Case Study:
The Wisconsin Kernza® Supply Chain Hub Pilot Project

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Wisconsin Kernza® Field Day at Michael Fields Agricultural Institute (East Troy). Photo credit: Clean Wisconsin

Grain crops dominate farmland and diets worldwide, but reliance on annual varieties drives soil loss, water pollution, and agricultural greenhouse gas emissions. Kernza®, developed from the perennial intermediate wheatgrass (*Thinopyrum intermedium*), offers Wisconsin farmers an alternative that builds soil health, protects water quality, reduces agricultural greenhouse gas emissions and sequesters carbon long-term with its deep root systems. As demonstrated by the NCS Roadmap, if grown at scale within Wisconsin, Kernza® could play a key role helping our state to achieve net-zero climate goals. At the same time, expanding Kernza® markets and processing capacity can generate new value-chain oopportunities for new, perennial foods and nutrient-dense ingredients, strengthen rural economies. and position Wisconsin as a national leader in perennial grain production.

Despite its promise, Kernza® faces hurdles to widespread adoption, mainly due to high market prices (partly as a result of low supply) and limited market options. Since 2019, early growers of Wisconsin Kernza® have struggled to find a consistent market. Existing regional and national markets, such as *Perennial Promise Growers Cooperative*, *Sustain-A-Grain* and *Patagonia Provisions*, require organic or regenerative organic certified grain to secure grower contracts. New growers often trial new crops in small-scale plots (5- and 10-acres) to decide if they will continue growing to the recommended 30+ acres of pro-

Harvesting Kernza® at Michael Fields Agricultural Institute (East Troy).
Photo credit: Michael Fields Agricultural Institute.

Inspecting Kernza® field development at Four Winds Farm (Fitchburg).
Photo credit: Clean Wisconsin.

duction. For small-scale, new adopters in Wisconsin, field preparation practices to establish new sites for planting Kernza® often disqualifies them from certification, as herbicide applications are often needed to reduce early weed competition to ensure stand success. It can take three years to regain certification, and by then grain yields have reduced and fields grown for food-grade grain must be re-established. There are few regional or national market options for conventionally-grown or transitional Kernza®, leaving small-scale early adopters without a buyer for harvested grain and disincentivizing further cultivation.

At the same time, there is growing interest from local Wisconsin craft breweries, distilleries and bakeries for non-organically certified Kernza®. In 2023, *Lakefront Brewery* (Milwaukee), a champion for supporting local Wisconsin farmers through procurement of locally-grown ingredients, sourced 2,000 lbs of Wisconsin-grown Kernza® for a test run of five beers. At $7.50 per pound of raw grain, Kernza® was significantly more expensive than traditional brewing grains like malted barley, priced at $0.34 per pound. Without a local processor equipped with the specialty equipment necessary to clean and process the small-grains to industry specifications, the brewery then sent the Wisconsin-grown Kernza® to be cleaned in North Dakota, aggregated in Minnesota, and then incurred additional expenses for a grain processor to flake it to industry specifications. This locally grown grain ultimately traveled over 1,000 miles just to end up back in Milwaukee—36 miles from its fields of origin. On top of transportation and additional processing costs, the added transportation emissions negated the climate benefits of the crop, while also reducing profit margins for both growers and end-users alike.

To overcome these barriers across the supply chain, *Clean Wisconsin*, *Michael Fields Agricultural Institute*, University of Wisconsin-Madison, UW-Extension's *Emerging Crops Program*, and *Rooster Milling* came together with support from the Daybreak Fund and the Platform for Agriculture & Climate Transformation (PACT), to. to make the first concerted effort to address commercialization of Kernza® in Wisconsin and to align stakeholders across the local supply chain. In January 2024, the project secured specialty equipment for *Rooster Milling* in southeastern Wisconsin to adjust their grain cleaning line to optimize Kernza® cleaning and dehulling, thereby increasing access to local cleaning and processing facilities equipped to handle the unique properties of this emerging grain. This became the precipice for the *Wisconsin Kernza® Supply Chain Hub* to connect farmers, processors, and buyers in an effort to streamline operations, identify major challenges faced across the supply chain and to coordinate activities aimed at overcoming these obstacles. So far, ten existing farmers and five research stations—covering 96 acres across 12 counties in Wisconsin—have participated in the project, increasing Wisconsin Kernza® production from 42 acres to over 150 acres in just its first year. By the end of August 2024, 4,000 lbs of Kernza® had been harvested and prepared for processing, enough to produce 100-300 barrels of beer.

Since then, the Wisconsin *Kernza® Supply Chain Hub* has developed resources to build the capacity of Wisconsin Kernza® growers, including post-harvest handling guidelines and resources to guide new growers on the kinds of on-farm equipment necessary to maintain quality in storage and in transport. In collaboration with *The Land Institute*, University of Minnesota's *Forever Green Initiative*, and USDA *Kernza®CAP* project, the *Wisconsin Kernza® Supply Chain Hub* presented at farmer field days and brewer events to raise awareness of Kernza®'s environmental and

Cleaning Wisconsin-grown Kernza® at Rooster Milling (East Troy).
Photo credit: Clean Wisconsin.

Wisconsin-grown Kernza®.
Photo credit: The Land Institute.

culinary benefits. In addition to improving infrastructure, in December 2024, the *Wisconsin Kernza® Supply Chain Hub* brought together over 30 farmers, processors, craft brewers and distillers to facilitate roundtable discussions addressing pricing challenges and to work together to identify the best farm-gate price range that provides fair returns for farmers while being viable for buyers (*see* NCS Toolkit). Wisconsin distillers and brewers shared that this event was the first time in memory where they were in the same room talking about sourcing needs and challenges across the supply chain. Over 400 lbs of Wisconsin Kernza® was processed and distributed to the participating businesses as samples to trial. As a result of these efforts, four new Kernza® beers were released to the public in 2025: *Duesterbeck's Brewing Co.* (Elkhorn) released a Golden Ale at the Walworth County Fair, which sold out. *Karben4 Brewing Co.* (Madison) brewed a *Kernza® Pub Ale*, which sold out. *Hillsboro Brewing Co.* (Hillsboro) released an Amber Lager featuring Wisconsin-grown Kernza®, and prompted them to trial a batch of their nationally-distributed *Fantasy Factory* IPA using Wisconsin-grown Kernza®. This special release was paired with a blind-consumer test, surprising all with the results that the average consumer detected no significant difference between the regular *Fantasy Factory* and the Kernza® *Fantasy Factory*, and if they did they expressed preference for the Kernza® version.

By 2026, Wisconsin-based production is expected to quadruple as first-year fields mature and new growers join the effort. A robust supply chain is critical to meeting this growing demand and ensuring consistent quality and supply to breweries, bakeries, and restaurants.

Looking ahead, *Wisconsin Kernza® Supply Chain Hub* partners are working on securing large-scale steam flaking equipment to enable processing that brewers and distillers, and to process in the volumes required to scale production and to more end-users. Grower technical support continues through information sharing within the network, which was connected in communications via this project, and through a support line maintained by the *Michael Fields Agricultural Institute*. Consumer education efforts initiated through this project are also continued by *Michael Fields*, and we anticipate consumer survey efforts in future years to evaluate gains in consumer awareness and use of Kernza® as a novel food attached to significant environmental benefits. By working collaboratively, Wisconsin aims to lead the way in scaling Kernza® and demonstrating how natural climate solutions can benefit both rural economies and the environment.