

KERNZA® PERENNIAL GRAIN

# 2024 ANNUAL SUPPLY REPORT

Insights into U.S. Kernza® Planting, Harvest,  
and Management Data



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# Table of Contents

Quick Stats.....	01
Planting.....	02
Management & Harvest.....	06
Grain Inventory.....	11
Kernza Stand Age by Region.....	14
2024 Annual Supply Summary.....	15

# Quick Stats

All statistics represent U.S. data only, no international acres were considered for this report.

**3,270 acres of Kernza perennial grain in the U.S.**

**972 acres** were planted in 2024.

**559 acres** were rotated out of production.

**310 lbs/acre** was the average bin-run grain yield on farm.\*

**614,553 lbs** of clean, dehulled Kernza grain are estimated to be in storage.\*\* More than half was harvested in 2024.



**169 Kernza perennial grain licensees.**

**75 licensees** actively grow Kernza.

**15 US states** have active Kernza growers.

\*Average yield estimates are weighted by the number of acres harvested in each field because yields are generally lower in smaller fields with more edge effects.

\*\*We estimate that the average loss from bin-run grain to clean, dehulled grain is 40%



# Planting



## Quick stats

**972**

Acres were planted in 2024, a 31% increase from 2023.

**470**

Acres of new plantings were conventional.

**205**

Acres of new plantings were Certified Organic.

**163**

Acres of new plantings were Regenerative Organic Certified (ROC).

**134**

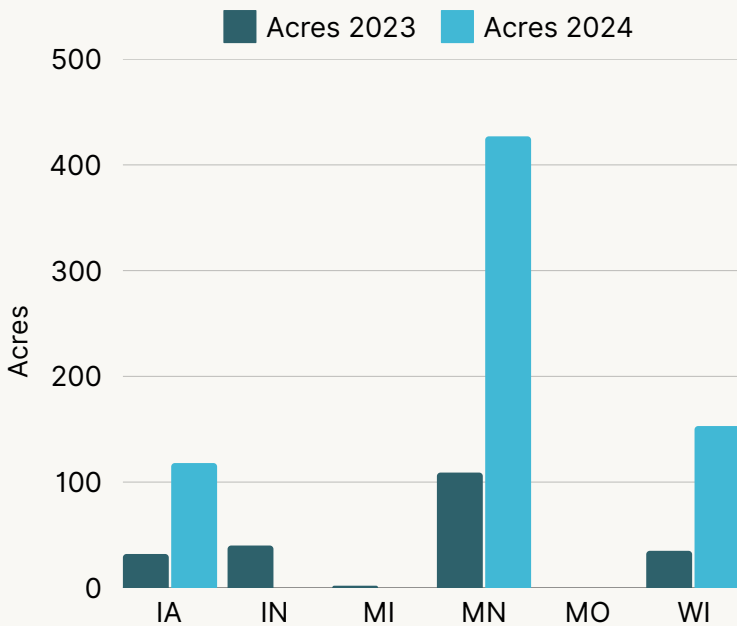
Acres of new plantings were transitional.

# Planting in the Midwest

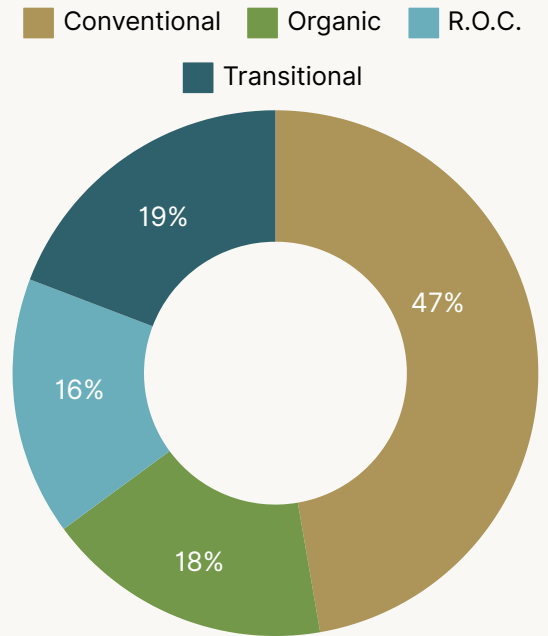
## Iowa, Indiana, Kentucky, Michigan, Minnesota, Missouri, Wisconsin

Growers planted 698 acres in the Midwest, and most were planted between August 31st and October 14th, 2024. Of the 698 acres planted, 48 acres failed to establish due to a lack of moisture at planting and poor germination. All newly planted acres in this region are unirrigated dryland. Nearly all acreage was planted with the MN-Clearwater Kernza variety with an average seeding rate of 14.2 lbs/acre. Various crops preceded Kernza plantings, including soybeans, grass hay, alfalfa, oats, hemp, field peas, corn, clover, grass mixes, buckwheat, and wheat.

**Midwestern Acres Planted**



**Management Type of Acres Planted 2024**

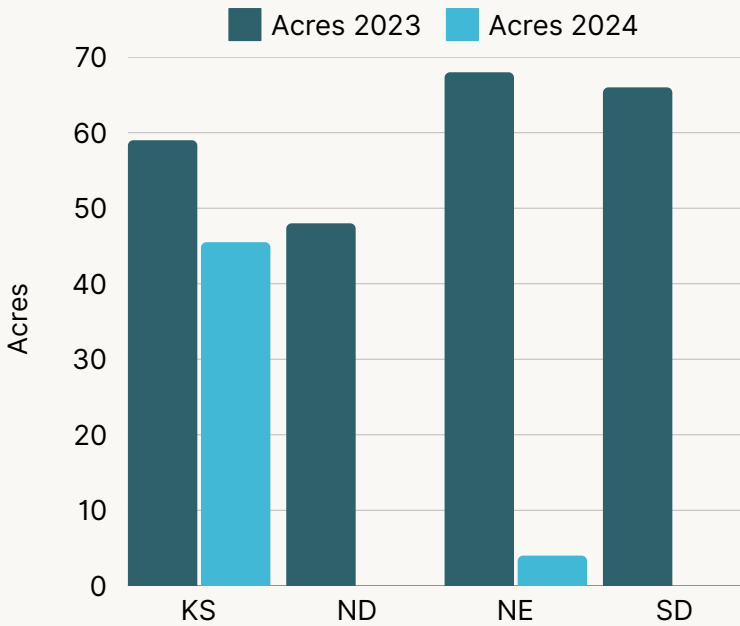


# Planting in the Great Plains

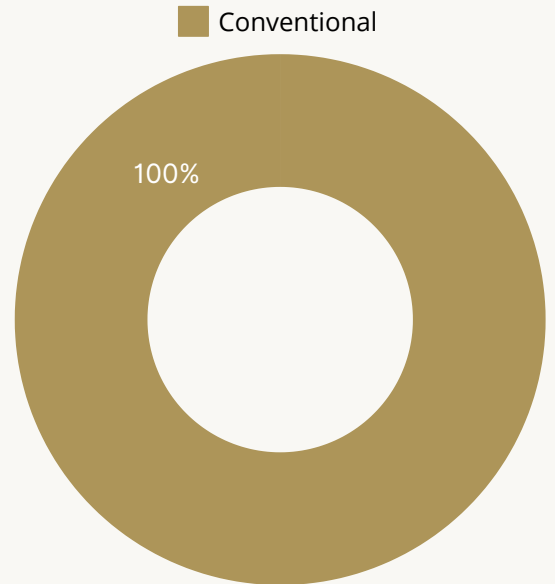
## Kansas, Nebraska, North Dakota, South Dakota

Growers planted 50 acres of Kernza in the Great Plains. Spring plantings occurred in April 2024, while fall plantings occurred in mid to late October 2024. Most acres were planted dryland, with only 4 acres planted under irrigation. TLI-703 was the most planted variety, with a seeding rate of 10-12 lbs/acre. Kernza plantings were typically preceded by corn and soybeans.

Great Plains Acres Planted



Management Type of Acres Planted 2024

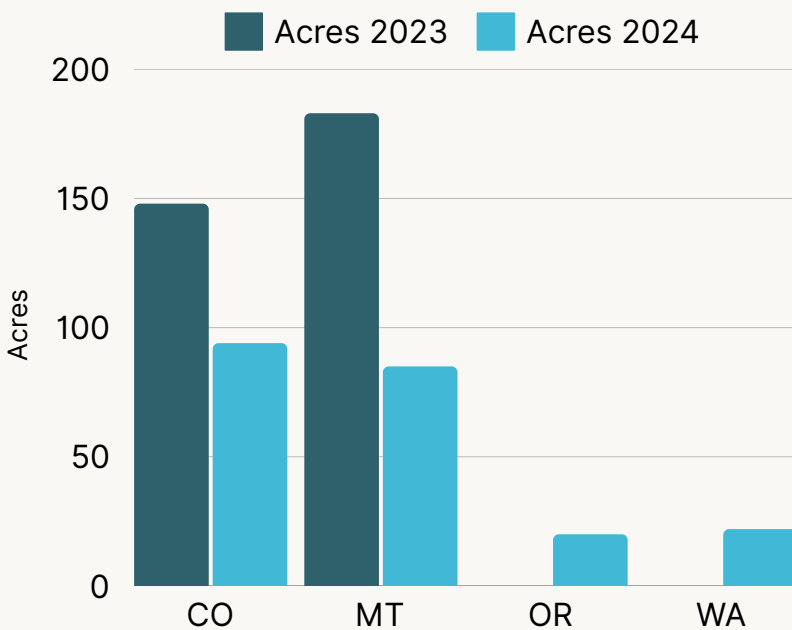


# Planting in the West

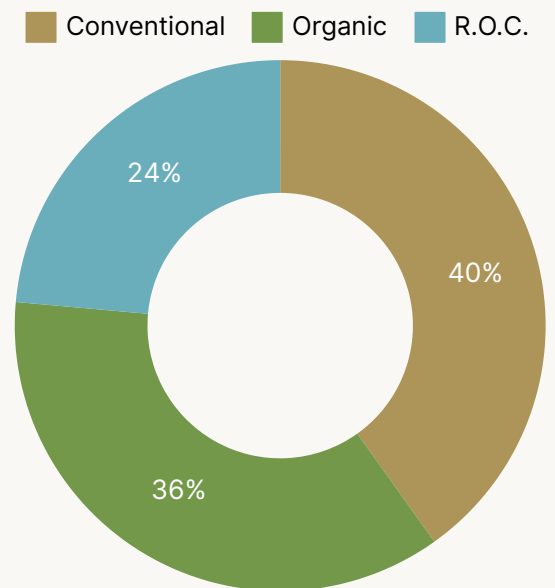
## Colorado, Montana, New Mexico, Oregon, Washington, Wyoming

Growers in the West planted 221 acres in 2024. New plantings occurred in the spring and fall. Nearly three-quarters of the region’s planting occurred in the spring between March 30th and May 10th, 2024, with two late June plantings. Approximately 60 acres were planted in the fall between September 19th and October 3rd, 2024. More than half of all acres in the region are under irrigation; mainly in Colorado and Oregon. Several Kernza varieties were planted, including TLI-703, TLI-704, TLI-801, and MN-Clearwater, with an average seeding rate of 13 lbs/acre. Various crops preceded Kernza, including triticale, potatoes, cauliflower, and a multispecies cover crop.

**Great Plains Acres Planted**



**Management Type of Acres Planted 2024**



# Management & Harvest



## Quick stats

**514,450**

Estimated\* pounds of clean\*\* grain were harvested in 2024

**542**

Tons\*\*\* of Kernza hay and straw were harvested

**1,241**

Acres were grazed

\*Estimated equivalent clean, dehulled tons using a cleaning and dehulling loss estimation of 40%

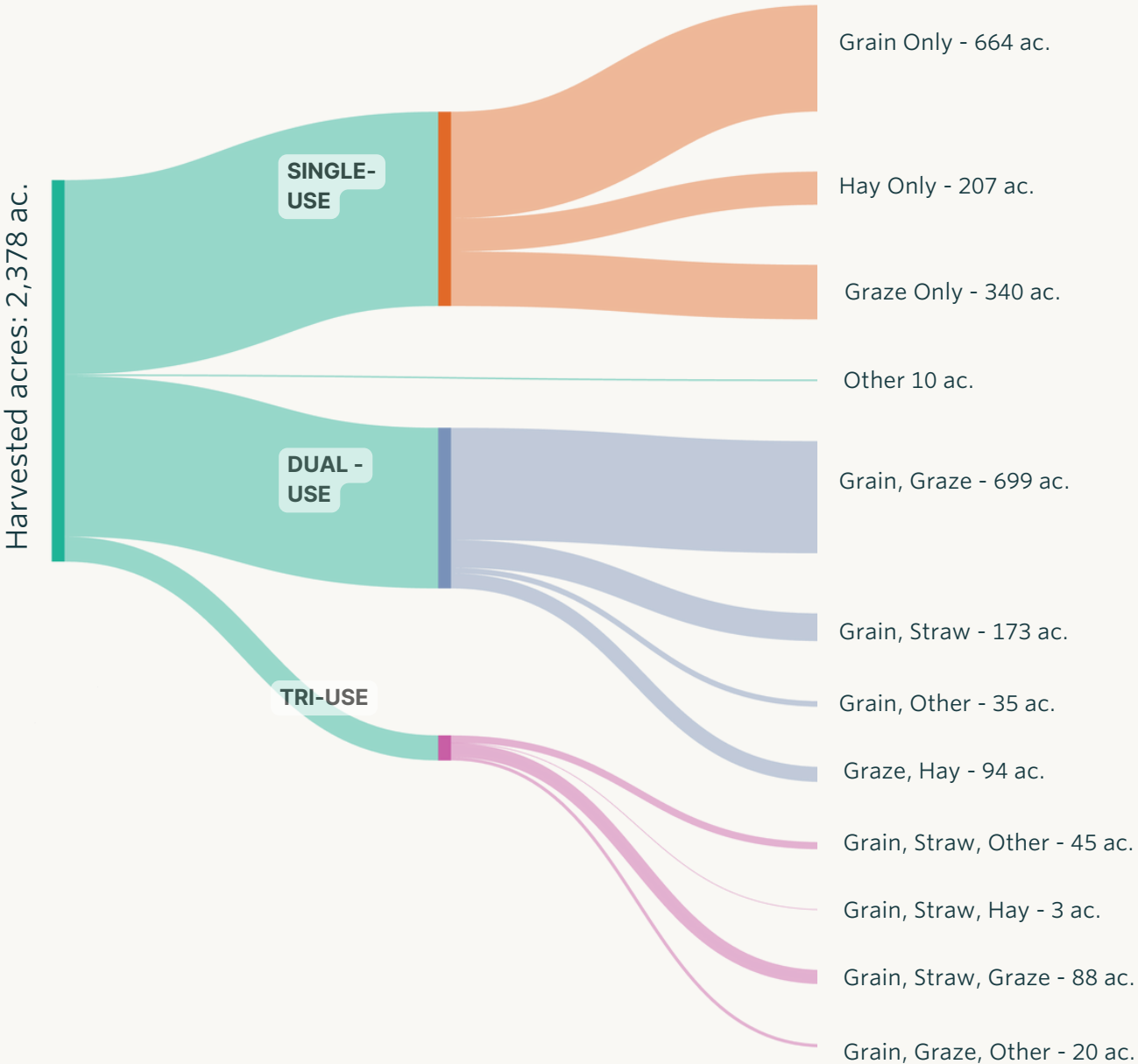
\*\*514,450 lbs +/- 157,989 lbs estimated clean, dehulled.

\*\*\*A ton, is an "English ton" (short ton) equivalent to 2000 lbs.



# Harvest Products

**Kernza often produces more than one product.** All products harvested from Kernza fields (grain, straw, hay, graze) in the US in 2024 are shown below. The number one product for Kernza is grain, but half of all acres resulted in two or more products. Notably, there was a five-fold increase in the number of acres used for grain production and grazing compared to 2023.



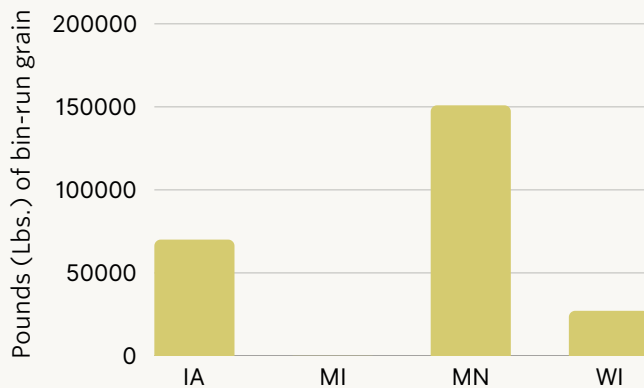
# Management & Harvest in the Midwest

Iowa, Illinois, Indiana, Kentucky, Michigan, Minnesota, Missouri, Wisconsin

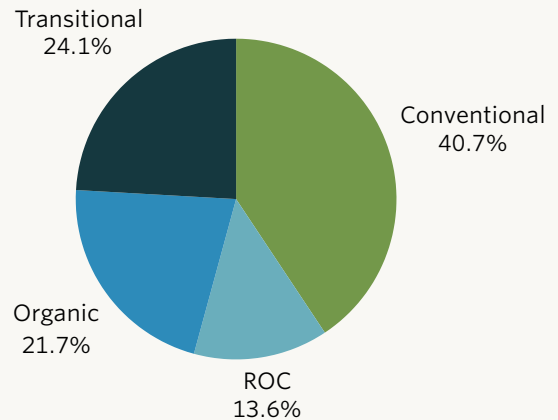
**Growing Conditions & Management Observations:** Approximately half of all producers in this region reported good overall growing conditions; the other half reported adverse conditions ranging from winter kill to extreme summer drought to spring flood damage.

**Grain Harvest Observations:** Grain harvest began as early as August 11th and as late as October 16th, 2024. This two-month harvest window was tighter than the three-month harvest window of 2023. In this region, a variety of harvest methodologies were employed, with direct harvesting by draper header being the predominant technique. Additionally, two producers adopted the use of a stripper header, while eight others reported swathing followed by combining with a pick-up header.

**2024 Kernza Grain Harvest (Bin-Run) Totals**



**Management Type of Kernza Grain Harvested in 2024**



**Grazing Observations:** Approximately 230 acres of Kernza provided grazing for sheep, beef cattle, and dairy cattle. When reported, stocking rates ranged from 26 to 60 animal-days per acre (ADAs), typically on two-year-old Kernza stands. The timing of grazing varied depending on the goals of the producer. Some producers grazed cattle in the fall to take advantage of post-harvest regrowth, and others grazed in the spring to clean up the previous years' residue.

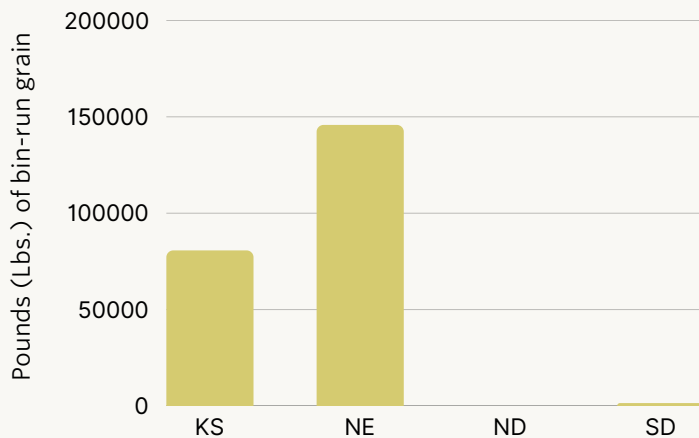
# Management & Harvest in the Great Plains

Kansas, Nebraska, North Dakota, South Dakota

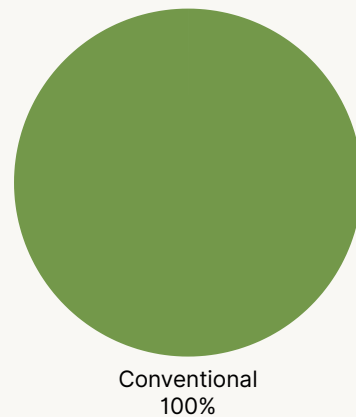
**Growing Conditions & Management Observations** In general, farmers in this region reported a good rain year, with the exception of producers in southern Nebraska and northeastern Kansas, who reported a lack of rain from August through September. In this region, there was an increase in irrigated acres, with 252 acres under irrigation. The majority of acres did not receive herbicide. However, most acres did receive synthetic fertilizer. Most first-year stands were fertilized in the spring, while most 2,3, and 4-year-old stands received UAN (Urea Ammonium Nitrate) in the fall and urea in the spring.

**Grain Harvest Observations:** Grain harvest began as early as July 24th and as late as September 11th. This seven-week harvest window is tighter than the three-month harvest window of 2023. All acres in this region were direct cut using a variety of different headers; the most common was a draper header followed by an auger feed header or a stripper header.

**2024 Kernza Grain Harvest (Bin-Run) Totals**



**Management Type of Kernza Grain Harvested in 2024**



**Grazing Observations:** Approximately 210 acres of Kernza were grazed, with an average stocking rate of 25 ADAs. The timing of grazing varies based on the producer's objectives, with many in this region utilizing Kernza as winter pasture and for grazing on fall regrowth.

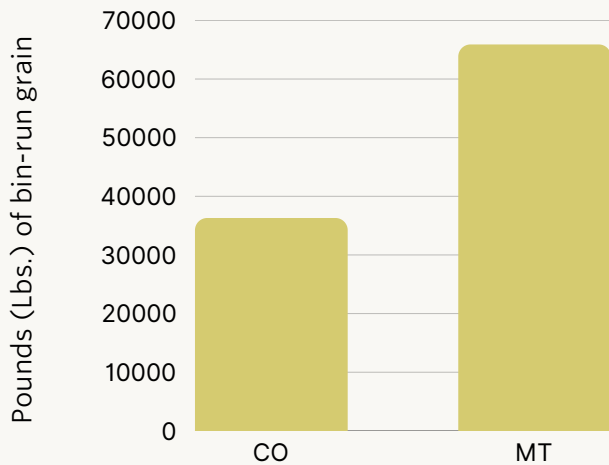
# Management & Harvest in the West

California, Colorado, Idaho, Montana, New Mexico, Oregon, Washington, Wyoming

**Growing Conditions & Management Observations:** This region suffered from numerous weather and pest issues. Many of the growers in this region reported drought conditions as well as hail damage. Farmers in central Montana also reported significant grasshopper pressure. The majority of acres in this region did not receive herbicides or fertilizers.

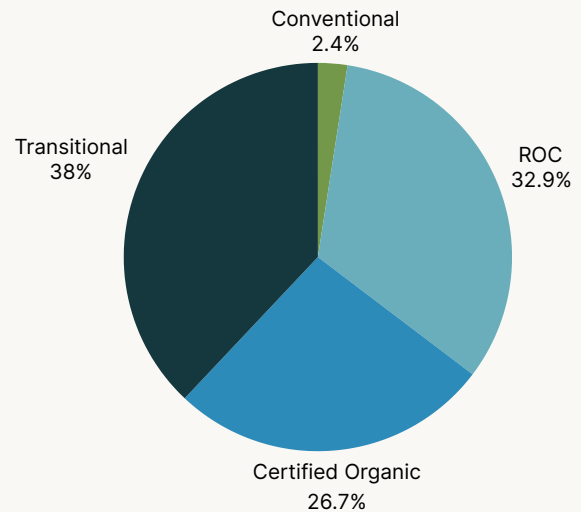
**Grain Harvest Observations:** Harvest began as early as July 20th and as late as October 1st. Late harvest led to shattering. Only Montana and Colorado had grain harvests. Nearly all acres in this region were direct-cut with a stripper header.

**2024 Kernza Grain Harvest (Bin-Run) Totals**



\*Only Colorado and Montana are represented on this chart because they are the only states to have reported harvesting grain in this region in 2024.

**Management Type of Kernza Grain Harvested in 2024**



**Grazing Observations:** Approximately 80% of acres in this region were grazed. Grazing typically took place in the fall, with a few farms grazing in both the fall and the spring. Only one farm recorded a stocking rate, which was estimated at 172 ADAs.



# Grain Inventory

## Grower Estimated Storage by Harvest Year

Equivalent\* clean, dehulled pounds

**408,440**

Estimated pounds of clean grain in storage\*\* from 2024 harvest

**134,395**

Estimated pounds of clean grain in storage from 2023 harvest

**71,718**

Estimated pounds of clean grain in storage from 2022 & 2021 harvest

\*Estimated equivalent clean, dehulled tons using a cleaning and dehulling loss estimation of 40%

\*\* The 2024 storage estimate differs from the 2024 harvest estimate on pg. 6 because some of the grain harvested in 2024 has already been sold and is therefore not in storage.

# Storage Data by Region

*Self-reported data from individual Kernza growers*

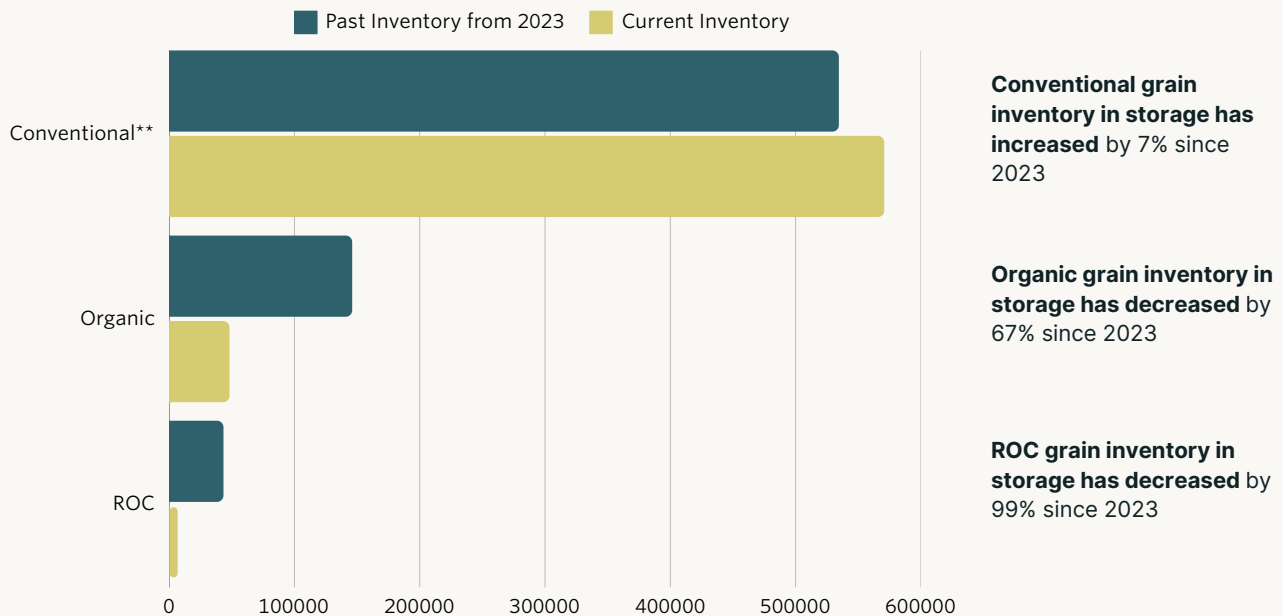
**Eastern (New York):** New York has 8,000 lbs. of bin-run grain from a 2024 harvest. This grain is organic.

**Midwest:** There are 503,760 lbs of bin-run Kernza and approximately 30,226 lbs of clean Kernza. This grain is a combination of ROC, organic, transitional, and conventional grain.

**Great Plains:** There are approximately 210,763 lbs of bin-run grain in storage, with an additional 135,090 lbs of clean grain. The majority of grain in this region is conventional.

**Western:** There are just over 44,140 lbs of bin-run grain in storage. This grain is a combination of transitional and conventional grain.

## Kernza Grain\* Inventory in Storage 2023 Compared to 2024



\*Much of the grain in storage currently needs to be cleaned. However, this chart converted all storage estimates into clean, dehulled grain. We estimated a cleaning and dehulling loss of 40%.

\*\*Transitional grain is included in the conventional estimate, because it is generally sold as conventional.

# Grain Yield by Region

Kernza yields depend on climatic factors, stand age, variety, harvest equipment, and grower familiarity with Kernza. **The yield data below are self-reported, bin-run, estimates. Many of these estimates are the best available but are often made without a scale weight or test weight for reference.**

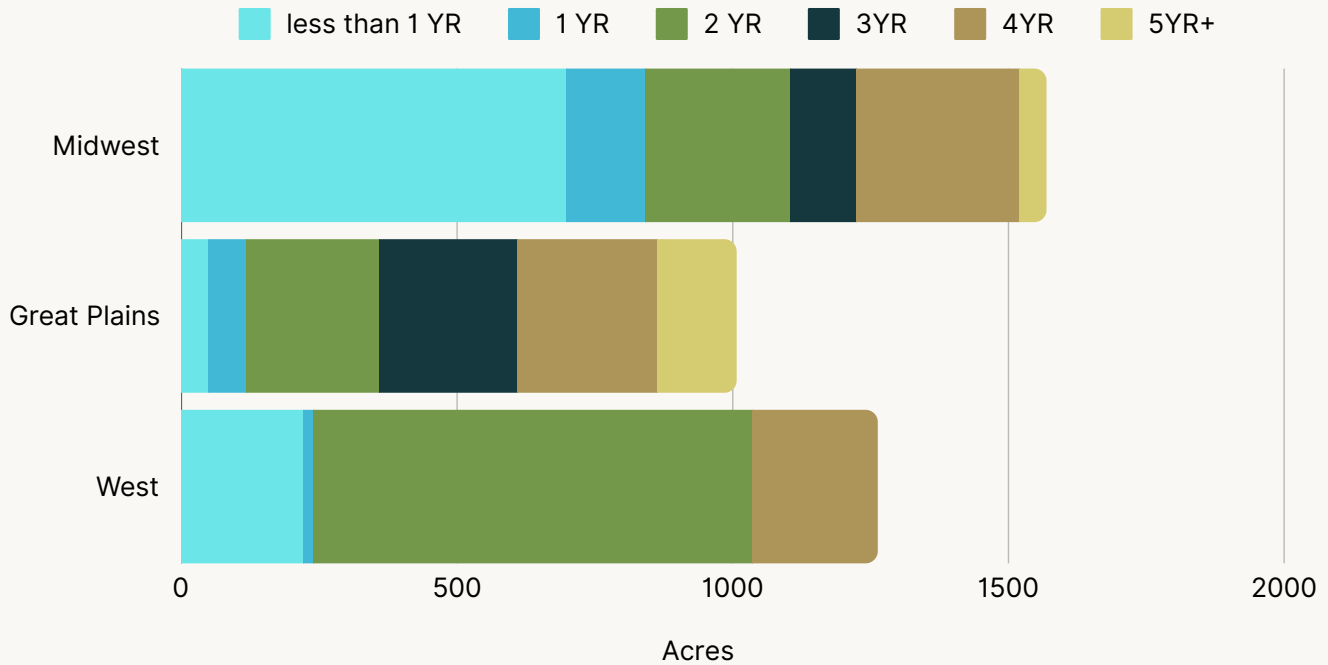
**Midwest** (Iowa, Michigan, Minnesota, Wisconsin): Growers harvested 39 fields for grain, and the average field size was 22 acres. The weighted\* average for all bin-run grain yield estimates in the Midwest was 366 lbs/acre, which is up slightly from the 2023 weighted yield average of 334 lb/acre.

**Great Plains** (Kansas, Nebraska, South Dakota): Growers harvested 17 fields for grain, and the average field size was 31 acres. The weighted\* average for all bin-run grain yield estimates in the Great Plains is 378 lbs/acre, which is up significantly from the 2023 weighted average yield of 281 lbs/acre.

**West** (Colorado, Montana): Growers harvested 8 fields for grain, and the average field size was 66 acres. The weighted average for all bin-run yield estimates in the West was 190 lbs/acre, which is down from the 2023 weighted\* average of 212 lbs/acre, likely because of weather events and insect pressure.

\* Average yield estimates are weighted by the number of acres harvested in each field because yields are generally lower in smaller fields with more edge effects.

# Kernza Stand Age by Region



**Kernza Stand Age:** The figure above illustrates the distribution of active Kernza acres across the U.S., categorized by region and stand age. Fields marked as “less than 1 YR” were planted in 2024, those labeled “1 YR” were established in 2023, and so forth. Over a quarter of all acres were planted in 2024 (“less than 1 YR”). The largest category comprises fields that are 2 years old, planted in 2022, which represent 40% of all Kernza acres. The data show that about 778 acres, or 24% of total US Kernza acres, are 4-year-old stands (planted in 2020), which we anticipate will be rotated out of production in 2025. Fields that are 5 years old or older, totaling 191 acres or 6% of the total U.S. Kernza stand, are primarily utilized for hay production and/or grazing livestock.



# 2024 Annual Supply Summary

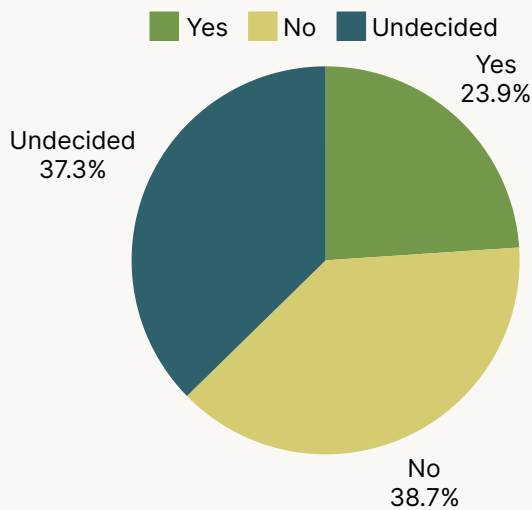
A synthesis of data the presented in this report.

Total U.S. acreage increased by 865 acres from 2023, reaching 3,270 total acres in 2024, with most new plantings in Minnesota, Wisconsin and Iowa. Approximately 559 acres were rotated out of production, the majority of which were 4 years old or older.

Grain inventory estimates suggest 614,553\* lbs of Kernza remain in storage, with over half of that harvested in 2024. Storage inventory trends show a 7% increase in stored conventional grain but a 67% decline in stored organic grain and a 99% drop in stored Regenerative Organic Certified (ROC) grain inventory from the previous year.

Grain yields varied by region, with the Great Plains showing the most improvement, increasing from 281 lbs/acre in 2023 to 378 lbs/acre in 2024. The Midwest also saw a slight increase in yields, while the West experienced a decline due to weather and pest challenges.

Farmers continue to explore diverse management strategies, with Kernza being used for grain, grazing, hay, and straw production. Grazing acreage saw significant expansion, with a five-fold increase in dual-use acres (grain + grazing).



## 2025 Planting Intentions

Similar to 2023, there is a near split in planting intentions for the coming year. Many of the “Undecided” responses indicated concerns over market as the primary factor in their decision.

\*614,553 lbs represents a clean-dehulled estimate, using an estimated cleaning and dehulling loss of 40%. Note that the majority of stored grain remains uncleanned.

# Contact

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**Kernza® CAP**



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