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

Cover Page

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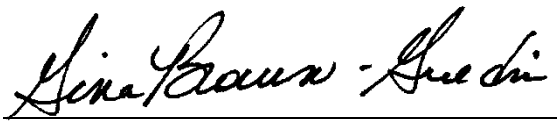
Fiscal Year:	FY12
USDA-ARS Agreement ID:	59-0206-9-083
FY12 USDA-ARS Award Amount:	$ 9,500

USWBSI Individual Project(s)

USWBSI Research Category*	Project Title	ARS Award Amount
VDHR-SWW	Developing Double Haploids to Expedite Mapping and Enhance FHB Resistance in SRWW.	$ 9,500
	Total ARS Award Amount	**$ 9,500**



7/15/2013

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: *Developing Double Haploids to Expedite Mapping and Enhance FHB Resistance in SRWW.*

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

   There is a need to rapidly develop wheat cultivars adapted to the southeastern United States with high levels of resistance to Fusarium head blight. Improved breeding methods that make use of marker-assisted selection and doubled haploid technology are needed. To address these needs, this project is the mapping of FHB resistance in experimental line ARGE97-1042-4-5-20 has been the most effective source of FHB resistance in the soft winter wheat region. This will result in development of useful markers to select for and deploy this resistance in individual breeding programs.

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:

   A new population for mapping FHB resistance genes was developed from the cross LA01069D-23-4-4/ARGE97-1042-4-5-20. Approximately 200 doubled haploid lines are being grown to increase seed for distribution to breeding programs in the Southeast that will evaluate the population in screening nurseries. Seed has been sent to the Eastern Regional Genotyping Lab at Raleigh, NC for DNA isolation and SNP genotyping.

   Impact:

   This population will provide germplasm having resistance from ARGE97-1042-4-5-20 that has been the most effective source of FHB resistance in the soft winter wheat region. Efficiency of breeding programs to develop and release FHB resistant varieties will be enhanced by marker-assisted selection for resistance genes derived from ARGE97-1042-4-5-20.

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