

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

**Cover Page**

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<b>Fiscal Year:</b>	FY12
<b>USDA-ARS Agreement ID:</b>	59-0206-9-067
<b>USDA-ARS Agreement Title:</b>	Diagnostic Services for Vomitoxin (DON) in Wheat.
<b>FY12 USDA-ARS Award Amount:</b>	\$ 102,126*

**USWBSI Individual Project(s)**

<b>USWBSI Research Category**</b>	<b>Project Title</b>	<b>ARS Award Amount</b>
FSTU-S	Diagnostic Services for Vomitoxin (DON) in Wheat.	\$ 102,126
<b>Total ARS Award Amount</b>		<b>\$ 102,126</b>

7/8/2013

Principal Investigator

Date

\* Partial funding for this research is under ARS agreement # 59-0206-9-062

\*\* 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:** *Diagnostic Services for Vomitoxin (DON) in Wheat.*

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

This funding supported wheat analyses for *Fusarium graminearum* mycotoxins produced during scab infection in research projects by multiple USWBSI PIs (17) in 5 states. In particular, vomitoxin or deoxynivalenol (DON) and additional mycotoxins 15- and 3-acetyldeoxynivalenol plus nivalenol were analyzed by gas chromatography/electron capture detection. Approximately 11,000 samples were estimated for mycotoxin analysis and by May 2013 approximately 7,500 (7,465) wheat samples were analyzed. The 2012-2013 dry weather conditions resulted in many initial check DON samples testing negative, with no further testing requested. The results were sent electronically to the individual USWBSI PIs for their research. A technician was hired to assist in laboratory sample preparation and preparation of sample clean-up columns for mycotoxin extraction.

**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 chemist performed approximately 7,500 analyses on wheat for *Fusarium graminearum* mycotoxins (in particular vomitoxin) for use by USWBSI PIs in their research projects.

**Impact:**

Mycotoxin data generated by this project is used by USWBSI PIs in their research projects focused on mitigation of scab in cereal grains.

FY12 (approx. May 12 – May 13)

FY12 Final Performance Report

PI: Mostrom, Michelle

USDA-ARS Agreement #: 59-0206-9-067

**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.**

NA – Analytical testing performed for research PIs receiving USWBSI funding.

**PI:** Mostrom, Michelle

**Project:** Diagnostic Services for Vomitoxin (DON) in Wheat.

**FY12 FPR – USWBSI ADDENDUM  
DON Service Labs – Quality Control Data**

**Insert below Quality Control Data/Results from the FY12 Award Period (May 2012-May 2013):**

	Front $\mu$ ECD Detector			Back $\mu$ ECD Detector		
Pool	Wheat	Barley	Corn	Wheat	Barley	Corn
Mean	1.0	2.7	4.7	0.9	2.8	4.6
Std Dev	0.1	0.3	0.5	0.2	0.4	0.5
CV	15.2%	12.8%	10.2%	17.4%	13.4%	11.3%