USDA-ARS/
U.S. Wheat and Barley Scab Initiative
FY11 Preliminary Final Performance Report
July 13, 2012

Cover Page

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Fiscal Year:	FY11
USDA-ARS Agreement ID:	59-0206-0-060
USDA-ARS Agreement Title:	Developing More Precise Markers to FHB Resistance QTLs for Wheat.
FY11 USDA-ARS Award Amount:	$ 9,756

USWBSI Individual Project(s)

USWBSI Research Category*	Project Title	ARS Award Amount
HWW-CP	Developing More Precise Markers to FHB Resistance QTLs for Wheat.	$ 9,756
	Total ARS Award Amount	**$ 9,756**

7/10/12

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 More Precise Markers to FHB Resistance QTLs for Wheat.*

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

   The current markers for the known FHB resistance QTLs are flanking markers and thus recombination can break up the linkage between the markers and the QTLs making marker-aid selection less effective. The overall goal of this project is to develop more precise markers for the known FHB resistance QTLs to make marker-aid selection more efficient and effective.

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:

   Three candidate genes have been identified with one for QTL Fhb1 and two for QTL Fhb_6BL. Marker development is going on.

   Impact:
   More precise marker will increase the efficiency and effectiveness of marker-aid selection for improving FHB resistance in wheat.

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.

The following two posters were presented at the 2011 National Annual FHB Forum:

Galla A, Zhuang Y, **Yen Y**. 2012. A putative fungal miRNA that might play a role in Fusarium head blight pathogenesis in wheat. In: *Proceedings of the 2011 National Fusarium Head Blight Forum*, December 4-6, 2011, St. Loius, MO, USA, pp.85.

Zhuang Y, Galla A, **Yen Y**. 2011. Identifying and characterizing candidate genes associated with FHB resistant QTL *Qfhb1*. In: *Proceedings of the 2011 National Fusarium Head Blight Forum*, December 4-6, 2011, St. Louis, MO, USA, pp.100.