

**U.S. Wheat and Barley Scab Initiative
 FY02 Final Performance Report (approx. May 02 – April 03)
 July 15, 2003**

Cover Page

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Year:	FY2002 (approx. May 02– April 03)
Grant Number:	NA
Grant Title:	Fusarium Head Blight Research
FY02 ARS Award Amount:	\$ 8,780

Project

Program Area	Project Title	USWBSI Recommended Amount
VDUN	Coordination of a Uniform Regional Scab Nursery for Spring Wheat Parents.	\$9,000
	Total Amount Recommended	\$9,000

 Principal Investigator

 Date

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 development of the wheat disease scab (*Fusarium head blight*) poses an obstacle for public and private sector 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 was initiated several years ago to address this problem. Interested parties submit germplasm nominations for testing in different locations in the spring wheat production region, including sites in Minnesota, North and South Dakota, and Canada, that each are specifically set up to provide conditions that will enhance the likelihood of scab developing on the wheat. Both hard red spring wheat and durum wheat is accepted. The coordinator selects the final entries and oversees the exchange of seed between germplasm contributors and location cooperators. In turn, a core group of scientists (who submit the majority of the entries) are responsible for collecting disease data at one or more nursery locations. These data are supplied to the coordinator, who oversees its collation and statistical analysis, and then generates a final annual report. An additional issue that the Nursery addresses is that of open and free germplasm exchange. To address this issue and foster cooperation among breeders developing scab resistant germplasm, germplasm exchange among Nursery entries is encouraged. The funding received from the USWBSI helps cover expenses involved in coordinating the nursery, such as seed shipment, data collation and statistical analysis, processing the final annual report, mailing hard copies of the report to interested parties, and travel related both to Nursery coordination and dissemination of results to colleagues.

2. What were the most significant accomplishments?

The Nursery included six locations in 2002. A total of 39 germplasm entries were evaluated, including 32 bread wheats and 7 durums. The bread wheats were predominantly hard red spring, but 5 accessions from the USDA PI collection that may harbor novel scab resistance genes were also included. The Nursery entries came from three public research universities, two private wheat breeding companies, and from the public Canadian wheat breeding program. Data from this Nursery were compiled and analyzed, and the report that was produced provides both individual location and overall mean scab resistance-related information, and detailed ranking information among entries. This expanded version of the annual report has been disseminated both by hard copy mailings, and by placement of the report on the USWBSI and Graingenes web sites. This nursery continues to function as a vehicle for exchange of germplasm among spring wheat breeders in the Upper Midwest, and as an excellent source of data on wheat scab resistance from the field. For the 2003 season, a similar number of entries are being evaluated, and new dryland screening locations are being included to increase the number of locations represented, and to compare results obtained to those from the traditional mist irrigated locations.

FY02 (approx. May 02 – April 03)

FY02 Final Performance Report

PI: Garvin, David F.

Grant: 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 MATTHIESEN L. Report of the 2002 Uniform Regional Scab Nursery for Spring Wheat Parents. Hard copies distributed to cooperators in nursery and other interested parties, and the report is also available at the USWBSI web site (<http://www.scabusa.org/>) and through the Graingenes web site (<http://wheat.pw.usda.gov>).