



KERNZA® HANDLING REQUIREMENTS

How to Store, Dry and Condition your Kernza® to Optimize Quality and Maximize Storage Life

PRIOR TO HARVEST

Ensure that all equipment (including loading equipment) is thoroughly cleaned & sanitized to prevent contamination. See *Post-Harvest Equipment Needs* for recommended equipment specifications^a.

Current recommendations emphasize harvesting Kernza® at <14% moisture. Harvesting above this threshold requires drying with heat, which could damage grain quality and adds unnecessary cost to production^b. Aerating fans will NOT dry grain down much more than 1% in moisture--they will only keep moisture-levels stable. For this reason, make sure to harvest at the proper moisture for storage. A grain moisture tester can be a useful tool to take out the guesswork.

POST-HARVEST

As with all food crops, make sure Kernza® is stored in a dry, rodent-, bird- and insect-proof location. Because Kernza® has higher fat content than wheat, storing grain in stable, low temperature and humidity conditions can extend its shelf life.

In storage, grain needs to be held *under 14% moisture at all times*. Make sure to stir grain after 48 hours to expose all areas to aeration. If not stirred, grain will likely stick to the sides of the bin or storage container. Where grain is stored in a bin with full floor aeration, a stirring device may not be necessary. Keep fans running for at least two weeks after loading grain into storage bin. After two weeks, check grain periodically and run fans as needed to maintain good grain condition.

For **short-term storage**, FIBC bags or totes, gravity wagons and tarp-covered semi-trailers will suffice. Cover open wagons or trailers with tarps to guard against bird droppings. Grain often “sweats” for the first 24-48 hours after being put into storage, so tube fans should be placed into grain to keep air moving through the grain.

For **long-term storage**, rodent- and insect-proof containers with circulating aeration are crucial to maintain food safety and quality control. Depending on the scale of your harvest, you can store Kernza® long-term in ProBoxes (also useful for shipping), metal grain bins, granaries and silos equipped with fans.

When grain moisture is below 14%, collect a 2 lb. representative sample to submit for quality testing. See *Kernza® Quality Testing Requirements* for more information. Inspect grain regularly for rodents, bird predation, worms and moths. If you see pests or moths, consider fumigating grain with CO₂.

^a Large quantities of Kernza® will not fully “gravity flow” through combines, gravity wagons, or even cone-bottom bins because of Kernza®’s hulls. Storing in containers with cone bottoms helps grain gravity flow, but you may need to climb in the bin and shovel/sweep grain down. A GrainVac may be helpful in moving grains out of bins. A larger bin that is less full is more effective when unloading.

^b If drying is unavoidable, *proceed with caution*– not much is known at this point about applying heat to dry Kernza®. To reduce moisture levels, *heat should be kept at LOWEST setting and grain should be stirred often and checked regularly*.

Drying vs Conditioning What’s the difference?

Grain *drying* removes moisture from the grain and almost always involves heat. It is more commonly used for larger grains and *not small grains like Kernza*. Heat can damage grain quality, denature proteins and degrade enzymes.

Grain *conditioning* is the process of maintaining moisture levels at a steady rate to increase the storage life of grain, and minimize grain spoilage and quality reduction. This is achieved by circulating air through the grain using a grain bin fan or tube fans for gravity wagons, ProBoxes, and FIBC bags.

See *Post-Harvest Equipment Needs*

The Land Institute's Identity Preserve Program

Conditioning Requirements

- 8.1** *Conditioning facilities shall be approved by The Land Institute (or its agent) prior to handling Kernza® seed, grain or other product via their online platform (<https://thelandinstitute.submittable.com/submit>)*
 - 8.2** *Facility must preserve the identity of the product at all times.*
 - 8.3** *Approval of conditioning facilities shall be on an annual basis via renewed trademark license agreement with the organization owning the facility.*
 - 8.4** *Facilities handling Kernza® destined for sale as a food product shall submit evidence of inspection for food safety standard compliance.*
-