

## Business Watch



**TRAINING TOMATOES:** Lee Taylor walks on stilts down the rows of growing tomatoes to adjust the wires they're trained to climb. The vines are leaned a few inches forward every few days to encourage new branches to climb.

### How hydroponic tomatoes are grown in Kansas

**H**YDROPONIC vegetables have been grown in Holland for generations.

The plant genetics used at 4-Star Hydroponics in St. John were developed in the Netherlands, and the seeds for the hydroponic family farming operation are imported from Holland.

"These plants have been bred to grow well in greenhouse conditions, and to root well in the perlite and nutrient water we grow them in," Taylor says. Each plant is rooted in a gallon container of perlite; drip irrigation tubes keep the growing medium wet with water that has been enriched with nutrients normally found in fertile soil.

He says the plants have also been bred to produce the fruit size and pulp consistency that consumers associate with slicing tomatoes.

Generally, he says, tomatoes are considered a fairly easy crop to grow.

"They are, in the sense that they survive and are pretty forgiving," he says. "But to get the highest-quality produce takes a lot of labor."

Young tomato plants produce abundant, good-sized fruit, Taylor says. But older plants slow down in both production volume and size. 4-Star Hydroponics replaces plants about every six months, clearing out four growing bays in the greenhouse to replace the oldest tomato plants with new, small plants only a few inches tall.

Within two or three months, the new plants set on the first clusters of tomatoes and are trained to climb growing wires. Those wires can then be adjusted to lean the vines forward, until eventually the oldest are mere stems running end to end of the row at the bottom of the bay, as newer branches climb the wires.

When the newest plants become productive, the bay containing the oldest tomatoes is cleared out and cleaned in preparation for a new round of fresh plants.

"We just rotate like that year-round," Taylor says.

### Diversification is the future at Taylors' 4-Star Hydroponics

**T**HIS spring marked a breakthrough in business success for 4-Star Hydroponics, a family-operated business based in St. John.

"Kroger came to us and asked us to begin growing living basil for them," says Jarrod Taylor, the 4-Star marketing manager. "I call this a breakthrough, because instead of going to stores, trying to convince them to buy our product and asking them what they will pay for it, we have them coming to us asking for a product — and asking us how much it will cost."

To accommodate the request, 4-Star Hydroponics has undergone the second major expansion of its 10 years in business. A bay of "ebb and flow"-style growing tables with produce growing in tubs of continuously circulating water was installed.

The plants start off as seedlings, and are delivered to stores when they reach about 6 inches tall. They are sold with roots intact in a sleeve of nutrient water.

"The customer then puts the plant in a glass container, with the water, in a sunny spot on the counter or windowsill, and can snip fresh basil for up to two or three weeks," he says. "We think this is going to be a great product line for us."

In late April, Taylor added a black-light filtration system.

"The recirculating water passes through a tube where it is exposed to black-light sterilization several times a day," Taylor says. "The technology guarantees that bacteria will not get a chance to multiply in the water."

4-Star Hydroponics is also experimenting with growing other produce, including Asian greens, leaf lettuce and spinach using the ebb-and-flow system. Some of those products are already under contract to retailers, he says, and he is confident others will take off.

He says 4-Star invested last year in computerized equipment that controls all of the processes in the greenhouse.

"I can check the computer from my living room, and monitor everything that is going on. It will tell me the temperature, humidity, and ventilation status, as well as which tubs are being watered and what is going on with lighting. It was a big investment, but it sure has been worth it."



**ASIAN GREENS:** Another diversified product from 4-Star Hydroponics is Asian greens, tangy-flavored salad greens that can be used in green salads or added to stir-fry dishes.



**LIVING BASIL:** Jarrod Taylor looks over the latest product at 4-Star Hydroponics: living basil. The company is growing the herb for Kroger, where it will be marketed with the rootball intact.

### Retirement dream creates company

**D**ON Taylor, a lifelong livestock rancher in Stafford County, was on vacation at Epcot Center more than a decade ago when he saw his first hydroponic growing system. Immediately, he knew what he wanted to do in retirement.

His sons, Jarrod and Lee, had been hoping to find a value-added agricultural occupation that would allow them to live in rural Kansas and make a living; they saw the idea of greenhouse gardening as something with real possibility — not just for Dad's retirement, but for a new family business.

They bought a standing greenhouse in Colorado, tore it down and moved it to Kansas. They then spent a year of evenings and weekends rebuilding it to launch 4-Star Hydroponics over a decade ago.

About five years ago, when the "locally grown" market really took off, the company's reputation for quality produce was already established — and expansion was soon needed.

"This time, we hired someone to do the construction," Jarrod Taylor, who now manages marketing for the company, says. "We were done with evenings and weekends. The expansion took only a few weeks."

Taylor says 4-Star Hydroponics has profited from the high visibility of the organic movement, even though it is not an organic grower.

"We are an all-natural, local, grower, but definitely not organic," he says.

Certified organic, he says, requires meeting a laundry list of requirements, some of which are just not feasible in the western Kansas climate.

"It would cost me three times as much, and just price me out of the market," he says. "What we have with hydroponics is a high-quality product that we know is safe and that we can sell at a competitive price, with the produce being brought in from Mexico and the hothouses in Canada. It is rewarding to me to go into a store and see that our bins are empty, and there's still unsold product in those other bins."

He says it is company policy not to adjust the price it charges the retail stores and restaurants it serves upward when natural disasters occur, such as freeze or flood in Florida and California, or other growing regions.

"We set our price and it doesn't change because of someone else's misfortune," he says. "We don't try to profit from disaster. I can't speak to consumer prices in the store, because the retailer sets that, and they may adjust to reflect what the market will bear. But we don't."

As for Don Taylor, he has seen his retirement "dream job" take on a life he had hardly imagined possible when he first saw that hydroponic growing operation at Epcot Center.

"It's not just a retirement for Dad; it's a thriving business for all of us — and even, we hope, for the next generation," Jarrod Taylor says.

Jarrod and Michelle have four children. Lee and Megan are expecting their first.

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