

U.S. Wheat and Barley Scab Initiative
FY01 Final Performance Report (approx. May 01 – April 02)
July 15, 2002

Cover Page

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Year:	FY2001 (approx. May 01 – April 02)
Grant Number:	N/A
Grant Title:	Fusarium Head Blight Research
FY01 ARS Award Amount:	\$ 9,735

Project

Program Area	Project Title	Requested Amount
Variety/Uniform	Coordination of screening spring wheat parents for scab in a Uniform Regional Nursery	\$ 10,000
	Total Amount Requested	\$ 10,000

Principal Investigator

Date

Project 1: Coordination of screening spring wheat parents for scab in a Uniform Regional Nursery**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, Iowa, 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 seven locations in 2001. A total of 40 germplasm entries were evaluated, including 34 bread wheats and 6 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. Results suggest that some of the potential new sources of scab resistance from the USDA PI collection (submitted by Dr. Yue Jin) that were included in the Nursery exhibited good scab resistance and thus may be promising new sources of genes for FHB resistance. From the 2001 results, it was determined that due to low disease incidence at the Iowa location for two straight years, this location will be dropped in future years. However contacts have been initiated that are aimed at exploring the possibility of planting out the nursery off-season at a foreign location with severe scab pressure on the wheat crop (Uruguay) in upcoming years. The 2001 annual report has been disseminated both by hard copy mailings, and by placement if the report on the USWBSI web site. 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 2002 season, a similar number of entries will be evaluated.

FY01 (approx. May 01 – April 02)

PI: Garvin, David F.

Grant: N/A

FY01 Final Performance Report

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 BUSCH, R.W. Report of the 2001 Uniform Regional Scab Nursery for Spring Wheat Parents. Hard copies distributed to cooperators in nursery, and the report is also available at the USWBSI web site (<http://www.scabusa.org/>).