

**USDA-ARS/
U.S. Wheat and Barley Scab Initiative
FY08 Final Performance Report (approx. May 08 – April 09)
July 15, 2009**

Cover Page

PI:	Ed Souza
Institution:	USDA-ARS
Address:	Soft Wheat Quality Laboratory 1680 Madison Ave. Wooster, OH 44691
E-mail:	edward.souza@ars.usda.gov
Phone:	330-263-3891
Fax:	
Fiscal Year:	2008
USDA-ARS Agreement ID:	NA
USDA-ARS Agreement Title:	Evaluation of Fusarium Nurseries for Milling and Baking Quality.
FY08 USDA-ARS Award Amount:	\$ 6,951

USWBSI Individual Project(s)

USWBSI Research Category*	Project Title	ARS Adjusted Award Amount
VDHR-NWW	Evaluation of Fusarium Nurseries for Milling and Baking Quality.	\$6,951
	Total Award Amount	\$ 6,951

Principal Investigator

Date

* MGMT – FHB Management
FSTU – Food Safety, Toxicology, & Utilization of Mycotoxin-contaminated Grain
GDER – Gene Discovery & Engineering Resistance
PBG – Pathogen Biology & Genetics
BAR-CP – Barley Coordinated Project
HWW-CP – Hard Winter Wheat Coordinated Project
VDHR – Variety Development & Uniform Nurseries – Sub categories are below:
 SPR – Spring Wheat Region
 NWW – Northern Winter Wheat Region
 SWW – Southern Sinter Wheat Region

Project 1: *Evaluation of Fusarium Nurseries for Milling and Baking Quality.*

1. What major problem or issue is being resolved relevant to Fusarium head blight (scab) and how are you resolving it?

New breeding lines developed with resistance to *Fusarium* head blight must have adequate milling and baking quality if they are to be successfully released as finished cultivars for use by farmers. This project evaluates the quality of breeding lines targeted for *Fusarium* resistance at early stage, while they are in regional screening nurseries and provides that information back to breeders in a timely manner.

A second problem concerns selection of breeding materials for crossing to develop the next cycle of resistant cultivars. By evaluating the regional nurseries, we allow breeders to effectively identify the lines with both desirable resistance and desirable milling and baking quality. The combination of information was not available previous to the grant and was a barrier to identifying optimum combinations of parents for developing viable commercial cultivars with *Fusarium* resistance.

2. List the most important accomplishment and its impact (i.e. how is it being used) to minimize the threat of Fusarium head blight or to reduce mycotoxins. Complete both sections (repeat sections for each major accomplishment):

Accomplishment:

The Southern Uniform Fusarium Head Blight Nursery and the Northern Uniform Winter Wheat Scab Nursery were evaluated for milling and baking data and the data provided to breeders by December 1st. Evaluations were provided to breeders by the nursery coordinators as part of the nursery reports. The results were posted on the Soft Wheat Quality Laboratory website (<http://www.ars.usda.gov/News/News.htm?modecode=36-07-05-00>) and presented in a poster at the annual meeting of the USWBSI in Indianapolis.

Impact:

Timely, accurate evaluations of milling and baking quality directly influences the decisions of most of the breeding programs participating in the CP. Long-term impact of the research will be shorter delivery time of improved cultivars with both target soft wheat quality and improved disease resistance.

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.

E. Souza, C. Sneller, P. Paul, L. Sweets and M.J. Guttieri. 2008. Wheat Quality Evaluation of Fusarium Head Blight (*Fusarium graminearum*) Resistant Soft Wheats and the Effect of Fungicide Management on Wheat Quality. Poster #98. Annual Meeting of the US Wheat and Barley Scab Initiative. Abstract in Proceedings, page 213.

If your FY08 USDA-ARS Grant contained a VDHR-related project, include below a list all germplasm or cultivars released with full or partial support of the USWBSI. List the release notice or publication. Briefly describe the level of FHB resistance. If this is not applicable (i.e. no VDHR-related project) to your FY08 grant, please insert ‘Not Applicable’ below.

No genotypes released this year involving the data produced within the project.