

HORTI-FACTS

LEDS ENABLE GROWER TO EXPAND PRODUCTION
WITH VERTICAL HYDROPONIC SYSTEM



Founder Jeffrey Orkin, Greener Roots Farm

CASE FILE FACTS

COMPANY	Greener Roots Farm
LOCATION	Nashville, Tenn.
CROPS	A mix of leafy greens and herbs, including basil, cilantro and parsley.
TECHNOLOGY	Philips GreenPower LED Production Modules Deep Red/Blue 120

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Background

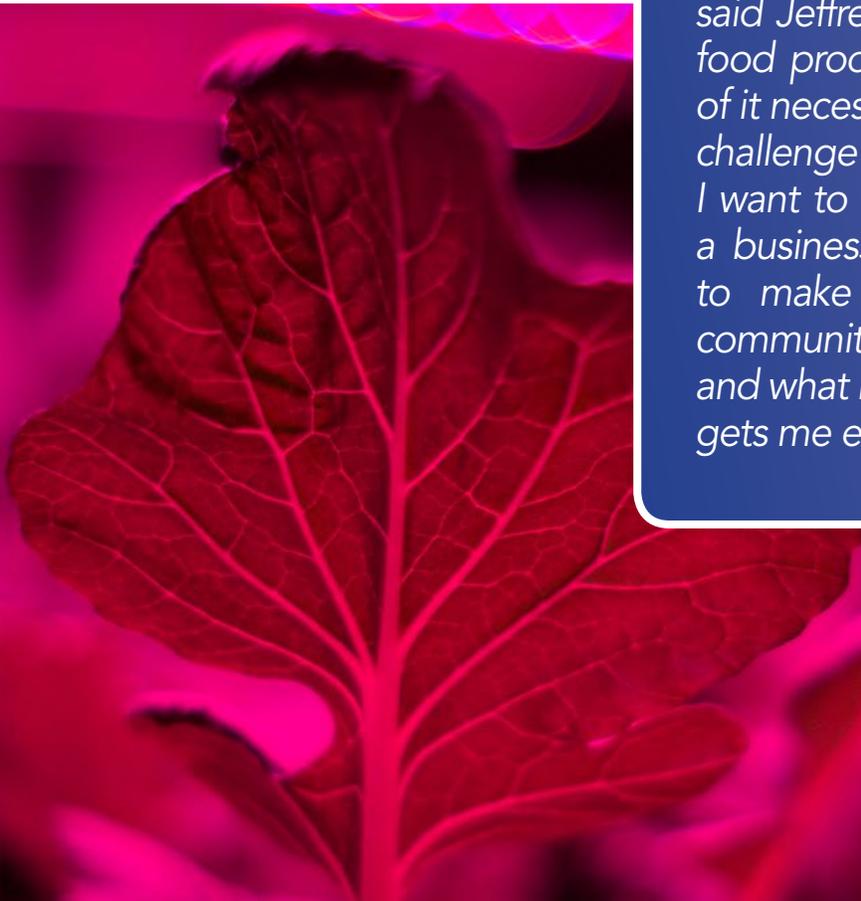
Greener Roots Farm began operating in April 2014 in a leased 6,000-square-foot warehouse located about 5 miles outside of Nashville. Founder Jeffrey Orkin started small, growing plants on the windowsill of his downtown condominium in 2009. The next expansion occurred in December 2012 when he moved to the top of his 12-story condominium building. He discovered a 130-square-foot unused utility room on the roof which he was able to rent at a very reasonable rate. The room had a tall ceiling which enabled Orkin to use a vertical farming system with three different levels.

Challenge

Orkin said the biggest challenge to setting up his vertical production operation was trying to do it while running another full time business. “The challenge was finding the time to set up this production system,” Orkin said. “I operate a business called Landscape Solutions. I am a landscape architect. The company is a design-build for residential and commercial outdoor spaces. We focus on how sustainability meets that world.

“With the exception of having an electrician who ran hard wire for the electric panel and having a contractor do some other things, my girlfriend, an intern, who is now an employee, and I did most of the set up work. We were in the warehouse during evenings and weekends spending a lot of time setting things up. My biggest obstacle was trying to keep myself sane.”

“This concept of local food production presented a very interesting challenge,” said Jeffrey Orkin. “There is a lot of local food production going on, but not a lot of it necessarily makes money. For me the challenge is combining all of these factors. I want to be able to operate a farm with a business model that has the potential to make money while educating the community about how this can be done, and what it does for our food system. That gets me excited!”



Solution

The hydroponic production system Orkin is now using is completely different than the one he setup in his condominium utility room. Orkin has curtained off a grow room in which he is operating two vertical systems with enough space for two additional systems.

“I’m only at about one-third of what I could build out, but this was all I could afford on the front end,” Orkin said. “The warehouse system is a completely new design from the ground up. It is a vertical farm set up with five levels of growing that maxes out at about 13 feet. I have a total of about 2,000 square feet of growing space that only occupies 224 square feet of floor space as it is currently built.”

One of the major considerations moving to the warehouse was scaling the production system to the new facility.

“This included everything from water volume and structural concerns with water weight,” Orkin said. “Having to think through how to cool the space and whether or not the existing HVAC system had the capabilities to do what we needed it to do. It was a combination of taking very small systems and scaling them up and taking materials that would be needed to do that. In addition, there were facilities considerations as far as the height, cooling, and determining where the water is coming from and where it is draining to.”



Greener Roots Farm is producing a mix of herbs and leafy greens, including basil, cilantro and parsley, using 4-foot long Philips LED Production Modules.

Benefits

For his warehouse vertical production system, Orkin chose Philips GreenPower LED Production Modules Deep Red/Blue.

“Everything from seed to harvest takes place in the warehouse,” he said. “We are using 4-foot LED strips. The LEDs are very well designed for the crops that we are growing. I have chosen to produce herbs and leafy greens. For now, there isn’t any crop I’m planning to trial that would fall out of the crop categories I’m currently growing.”

Orkin said his crop mix allows him to provide diversity and selection to the restaurants he is supplying.

“In the future there may be some farmers markets with direct consumer sales,” he said. “Right now I prefer being able to sell larger volumes to restaurants.”

Orkin also said he shouldn’t have an issue with supplying local grocery stores year-round.

“I’ve started packaging a lot of product for grocery stores,” he said. “I’ve found a package that is made from post-consumer water bottles and is 100 percent recyclable.”

“I am really passionate about sustainability. I’m trying to have the biggest impact on the local food scene that I can. I’m trying to produce and deliver the freshest local food that I can. Also, I have to figure out where I can be the most successful as a business.”

For more: Greener Roots Farms, info@greeneroots.com; <http://greeneroots.com>.

