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

Cover Page

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Fiscal Year:	FY11					
USDA-ARS Agreement ID:	59-0206-9-067					
USDA-ARS Agreement Title:	I Diagnostic Services for Vomitovin (Licilo) in Wheat					
FY11 USDA-ARS Award Amount:	\$ 98,882					

USWBSI Individual Project(s)

USWBSI Research Category*	Project Title	ARS Award Amount
FSTU	Diagnostic Services for Vomitoxin (DON) in Wheat.	\$ 98,882
	Total ARS Award Amount	\$ 98,882

M. S. Mostmy

July 9, 012

Principal Investigator Date

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

^{*} MGMT – FHB Management

FY11 (approx. May 11 – May 12)

PI: Mostrom, Michelle

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

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 (19) 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 12,000 samples were estimated for mycotoxin analysis and by May 2012 approximately 9,000 (8,971) wheat samples were analyzed. 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 9,000 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.

FY11 (approx. May 11 – May 12)

PI: Mostrom, Michelle

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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.

FY11 FPR – USWBSI ADDENDUM DON Service Labs – Quality Control Data

Insert below Quality Control Data/Results from the FY11 Award Period (May 2011-May 2012):

The table summarizes the in-house quality control data run with DON analyses. Three quality control samples, wheat, barley and corn, are run with each analysis (n=101). A wheat blank is also run with each analysis.

Quality Control Data for FY11 USWBSI Samples

	GC/ECD Front Detector			GC/ECD Back Detector		
	Wheat	Barley	Corn	Wheat	Barley	Corn
Data Points (n)	101	101	101	101	101	101
Mean (DON PPM)	0.9	2.9	4.3	1.0	2.9	4.3
Standard Deviation	0.13	0.28	0.46	0.17	0.28	0.42
CV	14.5%	9.6%	10.7%	16.7%	9.6%	9.8%