

Gaining a Better Start with Early PGR Treatments

By **Andy Seckinger**

While the current economic situation is putting extreme pressure on growers, innovators are surviving with new practices, such as treating young plants in plug trays.

Over the past several years greenhouse growers have been forced to adapt to numerous changes in production practices. Thanks to many factors including a weak economy, growers must do more with less and look for savings in time and money without sacrificing plant quality.

Most growers now buy-in either plugs or rooted cuttings. While this is efficient and enables growers to process and grow more plants, it can also present real scheduling issues. Depending on crops and location, plugs usually start arriving in December and January. Growers generally receive plants in batches from week to week, continuing for several months depending on the crops grown.

A major challenge for most growers is staying ahead of this new plant-starting schedule. For example, once a bedding plant grower in Missouri or Illinois starts receiving bedding plant plugs or rooted cuttings, the shipments can continue for several months. This is a hectic time for the grower as they unpack plants and inspect for shipping damage and any other problems. The plugs are usually concentrated on a few bench tables

and are then transplanted into their production containers (4-inch and up) within a week.

Growers know the best way to grow healthy plants is to use an appropriate programmed approach of proper fertility, light, temperature and other cultural practices, including insect and disease pre-

vention and plant growth regulator (PGR) application.

The usual practice has been to transplant the plugs or cuttings and then start preventative treatments once spaced out. While this is the norm, it is time consuming since the plants that were concentrated on one to two benches are now spread over a



Fuchsia basket 55 days post 800-ppm Augeo treatment



Left: *Calibrachoa* 15 days post 400-ppm Augeo treatment.
Right: *Calibrachoa* 55 days post Augeo treatment.



much larger area requiring more time and material to treat.

Concurrently, the next batch of plugs or cuttings has arrived and it's a rush to unpack the new shipments and check for damage. This is when it is very easy for those vital first applications of fungicides and insecticides to be mistimed or to be missed altogether, allowing problems to develop.

Developing a New Solution

OHP Inc. has been cooperating with growers developing solutions for this critical stage. An innovation that growers are now exploring is the idea of treating the plug or cutting trays before transplanting them out to the production area. The idea is to treat the plugs or rooted cuttings in trays while they are still concentrated in a small area. The result is a tremendous saving of time and resources. We will examine the benefits of applying PGRs, and insecticides and fungicides in this early treatment period.

This past January, OHP worked with McNitt Growers in Carbondale, Ill., to treat plugs still in the tray with the new PGR Augeo. Augeo is a new type of growth regulator that breaks the apical dominance on plants, causing lateral branches to develop. Normally increasing lateral branching is accomplished by hand pinching, shearing or use of other PGR treatments like Florel.

The benefits of increased lateral branches are a tighter, more compact plant, better shipability, and an increased bloom potential due to the bud increase. Augeo can be applied at very early plant stages as it is foliar absorbed and usually requires just one application per crop

versus multiple applications or manual pruning.

Another element to add during early treatments is the application of insect and disease control measures.

"We have been focusing on the use of systemic materials whenever possible to ensure coverage and protection of the entire small plant," says Bill McNitt, owner of McNitt Growers. McNitt has been using Kontos for insect and mite prevention and control. Kontos is both xylem and phloem active in the plant and the up and down activity allows it to be used either as a spray or drench. As a spray, it moves into the plant and travels up and down.

This foliar systemic property is very important with these small plants because they do not always have a heavy root system to take up traditional systemics such as Marathon. By combining Veranda O or Compass O with the



Plants in plug stage on the day of treatment



Lantana basket 55 days post 800-ppm Augeo treatment

Kontos, McNitt also gets disease prevention, especially for *Rhizoctonia* and *Botrytis*, which are tough on small plants.

To recap the new approach, McNitt receives the plugs, inspects them, isolates them on the bench for a day or two, and then applies Augeo. The next day, he applies Kontos and Veranda O. The plugs or cuttings are usually transplanted into their market pots by the end of the week. Using this method, he gains about a two to three week window of protection on the newly transplanted material. He can now focus on handling the other plugs and cuttings which are coming in at this time.

Savings in Time and Dollars

While the primary objective is to get the plants off to a great start, growers can realize a tremendous savings in treatment time and spray cost.

A good example is spraying with Augeo. The label directions call for spraying 2 quarts or ½ gallon per 100 square feet of bench space. Since a typical plug tray is 10x20 inches it equals 200 square inches

or 1.388 square feet.

Following the recommended spray volume on the label, a grower can treat approximately 72 plug trays with ½ gallon or 144 trays with 1 gallon. To be conservative, let's estimate the grower will treat 100 trays with 1 gallon. When these trays are transplanted into typical 4-inch pots (each pot equals 16 square inches) we will have 16 square inches x 100 trays x 72 plugs or cuttings (7,200 pots x 16 square inches). This equals 115,200 square inches or 800 square feet. According to the Augeo label volume directions this takes 4 gallons of spray. Since we treated the plants in their trays, we have sprayed the same number of plants using 1 gallon of Augeo that would have taken 4 gallons if we waited until after transplant. That's a big savings to the grower.


Let's further examine possible cost savings based on average grower cost for these products. Augeo is \$170 per half gallon or \$2.65 per ounce, which equals \$.66 per ¼ ounce or 400-ppm treatment. Kontos is \$166.67 per 250 milliliter (8.3 ounces) container or \$.67 per milliliter (high dose per gallon). Veranda O is \$108.67 pound

or \$.24 per gram x 5 grams (high rate per gallon) equals \$1.20. If we put all these together we end up with a cost of \$2.53 per spray gallon to treat these plug trays. Again, if we waited until after transplant, we are looking at \$2.53 x 4 or \$10.12. The grower saves \$7.59 per 100 trays using this new treatment timing. That is without the reduced labor costs associated with treating plugs and trays rather than finished containers.

While every operation may have different costs depending on labor and materials, few would want to pass up a four-times savings in time and resources while still getting ahead of the game from plant branching and protection from pests.

The ornamental industry was built by entrepreneurs who overcame problems and learned to produce quality plants at an affordable cost. While the current economic situation is putting extreme pressure on all operations, innovators such as McNitt Growers will survive and grow with new practices such as plug trays sprays.

According to Bill McNitt, the adoption of this plug treatment technique should not only produce better plants but enable them to expand production without additional labor resources.

The concept of treating young plants in a concentrated area such as in plug trays can result in better coverage, less time, less cost and therefore improved efficiency and increased production. 

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