

Fairfield University engineering students help Shelton farm with Whole Foods grant

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 in Shelton, Connecticut. One of the farm's important and time-consuming tasks is the process of 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 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 been invented yet.

Stone Gardens had been using a greens spinner that its own farmers built, one that lacked a number of helpful features. There is no commercial product currently available to do the job. A SpinLeaf prototype the students developed has shown great promise, and the farmer is now using the device at the farm. 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, Maryland, 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. We will be working with Stone Gardens and Farmer Fred [Monahan] to get it operational."



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

"What is available on the market is too small [to clean loose leaf greens], so farmers like Stone Gardens have to build their own [spinners]," said Pierre. A device like SpinLeaf would help many other farms, since ninety percent of farms in the United

States are considered small-scale farms, according to the students.

Whole Foods Market is interested in supporting local businesses, big and small, and is a partial sponsor of the SpinLeaf project. Liz Giegerich, marketing team leader for Whole Foods Market/Fairfield, said, "We were so impressed with the students' design and forward thinking for the future of the food industry. The project aligns perfectly with our core value to serve and support our local community, and we're incredibly happy to be a sponsor."

Fairfield University Assistant Professor Shanon M. Reckinger, Ph.D., the Clare Booth Luce Professor in Mechanical Engineering, 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. Fred Monahan, of Stone Gardens, was their mentor.

Dr. Reckinger explained how 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. A large-scale 'salad spinner' such as SpinLeaf is essential for this industry."

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.

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.

The farm's current spinner lacks many features that are part of SpinLeaf.

SpinLeaf is made of 100% USDA food safe material, and includes safety features not present on similar, current devices. Built out of 14-gauge stainless steel and perforated stainless steel mesh, the apparatus provides a 2.5 times larger drum volume allowing for higher efficiency for rinsing and drying the greens.

Monahan was pleased with the students' device. "There are few fabrication adjustments to make, but that is normal for a project like this," he said. "When it is finished, this spinner will cut our prep time in half, at least."

For more information, visit

Photos: top) L-R: Sharoz Seyal, Colin Nerich, Claudele Pierre, Dr. Shanon Reckinger, Robert Governale, Fred Monahan; bottom) Colin Nerich, a recent graduate of Fairfield University, with 'SpinLeaf,' a device he developed with classmates to help farmers.



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