

**U.S. Wheat and Barley Scab Initiative
 FY00 Final Performance Report (approx. May 00 – April 01)
 July 30, 2001**

Cover Page

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Year:	FY2000 (approx. May 00 – April 01)
Grant Number:	
Grant Title:	Fusarium Head Blight Research
2000 ARS Award Amount:	\$9,756

Project

Program Area	Project Title	Requested Amount
Variety Development & Uniform Nurseries	Coordinate screening spring wheat parents for scab resistance in a uniform nursery and facilitate germplasm exchange.	\$10,000.00
	Requested Total	\$10,000.00¹

 Principal Investigator

 Date

¹ Note: The Requested Total and the Award Amount are not equal.

PI: Bob Busch

Grant:

Project 1: Coordinate screening spring wheat parents for scab resistance in a uniform nursery and facilitate germplasm exchange.

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

The problem of testing scab resistant germplasm over environments is addressed in the Northern Midwest area including North Dakota, South Dakota, Minnesota, Manitoba (Ag. Canada), Saskatchewan (Ag. Canada), AgriPro, and Western Plant Breeders. Hard spring wheat and durum lines are grown in tow locations in Minnesota, one location in South Dakota, two locations in North Dakota, and one location in Manitoba. This nursery is primarily for developed scab resistant germplasm to exchange germplasm for use as parents and to obtain a number of locations in one year since scab resistance is subject to large genotype x environment interactions. However, in 2000, resistant germplasm from the introduction nursery of Dr. Yue Jin in South Dakota was tested as well to provide additional information on these carefully selected possible new sources of resistance. This is a continuation of regional cooperation among researcher, both public and private in the upper Midwest that was initiated in 1995 and has proven to be very valuable to cooperating researchers. The funding helps cover some of the expenses involved in coordinating the nursery, combining data, processing the report and sending the results to collaborators and other interested persons.

2. What were the most significant accomplishments?

A northern location at Crookston, MN in the Red River Valley of the North was added in 1999 and represents a major area for scab and wheat production. In addition, Iowa State University began to screen the Uniform Regional Scab Nursery for Spring Wheat Parents in 2000. Morris MN, that has environmental condition similar to St. Paul, MN and Brookings, SD and so was dropped in 2001 to reduce possible duplication. Scab is a difficult disease to assess, and the *right amount* of disease is needed to allow maximum differential among entries. The readings are usually confounded by heading date so special precautions are needed for data collection. Data analyses must be evaluated by heading date to determine possible biases caused by differential heading. New germplasms from the Spring Wheat Germplasm Scab Introduction Nursery at South Dakota were included in the 2000 nursery for the first time. High levels of resistance of several of these gemplasms may contribute to higher levels of resistance in the future varieties in this region. Over 40 lines from ND, SD, MN, AgriPro, Agric. Canada, and Western Plant Breeders contributed lines to the 2001 Uniform Regional Scab Nursery for Spring Wheat Parents. It will be grown in IA, SD, ND, MN, and Manitoba, Canada at a total of seven locations. This nursery continues to function as an 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.

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Grant:

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 not designed to produce peer reviewed articles. It is to supply information about germplasm to spring wheat researchers and provide a forum for germplasm exchange.

BUSCH, R., LINKERT, G., and MATTHIESEN, L. 2000. 2000 Uniform Regional Scab Nursery for Spring Wheat Parents. 11 pages. Sent to about 25 persons. Also put on the U.S. Scab Initiative Website and has been available since Jan. 2001