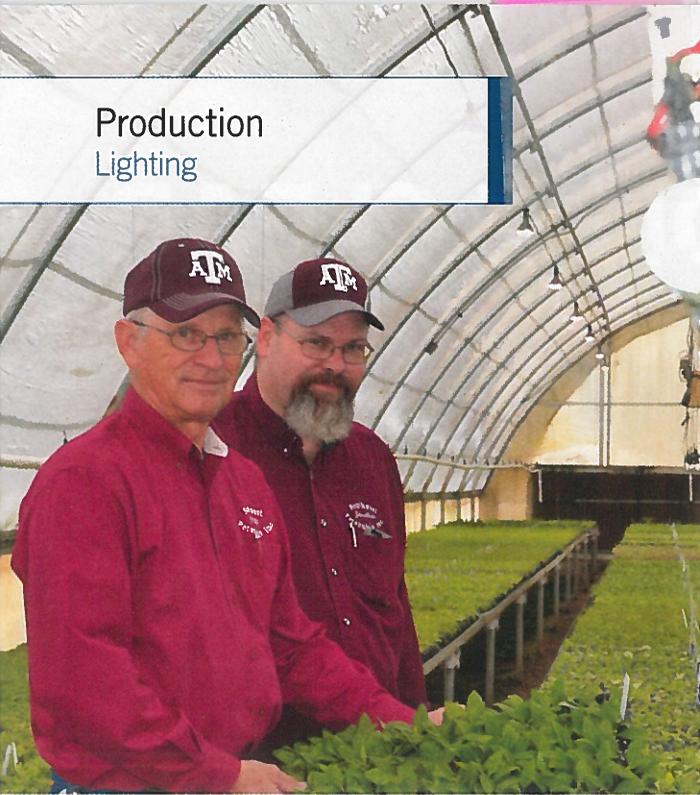


Jerry (left) and Jonathan Soukup were so satisfied with the growth results they got with the first 30 LED bulbs they purchased that they bought an additional 70 bulbs.



## Southwest Perennials Improves Production, Shortens Crop Time With LEDs

A father-and-son team find LEDs deliver a higher rooting rate for cuttings propagated under the lights.

by DAVID KUACK

**J**ERRY and Jonathan Soukup at Southwest Perennials in Dallas, Texas, are constantly looking for ways to maximize production of their starter plants. The father-son team produces more than 300 varieties of primarily heat- and drought-tolerant plants. The plants, 80 percent of which are vegetatively propagated, are grown in 80,000 square feet of greenhouses at two different locations. One of the things that the Soukups have done to run a labor-efficient operation is to keep their cultural practices simple and repeatable.

Southwest Perennials produces around 4 million starter plants annually in 72- and 128-cell trays. All of the young plants, including vegetative liners and seed plugs and stock plants, are grown in a Berger BM6 standard growing mix, to which RootShield is added.

"We've been using the same growing mix for nearly 10 years," Jerry says. "The only thing we add is a layer of vermiculite on the top of some seed-produced plug trays. The rest of the plants are grown in the straight mix."

### LEDs Have A Major Impact On Propagation

Jerry says the propagation system they have set up is simple, using poly-covered,

30-by-100-foot Quonset houses and overhead mist. One new element that the Soukups have added to their operation is installing Philips GreenPower LED Deep Red/White Flowering Lamps and GreenPower LED Deep Red/White/Far Red Flowering Lamps.

"At the 2013 Ohio Short Course, Hort Americas and Philips Lighting were running a show special: buy 20 bulbs get 10 bulbs free," Jerry says. "We had heard and read about the benefits of LEDs, so we decided it was a relatively cheap investment to see if the lights had any effect on our plants. We were on the skeptical side. I told Jonathan that we would invest a couple thousand dollars on the lights, and we'd see if there is any difference with them."

Jerry says it didn't take long to see the benefits of the LEDs on the plants. The bulbs were installed in mid-October, and the plants started to show the effects of the supplemental light in three to four weeks.

The Soukups were so pleased with the initial results that they purchased an additional 70 bulbs.

"When we started in October, we were using 30 bulbs in two houses," Jerry says. "By March we were using 100 bulbs in 10 houses."

"There is nothing else currently on the market that could have as dramatic an effect on our production as these lights have had," Jerry says. "This is for propagation. It may be a different situation for growers who are finishing the plants. What is ideal for us may not be ideal for another grower. For our situation, these bulbs delivered a response that we couldn't have imagined."

### Changing Production Methods

The Soukups maintain three different temperature regimes in their greenhouses.



**Vegetative cuttings taken from lit stock plants rooted in an average of four weeks compared to cuttings from unlit stock plants that rooted in six weeks.**

Photo courtesy of Southwest Perennials.

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Vegetative cuttings propagated under LEDs had a much higher rooting rate. Photo courtesy of Southwest Perennials.

Some of the most significant results from the LEDs occurred when plants were grown under the lights and temperatures of 70°F to 72°F.

“*Ceratostigma*, *lantana* and *Salvia greggi* showed some of the greatest growth,” Jerry says. “Some plants grew so quickly that we had to move them out to the edge of the greenhouse so they didn’t receive as much light. Some plants were actually growing too vigorously under the warmer temperatures with lights and we had to move them to cooler houses, where the temperatures were in the 40s and 50s.

“Some of the results that we saw under the lights we wouldn’t have gotten by applying more fertilizer or increasing the temperatures. It was simply the lights that were causing the plants to grow.”

Jerry says it was the first time they didn’t encounter any delays in plug growth because of cold temperatures and cloudy weather.

“Previously, there have been times in the propagation area where cutting production would lag by 10 to 14 days in January, February and March,” Jerry says. “This is the time of year when we really need to be shipping the plugs, but they just aren’t ready. Usually, the plants don’t have enough roots, but we didn’t see any kind of growth stall.

Jonathan says some of the plugs had to be cut back because they were growing so vigorously.

“We were actually able to take cuttings off of the cuttings,” Jonathan says. “Cuttings taken off stock plants that weren’t under the lights and then were

placed under the lights did not root as quickly as the cuttings taken from stock plants that were lit.”

Cuttings taken from lit stock plants rooted in an average of four weeks compared to the cuttings from unlit stock plants that rooted in six weeks.

“We also had a much higher rooting rate for the cuttings propagated under the lights,” Jerry says. “With the lights, we have the opportunity to turn a crop of cuttings four to six times.”

### Increased Market Demand

Jerry says 2014 was a good year for his company, as well as his customers located in the 48 contiguous states. Southwest Perennials markets most of its plants primarily through brokers and distributors.

“In 2013 our sales dropped off a little bit compared to previous years,” Jerry says. “But we saw a major increase in sales in 2014. Sales didn’t end in the spring; they continued into the summer. We shipped plants that we normally don’t ship at that time of the year, receiving orders for delivery in November through March that we didn’t get in the past.

“Some people I have talked with say they think this is going to be a trend that continues over the next four to five years, and potentially longer. The increase in construction is a major driver in the demand for ornamental plants.”

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