

BREWING

with **KERNZA**[®]
Perennial Grain

A relative of wheat and a leading regenerative crop, **KERNZA**[®] offers unique flavors, a transformation of grain agriculture, and tangible action on climate change.



TASTES GREAT, LESS TILLING

Kernza[®] is a robust perennial grain that is pleasing palates and enriching fields around the world. Farmers, chefs, researchers and food businesses are using it to shift the agricultural paradigm from an annual model to a perennial future, from an extractive imperative to a regenerative reality.

CLIMATE POSITIVE

Kernza's[®] extensive root system reaches over 10 feet underground, and is a net sink for atmospheric carbon. Research is showing that perennial grains like Kernza[®] are one of the most robust and effective solutions known to sequester carbon on our productive lands.

INCREDIBLE TASTE

Kernza[®] grain's sweet, nutty flavor works deliciously as an ingredient when brewing American Wheat Beer, Hefeweizen, Dunkelweizen, Weizenbock, and Belgian Witbier.

Founded by fourth-generation Kansas farmers, Sustain-A-Grain is committed to growing delicious perennial grains because they are good for the planet, good for eaters, and good for rural communities. For more information, please email info@sustainagrain.com.

IN PARTNERSHIP WITH



COMPARISON OF BREWING CHARACTERISTICS

| Type of Grain | | 2-row Barley Base Malt | Malted Hulled Kernza* | Unmalted DeHulled Kernza* | Malted White Wheat | Unmalted White Wheat |
|---------------------------|------|------------------------|-----------------------|---------------------------|--------------------|----------------------|
| Moisture | % | 5.23 | 3.5 | 11.2 | 5.00 | 12.0 |
| Total Protein | % | 11.5 | 16.8 | 18.6 | 11.5 | 10.0 |
| Alpha Amylase | D.U. | 65.0 | 56 | 8 | 48 | - |
| Germination Energy | % | >95** | >95** | >95** | N/A | >95** |
| Germination Capacity | % | >95** | >95** | >95** | N/A | >95** |
| Extract (FG Dry Basis) | % | 81.0 | 51.8 | 77.1 | 83.0 | 76.0 |
| Color | °SRM | 2.2 | 6.2 | 2.71 | 2.5 | 2 |
| Turbidity | NTU | 8.7 | Clear | Clear | - | - |
| pH | - | 5.8 | 5.9 | 6.1 | - | - |
| Soluble Protein | % | 4.7 | 9.1 | 5.4 | 4.7 | - |
| S/T Ratio | - | 41.0 | 54.3 | 29 | 41.0 | - |
| β-Glucan | mg/L | 96 | 38 | 77 | - | - |
| Free Amino Nitrogen (FAN) | mg/L | 169 | 319 | 133 | - | - |
| Diastatic Power | °L | 129 | 159 | 116 | 160 | - |

*- Source: Data represents initial lab scale testing results at Montana State University Malt Quality Lab

** Montana State University Malt Quality Lab does not recommend malting grain that does not have Germination Energy and Germination Capacity over 95%.

Kernza test results based on one sample. Numbers may vary slightly, sample to sample.

- **Less Extract:** Compared to wheat, Kernza yields less extract on a fine ground basis.
- **S/T Ratio:** Soluble Protein to Total Protein Ratio.
- **Malted Kernza:** Indicates thinner and lighter-bodied beer.
- **Unmalted Kernza:** indicates fuller-bodied beer with good head retention and foam stability.
- **Bright Appearance:** Low turbidity of unmalted Kernza suggests a clear, bright finished beer appearance.
- **FAN Level:** Free Amino Nitrogen, of malted Kernza suggests higher percentage usage will not negatively impact yeast growth or result in need for added yeast nutrients in the wort.
- **Won't Darken:** Both the malted and unmalted Kernza made beers with low SRMs, Standard Reference Methods, suggest that Kernza usage in higher percentages (>50 percent) won't darken the final product.

For orders or questions, please contact info@sustainagrain.com.