USDA-ARS/
U.S. Wheat and Barley Scab Initiative
FY12 Final Performance Report
July 16, 2013

Cover Page

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Fiscal Year:	FY12
USDA-ARS Agreement ID:	NA
USDA-ARS Agreement Title:	Coordination of the Uniform Regional Scab Nursery for Spring Wheat Parents.
FY12 USDA-ARS Award Amount:	$ 4,023

USWBSI Individual Project(s)

USWBSI Research Category*	Project Title	ARS Award Amount
VDHR-SPR	Coordination of the Uniform Regional Scab Nursery for Spring Wheat Parents.	$ 4,023
	Total ARS Award Amount	**$ 4,023**

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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
DUR-CP – Durum Coordinated Project
HWW-CP – Hard Winter Wheat Coordinated Project
VDHR – Variety Development & Uniform Nurseries – Sub categories are below:
SPR – Spring Wheat Region
NWW – Northern Soft Winter Wheat Region
SWW – Southern Soft Red Winter Wheat Region

Project 1:*Coordination of the Uniform Regional Scab Nursery for Spring Wheat Parents.*

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

   The significant environmental effect associated with FHB poses an obstacle for breeding programs seeking to develop more scab-resistant germplasm. Undertaking multisite evaluations across a range of environments is the only way to adequately assess scab resistance in germplasm, and the Uniform Regional Scab Nursery for Spring Wheat Parents (URSN) addresses this need. Interested parties from academia and private companies nominate germplasm for FHB resistance evaluation at field locations in Minnesota, South Dakota, and Canada that provide conditions to enhance FHB development. Location data are supplied to the coordinator, who oversees its collation and statistical analysis, and produces an annual report for the nursery program. An additional aspect of the URSN is to encourage open and free germplasm exchange, in order to foster cooperation among breeders in efforts to develop scab resistant germplasm.

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):**

   <u>Accomplishment:</u>

   The URSN was grown for the 18th year in 2012, at locations in the U.S. and Canada . Entries were contributed by university, industry, and national wheat breeding programs. Scab resistance-related trait data from the locations were compiled and analyzed, and the annual report that was produced provides individual location data summaries, and data summaries and rankings across locations.

   <u>Impact:</u>

   This nursery program continues to function as an excellent source of data on wheat scab resistance from the field, and as a vehicle for exchange of germplasm among spring wheat breeders in the Upper Midwest US and Canada.

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.

GARVIN, D.F, AND BLANKENHEIM, Z. 2013. Report of the 2012 Uniform Regional Scab Nursery for Spring Wheat Parents. The report is made available at the USWBSI web site (http://www.scabusa.org/) and through the GrainGenes web site (http://wheat.pw.usda.gov).