REPORT TO THE W-6 TECHNICAL COMMITTEE

From

USDA-ARS National Small Grains Germplasm Research Facility

Aberdeen, Idaho

June, 2005

National Small Grains Collection

NSGC presently holds 128,424 accessions of the small grains (wheat, barley, oat, rye, triticale, rice, and related wild species).

NSGC distributed more than 26,300 accession samples in 562 separate requests in the past 12 months. Thirty-four percent of the requests were from foreign scientists.

Voucher images have been completed for more than 68,000 NSGC accessions. Images include a view of the spikes or panicles along with a sample of threshed kernels.

Regenerated 529 wheat, 54 barley, 13 triticale, and 6 oat accessions at Parlier in the 2004-2005 season. The Parlier site is ideal for regeneration of small grains accessions with mixed growth habits or tender-type winter habit.

Through a Specific Cooperative Agreement with Dr. Scott Haley, Colorado State University, the 7,000+ Iranian wheat collection has been screened for reaction to the new Biotype 2 of the Russian Wheat Aphid. The screening has identified more than 100 accessions with excellent levels of resistance.

Groundbreaking for the Advanced Genetics Laboratory was held on March 30th. When completed next year this facility (which connects to the existing National Small Grains Germplasm Research Facility) will provided much-needed space for conducting state-of-the-art molecular genetics research. This will provide NSGC will new opportunities for molecular evaluations of the small grains accessions.

Barley and Wheat Genetic Stock Collections

The Barley Genetic Stock (GSHO) and the Wheat Stock Collection (GSTR) distributed 256 samples to U.S (64%) and foreign (36%) scientists during the past 12 months.

Seven hundred forty five new barley genetic stocks were acquired from Dr. Patrick Hayes, Oregon State University.

Over 800 barley genetic stocks were planted in the field for evaluation and for seed increase. Sixty wheat cytogenetic stocks were increased in the greenhouse in 2004-05.

One hundred thirteen hulless barley lines were planted in replicated plots at different locations in Idaho for evaluation of quality and agronomic characteristics. Results were presented to the Idaho Barley Commission, February 2005. An abstract and poster entitled “Beta-glucan and starch levels in hulless barley lines grown at two locations in Idaho” was presented at the 2004 ASA meeting in Seattle Oct. 31-Nov. 4, 2004. A paper entitled “Use of intersimple sequence repeat (ISSR) polymorphisms to study genetic relationships in closely related North American malting barley cultivars” was accepted for publication in the Journal of Genetics and Breeding, Aug. 28, 04.