



**Paul C. and Edna H. Warner Endowment Fund for Sustainable Agriculture
Interdisciplinary Grant Program for On-Farm Research**

Report Form

Project Title: Researching Small Farm Scale Grain Storage for Heirloom Grains

Summary (Describe your project, its objectives and results in one or two sentences)

Heirloom grains are growing in popularity among consumers. The Kinsman Farm in Fulton County, Ohio, grows food grade heirloom and rare grains. The objective of this project was to determine best practices for on-farm bulk storage of these grains.

What was done? (One paragraph describing the goals, experiments and how they were performed)

Poly dome bulk feed bins were purchased and assembled to help determine best management practices for on-farm storage of Turkey Red Wheat. Turkey Red Wheat is considered a heritage grain that predates modern breeding. The feed bins were placed in various situations, and grain was monitored for several factors (moisture, protein, clumping, and grinding quality). Additionally, the bins were monitored for rodent proofing and insect presence.

What were the results? (One paragraph on the outcome of the experiments, what was learned from them)

Grain samples collected from the bins in July and sent to the Lindsey Lab in Columbus for grain quality analysis. All three samples were at 13% moisture and had a test weight of 64 lb/bushel. Grain protein was 8.7 to 8.8%. After storing grain under two conditions (sun or shade) within poly containers, grain quality was assess again in February 2024 (approximately six months after harvest). After six months of storage, the grain quality parameters were consistent to those immediately after harvest. Grain samples will be continue to be saved and tested for milling and baking qualities in summer 2024.

How have the results contributed or will they contribute to sustainable agriculture? (One paragraph on how will farmers use this research information and what difference will it make on their farm?)

Understanding on-farm grain storage and quality factors of heirloom small grains are important for farmers entering this niche market. Hard red winter wheat, such as Turkey Red Wheat, is generally



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used for breads and should have medium to high protein (10.0 to 13.0%). The grain protein of the Turkey Red Wheat in this study was lower at 8.7 to 8.8%, which may make it more suitable for cookies, crackers, and other confectionary products.