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SPOTLIGHT

Field outside St. Peter produces first Kernza crop in county

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Agriculture is sometimes thought to be antiquated, stuck in its ways. But from the mule-drawn plow of the past to the tractors, balers and forage harvesters of today, it's really one of the fastest changing and most innovative industries around.

And one of its newest and most exciting products, Kernza, has now impacted Nicollet County.



Ben Penner walks in a harvested field of Kernza, the first of its kind in Nicollet County. The field is on Dan Coffman's farm. (Philip Weyhe/St. Peter Herald)

This August, Dan Coffman's farm, just west of St. Peter, harvested the first known crop of the wheat grain Kernza. Coffman is working with St. Peter resident and Le Sueur/Scott County farmer Ben Penner, who does significant agricultural advocacy and research in the area with the University of Minnesota Extension program.

Kernza, first developed experimentally in 1983 and later trademarked by The Land Institute in Kansas, is a perennial grain and its root can extend 10 feet or more beneath the soil surface, more than twice the depth of and in greater density than annual wheat roots. But perennial grains don't need plowing, which allows soil to keep trapping carbon in the ground, rather than releasing it to the atmosphere. Perennials' large root systems also boost soil and water health by keeping nutrients in the dirt.

For Penner, who helped Coffman plant 11 acres of the crop and plans to start 34 acres of his own this fall, Kernza has a number of benefits. He mentioned the climate impact chief among them, but he also noted that it doesn't need to be replanted annually, it works well in organic farming systems, and it offers livestock forage opportunities after harvest. Plus, it's a new product to bring to the market.

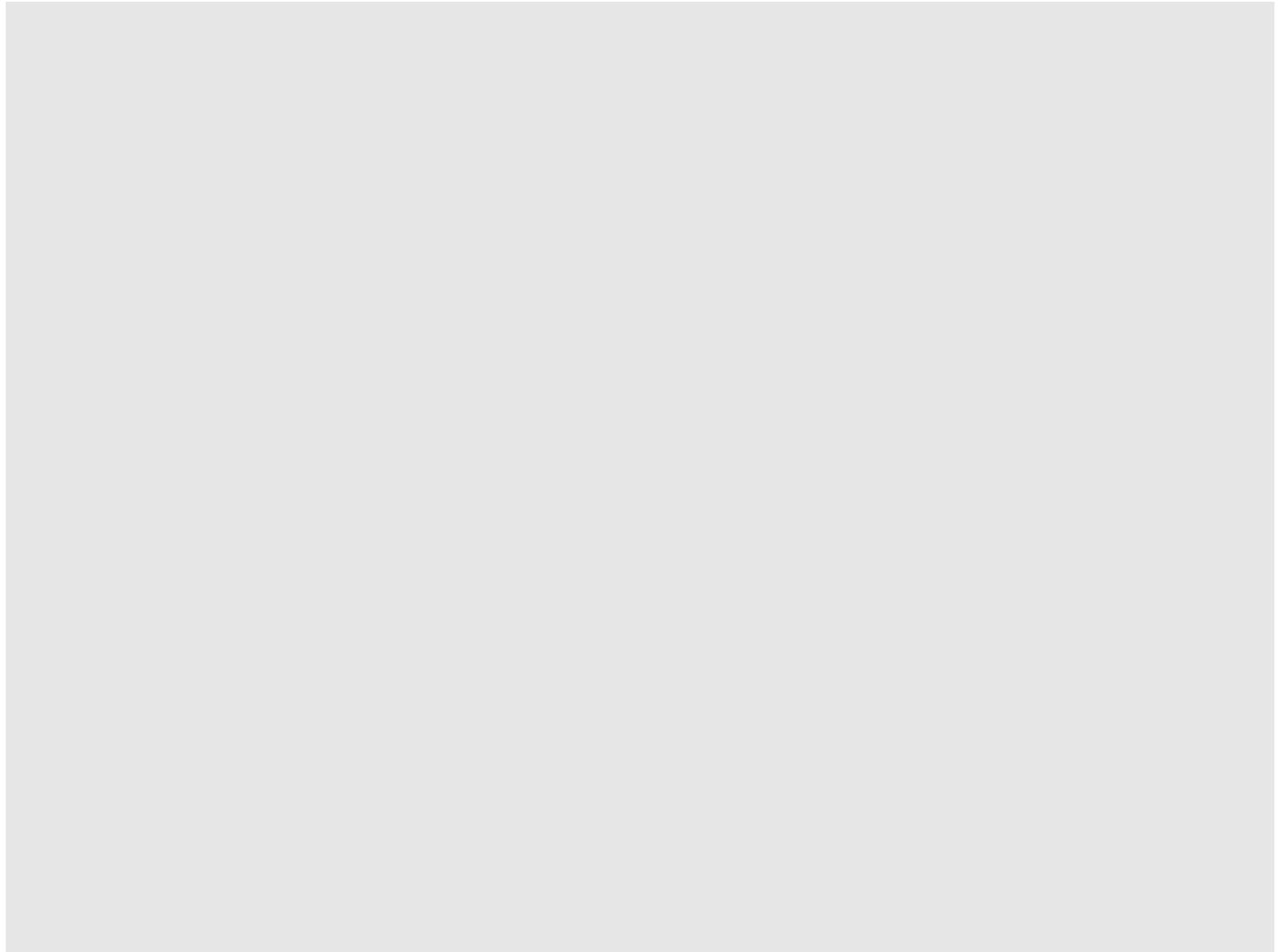
"American farmers, Minnesotan farmers are really good at innovating and meeting the needs of customers, so I think the ability to do that with a new crop is a net benefit to farmers," Penner said. "I think this crop really represents a huge step forward in cropping systems. I frequently say, 'How often do you get the chance to work on a brand new crop?'"

Local beginnings

Plant breeders at Rodale Institute in Pennsylvania were the first to work with a Eurasian forage grass called intermediate wheatgrass as a perennial grain candidate. They paired with the USDA in 1988 to work fertility and seed size. In 2003, The Land Institute took over selection and inter-mating to work on yield, seed size and disease resistance. It now has a number of partners, growing and testing the crop, but The Land Institute has bigger goals.

"Although Kernza grain has made its way into the commercial supply chain in small niche markets, our goal is to develop varieties of Kernza that are economical for farmers to produce at large scale," the program page says.

Around 2010, the grain was brought to the University of Minnesota, and the university's Forever Green program, which Penner works with, has since developed its own variety called Minnesota Clearwater. As researchers develop the grain for maximum output and efficiency, they're looking to rural farmers for help.



Ben Penner is among those leading the way in developing Kernza as a salable and marketable farm crop in Minnesota and beyond. (Philip Weyhe/St. Peter Herald)

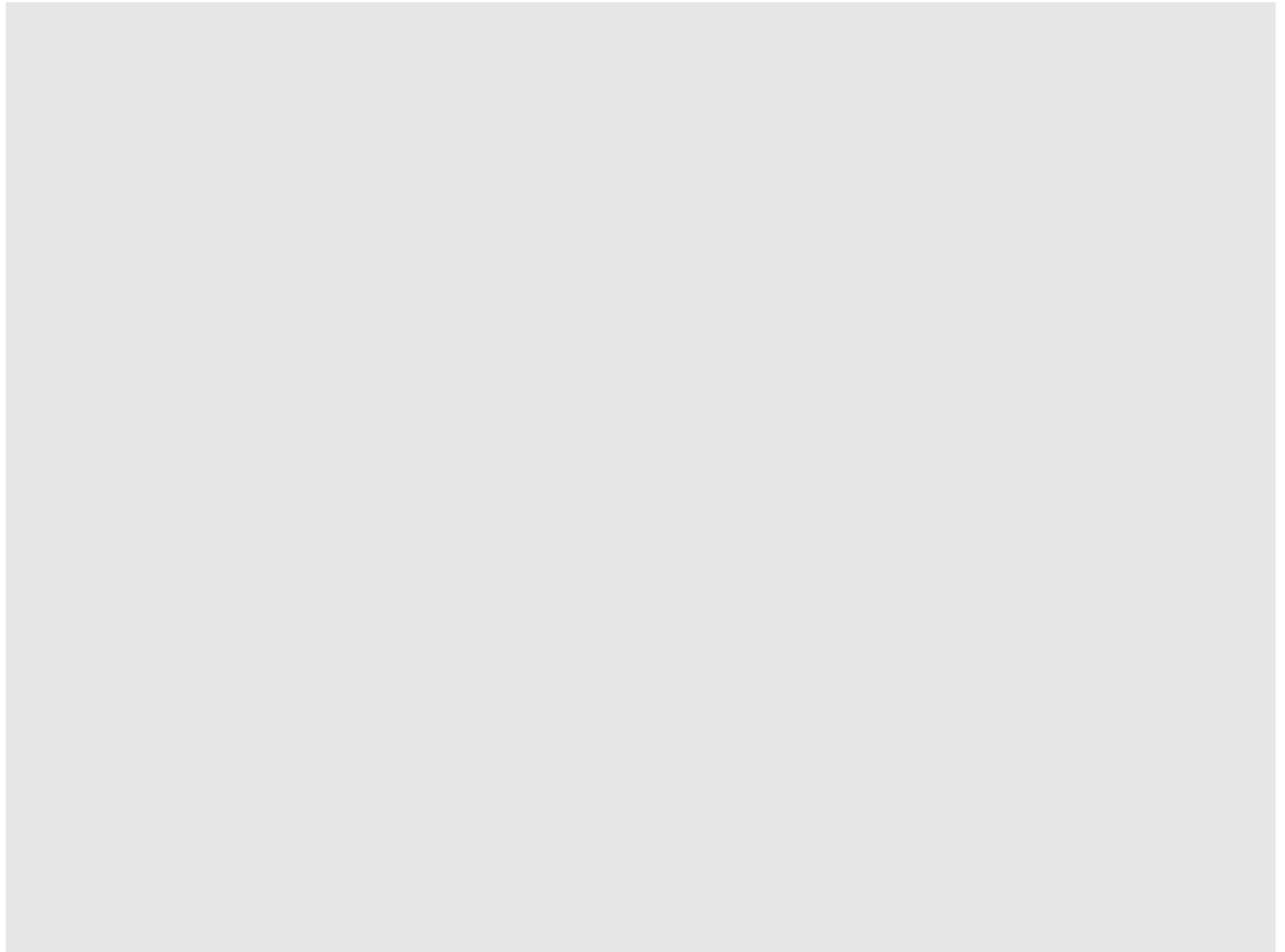
"It's now in that phase between where it's in the university's hands and trying to bring it into the realm of farmer, so Dan decided to put this in his field," Penner said.

For Coffman, who just started farming his 450 acres a few years ago, Kernza fits in with his vision for agriculture. His dad was a conservation officer, and he believes in practices that will preserve the land for future generations, including his own four children.

"I really like experimenting with new things, especially new crops, something different than corn or soybeans, to help build the soil and add another crop to the rotation," he said. "The perennial crops, we're not tilling and disturbing the soil every year. And that soil is covered 365 days per year, so from a soil health standpoint, that's excellent."

He said that his experience growing the crop in year one was positive.

"From what I can tell thus far, it's easier," Coffman said. "You just plant it and harvest it. It does require a little more management with the harvest, and then with the grain post-harvest. But some of that will get easier, because this is the first time we've dealt with Kernza."



Kernza is a perennial crop, meaning it doesn't need to be reseeded each growing season, although current best practice is to start over after three years when the crop's yield reduces. (Philip Weyhe/St. Peter Herald)

The 11-acre field, according to Penner produced somewhere between 800 and 1,000 pounds of product per acre in its first harvest, which is significantly less than traditional wheat yields, but as breeders continue to work on the seed, those yields have been increasing.

The Nicollet County field is the first Kernza crop in the immediate area. Other growing locations around the state include Rice County, southeast Minnesota and northwest Minnesota. Penner said that there are about 100 acres of the crop statewide in 2020, but by 2021 harvest season, there will likely be closer to 1,000 acres.

Finding a market

The big challenge for Kernza is commercialization. While it's benefits to the environment and to sustainable agriculture are obvious, it's marketability needs to be proven.

Asked who the consumer for the product is, Penner joked "everyone reading this article." But while he's aware it will take some education, he believes Kernza has a viable use in many settings.

"It's similar to a wheat flour, so it can be an ingredient for the home baker. Right now, there is a line of crackers available. It has a nice, nutty flavor to it. It has a different nutritional profile and gluten content (than other wheats)," Penner said. "Some of my work in the next six to eight months will be the fine point on these questions, so I'm going to be asking a lot of buyers to determine their exact needs for this product. And then essentially building the system."

One area the product has already been tested and used is in craft brewing. Northfield's Imminent Brewing debuted its first Kernza beer in February 2020. The first batch sold out and proved popular among the crowd.

"I'm not a beer drinker and I really liked it," said Just Food Co-op Marketing and Community Relations Manager Stephanie Aman. "It was sweet and had a really nice soft finish."

A number of breweries in the metro also found success using the product in their beers, and the demand in that industry is growing.

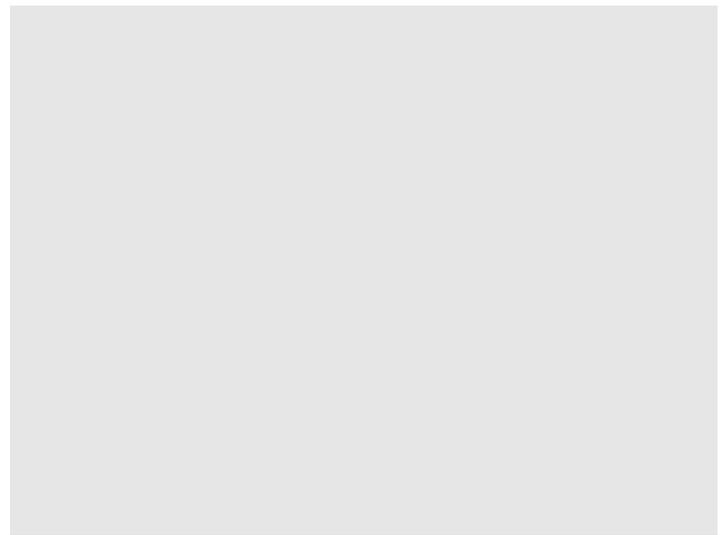
But what the product could use, Penner said, is some institutional buyers. In 2019, General Mills made a cereal with Kernza, and more large-scale purchases like that could help grow demand for the crop.

"I'm on the leadership board of a Kernza Co-op group, so that we can collectively sell to institutional buyers," Penner said. "It's at the stage where we're finding out who those core customers are. There are a number of organizations interested. And there is also room for startup businesses right now in processing."

While there is a lot to do, Penner and Coffman both believe Kernza is here to stay.

"It's been a fun and enjoyable experience, getting to experiment with a new crop," Coffman said. "It's actually bringing back some excitement into farming, instead of just a corn and soybean rotation."

Penner added, "The fact that it has the institutional support of the USDA, the University of Minnesota and Forever Green, it's one of the most exciting things I've seen in my lifetime, and Kernza will certainly, I think, eventually, maybe not this year or next, but eventually will be a big part of the mix and be part of the transformation of agriculture."



Kernza is similar to a wheat flour, but with different nutritional profiles and gluten content. Kernza is also considered more environmentally friendly than most crops. (Philip Weyhe/St. Peter Herald)

Reach Editor Philip Weyhe at 507-931-8567 or follow him on Twitter @EditorPhilipWeyhe. ©Copyright 2020 APG Media of Southern Minnesota. All rights reserved.

TRY IT OUT

You can be a Kernza consumer through Perennial Pantry, a public benefit corporation aiming to market perennial crops to the public. Consumers can pre-order Kernza from the website now at perennial-pantry.com.

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