

# In search of *incredible edibles*

Tissue culture propagator Agri-Starts celebrates its 26<sup>th</sup> anniversary with a new focus on finding and producing edible plants that can be grown by both commercial growers and consumers.

**A**gri-Starts in Apopka, Fla., has made a name for itself during the last 26 years propagating primarily foliage plants. *Spathiphyllum* and *syngonium* are the company's best-selling tissue culture liners followed by *cordyline* and *anthurium*. But one look at this year's company catalog will tell you that changes are coming. The foliage plants, which previously graced the covers, have been replaced by fruit of all kinds including blueberries, blackberries, kiwi, pineapple, banana, figs and papaya.

"My son Ty showed me the front page of the catalog a year ago and I told him that's pretty brave," said Agri-Starts owner Randy Strode. "I told him this was going to be his project since I am involved in so many other activities. We have been propagating figs, pineapple, kiwi and bananas for years, but never on the scale that we are planning to do. We have added an additional 30,000-square-foot greenhouse to handle the fruit propagation."

## Potential increased revenues

Even though Agri-Starts has been producing liners of tropical fruit, it wasn't until the company started producing blueberries and blackber-

ries for commercial growers that the Strodes saw the potential for expanding their product line to meet the increasing demand for home-grown edibles.

"It started with commercial blueberry producers. Now we are seeing the need for containerized food production. Plants that will fruit in a container for patios or gardens," said director of marketing Ty Strode. "Most of our tissue culture production is now tailored toward containers for the retail side."

The Strodes, who have been working with berry breeders at the University of Florida and University of Arkansas, said university officials are excited about the potential sales to consumers and the royalties they will generate.

Randy said the state of Florida currently has about 6,000 acres of commercial blueberry production. University officials expect the state will reach the commercial production saturation point at 10,000 acres.

"Once the commercial side is saturated then there is only plant replacement," Randy said. "That would result in a decline in the university's blueberry revenues. Retail could provide a continuous stream of revenue if we continue to sell the southern high bush hybrids that are patented university varieties."

Ty said Agri-Starts is working with

a couple large growers who are doing a considerable number of edibles and have the distribution channels worked out for selling to retailers. Smaller growers and some garden centers are also taking small orders of the edible crops.

"Our minimum order is just one tray so we can hit a lot of small markets," Ty said. "That's one of our strengths. We have a diverse product mix similar to a wholesale mail order catalog. Almost everything is produced in a 72-cell tray with some 144-cell trays for the local market."

## Edible challenges

Agri-Starts began working with blueberries about six years ago. Randy said the company has already made a major time and financial investment in the development and production of blueberries.

"We are working to determine what the commercial fruit producer wants and what is going to be the best product for the container growers," Randy said. "It will be two different programs."

He said that the blueberry plants have been more difficult to propagate than the foliage crops.

"Most of the tropicals are in a juvenile stage of growth when we put them into culture," he said. "The woodies are not. They are either in an adult phase of growth or in a quasi-phase between a juvenile and an adult. The systems we need to use to get them into culture are different, including the propagation medium, the salts levels and the hormones."



**Agri-Starts Inc.** Founded: In 1985 by Randy Strode. Location: Apopka, Fla. Production space: 150,000 square feet of greenhouse space. Market: Wholesale growers, specialty farms and more than 20 plant brokers primarily in the United States with some international sales. Crops: Tissue culture plugs (80 percent foliage and 20 percent edible plants). Employees: 80 full time and two part time.



Ty Strobe, Agri-Starts director of marketing, expects container-grown edibles, including blueberries, to become a major part of the company's tissue culture production.

Randy said the tissue culture production time is also longer for blueberries.

### Identifying new varieties

Ty is currently talking to researchers at the University of Georgia, the University of Arkansas, and the University of Florida trying to find additional plants to add to the edibles program. He also does considerable research on the Internet trying to identify potential varieties and crops.

“Compact habit is a key criteria for containers,” Ty said. “We also want thornless varieties. We are doing some thorned blueberry varieties, but in smaller numbers, for commercial growers who want to spread out the season with fruit production at different times. With the blueberries we are looking for plants that have a decorative look with shorter internodes and a fuller habit.

Self-pollinating plants that produce good quality fruit are also important.

Randy said that Agri-Starts has sold more kiwi this year than in all of the years it has offered this crop.

“It has all come together within the last two years,” Randy said. “We have been propagating figs, pineapple, kiwi and bananas for years, but they have never been marketed as container plants for retail. At one time we were producing 115 varieties of bananas for commercial fruit production. We have now reduced the number since many of them are very similar. We’ve paired it down to the ones that will perform best in different regions of the country.”



Agri-Starts celebrated its 25<sup>th</sup> anniversary with a new product catalog that featured edible plants for the first time. Edibles also appear predominately on the 2011 catalog cover.



Agri-Starts has built an additional 30,000-square-foot greenhouse to accommodate the higher light levels needed for edible plant production.

The southern high bush blueberries, pineapples, papayas, figs and bananas are considered to be tropical plants that do best in USDA Hardiness Zones 7-10. The range for northern high bush blueberries (Zones 7-10) and blackberries (Zones 3-9) should help to increase interest in edibles.

“We are also looking at different kiwis, including one that is bite-size like a grape,” Ty said. “There are also some varieties of Muscadine grapes we hope to have available within a year that would be for ornamental use.”

### Production protocols

Ty said the company’s efforts are now focused on identifying those blueberry varieties that will work best in containers and in different parts of the country.

“We are bringing on several northern high bush varieties next year,” Ty said. “These will be able to be grown in a good portion of the country.”

To assist in determining the protocols for producing the edibles as container crops, Agri-Starts has hired longtime commercial grower Tom Stutzman.

“One of Tom’s tasks is to determine if a grower receives a blueberry plug in May, what is the step-by-step production to be able to deliver a finished plant with fruit on it into a retail store,” said Randy. “There is a lot of information and consultants out there that can address commercial field production. However, nobody knows how to put a plant in a pot and have it ready to produce fruit when it’s shipped to a retailer. That’s the information that we are seeking to find out. There is a similar need for production information on the other crops as well, including bananas, papayas and kiwi.”

A production difference for growing edibles and foliage plants is light levels.

“With the edibles we have found that we need to have much higher light levels in order to harden the plants off for the container market,” he said. “The plants need to be toughed up so that they can be planted up and go directly out into the full sun in nurseries.”

A 30,000-square-foot Nexus greenhouse that was built primarily for edible crops is covered with Green.tek Dyna-Glas polycarbonate.

“Because the polycarbonate lets in so much light, we will be installing two layers of shade,” Randy said. “This will help us to grow a tougher, more durable plant that won’t stretch. Some of the blueberries being grown in our existing houses are showing some stretch. We are resolving that by pruning the plants. We think the higher light levels in the new house will eliminate the need for pruning. The majority of space in the new house will be used for edible crops that need more light, including the blueberries, blackberries, raspberries and kiwi.”

Randy said production requirements for container-grown blueberries are similar to azaleas.

“One of the most important things is having an acidic soil,” he said. “The blueberries should also receive the same type of fertilizer. Blueberries are going to be a 6- to 12-month crop for 6-inch to 2-gallon size containers.

“The production is relatively straight forward. What we are working on now is how to schedule the plants so that they have fruit on them when they are shipped to the stores. Blueberries sold in-season when the plants naturally produce fruit isn’t that difficult. The challenge comes when a grower wants to extend the selling season.”

**For more:** Agri-Starts, (407) 889-8055; [www.agristarts.com](http://www.agristarts.com).