Use Rooting Hormone or Eat Ice Cream?

A vegetative breeder tests whether rooting hormone is really worth using on the most popular varieties.

Kris Carlsson, featuring research from Luís Muñoz

Growing up, I remember reading an article about my favorite baseball player, Rickey Henderson, where it said Rickey ate a gallon of ice cream every night after the ball game. Rickey attributed this gallon of ice cream to making him one of the best base stealers in baseball history. I tried to convince my mom way back when that she should let me eat a gallon of ice cream every night, but no success. What does this have to do with rooting hormone? I think the hormone is like the ice cream for your cuttings—it won't allow them to steal a base faster, but they will root faster.

There are many methods and techniques used to propagate successfully. They can vary from carefully planning and preparing every detail to having a fancy propagation system in place, but can rooting hormone be a contribution to this success? What's the right rooting hormone to use? What technique should I use to apply rooting hormone? Today, we plan to answer this question.

The trials

We set up a trial to evaluate cuttings stuck with no hormone compared to powder dipping of Hormex #1 and #3, liquid dipping in Hortus IBA Quick Dip Solution, and overhead sprays of Hortus IBA at 100 ppm and 200 ppm. All of these applications were made at stick with propagation-difficult crops like osteospermum and lantana. We also did the same treatment to calibrachoa, which many growers do not use rooting hormone on.

Finally, we looked at geraniums under the same treatments. My colleague Luís Muñoz was pulling 10 cuttings every other day to evaluate development as the cuttings callused, initiated roots and rooted to the edge of the Ellepot. In the initial stages before root development, all cuttings were pulled randomly from the tray and dumped after evaluation so that results were not skewed by damaged cuttings stuck back into the Ellepot.

Osteospermum

At approximately five days after stick, Osteo Serenity Pink Magic cuttings had a higher callus initiation percentage when using rooting hormone. Pink Magic cuttings that were stuck into 105 trays with no hormone averaged about 40% callusing at five days after stick, while cuttings that were stuck with no hormone, then treated with an IBA 100 ppm hormone spray right after stick, had an average of 90% callus initiation five days after stick.

This later translated into quicker rooting with the hormone spray application and, two weeks after stick, we noticed a larger difference in rooting (see Figure 1). Hormone use proved to have promoted a better, more developed liner, which ultimately allowed us to pull liners out of mist and propagation about four days sooner than our no-hormone treatment.

Calibrachoa

Calibrachoa is typically a crop we don't use rooting hormone on because it roots fairly well, but we still put it to the test. Calibrachoa Cabaret Deep Yellow at five days after stick with no hormone had an average of 80% of cuttings show some sort of callus. This is really great for a crop that requires no rooting hormone. However, when we compared it to our IBA 100 ppm spray treatment, we noticed a difference. At five days after stick, we had 100% of cuttings showing callus and about 50% of those had small roots beginning to root into the soil. Another detail we noticed was that for the first 10 days, IBA treatments displayed more wilting/leaf curl than our no-hormone treatment.

Approximately two weeks after stick, 90% of cuttings stuck with no hormone began to show some roots emerging out to the edge of the liner, while cuttings that received the hormone application were already developing roots outside of the liner (see Figure 2). They appeared to have at least twice as many roots as our no-hormone treatment. This allowed us to remove the hormone treatment out of mist earlier and out of propagation one week sooner. All signs of wilt from the IBA spray disappeared at 10 days after stick.

Geranium

Hormone use on geraniums is optional. We chose to try our Geranium Dynamo Dark Red and repeated the same treatments. Geraniums that were stuck ▶

Osteo Serenity Pink Magic
No Rooting Hormone

Osteo Serenity Pink Magic
IBA 100 ppm Spray

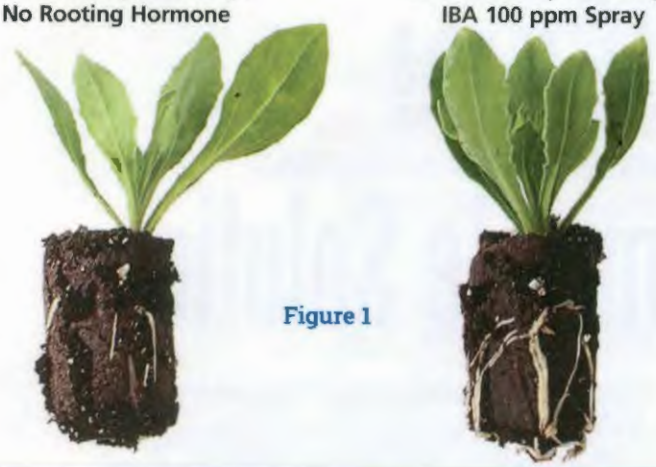

Figure 1

Calibrachoa Cabaret Deep Yellow
No Rooting Hormone

Calibrachoa Cabaret Deep Yellow
IBA 100 ppm Spray

Figure 2

Geranium Dynamo Dark Red
No Rooting Hormone

Geranium Dynamo Dark Red
IBA 100 ppm Spray

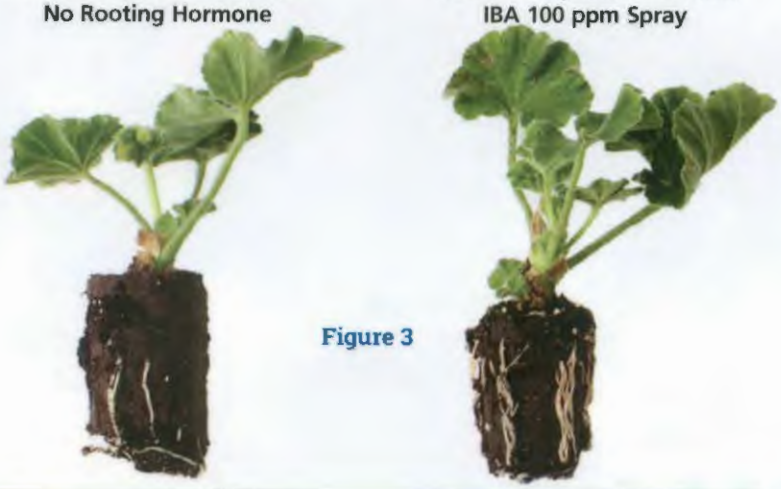

Figure 3

Lantana Landmark Rose Sunrise
No Rooting Hormone

Lantana Landmark Rose Sunrise
IBA 100 ppm Spray

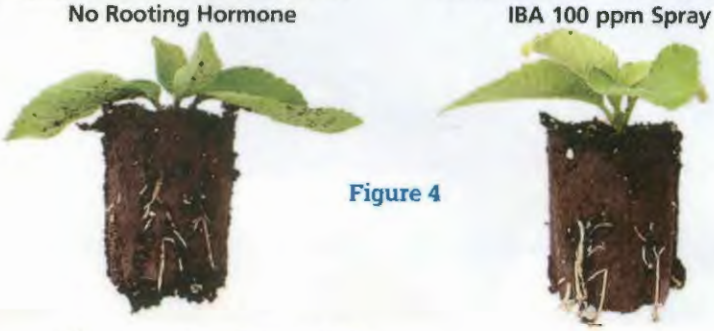

Figure 4

with no hormone only resulted in about 50% of callusing at five days after stick. Whereas geraniums that received an IBA 100 ppm spray after stick had 100% of cuttings begin to callus five days after stick. Once again, IBA application seemed to cause wilting/leaf curl symptoms for about 10 days before they grew out of it.

Two weeks after stick, no-hormone treatment only had about 60% of liners showing minimal rooting and our IBA 100 ppm spray once again provided better results. One hundred percent of liners were more developed and showed a much larger amount of roots (see Figure 3). This allowed us to remove from propagation four days ahead of the no-hormone treatment.

Lantana

Lantana Landmark Sunrise Rose had 100% of cuttings initiate callusing five days after stick with no hormone. (I guess Luís is a really good lantana propagator!) Lantanas that received the IBA 100 ppm spray also showed some advantage. They were all callused as well, but about 40% of them showed some minimal signs of roots beginning to sprout. For lantanas, it took a little longer for differences to show. Two weeks after stick, no-hormone treatment only had about 30% of cuttings achieve very small root growth to the edge of the Ellepot. Our IBA 100 ppm spray was only able to get us to 50%, achieving some growth to the Ellepots as well. Slightly larger roots than our no-hormone treatment, but not enough to make a huge difference.

Lantana Landmark Sunrise Rose stuck with no hormone were finally ready to be moved out of propagation about four weeks after stick. Lantana with IBA 100 ppm spray treatment were ready to be moved out of propagation approximately 25 days after stick, only giving it about a three-day head start compared to the no-hormone treatment. You can see a small difference for liners receiving the IBA 100 ppm spray in the picture taken approximately four weeks after stick (see Figure 4). Is it worth it? Please trial under your propagation conditions to check.

So, in conclusion, if you want to root cuttings as fast as Rickey Henderson steals bases, you should use rooting hormone. I think that you should start a trial today—even on crops that don't require rooting hormone to see if you can root faster, high-quality liners. Our conclusion was that IBA spray at 100 ppm gave the best rooting results while providing the lowest input cost during stick.

Also, please feel free to eat a gallon of ice cream every night. Just keep in mind you better start running fast like Rickey or you're going to feel the extra pounds!

Kris Carlsson is the Global Product Manager and Luís Muñoz is Culture Research Technician for Ball FloraPlant. Both are stationed in Arroyo Grande, California. Please visit ballfloraplant.com for the full presentation of their trials.