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A Crop Sprouts Without Soil or Sunshine

By TODD WOODY

EcoVeggies Seedlings flourish in an aeroponic growing machine at St. Philip's Academy in Newark.

On the rooftop garden at St. Philip's Academy, a private school in Newark, students tend plots of everything from broccoli and beets to sweet corn and spaghetti squash.

But since August, they have also been helping to farm arugula, chervil, fun jen and komatsuna in a machine installed in a fourth-floor science classroom that grows crops without soil or sunshine.

Made by the Ithaca, N.Y., company AeroFarms, the aeroponic growing system is owned by EcoVeggies, a startup formed by three former Wall Street technology workers who aim to transform Newark's abandoned and vacant buildings into so-called vertical farms.

"The produce will be sold and used in the areas immediately surrounding Newark to start with, and then we expect to be able to service the immediate tri-state area," Richard Charles, one of EcoVeggies' founders, wrote in an e-mail.

At St. Philip's Academy, leafy greens are planted in a cloth bed and irrigated with a nutrient-infused mist. Light is provided by LED lamps, which are more energy-efficient than conventional lighting and can be placed closer to the beds. The LED lamps also provide pest control, said AeroFarms' chief executive, Ed Harwood, because they can be set to emit certain wavelengths that disrupt insects' breeding.

AeroFarms is leasing the machine, which stands 7 feet tall by 10 feet long, to EcoVeggies for use in the pilot project at St. Philip's. It can produce about 20 pounds of produce per harvest, Mr. Charles said.

EcoVeggies and AeroFarms are part of the sustainable agriculture movement, sometimes called Agriculture 2.0, which seeks to combine technology and organic farming to grow crops in urban areas that often lack access to fresh food.

In another effort to turn Newark into an agricultural hot spot, Weber Thompson, a Seattle architecture firm, and Dickson Despommier, a professor of environmental health sciences at Columbia University, this year proposed building a large vertical farm in the city.

AeroFarms' modular farms are built in stackable containers designed to be housed in a variety of buildings. The company, which is backed by 21Ventures and the green-tech

investor David Gelbaum's Quercus Trust, has built a second machine and has an order for a third, Mr. Harwood said.

"We have a substantial pipeline of prospects and expect to close on a commercial- size growing facility soon," he wrote in an e-mail.

Mr. Charles said he expected to sell produce grown in AeroFarms machines to local schools, supermarkets, hospitals and restaurants.

Karen DePodwin, a spokeswoman for St. Philip's Academy, said that school officials met the EcoVeggies partners at a conference at Rutgers Business School to address Newark residents' access to healthy food.

"Our students are excited to see the future of farming in their own science lab," she said. "Some of the leafy greens grown using the system are being used in our teaching kitchen and healthy lunch program."