Clean Technology Insight

Green Shoots? AeroFarms Systems Aims To Bring In $5M

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AeroFarms Systems LLC, a company that makes stackable aeroponic systems that grow leafy green vegetables without pesticides, soil and sun, is planning to raise a $5 million Series A round, Clean Technology Insight has learned.

Ed Harwood, chief executive and founder of the Ithaca, N.Y.-based company, said in an interview that he has been talking with possible venture capital investors and has engaged advisory firms New Seed Advisors and Equinox Securities to introduce the company to venture firms. Harwood is a former head of plant science at Cornell University's cooperative extension.

He said he is hoping to close the round in the next few months, and the company is also close to completing its first major deal. Harwood also said he expects to break even by some time next year, citing the low capital costs involved in his business.

Harwood said the company will use the $5 million for sales and marketing, working capital, and expansion of facilities and key team members.

In November, Aero raised $500,000 in seed money from The Quercus Trust of Newport Beach, Calif., with co-investor 21Ventures LLC, a New York-based venture capital firm.

Aeroponics is the process of growing plants in air or mist.

Aero's systems grow 175,000 pounds of baby leafy greens per year. Harwood said a typical installation of 10 machines will grow nearly 13 acres of produce while using less than 10,000 square feet of floor space. Harwood said this method of growing crops is economically competitive with traditional farming.

"Actually sunlight is not free; it comes with heat and often too much light, forcing production of cool season crops to be grown at many latitudes to serve consumers all year round," Harwood said.

The system "looks like a stacked series of tunnels," Harwood said. "Those can be stacked about seven high, and each one of those ducts has two zones. There is the root zone where you're spraying the roots and the bottom serves as a way to collect and recycle the nutrients you're spraying. Above the second zone is the plant zone where you provide the light. The separation between those zones is a horizontal cloth. That's the proprietary part of the thing."

The machines can be stacked up to seven units high, or 20 feet, and each unit can be up to 80 feet long. Harwood said as many of those groups could be used as the room allows.

The equipment uses light-emitting diodes to provide light for the plants, which only need the red and blue parts of the spectrum to function properly. LEDs are good at providing light from a narrow part of the light spectrum and are very energy-efficient compared to other types of light.

The Department of Energy says that LEDs are 10 times more efficient than incandescent lights.

"For plants, it's really kind of nice," Harwood said. "I want to give the plant just-in-time photons of just the right part of the spectrum."

This farming method is comparably environmentally friendly, he said, because the food can be grown locally, saving transportation-based emissions. Also, because the produce is grown indoors, no pesticides are needed and it can be grown year-round.

"If you don't have pests you don't need pesticides," Harwood said.

Aero began operations in 2004 and employs five people to work on the technology and the business, growing out of Harwood's research at Cornell University and its cooperative extension. As the head of plant science for Cornell's cooperative extension, Harwood said he realized that no company had made aeroponic systems for commercial uses.

He now estimates his company could be facing a $1 billion market if it can address 25% of the sales of leafy greens. His equipment focuses on baby leafy greens because they sell for more money than some other vegetables.

http://www.aerofarms.com

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