

**U.S. Wheat and Barley Scab Initiative  
Annual Progress Report  
September 18, 2000**

**Cover Page**

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<b>Year:</b>	<b>FY2000</b>
<b>Grant Number:</b>	<b>59-0790-9-040</b>
<b>Grant Title:</b>	<b>Fusarium Head Blight Research</b>
<b>Amount Granted:</b>	<b>\$20,000.00</b>

**Project**

<b>Program Area</b>	<b>Objective</b>	<b>Requested Amount</b>
Variety Development	Accelerate development of resistant varieties.	\$15,000.00
	<b>Requested Total</b>	<b>\$15,000.00<sup>1</sup></b>

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Principal Investigator

Date

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<sup>1</sup> Note: The Requested Total and the Amount Granted are not equal.

**Project 1: Accelerate development of resistant varieties.**

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. Please provide a comparison of the actual accomplishments with the objectives established.

The Uniform Winter Scab Nursery (UWSN) was planted in south and north Louisiana in Nov 1999. Heading was late and occurred over several weeks due to inadequate vernalization at both sites. The Southern Regional Scab Nursery (SRSN) was also evaluated at both locations. The SRSN headed at both locations. No useful data was collected at this site due to a 150-year record drought that prevented scab development even though both sites had mister systems and were inoculated at least twice with scabby corn.

A group of 2,300 headrows from 72 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, but little scab developed. 1368 heads were harvested from 228 rows for purification/re-evaluation; while another 39 were harvested as entire rows for entry in preliminary yield trials and in 3 locations of FHB screening in 2001. Additional crosses were made at Baton Rouge to incorporate FHB resistance and populations exchange with pathologist/breeders in Arkansas also continued.

The MS3 adapted population was advanced and additional selections were made. FHB sources have not been incorporated into the population to date because of the lack of FHB selection pressure in 2000. Infusion of FHB sources into the MS3 background will begin in 2001, based on data from other locations.

3. What were the reasons established objectives were not met? If applicable.

The UWSN and SRSN did not produce useful data due to extreme drought. These will be repeated in 2001 with some modification of the mister and inoculation methods. FHB resistance was also not incorporated into the MS3 background, although the MS3 population was improved.

4. What were the most significant accomplishments this past year? The LSU FHB project continued to develop good adapted soft red winter wheat lines that have sources of Fhb in their parentage. The cooperation between LSU and the University of Arkansas on this project was expanded.

Year: 2000

Progress Report

PI: Steve Harrison

Grant: 59-0790-9-040

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