

Barley Coordinated Agricultural Project Work Plan FY06 (3/1 – 2/29/07)
Byung-Kee Baik, Washington State University

1. Research, education and outreach activities Research

We will start to determine the food-use quality traits as soon as barley grain (~250 g) is received from Bozeman/Ft. Collins Seed Multiplication trials (October 1). Grain of 960 lines will be cleaned, if necessary, and determined for kernel hardness. Hulled barley will be dehulled using an abrasive device. Grains of both hulled and hulless barley will be ground using a laboratory sample mill and determined for moisture content. Barley flours of 960 lines will be further subject to the determination of starch amylose content, phenolic compound content and polyphenol oxidase activity. Between October 2006 and February 2007, we expect to complete the determination of grain hardness, dehulling and grinding of grains and moisture content determination of barley flours. All the tests will be performed at least in duplicate.

Education

One MS student and one undergraduate student will work with a research technician and participate in sample preparation process, dehulling and grinding of barley grain and moisture content determination of flour.

2. Outcomes and deliverables (10/1 – 2/29)

- Kernel hardness of 960 varieties/lines
- Dehulling and grinding barley grains

Barley Coordinated Agricultural Project Biannual Progress Report FY 06 (4/1/06-9/30/06)
Byung-Kee Baik, Washington State University

1. Research, education and outreach activities

Research

We have identified methods and optimized procedures for the determination of food-use quality traits of barley, including grain hardness, total phenolic content, polyphenol oxidase activity and starch amylose content. We have received a total of 192 winter barley lines grown in the 2005/06 crop year, 96 from Oregon State University and 96 from Virginia Tech. The other 768 lines are expected to arrive soon from Montana State University.

Dehulling of hulled barley using an abrasive device and hardness determination of grain is currently taking place.

Education

A Ph.D. student has been recruited for this project and started to work on the project in September. An undergraduate student will be hired as a time-slip helper to assist the graduate student in sample preparation, abrading, grinding and moisture determination.

2. List of specific outcomes

- Identified methods for the determination of food-use quality traits
- Hired and trained a Ph.D. student for food-use quality determination