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Engineering Students Help Small Farm Spin Ahead

19 8

By ecoRI News staff

Colin Nerich, a recent graduate of Fairfield University, with 'SpinLeaf,' a device he developed with classmates to help small-scale farmers. (Fairfield University)SHELTON — A group of recent graduates of Fairfield University's School of Engineering has developed a device to help small farms. "SpinLeaf" — an electric-powered greens spinner — was designed and built by the young engineers to help Stone Gardens Farm.

One of the farm's important and time-consuming tasks is cleaning loose-leaf greens. SpinLeaf's main function is to not only clean, but also dry the greens, all in one cycle. Whole Foods awarded the Fairfield University students a $500 grant for the project.

It began last fall as part of the school's yearlong "Senior Design" course, which asks seniors to develop a device, vehicle or tool that is needed in the marketplace but hasn't yet been invented.

Stone Gardens Farm had been using a greens spinner that its own farmers built, but it lacked a number of helpful features and there is no commercial product currently available to do the job. A SpinLeaf prototype the students developed has shown promise, and the farmer is now using the device.

It works on a horizontal axis with an electrically powered rotating drum fabricated from sheets of stainless-steel mesh that has a large sliding door with an optional water delivery system.

"When some of my farmer friends have seen it, they are all very impressed by it," said Fred Monahan, of Stone Gardens Farm, which grows 50 acres of vegetables annually and raises poultry, pork and beef. "I think there is a need for a spinner like this on all farms who want to market direct to the consumer."

"We're in the testing phase with SpinLeaf," said Colin Nerich, of Chevy Chase, Md., a member of the School of Engineering's Class of 2014. "We want to patent the device in the hope to mass market it to other small-scale farms."

Nerich worked on the project throughout the academic year with fellow mechanical engineering majors Sharoz Seyal, of Fairfield, and Claudele Pierre, of Bridgeport, and Robert Governale, an electrical engineering major from Wallingford.

"What is available on the market is too small (to clean loose leaf greens), so farmers like Stone Gardens have to build their own," Pierre said.

A device such as SpinLeaf would help many other farms, since 90 percent of farms in the United States are considered small scale, according to the students.

Fairfield University assistant professor Shanon Reckinger, Ph.D., advised the students on the project. The "Senior Design" course instructor was Shahrokh Etemad, Ph.D., chairman and associate professor of mechanical engineering at Fairfield.

Reckinger said SpinLeaf could play a crucial role in the farming industry.

"When loose leaf greens like kale, lettuce and spinach are harvested, they are extremely sensitive to heat and risk wilting or drying out quickly and easily," she said. "Greens are first treated by rinsing to remove dirt and debris. After rinsing, all water must be removed in order to preserve fresh, crisp produce."

In addition to this initial cleaning and drying, loose greens often need a cold rinse to rehydrate the leaves before they go to market. The SpinLeaf device provides this next step, again using the right amount of rinsing and drying to prepare produce for sale and preserve it in the interim.

"There are few fabrication adjustments to make, but that is normal for a project like this," Monahan said. "When it is

finished, this spinner will cut our prep time in half, at least."

Fred and Stacia Monahan founded Stone Gardens Farm in 1998, after expanding from a roadside vegetable stand where they sold vegetables and flowers at Shelton's Dairy on Birdseye Road in Shelton. The couple steadily grew their business, planting more varieties of vegetables on mostly leased land.

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