

from the road

Production in Paradise

In Costa Rica, the FlorExpo farm produces 135 million cuttings a year under the highest standards for quality and customer service. The neighborhood’s not bad either.

By Jasmina Radjevic

In September, I had the opportunity to visit Costa Rica, the home of many horticultural production facilities, including the FlorExpo farm. I was invited to tour it with Chris Berg of McGregor Plant Sales. Up until my visit, I was completely unaware of the variety of products that come from FlorExpo, including annuals, perennials, succulents, herbs and grasses. Today, FlorExpo produces approximately 135 million cuttings per year. They produce cuttings of more than 1,200 varieties for about 60 breeders. The company’s success can be attributed to progressive partnerships and continuous innovations made by owner Fernando Altmann Sr. and his son and production manager, Fernando “Macho” Altmann Jr.

‘A Handshake and a Hug’

Altmann started in the industry working for a bromeliads farm, selling to foliage brokers in the United States. On the side, he worked to develop his 1.5-acre cut flower farm. He and Tom McGregor first met when Fernando asked Tom to represent his product in the United States;

at the time, McGregor Plant Sales was a small, regional foliage broker for the Southern California market. After a few years of business, Altmann left the bromeliad farm as his cut flower production began to grow, but he and McGregor kept in touch, always looking for their next opportunity to work together. Years later, Altmann came up with the plan to produce unrooted cuttings for the United States, as he was already producing several thousand for his own use on the cut flowers. The two never signed a contract, according to Altmann; his partnership with McGregor was always based on friendship and trust, “just a handshake and a hug.” Altmann says his business has always been 50 percent quality of the cuttings and 50 percent customer service. And judging by FlorExpo’s success, everything else has fallen into place. “Our vision was never to be the biggest but to be the best,” Altmann says. “And maybe by being the best, we will become the biggest.” To satisfy his standards for cutting quality and customer service, Altmann has continually focused on innovation, first with perennial production and today with new programs such as organic



Greenhouses are full-metal construction with wire benching and concrete floors. No wood is allowed in the structure for cleanliness reasons.

herbs, unrooted grasses and succulent cuttings.

Early Innovations

Perennials are a specialty program. “Annuals are easy: Once you figure out a petunia, you’ve figured out 100 varieties,” shares Macho Altmann. “But with perennials, each one is its own beast.” And that’s how FlorExpo made its first big move. Altmann and company went through all the trial and error very early on, and today they have mastered hundreds of perennial varieties. One of their early struggles, heuchera, has paid off: FlorExpo now has the largest heuchera



from the road



Upon my arrival, I learned exactly why it takes an employee seven minutes on average to suit up and enter the greenhouse.



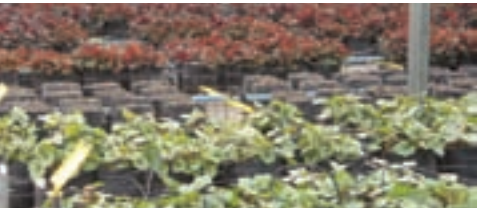
Cuttings of carex 'Ice Dance' take around 24 days to fully root out liners. Old leaves are trimmed when the cutting roots and new leaves develop.



Elite cuttings of Suntory items being stuck in the propagation house. This house is a division within the house where the stock plants will remain. After an Elite cutting or tissue culture is planted, it will not leave that house until the end of the season to reduce risk of contamination.



Left: A vacuum is used to collect beneficials and pests from the plants. Right: Bags of insects that were collected during the vacuuming are placed in a freezer, where the bad insects die off. The beneficial insects are cold tolerant, so they are then re-released into the greenhouse.



Beneficials

FlorExpo is committed to sustainable practices through a steady decrease of chemical applications on the farm. "After we launched our Certified Organics program last season, we knew that we needed to apply these principles on a larger scale throughout our farm," says Macho Altmann.

To help with this process, FlorExpo hired Jaime A. Uribe, who has widespread experience working with monoculture farming of ornamental crops throughout Central America and South America. Uribe has been tasked with developing internal laboratories to cultivate different types of beneficial fungi and bacteria, as well as predatory insects. "We have isolated our own strains from our farms and have found that these work more effectively than foreign strains available for purchase," Uribe says.

Because beneficial fungi and bacteria need to be applied weekly in large quantities, internal labs were necessary for economic reasons alone. The labs are now producing a variety of fungi including Trichoderma, Metarrizium, Paecilomyces and Beauveria. Adding these fungi to plant media can help protect the plants from various pests and make plants better able to absorb critical nutrients for healthy cuttings. Some bacteria act as natural insecticides against caterpillars.

A separate lab at the farm is dedicated wholly to the production of green lacewing (*Chrysoperla carnea*), which, when released in large quantities, can effectively control the aphid population throughout the farm.

The farm cleans the plants weekly, using large vacuums to suck up all insects. The insects that have been taken are bagged and put in specific temperatures. "At the right cold temperature, the

pests go dormant and fall to the bottom of the bag, while the beneficial insects stay alive," Uribe says. "This allows us to collect our beneficials again and let them back into the greenhouse."

A fully integrated pest management system in place at FlorExpo allows for the production of cleaner and more environmentally friendly cuttings each day.



Above left: FlorExpo went through all the trial and error with perennials very early on, and today they have mastered hundreds of varieties. Above right: A greenhouse worker disinfects her apron and gloves between each "break" of plants on the bench.

production in the world.

"Our persistence to work out the hard varieties is what has given us a name in the marketplace and has earned our reputation with perennial breeders and growers alike around the world," says Altmann Sr. FlorExpo has one of the largest and most complete vegetative perennial lineups around the world, mainly because they've been doing it the longest and have worked out the kinks early on.

Greenhouse Protocols

At FlorExpo, sanitation comes first. Even Altmann Sr. has been reprimanded in his own greenhouse for attempting to enter without the proper attire! These very specific greenhouse protocols are implemented to ensure healthy, clean stock.

Each greenhouse has a three-door entrance. Anyone entering the greenhouses, employee or not, must suit up first. This involves stepping into disinfectant at the first door. At this point, shoes must be removed and replaced with boots. Next, cloaks and aprons must be worn. Hands must be washed and sanitized, followed by latex gloves. Last, those entering the greenhouse must spray disinfectant over their aprons and cloaks and step into disinfectant at the final door leading into the greenhouse.

Each worker in the greenhouse uses three knives, which are kept in the same type of disinfectant used when entering the house. When pinching plants, workers change knives between each plant so nothing carries over from plant to plant. Throughout the greenhouse, yellow markers hang above the benches to indicate points where workers must disinfect their gloves and aprons. Breaking the benches up into these segments reduces the risk of an outbreak through an entire crop, instead limiting it to a smaller block.

Eight years ago, FlorExpo began building their own greenhouses rather than ordering them from overseas companies. They use all-metal construction with wire benching and concrete floors. The benches in the houses are narrow, which keeps workers from having to lean over plants and brush foliage. No wood is allowed in the structure to avoid fungal or bacterial diseases. These greenhouses are surrounded by a wide strip of concrete to prevent weeds from growing near the greenhouses, thus eliminating a potential habitat for insects and diseases.

from the road

To ensure reliability with sensitive varieties, FlorExpo implements special protocols. Certain greenhouses on the farm have their own rooting stations within the houses themselves. Benches are arranged in the greenhouse so sensitive varieties are next to

less sensitive varieties. Also, 50 percent of the production is on one half of the greenhouse, while the remaining 50 percent is on the opposite end. This is called “mirror production.” As an extra precaution, the petunia stock is isolated completely from the rest

of the greenhouse because it is considered one of the most sensitive varieties.

All plants are grown in a hydroponic-like situation, in 100 percent volcanic rock, which doesn’t hold any fertility, so any problems that arise are easy to change. “Any

nutrient problems can be fixed within two days,” says Macho. “With soil, it takes at least one week.”

Recent Developments

Succulents. Last year, FlorExpo started a succulent program as a trial. They produced 200,000 cuttings at first, and it was such a success that they increased production to 600,000 cuttings this year. Succulents can be a challenging product where shipping is concerned: They are extremely heavy because of the water they hold. To tackle this issue, FlorExpo dehydrates the cuttings before shipping.

The moisture in the succulents causes weight problems as well as bacterial issues and breakage during packaging. Because the cuttings are being shipped internationally, freight is an important place to help control costs. By dehydrating the cuttings, boxes weigh much less, and more cuttings will fit in a case. And fresh, fully turgid cuttings are more likely to snap apart in transit — dehydrating them makes them

Pre-Finished
Style.

Get in style with pre-finished varieties. Grown in the California sunshine, pre-finished provides early season color that is perfect and retail-ready. A match-made for combinations, hanging baskets and large containers, for late season turns!



Save with Style.

Save this winter on your energy costs and bring in pre-finished containers later. Plus, see the savings add up with Euro’s new 10% discount on your shipping rate.



Sell the #1 Brand in Plants and purchase the Flat-Filler Display Tray with your next order.

Contact your favorite broker to book your order. Visit us at www.PWEuro.com to view the complete pre-finished line.

EURO-AMERICAN
PROPAGATORS
Quality Plants. Innovative Thinking.
888-323-0730

Proud Growers of
PW
PROVEN
WINNERS

Write in 111



Tissue Culture

In order to produce the highest-quality cuttings, it’s essential each plant is initiated in a clean and disease-free environment. While in Costa Rica, I also visited Fitotec, the tissue culture lab where many of FlorExpo’s cuttings begin. I met with Roxanna Villalobos, who maintains all of FlorExpo’s stock in tissue culture. Throughout the lab, tissue culture is brought in from various breeders, or FlorExpo will send in actual plants from the stock at the farm.

This lab maintains many varieties that wouldn’t be available as clean stock, such as open varieties where there is no breeder holding the material. The lab also works to build up elite stock when new varieties are sent in from other breeders around the world, such as Suntory or Westflowers.

from the road

more flexible when packed. Lastly, a turgid cutting is going to “sweat” in the bag during transit, inviting possible bacterial issues. A dehydrated cutting won’t have this issue. Succulents are the only cuttings on the farm that aren’t harvested right

before shipping; rather, they are cut days before packaging and laid on benches to wilt down.

Herbs. In the past few years, there has been a growing need for a source for organic unrooted cuttings. So three years ago, FlorExpo

and McGregor Plant Sales initiated a USDA-certified organic herbs program. One of the toughest changes they needed to make to their traditional herb program involved nutrition. There are very few certified-organic products in Costa Rica,

says Macho, so they now use home-made product for fertilization and pest management, and they are carrying over some of these processes to their conventional programs at the farm. For example, they created their own integrated pest management lab for the organic program, but thanks to the lab’s great results in controlling aphids, white fly and thrips, they started using these IPM methods in the rest of their programs. And as their use of chemicals has gone down, so has the cost to produce cuttings.

Grasses. FlorExpo’s most recent innovative undertaking is its grasses program. In the past, customers who ordered grasses from FlorExpo received rooted cuttings grown in bags. “Some of the disadvantages were overall pack-out, lead time and the overall success rate for the program,” says Chris Berg of McGregor Plant Sales.

Now they have begun a new program where they grow the grasses in troughs, using volcanic rock. “The grasses are sending out more side divisions,” explains Berg. “Now we have an actual unrooted cutting of the grasses that we can ship to the growers, similar to other FlorExpo cuttings.” This allows the grass cuttings to be lined out in the packaging and makes them easy to stick right away. The biggest advantages to this new program are higher packouts, the ability to combine grasses with other cutting orders, and immediate availability, rather than waiting for re-rooted divisions.

The time between sticking to liner is anywhere from three to five weeks, depending on the variety. So growers can now purchase an unrooted cutting at a better price point and then have the high-value liner, Berg says.

Moving forward, just like with previous programs, FlorExpo will work out any kinks with the new grasses program as they continue trialing the program. Be on the lookout for new developments as we move into 2010. [GPN](#)

Jasmina Radjevic is associate editor of GPN. She can be reached at (847) 391-1004 or jradjevic@sgcmail.com.

Commercial Greenhouses



PT30 greenhouse

The PT-30 is an innovative structure. It can be used as a seasonal cold frame but is also heavy-duty enough to be used as an inexpensive, year-round growing structure.

- Versatile and affordable
- Complete package saves you time
- Heavy-duty construction

20% Larger Tubing!



PT-30 uses larger diameter tubing.

Others use smaller diameter tubing.

We manufacture the PT-30 arches with an industry leading 2" x 14 gauge tubing so that you can rest assured it will provide years of trouble-free use.

PT-30 2" Others 1.66"

NEW! Roll-up side ventilation

- * Simple operation
- * Self-Locking gearbox
- * Full range of ventilation positions



To see our full line of retail and commercial greenhouses, visit us on the web at www.poly-tex.com or call us toll-free at **800-852-3443**.

©2008 Poly-Tex, Inc. All rights reserved.

Write in 136



POLY-TEX
Greenhouse & Display Systems

LearnMore
For more information related to this article, go to www.gpnmag.com/lm.cfm?gp120901

20 GPN December 2009

www.gpnmag.com