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## KERNZA® QUALITY TESTING REQUIREMENTS

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### OVERVIEW

Like any grain, Kernza® must be tested to ensure safety of consumption for humans and/or livestock. We recommend all Wisconsin growers submit through the University of Minnesota's **Forever Green Initiative (FGI)** to standardize methods and results. The Forever Green Initiative covers the cost of standard grain quality testing for Kernza® (\$100) and maintains an anonymous database of results. The *FGI Grain & Seed Testing Protocol* will have been provided to you as a stand-alone PDF and explains the process in detail.

Grain samples are sent to North Dakota Grain Inspection Services (NDGI) and are tested for purity, moisture, protein, vomitoxins and aflatoxins.

Wisconsin growers can coordinate quality testing through Nicole Tautges, Research Director at Michael Fields Agricultural Institute ([ntautges@michaelfields.org](mailto:ntautges@michaelfields.org)) or Andrew Leach, Sustainable Commercialization Associate at FGI ([leach167@umn.edu](mailto:leach167@umn.edu)) to request a submittal form.

Upon request, you will receive a copy of the *NDGI Submitted Sample Request Form* that is partially filled out with a unique reference ID for your request (e.g. P2310), which helps them keep track of the test results.

### HOW TO GET YOUR KERNZA® QUALITY TESTED

1. Email Andrew Leach (cc: Nicole Tautges) to request a *NDGI Submitted Sample Request Form*.
2. Print out the *NDGI Submitted Sample Request Form* and add your name, date, and harvest year to the form.
3. Label your 2 lb. grain sample with your name, date, and harvest year, and reference ID found on the *NDGI Submitted Sample Request Form*, unique to your request. You can include multiple lots if so desired, just make sure those lots are also labeled.
4. Mail the sample(s) and *NDGI Submitted Sample Request Form* directly to NDGI at the following address:

**North Dakota Grain Inspection Services, Inc.**  
4150 98th Ave. S  
Fargo, ND 58104

The quality testing results will be emailed to Forever Green within two weeks and will be forwarded back to you.

5. Upon receipt of your quality testing results, save a copy of your results. Confirm with Nicole Tautges that you have received your results and that your grain sample has passed food-grade quality standards. A copy of your quality testing results must be submitted to the grain processor, with any food-grade quality grain being advanced for processing.

If your sample does not pass quality testing standards for food-grade use, Nicole will talk with you about your options.

# The Land Institute's Identity Preserve Program

## Quality testing requirements

- 9.1** *Grower shall draw and retain a sample from each field harvested as the product is conveyed into the storage bin.*
- 9.2** *A representative sample of each conditioned lot shall be drawn by an authorized sampler according to designated sampling procedures*
- 9.3** *The sample shall be submitted to a designated laboratory for testing along with information necessary to complete certification.*
- 9.3.1** *Designated laboratories include Northern Plains Grain Inspection*
- 9.3.2** *Written approval of other laboratories may be given by The Land Institute at its discretion.*
- 9.4** *The Land Institute shall determine the tests to be performed.*
- 9.4.1** *Current tests on Kernza<sup>®</sup> destined to be food to be performed include: Purity, DON, moisture and protein.*
- 9.5** *Product shall be tested and analyzed in accordance with the procedures prescribed by The Land Institute.*
- 9.6** *Test results shall be submitted to The Land Institute (or its agent) via its online platform and evaluated for conformance to quality standards.*
- 9.7** *The Land Institute (or its agent) shall determine the certification status of all lots for which Program certification has been requested within 60 days of submission of required data.*

# EXPLANATION OF TEST COMPONENTS & RESULTS



UNOFFICIAL GRAIN INSPECTION CERTIFICATE  
 NDGI  
 4150 98th Ave South, Fargo, ND 58104  
 PHONE: 7012937420 FAX: 7012418818

ORIGINAL  
 NR5292439  
 NOT NEGOTIABLE

LEVEL OF INSPECTION: Original  
 IDENTIFICATION: P2310  
 ISSUED AT: Fargo, ND  
 LOCATION: University of Minnesota-Forever St. Paul, MN  
 DATE SAMPLED: April 11, 2024  
 DATE OF SERVICE: April 11, 2024  
 QUANTITY: (This is NOT a weight certificate) 1 SubmittedLot  
 METHOD OF SAMPLING: Submitted

## TEST WEIGHT

Test weight is the density of the grain sample (i.e., the weight of a known volume: bushel).

Generally, the higher the test weight, the higher the quality of the grain.

## MOISTURE LEVEL

Grain moisture is the percent water, based on weight, in the sample.

Percent moisture should be **less than 14%** to store safely without spoilage.

## FOREIGN MATERIAL

The percent of the sample, by weight, that consists of materials *besides* grain (e.g., rocks, soil, straw, weed seeds, etc.).

## PROTEIN LEVEL

Expressed as the percentage of protein by mass. Protein content is important for determining grain quality. In general, higher protein indicates higher quality grain.

## AFLATOXINS

Aflatoxins are a group of toxins produced by certain types of mold that contaminate agricultural crops and cause cancer in humans and animals. The molds that produce aflatoxins, *Aspergillus flavus* and *Aspergillus parasiticus*, are common in warm, humid regions and can grow in soil, hay, decaying vegetation, and grains. They can contaminate crops during the field, harvest, storage, and processing stages.

Levels of aflatoxin must be **≤20 ppb**.

## VOMITOXINS (DON)

Vomitoxin, also known as deoxynivalenol (DON), is a mycotoxin that's a common contaminant in moldy grains like corn and wheat. It's produced by the fungus *Fusarium graminearum*, which causes *Gibberella* Ear Rot (GER) that can contaminate grain in the field. Because vomitoxin is heat stable, it can remain even after cooking.

Food-grade levels of DON in Kernza® must be **≤0.5 ppm**.

In cases where the Kernza® grain test results in too high of DON to be food grade, Kernza® *can be used for livestock feed as long as vomitoxin levels are less than 5 ppm*.

KIND: Kernza  
 RESULTS: Test Weight 14.9 lb/bu  
 Foreign Material 11.3%  
 Protein 12.7  
 Moisture 10.2%  
 DON does not exceed 0.5 ppm.  
 Aflatoxin not detected.

REMARKS: Results based on the CHARM ROSA DONQ2 test kit. Commodity not validated by test kit manufacturer. Results based on CharmiROSA test kit. Commodity not validated by test kit manufacturer.

APPLICANT NAME: University of Minnesota-Forever Green  
 ISSUING OFFICE: NDGI  
 I CERTIFY THAT THE SERVICES SPECIFIED ABOVE WERE PERFORMED ACCORDING TO THE RESULTS STATEMENT  
 NAME OR SIGNATURE: