

**USDA-ARS/
U.S. Wheat and Barley Scab Initiative
FY07 Preliminary Final Performance Report (approx. May 07 – April 08)
July 15, 2008**

Cover Page

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Fiscal Year:	2007
USDA-ARS Agreement ID:	59-0790-7-079
USDA-ARS Agreement Title:	Rapid, Multiplex Real-Time PCR Method for Detection, Identification and Quantification of Fusarium spp.
FY07 ARS Award Amount:	\$ 35,010

USWBSI Individual Project(s)

USWBSI Research Area*	Project Title	ARS Adjusted Award Amount
FSTU-R	Rapid, Multiplex Real-Time PCR Method for Detection, Identification and Quantification of Fusarium spp.	\$35,010
	Total Award Amount	\$ 35,010

Principal Investigator

Date

* CBCC – Chemical, Biological & Cultural Control
EEDF – Etiology, Epidemiology & Disease Forecasting
FSTU – Food Safety, Toxicology, & Utilization of Mycotoxin-contaminated Grain
GET – Genetic Engineering & Transformation
HGR – Host Genetics Resources
HGG – Host Genetics & Genomics
IIR – Integrated/Interdisciplinary Research
PGG – Pathogen Genetics & Genomics
VDUN – Variety Development & Uniform Nurseries

Project 1: *Rapid, Multiplex Real-Time PCR Method for Detection, Identification and Quantification of Fusarium spp.*

1. What major problem or issue is being resolved and how are you resolving it?

The major problem this project addresses is the lack of a species specific quantitative method to apply to any study evaluating *Fusarium* colonization of grain. We are currently optimizing real-time PCR conditions to be able to amplify and accurately quantify the targeted species in a multiplex set up.

2. List the most important accomplishment and its impact (how is it being used?). Complete all three sections (repeat sections for each major accomplishment):

Accomplishment:

Project not yet completed.

Impact:

Once the project is complete, there will be a method available to scientists involved with scab research to accurately quantify the target *Fusarium* species in grain and potentially in other plant tissues.

As a result of that accomplishment, what does your particular clientele, the scientific community, and agriculture as a whole have now that they didn't have before?:

Currently, only detection methods exist which do not quantify species specific biomass. This will greatly advance research efforts in this area, leading to better management practices.

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.

Tobias, D.J., A. Vashisht, A. Boddada, C.E. Wolf-Hall and P.B. Schwarz. 2007. Development of a multiplex real-time PCR assay for rapid detection and quantification of *Fusarium* spp. in barley. Proceedings of the 2007 National Fusarium Head Blight (NFHB) Forum, December 2-4, 2007, The Westin Crown Center, Kansas City, Missouri. Page 14.