

Intermediate Wheat Grass Forage Quality Across the United States

Jo Heuschele, USDA-ARS
Grace Miner, USDA-ARS
Garett Heineck, USDA-ARS
David Poss, USDA-ARS
Alison Duff, U.S. Dairy Forage Research Center
Jose Franco, Savanna Institute
Joshua Gamble, USDA-ARS
Jacob Jungers, University of Minnesota
Eeusha Nafi, University of Minnesota
Louis Saporito, USDA-ARS
Alison Hamm, USDA-ARS
Lee DeHaan, The Land Institute
David Bjorneberg, USDA-ARS
Al Rotz, USDA-ARS
Amanda Ashworth, USDA-ARS
Steve Larson, USDA-ARS
Kyle Mankin, USDA-ARS
Jude Maul, USDA-ARS
Douglas Smith, USDA-ARS
Peter Kleinman, USDA-ARS

USDA's Agricultural Research Service (ARS) initiated national research on Kernza as a transformational grain crop that can support the sustainable intensification of US agroecosystems, enhance economic and societal health, and improve the well-being of the nation's citizens. Kernza, a product of the Land Institute's breeding of intermediate wheatgrass (*Thinopyrum intermedium*), is a perennial crop with "dual use" flexibility: Kernza can be harvested for both grain and forage within a single growing season, potentially expanding options for producers. The project involves coordinated field trials and system-level analysis to develop best practices for agronomic management and utilization of Kernza. One of the goals of this project is to determine the feasibility of Kernza as an animal forage during grain production.

Eight states (Arkansas, Colorado, Idaho, Minnesota, Pennsylvania, Utah, Washington, and Wisconsin) across water, soil, and temperature gradients were evaluated for yield, fiber digestibility (NDFD-30hr), fiber (NDF & ADF), and mineral content over a three-year growing period. For the first year of growth, location explained the variability for differences found in fiber and mineral content. While both location and genotype explained variability of forage yields and digestibility. Water availability and temperature may account for the differences in forage quality across the country. This study suggests locations across the nation for growing Kernza as an alternative forage to improve farm crop rotation flexibility.