

**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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Grant Number:	59-0790-9-040
Grant Title:	Fusarium Head Blight Research
2000 ARS Award Amount:	\$19,512

Project

Program Area	Project Title	Requested Amount
1403	Development of FHB Resistant SRW Whet Genotypes Adapted to the Gulf Coast.	\$20,000.00
	Requested Total	\$20,000.00¹

Stephen A. Harrison

7-30-2001

Principal Investigator

Date

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

Project 1: Development of FHB Resistant SRW Wheat Genotypes Adapted to the Gulf Coast.

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

The overall objective of the project is to accelerate development of wheat varieties and germplasm adapted to the Gulf Coast that are resistant to Fusarium Head Blight (FHB). The Gulf Coast is a unique wheat-growing region that is not suitable for most wheat varieties due to low vernalization and high disease pressure. Objectives will be accomplished by: (1) Participating in regional screening nurseries (2) Initiating a recurrent selection program, and (3) Crossing adapted soft wheat lines and varieties with genotypes having resistance to FHB.

2. What were the most significant accomplishments?

Screening methodology was improved and high levels of scab developed at Baton Rouge in 2000-01. The Southern Regional Scab Nursery (SRSN) was also evaluated at two LA locations. Significant levels of scab occurred at Baton Rouge, but variation in heading for this nursery was greater than 28 days among lines and relative ratings were highly confounded with heading date.

A group of 1,433 advanced-generation headrows from crosses made in 1996-97 was evaluated at Baton Rouge. Each cross contained a source of FHB resistance, which included Chinese and CIMMYT lines, and adapted FHB resistant lines such as 'Freedom'. The headrows were also inoculated under a mister system and significant levels of scab developed. Selections were made among this group based on visual ratings of scab development. Tropical storm Allison caused rainfall of approximately 24" over a one-week period just prior to harvest. As a result, all lines sprouted and kernel and DON data were not collected. All selected headrows were harvested from a non-infected location in north Louisiana or by Dr. Gene Milus at Fayetteville, AR and no material was lost as a result. Several breeding lines with scab resistance sources were harvested and will be entered in the 2002 Uniform Southern FHB Nursery. Additional crosses and backcrosses were made at Baton Rouge to incorporate FHB resistance into adapted backgrounds. Seventeen F1 lines containing 10 different FHB resistance sources were advanced to the F2 generation for selection in 2002-02. The cooperative exchange of material with Drs. Gene Milus of the Univ. of Arkansas and Paul Murphy of N.C. State continued.

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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.

None