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Rootsii bets on sweet potatoes to disrupt plant-based dairy market

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A North Carolina food-tech startup is turning one of the state's biggest agricultural challenges into a new business opportunity after securing nearly $1.82 million in grant funding to commercialize a plant-based milk made from surplus sweet potatoes.

Rootsii, a startup co-founded by Dr. Brett Taubman, professor at Appalachian State University, and Daniel Parker, manager of the university's Fermentation Sciences Lab, has received preliminary funding from NCInnovation, a nonprofit focused on advancing university research into market-ready businesses.

The investment supports the commercialization of a proprietary technology designed to address a major inefficiency in North Carolina's agricultural sector: the loss of millions of pounds of sweet potatoes that never reach consumers.

Tackling a Multi-Million-Dollar Waste Problem

North Carolina produces approximately 60 percent of the United States' sweet potatoes, yet as much as 40 percent of the annual harvest is lost before reaching retail markets, according to industry estimates.

That translates into roughly 63 million pounds of sweet potatoes discarded each year, representing an estimated $13.2 million in lost value for farmers.

Rootsii's solution is a patent-pending enzymatic process that converts surplus sweet potatoes into a naturally sweet, plant-based milk without the need for added sugars.

"The sweet potato industry is desperately in need of innovation, and we have an innovation that should seriously help to promote it," said Taubman.

The company's current formulation contains only four ingredients: sweet potatoes, chia seeds, yeast-derived protein, and coconut oil. Future versions are expected to replace coconut oil with muscadine grape seed oil, another upcycled agricultural byproduct sourced from North Carolina's wine industry.

Beyond Plant-Based Milk

While sweet potato milk will serve as the company's flagship product, Rootsii is pursuing a broader vision centered on value-added fermentation and food innovation.

Its planned product portfolio includes creamers, yogurt, ice cream, sweet potato miso, and fermented hot sauces, creating multiple commercial pathways for agricultural byproducts that would otherwise go unused.

The strategy reflects growing consumer demand for sustainable food products while addressing mounting concerns around food waste and supply-chain efficiency.

Building a New Agricultural Value Chain

Production will be divided between two locations, with bulk processing taking place in eastern North Carolina near major sweet potato growing regions and product development continuing in Boone, home to Appalachian State University.

The project, which began development in 2024, is targeting commercial readiness within the next two years.

Funding from NCInnovation will support product validation, consumer testing, shelf-life studies, and production scale-up efforts. The grant will also fund undergraduate research opportunities, providing students with hands-on experience in food innovation and commercialization.

Creating New Markets for Farmers

Industry leaders view the initiative as an example of how agricultural innovation can create economic value while improving sustainability.

"North Carolina is the country's top sweet potato producer, and Dr. Taubman's work could open an entirely new market for those farmers while reducing agricultural waste," said Michelle Bolas, CEO of NCInnovation.

Rootsii is already collaborating with the North Carolina Sweetpotato Commission, Caldwell Community College's Culinary Arts Program, and the High Country Impact Fund, while discussions with beverage companies and distribution partners are underway.

As consumer interest in plant-based foods continues to expand, Rootsii is positioning itself at the intersection of food technology, sustainability, and agricultural innovationâ??transforming an overlooked waste stream into a potentially scalable new category of dairy alternatives.