This overview shares research and on-farm trials of Intermediate wheat grass (IWG). *Thinopyrum intermedium* L., in the United States. Researchers at Michigan State University, in partnership with Minnesota State University, are evaluating grain and forage quality of IWG when used as a dual-use crop: IWG holds promise as a forage and an edible grain for flour or whole grain. Its environmental qualities can be attributed to its extensive root system and semi-perenniality (3-5 years), providing reduction in erosion and nutrient leaching.

We have interviewed farmers and researchers who are growing IWG to help identify field challenges and values. This crop is in the very early stage of commercialization and is still under investigation to understand its ability to be grown as a dual-use crop and reliability as a perennial. The Land Institute has recently registered a selected line, Kernza®, to provide food and agricultural markets quality assurance. This crop is attractive to sustainable farmers for its economic and environmental values.

**What's the scoop on this crop?**

- **1906** Intermediate wheatgrass (IWG) was introduced to the United States from Central Europe and West Asia.
- **1976** Birth of The Land Institute, a non-profit research organization started by Wes and Dana Jackson to find solutions for soil erosion as offered by perennials.
- **1983** Researchers at The Rodale Institute collect 100 different perennial grasses for breeding materials, including IWG.
- **1988** The Rodale Institute makes the initial selections of IWG collections based on grain yield and seed fertility.
- **2003** IWG Breeding program at The Land Institute begins. Seed collected from The Rodale Research Institute to continue to domesticate IWG.
- **2008** Research of perennial grasses begins at Michigan State University
  - As the plants age, they invest fewer resources into seed production to withstand cold stress in winter, late fall and early spring.
- **2009** The Land Institute files for trademark of the name Kernza®
  - Researchers wanted to give this crop a new name and also ensure that farmers know exactly what seed they are getting.
- **2011** Breeding program established at University of Minnesota
  - Focus of program is to improve traits related to seed size, grain yield, lodging resistance, non-shattering, free threshing.
- **2012** Kernza research continues to expand:
  - A region-wide collaboration meeting held to generate research relationships on perennial grains (2012-Michigan State Univ)
  - Research showing high quality forage harvested in spring, noting slightly decreased grain yield (2015-2016-Cornell Univ)
  - Testing effects of grazing on grain yield, on farm. Testing seed quality of Kernza. (2016-2018- Univ. of MN, Mich State Univ, and Univ. of WI)
  - Addressing challenges to extend life of the stand. (UMN)
  - Results showing possibility of relatively high Kernza grain yield of 1500 lb/acre. (UMN)

**What Are Farmers Saying About Kernza?**

- "Within 10 years I think we'll have a very viable crop option for farmers." - Carmen Fernholz, Winter, 2017 farmer
- "I'm excited about the possibilities of this crop. We'll just have to wait and see how it fits in." - Randy Hampshire, Planted Kernza Fall 2016, Farmer in Kingston, MI
- "I was really impressed with how much flour I got from those small grains. I milled it and baked scones, it had plenty of loft and it stood up well when mixed with annual wheat flour. I think people liked the nutty taste too!" - Lee Purdy, 2013 Miller, Baker and Farmer, Linden, MI

**Where is Kernza Growing?**

**Kernza seed in hull**

**Stand of Kernza in August as it dries.**

**Left two: Annual rye  Right two: IWG roots**

**What is Kernza?**

- Kernza is a new crop, a perennial grain from the Netherlands that's been around since 1976
- Kernza is being developed as a dual-use crop, meaning it can be used for both forage and grain
- Kernza is a cold-tolerant crop that can be grown in a wide range of climates
- Kernza is a high-yielding crop that can produce both forage and grain
- Kernza is a nitrogen-fixing crop that can help reduce the need for synthetic fertilizers
- Kernza is a low-input crop that can be grown with minimal tillage

**Research of Kernza**

- Kernza research has been conducted at The Land Institute and Michigan State University
- Kernza research has focused on improving yield, quality, and adaptation
- Kernza research has shown promising results for grain and forage production
- Kernza research has identified limitations and challenges for Kernza production

**Farmers and Researchers**

- Farmers and researchers have been involved in Kernza research and development
- Farmers and researchers have shared their experiences and insights on growing Kernza
- Farmers and researchers have provided feedback on Kernza performance and potential

**Future of Kernza**

- The future of Kernza is promising, with ongoing research and development
- Kernza has the potential to be a valuable crop for farmers and researchers
- Kernza has the potential to contribute to sustainable agriculture and environmental stewardship