

**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:	59-0790-9-046
Grant Title:	Fusarium Head Blight Research
FY02 ARS Award Amount:	\$ 15,514

Project

Program Area	Project Title	USWBSI Recommended Amount
VDUN	Development of Scab Resistant Wheat Cultivars Adapted to the Southeast.	\$15,902
	Total Amount Recommended	\$15,902

 Principal Investigator

 Date

Project 1: Development of Scab Resistant Wheat Cultivars Adapted to the Southeast.

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

The overall goal of the project is to enhance the development of Fusarium head blight (FHB) resistant varieties for the Southeast. Currently, the leading varieties available to southeastern producers are moderately to highly susceptible to scab. Wheat varieties with higher level of scab resistance are needed to reduce the economic losses from this disease. Most of the sources of resistant to wheat FHB are presently found in Chinese and Mexican material. These materials often do not have the yield potential or the resistance to leaf rust, powdery mildew and septoria nodorum or the Hessian fly that is necessary for profitable production in Georgia and the Southeast. Different sources of scab resistance (Sumai 3 sources, Ernie, and adapted elite germplasm from other University breeding programs) and Brazilian varieties) are being used to cross with adapted elite Georgia lines. Backcrossed and Doubled-haploid techniques are being used to accelerate the development of resistant varieties.

2. What were the most significant accomplishments?

Due to the involvement in the USDA Scab Initiative, the level of resistance within the elite lines of Georgia's program has significantly increased. Several lines have been identified which have significantly better resistance than the presently grown varieties in the state. The Scab Initiative has permitted the screening program to expand in both the greenhouse and field. Sixty elite experimental lines with various level of scab resistance were evaluated under field conditions. These lines were evaluated for Type 2 resistance. Eight breeding lines in the elite nursery were identified with moderate to high level of resistance to scab. These elite resistant lines have been crossed with other known sources of resistance and selection in the advance stage. Five experimental lines were grown in the 2002 Uniform Regional Scab Nursery. Most of these lines have improved levels of Fusarium head blight resistance with index ranging from 7 to 34%.

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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.