixed combos from pots or flats, giving the combo two weeks or so to root and fill in. In this way, you can control the pots as needed and get them flowering but still have full combos in a shorter period of time.

USING FLOREL

Cultural sheets often recommend pinching before transplanting and then again after trans-

planting once or twice if plants get too big. Again, if you are a small grower (acreage, not height!), you can probably do this. But if you grow a lot of plants, the labor involved would kill your profit margins. So as you increase the number of vegetative annuals you produce it becomes increasingly important that you use PGRs correctly.

I recommend growers pinch liners to even them up either before or after transplanting. Otherwise, use Florel sprays to get the plants to branch more and control early growth. I have written about this topic a lot in the past, so I am just going to touch on the highlights here:

• Spray liners and transplanted crops with Florel at 500 ppm or lower every other week (more often during warmer weather) after rooting out until you get the branching you need or you run out of time before you want flowering. Geraniums, vegetative petunias, calibrachoa and fuchsia are some of the crops that need six weeks to re-bloom after a Florel application.

• Make sure the water pH in the spray tank after adding Florel is 5.0 or lower. Acidify the water if needed. If water pH drops to 3.0, reduce the ppm needed.

• Make sure plants are not stressed when sprayed (too much light, too dry, no roots, etc.).

• Allow Florel spray to stay wet on plants for at least four hours to get the majority of the chemical into the plant. If the spray dries too quickly, increase the ppm or spray more often.

• You can pinch and spray plants with Florel. Doing so will bring all of the branches out more evenly.

Figure 1, left, lists some of the crops that are responsive to Florel. The key is to get the Florel on early so you can influence branching without multiple pinches. And remember, take notes on how long it takes each crop to flower after Florel applications. Most crops can be safely sprayed during propagation (after roots start showing) and again one week after transplanting. Fuchsia baskets should be sprayed 2-4 times after transplanting to avoid pinching. But 4-inch ➧

Left: Results of Sumagic liner dips on vegetative petunia at 1 and 2 ppm; Right: A late Bonzi drench will prevent stretching without delaying flowering. (Photos this page courtesy of Jim Barrett)

zonal geraniums may not have enough time to re-bloom if sprayed after transplanting (six weeks or less crop time). So, if you haven't worked with Florel yet, get started next spring!

USING LATE DRENCHES

If you have done pinching and Florel applications properly, you now have a well-branched plant. You need to develop a growth regulator drench program to keep those plants from getting too big to ship. Florel will only hold the growth for a short time. For growth regulator drenches, you can use A-Rest, Bonzi (or Piccolo) or Sumagic, as all of these chemicals are active in the soil and taken up by the roots very well. The key points to successful drenches are:

- Make sure the media is uniformly moist before drenching to allow proper container distribution.
- Use enough volume to get 10 percent run-through or leachate. This is a challenge for larger containers, but remember that most of the active roots are at the bottom of the container.
- Work out the proper concentration (ppm) of chemical to use for different crops and varieties. Figure 2, left, lists some guidelines for using Bonzi on many vegetative annuals. This list was developed for Mid-South locations, so adjust according to your weather and time of year. No one rate covers all crops, so do your own trials.
- Make sure plants grow out of the drench in 2-3 weeks. If growing out too soon, either increase the concentration or volume applied. Hold back some plants as untreated checks, as

Figure 2. Crop listing for growth regulators (Mid-South).

Crop — Veg. Annuals	Bonzi Drench Code	Crop — Veg. Annuals	Bonzi Drench Code
Angelonia	D3-4	Impatiens, Double	D3-4
Argyranthemum	D2-3	Impatiens, NG	D1-Low
Bacopa	D2-3	Ipomea	D3-4
Brachycome	D2-3	Lantana	D3-4
Bracteantha	D2-3	Lysimachia	D2-3
Calibrachoa, Million Bells	D3-4	Nemesia	D2-3
Carnation	D2-3	Osteospermum	D2-3
Cobbity Daisy	D2-3	Petunia, Cascading	D3-4
Coleus – Sun	D4	Petunia, Double Wave	D4-5
Dahlia	D3-4	Plectranthus	D2-3
Dianthus	D2-3	Portulaca, Yubi	D2-3
Diascia	D2-3	Salvia	D2-3
Evolvulus	D3	Scaevola	D2-3
Fuchsia	D1	Snapdragon, Trailing	D2-3
Geranium, All	D1-Low	Torenia	D2-3
Helichrysum	D3-4	Verbena	D3-4

Note: D1 = 1/2-1 ppm, D2 = 1–2 ppm, D3 = 2–3 ppm, D4 = 3–5 ppm, D5 = 5–8 ppm

well as some plants when shipping to make sure they grow out of the drench.

• Increase the rate 50-100 percent if using pine bark in the growing medium, as bark ties up some of the chemical.

• Generally, apply the drench when plants are at a saleable size and starting to flower. Done properly, drenches do not delay flowering.

• Repeat the drench in 2-3 weeks if needed. This allows you to hold plants for one month after the ship date.

USING EARLY DRENCHES

Now that we covered the basics for drenching a crop when up to size, let's talk about drenching even earlier than that: dipping liners or plugs before transplanting or drenching two weeks after transplanting. This latter drench replaces a spray but is more effective, lasts longer and does not delay flowering.

An effective technique for controlling vigorous varieties before going into a combo is to dip the liner with a PGR and then transplant. This will hold the vigorous varieties back for 2-3 weeks while the slower ones get growing. Starting rates for liner dips are: A-Rest (1-10 ppm), Bonzi (½-5 ppm) and Sumagic (¼-3 ppm).

I have a number of growers who are now using this liner dip for crops being grown pot-tight as well. You still may have to drench again when up to saleable size, as the plants will have outgrown the liner dip by that time. When combined with proper pinching and Florel applications, the results can be spectacular!

If you cannot dip the liners before transplanting, try drenching the containers (not mixed combos!) two weeks after planting. When applied at this stage, you get much better and longer lasting effects than with a spray. Flowering is not delayed and may even seem more, as flowers are closer together. Rates will be similar to those listed in Figure 2, left, but do your own trials. You need to make sure the plants grow out of the drench in 2-3 weeks, so use the proper concentration and volume. Too much chemical could give you results you can't sell!

There you have it! If you want to consistently deliver quality vegetative annuals in pots, hanging baskets or mixed combos, you need to master Florel, liner dips and a final drench before shipping. Do your own trials and keep good notes on re-bloom times and growth control, especially with different varieties and time of year. Leave some plants untreated for comparison, and also hold back some plants from shipping to make sure they grow out in 2-3 weeks. And remember, I am only responsible for one plant! So if you mess up your growth regulator treatments, I warned you about doing trials first! GPN

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