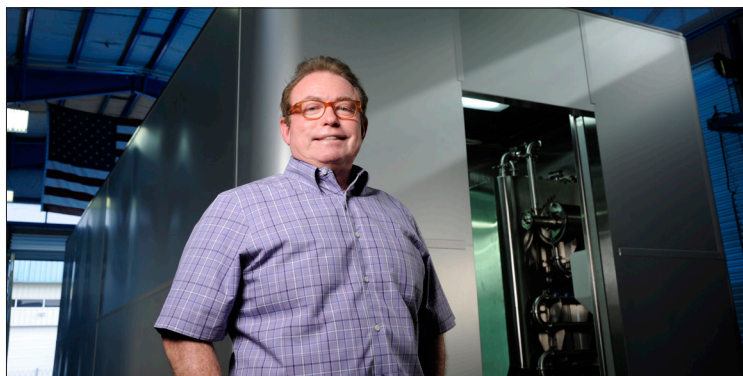


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Ecosphere Technologies CEO Dennis McGuire is pictured in front of the Ecos Grow-Cube™



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Dennis McGuire, CEO Ecosphere Technologies



Ecosphere Technologies pioneers portable farms

By Kit Bradshaw
For Progress & Innovation

First it was a way to treat water without chemicals.

Now Ecosphere Technologies Inc. of Stuart has developed a self-contained fully automatic greenhouse they call the Ecos GrowCube™.

The first GrowCube is set to come off the assembly line. It is the result of more than a year of research, development and fine-tuning and is 30 feet by 10 feet, and nine feet tall, according to Dennis McGuire, founder and CEO of the company.

The GrowCube's initial size was determined by the widest cargo that could be transported via truck without a flagman on duty, McGuire said. Future GrowCubes can be lengthened to suit the customers' wishes.

Agriculture needs water

"There are a lot of people who want to grow crops in a controlled environment," McGuire said. "All my patents are centered around water; cleaning it and reusing it, recycling it. As we worked on various uses for our technology we looked at agriculture."

"Water is a big problem with agriculture. How does our planet expand going forward?" he asked.

"We grow in a controlled environment where we can get a lot more crop production by growing vertically. We've taken the technology we've developed with water and added other factors — light, CO2, oxygen and temperature to create a complete systems integration that can be monitored and controlled remotely, if desired," McGuire said.

'Clean room' atmosphere

The inside of the GrowCube is framed with aircraft grade aluminum, with R-18 insulation and highly reflective material. All the components use stainless steel.



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Ecos GrowCube™ renderings

"It is essentially a 'clean room' atmosphere inside the GrowCube," McGuire said. "We've kicked up the whole game growing inside a controlled environment, by tying all the functions together into a computer interface."

One of the key features of the GrowCube is its portability. McGuire said that it can be delivered to nearly any location and installed on the property. There is a back-up generator available so that the crops keep growing in case of a power failure.

Global flexibility

McGuire envisions the GrowCube being used around the world, since it can be transported like a cargo container on

a ship or via a train or plane. Because it is self-contained, the GrowCube can be used on farms, in the desert, as part of an urban farm in the city or even in a large backyard.

The GrowCube can be used to grow a variety of plants — no tall trees, please.

"For instance, the GrowCube grows plants vertically, so you can grow thousands of heads of lettuce, since you're not growing the lettuce in the dirt," McGuire said.

In addition to a controlled environment, the GrowCube allows the nutrients to be introduced to the plants in a timely fashion, the inside lighting allows for the optimum light for the plants and the seven-ton HVAC system controls the plant temperature perfectly.

"Using an iPad, for instance, we can mix the nutrient levels, set the pH levels perfectly and set the CO2 levels at exactly where we want them," McGuire said.

Food to Frangipani

"We think GrowCubes will be used in a variety of ways. There is a trend for farm-to-table food selections in many restaurants. We see high-end restaurants having a GrowCube in back, to provide their own vegetables and fresh herbs to their customers," he added.

"But we don't see someone just using one GrowCube," McGuire said. "We envision someone using 50 or 100 GrowCubes on their property. We believe it is designed for higher value crops, from Frangipani to vanilla to perfume plants that have expensive essential oils. You can grow any plant that can be grown outdoors in a GrowCube. It can even be used to grow medical marijuana. Plus we have 12-inch tables that fit in the GrowCube so you could easily grow shrimp in the same GrowCube as you grow your vegetables."

McGuire doesn't intend to sell the GrowCubes to customers, but to lease them.

Leasing technology

"We are renting our technology," he said, "so it will make it easier for a farmer or anyone to get into the business. We're in this for the long term with our customers. We'll not only lease the GrowCubes, but we'll give the customer advice on how to maximize their plant growth, and how to keep bacteria at bay in the water without chemicals."

Ecosphere Technologies, according to McGuire, may be "a little early to the party." However he believes the company's customers will be "people who don't want chemicals in the crops they are growing and are sophisticated in what they are doing with their crops."

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