

**USDA-ARS/
U.S. Wheat and Barley Scab Initiative
FY07 Final Performance Report (approx. May 07 – April 08)
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Cover Page

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Fiscal Year:	2007
USDA-ARS Agreement ID:	59-0790-4-128
USDA-ARS Agreement Title:	Conventional Breeding Information Technologies to Control FHB in Wheat and Barley.
FY07 ARS Award Amount:	\$ 96,660

USWBSI Individual Project(s)

USWBSI Research Area*	Project Title	ARS Adjusted Award Amount
EC/HQ	Hosting the Manager of the USWBSI's Networking and Facilitation Office.	\$96,660
	Total Award Amount	\$ 96,660

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: *Hosting the Manager of the USWBSI's Networking and Facilitation Office.*

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

Scab affects the industries and people involved in virtually every stage of the production, processing, and distribution systems of five market classes of wheat and barley across the U.S. The Networking and Facilitation Office (NFO) has been in existence since 1999. The goal of the NFO is to minimize the barriers to the success of the U.S. Wheat & Barley Scab Initiative arising from the administrative burdens and communication challenges. In FY07, there were 85 researchers working in 27 institutions (including ARS and CIMMYT) across 25 states and Mexico. The NFO is addressing this problem by 1) helping scientists and all interested parties, who in the past may have problems communicating with each other, to learn from each other by facilitating communications and communication system development; 2) identifying and implementing an internet-based communication and collaboration mechanisms; and 3) acting as a center of accountability and a rapid clearing house of scab-related information. The NFO provides administrative support to the various committees, as well as being responsible for the organization of the Initiative's annual scientific conference. Finally, the NFO facilitates the annual resolution of a comprehensive national research plan and budget, and represents the Initiative's only 'fixed' asset.

**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 (1): During FY07, the USWBSI began implementation of its newly developed Action Plan starting with the creation of five coordinated Projects:

- Commodity-based Coordinated Projects:
 - Barley Coordinated Project
 - Hard Winter Wheat Coordinated
- Variety Development and Host Resistant Coordinated Projects
 - Spring Wheat Parents (included Durum projects)
 - Northern Winter Wheat
 - Southern Winter Wheat

Impact (1): By coordinating research efforts within these specific categories, the expectation is that it will lead to greater collaboration and communication, improved focusing of research efforts and more efficient use of resources.

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? (1)

Several of these coordinated projects include their stakeholders (growers, producers, end-users) in the development of the research plan for their commodity or region. Researchers have more involvement in determining the research priorities for their coordinated project.

Accomplishment (2): One of the NFO's most important accomplishments was the successful facilitation of the development of the USWBSI's FY08 Research Plan and Budget, which was approved by USDA-ARS in February. See attached table (1), for a summary of meetings, conference calls, etc. facilitated by the NFO that lead to the FY08 Research Plan and Budget.

Impact (2): One-hundred and twenty-four research projects across five research areas, and the USWBSI Headquarters, received funding in the amount of \$4,956,797 to continue the fight against FHB.

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?:(2)

There are 83 scientists in 25 states and Mexico continuing to work on developing as quickly as possible effective control measures that minimize the threat of Fusarium Head Blight (Scab) to the producers, processors, and consumers of wheat and barley.

Accomplishment (3): In December of 2007, the NFO working with the Forum Organizing Committee facilitated the USWBSI's annual scientific Forum, which was held in Kansas City, Missouri. Over 200 crop scientists (including research associates, research technicians and graduate students), growers, and industry representatives from across the nation and around the world, as well as area leaders of the U.S. wheat and barley industry, attended the 2007 National FHB Forum. Research results and findings were presented to the forum participants in the form of invited talks (22), and poster (102) presentations accompanied by abstracts or papers published in the Forum proceedings. One afternoon was devoted to group discussions designed around the USWBSI's five research areas and three commodity-based coordinated projects. The focus of the group discussions was the implementation of the USWBSI's Action Plan and communicating results in the real world. There were also mini breakout sessions covering the following topics:

- Tebuconazole EPA Emergency Exemption: Recent Developments and 2008 Application Positioning;
- Genotyping Centers – Breeders met with scientists from the genotyping labs.
- FHB Disease Forecasting Models; and
- Technicians and graduate students: an informal exchange of ideas and protocols for FHB research.

Impact (3):

The annual Forum is the primary mechanism whereby USWBSI scientists and stakeholders come together to discuss both the progress being made, as well as problems that interfere, with the successful combat against this devastating disease.

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? (3)

The clientele has a greater understanding of what research is being conducted under the USWBSI; as well what progress is being made in the following areas (titles of Forum poster sessions):

- Host Plant Resistance and Variety Development
- Gene Discovery and Engineering Resistance
- Pathogen Biology and Genetics
- Food Safety, Toxicology and Utilization of Mycotoxin-contaminated Grain
- FHB Management

Table 1. Summary of Meetings, Conference Calls and Workshops facilitated by the Networking & Facilitation Office (NFO) during FY07.

Committee	# of Meetings/ Conference Call (CC)	Description/Purpose of Meeting
Steering Committee (SC)	2 Meetings	5-30-07: Semi-Annual Meeting 12-4-07: Semi-Annual Meeting – Review FY08 Research Plan and Budget
Executive Committee (EC)	4 Meetings 2 CC	Meetings: Follow-up to SC's 5-30-07 meeting; met with review panels to discuss their recommendations; follow-up of Annual Forum and USWBSI's recommendation for FY08 Research Plan and Budget. Conference Calls: Discuss USWBSI Business – Annual Research Plan and Budget; setting of Working Caps; agenda for semi-annual spring SC meeting; and program for Annual Forum.
USWBSI SC-EC Sub Committees	1 Meeting 7 CC	7-07 - Communication sub-committee Meeting, Fargo, ND 9-07- Communications sub-committee conference call Purpose of meetings: Enhancing the USWBSI's communication activities. 11-07 – EC sub-committee interview with Co-Chair candidates 2-08 – PBG sub-committee - discussed future direction of PBG research area.
Coordinated Project Committees (CPC) /Review Panels (RP)	CPCs – 8 CC RP – 11 CC	Coordinated Project Committees (CPC) – Discuss final FY08 coordinated project pre-proposal. Review Panels - Discuss FY08 Funding Recommendation
RA Workshops/ Planning Meetings	4 Workshops/ Meetings 7 CC	6-07 – Barley Coordinated Project Planning Meeting, St. Paul, MN 6-07 – DON Labs discuss protocols for sampling for DON. 7-07 – VDHR – Northern Winter Wheat Coordinated Project Conference Call 7-07 – VDHR-Spring Wheat Coordinated Project Conference Call 8-07 – FHB Management – Biocontrol Planning Meeting, San Diego, CA 3-08 – VDHR – Soft Winter Wheat Coordinated Project Planning Meeting, Wooster, OH 3-08 – PBG RAC conducted three separate conference calls with MGMT, GDER and VDHR research scientists/committee members. 3-08 – FSTU – discuss coordination of DON testing labs. 3-08 – VDHR-Spring Wheat Coordinated Project Planning Meeting, Fargo, ND

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.

Forum Proceedings:

Canty, S., A. Clark, D. Ellis and D. Van Sanford (Eds.). 2007. Proceedings from the 2007 National Fusarium Head Blight Forum, Kansas City, MO; December 2-4. University of Kentucky, Lexington, KY. 252pp. Proceedings are available in PDF format on the USWBSI's Website (<http://www.scabusa.org/forum.html#forum07>).

Invited Talks:

Van Sanford, D. A. 2008. The USWBSI: Status Report. 2008 Wheat Quality Council Annual Meeting. Kansas City, MO. February 19-21, 2008.

Newsletters:

Lilleboe, D., S. Canty, and D. Van Sanford. Spring 2008. *Fusarium Focus*. U.S. Wheat & Barley Scab Initiative. Volume 8, Issue 1.

Lilleboe, D., S. Canty, and D. Van Sanford. Fall 2007. *Fusarium Focus*. U.S. Wheat & Barley Scab Initiative. Volume 7, Issue 2.

Press Releases:

06-17-08 News Release: Scab Incidence Varies Across Midwestern States.

05-19-08 News Release: Early Southern Scab Reports Mixed.

01-07-08 News Release: USWBSI Announces new Co-Chair.

10-08-07 News Release: Scab Disease Generally Low across U.S. in 2007.

07-30-07 Press Release: USWBSI Mourns Loss of Co-Chair Tom Anderson.

All Press Releases are available in PDF format on the USWBSI's Website (<http://www.scabusa.org/news.html#newsletters>).