Cover Page

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Fiscal Year:	FY11
USDA-ARS Agreement ID:	59-0206-9-067
USDA-ARS Agreement Title:	Diagnostic Services for Vomitoxin (DON) 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. Mostrom

_____   July 9, 012
Principal Investigator   Date

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[*] 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

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):**

   <u>**Accomplishment:**</u>
   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.

   <u>**Impact:**</u>
   Mycotoxin data generated by this project is used by USWBSI PIs in their research projects focused on mitigation of scab in cereal grains.

(Form – FPR11)

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%