

## Forever Green Initiative



Photos courtesy of Karl Hakanson, UMN

# 2022 UMN Forever Green Kernza®

## Commercialization Priorities in MN and the Upper Midwest

### Introduction

Kernza® perennial grain is North America's first commercially-viable perennial grain crop. Kernza is the trademark name for products harvested from improved lines of Intermediate Wheatgrass (IWG), a perennial forage grass native to Eurasia that was brought to North America in the early 20th-century. Research to develop IWG into a commercially-viable perennial grain crop for human consumption has advanced rapidly over the last several decades under the vision and leadership of The Rodale Institute, The Land Institute, University of Minnesota (UMN) Forever Green Initiative (Forever Green), and others. All breeding efforts to-date on this crop have been non-GMO.

The Land Institute, a nonprofit research organization based in Salina, Kansas, owns the Kernza trademark and took leadership to develop Kernza decades ago as part of its vision to develop a 'Natural Systems Agriculture' of perennial polycultures. Through collaboration with The Land Institute, Kernza also became the spearhead of over a dozen perennial and winter annual crops and cropping systems being developed by Forever Green to expand "continuous living cover" (CLC) agricultural systems in the Upper Midwest. These new crops will offer growers new economic opportunities, unique sustainable products to industry, and critical ecosystem services to society. UMN FGI started its Kernza breeding program in 2011 using germplasm shared by The Land Institute. In 2019, UMN released the world's first Kernza variety, MN-Clearwater. In 2022, MN-Clearwater will continue to be the premier commercially-available Kernza® variety. Forever Green and The Land Institute continue to work closely on all aspects of Kernza.



As a deep-rooted perennial, Kernza shows potential to improve water quality, reduce soil erosion, sequester carbon, and provide other ecosystem services, all while reducing tillage, input, and seed costs for growers. Kernza is also being promoted to producers as a dual-use crop for grain and forage, as it produces a high-quality hay and high volume of straw annually. Kernza provides food industry partners a uniquely sustainable grain with wide potential applications in food products, brewing, and distilling. This new small grain has a bold story and big vision for perennial grain crops that improve water quality, soil health, climate, grower livelihoods, and rural vitality, all while meeting industry and consumers' growing demand for holistically sustainable and regenerative food products.

## Context: The State of Kernza® in 2022

Kernza's commercial development took great strides in 2021, and continues to be at a critical stage of development in MN, the Upper Midwest, and nationally. Kernza® perennial grain is now squarely in what is often referred to in innovation management as the "Valley of Death." Traversing this 'valley' is the process in which all innovations take the plunge into the risky business of establishing themselves in the marketplace, attempting to scale, and achieving profitability. So, this is a good, inevitable place for Kernza to be that signals progress. Kernza's task now is to climb out of the valley and into the world.

Many 'new crops' have failed to make it across this valley, for myriad reasons ranging from weather, to lack of on-farm success, to regulatory hurdles, to economics, to consumer acceptance. Despite the legacy of new crops stalling out in the Valley, Kernza continues to make progress. The network advancing this crop has maintained Kernza's momentum through continued transdisciplinary scientific crop development efforts, strategic commercialization, entrepreneurship, grower and industry leadership, policymaker support, as well as surging buyer and consumer demand— all aided by the context of a growing regenerative agriculture movement.

The Upper Midwest region is now producing roughly 2,000 acres of Kernza total— roughly five times 2019 production, and almost half of the world's early commercial production. Three seed companies in the region—[Albert Lea Seed House, Minnesota Native Landscapes](#), and [Brownseed Genetics](#)—provided the vast majority of the world's commercial seed supply in 2021, and/or will have seed available in 2022. These companies are licensed by UMN to sell MN-Clearwater.

Over the last year, Kernza made major headway in the public consciousness through frequent media coverage, appearance on more store shelves, and use in more home kitchens. Kernza was profiled in 2021 by The Washington Post, The Star Tribune, Minnesota Public Radio, The Progressive Farmer, Mankato Free Press, St. Cloud Times, and numerous other local newspapers, agriculture news outlets, and trade publications.

The number and range of Kernza products hitting the market is expanding weekly. Regional and national products now include:

- [Perennial Pantry](#) products including whole grain, 100% Kernza flour, a blend of Kernza and regeneratively-grown wheat, and a pancake mix
- [Patagonia Provisions](#) beers including Long Root Ale, Long Root Wit, and Long Root IPA, as well as a new food product, [Organic Kernza Fusilli Pasta](#)
- [Cascadian Farms Climate-Smart Kernza®](#) cereal, available in Whole Foods nationwide
- The Marvel Kernza® naan and Perennial Pockets (Kernza® pita) from [Artisan Naan Bakery](#), available online and in over a dozen locations at Twin Cities grocery cooperatives and Lunds & Byerlys stores
- Numerous bakeries, including [Doughp Creations Kernza Sourdough](#) and trial creations from [D'argent Bakery](#) in Minneapolis
- Early-to-adopt stalwart partners such as [Bang Brewing](#), [Bakers Field Flour & Bread](#), and [The Birchwood Cafe](#) continue to keep Kernza on plates and in glasses
- Local breweries continue to brew and offer limited-run Kernza beers in their taphouses

This momentum, along with a groundswell around regenerative agriculture and soil health, landed Kernza on Whole Foods Market's "[Top 10 Food Trends in 2022](#)."

Several new Kernza processors and millers in MN and SD are bringing Kernza into

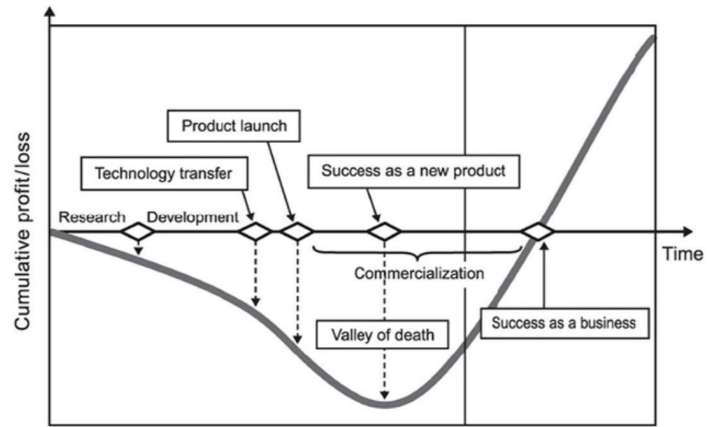


Photo courtesy of Mette Nielsen



their business in early 2022 to provide more processing options to Kernza growers and buyers. National partners such as [Healthy Food Ingredients](#) continue to play an important processing role for Kernza growers and buyers. The grower-entrepreneurs at [Sustain-a-Grain](#) are providing regional leadership in production and marketing in Kansas, a base of growers is established in Montana, and first-adopter growers are sprinkled elsewhere across the US and in several other countries. Inquiries are also coming in frequently from Canada, Europe, and South America seeking to establish international production and markets.

Minnesota and the Upper Midwest will continue in 2022 to be an international leader in integrated Kernza research and commercialization. This is due to a myriad of actors collaborating to advance Kernza and CLC agriculture, ranging from land grant universities, growers, supply chain partners, end-users, consumers, communities, researchers, advocates, policymakers, and funders.

## Grower leadership steps forward

In 2021, the [Perennial Promise Growers Cooperative](#) (PPGC) officially incorporated, began enrolling members, and hired a marketing team. The mission of PPGC, as they describe on their website is to provide direction and assistance to farmers interested in growing and marketing Kerna, working closely with them to provide assistance in adopting this transformational ecological system as well as provide the logistical and processing networks, services and expertise for scaling-up Kernza.” At over 25 members and growing, PPGC has rapidly solidified a role as an important leader in Kernza perennial grain production. UMN FGI is committed to working with PPGC on Kernza’s continued scientific and commercial development to ensure Forever Green is delivering meaningful economic, social, and environmental benefits to growers and rural communities.

FGI encourages prospective growers to connect with PPGC as the best means of achieving success in Kernza production and marketing, and buyers to connect with the cooperative as a global leader in accessing a high-quality, reliable, sufficient supply of Kernza® perennial grain in 2022 and beyond.

## Valued State support from MDA, national KernzaCAP project, many more

Investments from State of Minnesota’s Clean Water Fund and accompanying support from the MN Department of Agriculture, continues to be a critical ingredient to Kernza and CLC’s early successes in MN and beyond. FGI hopes other states follow suit with State-level investments.

A community of policymakers, advocates, NGOs, and communities continue to create a web of good will and multi-faceted support to advance Kernza. This includes Friends of the Mississippi River, Minnesota Environmental Partnership, the MN Farmers Union, Land Stewardship Project, the Sustainable Farming Association, Green Lands Blue Waters, the Artisan Grain Collaborative, Clean River Partners, the Lake Pepin Legacy Alliance, Great River Greening, the MN Rural Water Association, the MN Board of Water and Soil Resources, and many more. The Agricultural Utilization Research Institute (AURI) continues to play a multi-faceted and critical role in supporting agricultural utilization insights and supply chain development for Kernza.

Supported by a major federal USDA SAS CAP project housed at UMN, the [KernzaCAP Project](#), peer research institutions across the country are collaboratively advancing Kernza breeding, agronomy, education, extension, policy, environmental quality, supply chains, economics, and integration.



## Big Questions Remain

Many questions about Kernza's path forward require perennial consideration. In 2022, particular questions include:

- How can Kernza commercialization efforts ensure equitable access to new opportunities, including for Black, Indigenous, and people of color across the value chain as producers, supply chain partners, and consumers?
- How will social and economic sustainability benefits of strong returns to early-adopter growers be balanced by industry and consumer willingness to pay, informing scaling?
- Should the focus be on developing regional value-based supply chains for their various benefits, major industry partnerships with potential to scale quickly, or both?
- How might Kernza's ecosystem services be valued and monetized via product pricing, creative partnerships, ecosystem service markets, public investment, or otherwise?
- How will the emerging, multi-stakeholder Kernza Stewards Alliance address differences and advance common priorities across the supply chain and across sectors?

Over the long term, Forever Green remains committed to the sustainable commercialization of Kernza and other continuous living cover crops and cropping systems. This means continually and responsibly scaling production, supply chains, and markets for these crops while addressing economic, social, and environmental sustainability.

## 2022 UMN Forever Green Kernza® Commercialization Priorities

With this broader context in mind, Forever Green's top priorities for Kernza in 2022 are to:

1. Help Kernza cross the "valley of death" by supporting the growth and success of early Kernza enterprises, scaling production, and intensive market development efforts
2. Continue to deploy first-wave resources and technical support for early adopters
3. Co-develop governance structure for Kernza, via a Kernza Stewards Alliance, to transfer ownership and leadership of Kernza to licensees, with long-term institutional support
4. Address glaring gaps in Kernza's lack of racial and ethnic diversity in its value-chain and stakeholders, as continuous living cover will only be successful if it is inclusive and just
5. Continue developing favorable local, State, and federal policy environments to support Kernza's success and expansion, including targeted investment in supply chain and market development

As in 2021, these 2022 priorities focus on continuing to scale production in close alignment with sustainable commercialization goals around grower livelihoods, regional economic development, community vitality, and environmental impact.

## A "LIFT" strategy

People often ask the Forever Green team, how will Kernza succeed? Will it be growers, researchers, and policymakers "pushing" the crop into the market through improved technologies, education, increased production, and favorable policies? Or it will be markets and consumers "pulling" the crop onto the landscape and into the marketplace?

What's been learned over the last three years is that, if one is in search of a verb, the action through which continuous living cover agriculture will take root and flourish is LIFT.

In other words, everyone has a role to play in lifting new systems: researchers, growers, buyers, advocates, voters, eaters, policymakers, people. In sustainability transitions of all types, myriad interconnected activities need to happen more or less simultaneously. So, Kernza and other CLC crops will only succeed if everyone involved continues to lift this perennial grain crop, together. Here's to another year of heavy lifting.

### Questions about 2022 Kernza Priorities?

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For more information, the latest news, and more info on Kernza, visit [kernza.org](https://kernza.org).

