

**USDA-ARS/  
U.S. Wheat and Barley Scab Initiative  
FY05 Final Performance Report (approx. May 05 – April 06)  
July 14, 2006**

**Cover Page**

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<b>Fiscal Year:</b>	<b>2005</b>
<b>FY05 ARS Agreement ID:</b>	<b>NA</b>
<b>Agreement Title:</b>	<b>Coordination of a Uniform Regional Scab Nursery for Spring Wheat Parents.</b>
<b>FY05 ARS Award Amount:</b>	<b>\$ 6,462</b>

**USWBSI Individual Project(s)**

<b>USWBSI Research Area*</b>	<b>Project Title</b>	<b>ARS Adjusted Award Amount</b>
VDUN	Coordination of a Uniform Regional Scab Nursery for Spring Wheat Parents.	\$ 6,624
	<b>Total Award Amount</b>	<b>\$ 6,462</b>

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Principal Investigator

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Date

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\* BIO – Biotechnology  
CBC – Chemical & Biological Control  
EDM – Epidemiology & Disease Management  
FSTU – Food Safety, Toxicology, & Utilization  
GIE – Germplasm Introduction & Enhancement  
VDUN – Variety Development & Uniform Nurseries

**Project 1:** *Coordination of a Uniform Regional Scab Nursery for Spring Wheat Parents.*

**1. What major problem or issue is being resolved and how are you resolving it?**

The significant environmental effect associated with the wheat disease scab (*Fusarium* head blight) poses an obstacle for breeding programs seeking to develop more scab-resistant germplasm. Undertaking multisite evaluations across a range of environments is the only way to adequately assess scab resistance in germplasm. The Uniform Regional Scab Nursery for Spring Wheat Parents (URSN) seeks to address this need. Interested parties from academia and private companies nominate germplasm for scab resistance evaluation at field locations in Minnesota, North Dakota, South Dakota, and Canada that provide conditions to enhance scab development on wheat. Both hard red spring wheat and durum wheat are included in the URSN. These data are supplied to the coordinator, who oversees its collation and statistical analysis, and produces an annual report. An additional aspect of the URSN is to encourage open and free germplasm exchange, in order to foster cooperation among breeders in efforts to develop scab resistant germplasm.

**2. List the most important accomplishment and its impact (how is it being used?).  
Complete all three sections (repeat sections for each major accomplishment):**

**Accomplishment:** The URSN was grown for the 11th year in 2005, at six locations (Brookings, SD, St. Paul and Crookston, MN, Prosper and Langdon, ND, and Glenlea, Canada). A total of 43 germplasm entries were included, including three resistant and two susceptible checks. The other 38 entries were contributed by university, industry, and national wheat breeding programs. Seven of these entries were durums. Scab resistance-related trait data from the locations were compiled and analyzed, and the annual report that was produced provides individual location data summaries, and data summaries and rankings across locations.

**Impact:** This nursery continues to function as an excellent source of data on wheat scab resistance from the field and as a vehicle for exchange of germplasm among spring wheat breeders in the Upper Midwest.

**As a result of that accomplishment, what does your particular clientele, the scientific community, and agriculture as a whole have now that they didn't have before?:**

The 2005 annual report provides readily accessible information on scab resistance in germplasm emerging from a number of wheat breeding programs. This in turn provides guidance to wheat breeders for future parental selections in their crossing programs. No other comparable vehicle for multisite scab evaluations and subsequent germplasm exchange exists for the spring wheat region.

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ARS Agreement #: NA

**Include below a list of the publications, presentations, peer-reviewed articles, and non-peer reviewed articles written about your work that resulted from all of the projects included in the grant. Please reference each item using an accepted journal format. If you need more space, continue the list on the next page.**

This project is designed specifically to produce a non-peer reviewed annual report for distribution to Nursery cooperators and other interested parties.

GARVIN, D.F, AND BLANKENHEIM, Z. 2006. Report of the 2005 Uniform Regional Scab Nursery for Spring Wheat Parents. The report is made available at the USWBSI web site (<http://www.scabusa.org/>) and through the Graingenes web site (<http://wheat.pw.usda.gov>).