

**USDA-ARS/  
U.S. Wheat and Barley Scab Initiative  
FY06 Final Performance Report (approx. May 06 – April 07)  
July 16, 2007**

**Cover Page**

<b>PI:</b>	David Van Sanford
<b>Institution:</b>	University of Kentucky
<b>Address:</b>	Department of Agronomy 327 Plant Science Bldg. Lexington, KY 40546-0312
<b>E-mail:</b>	dvs@email.uky.edu
<b>Phone:</b>	859-257-5020 ext. 80770
<b>Fax:</b>	859-257-7125
<b>Fiscal Year:</b>	2006
<b>USDA-ARS Agreement ID:</b>	59-0790-6-056
<b>USDA-ARS Agreement Title:</b>	U.S. Wheat & Barley Scab Initiative's Networking and Facilitation Office and Website.
<b>FY06 ARS Award Amount:</b>	\$ 185,823

**USWBSI Individual Project(s)**

USWBSI Research Area*	Project Title	ARS Award Amount
EC/HQ	U.S. Wheat & Barley Scab Initiative's Networking and Facilitation Office and Website.	\$ 185,823
	<b>Total Award Amount</b>	<b>\$ 185,823</b>



July 16, 2007

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  
 PGG – Pathogen Genetics & Genomics  
 VDUN – Variety Development & Uniform Nurseries

**Project 1:** *U.S. Wheat & Barley Scab Initiative's Networking and Facilitation Office and Website.*

**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 FY06, there were 83 researchers working in 28 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):** As a response to stakeholder concerns, the U.S. Wheat and Barley Scab Initiative (USWBSI) Steering Committee set in motion a plan to restructure the Initiative in ways that would lead to greater effectiveness and more rapid delivery of solutions. A primary objective was to enact structural and administrative changes that would lead to greater collaboration and communication among the Scab Community (researchers and end-users), as well as more rapid attainment of effective results against FHB. The 2006 Forum was devoted almost entirely to the development of an Action Plan. The FY06 research areas have been reorganized into the following five research areas:

- FHB Management (formerly CBCC and EEDF)
- Food Safety, Toxicology & Utilization of Mycotoxin-contaminated Grain
- Gene Discovery & Engineering Resistance (formerly Genetic Engineering & Transformation)
- Pathogen Biology & Genetics
- Variety Development & Host Resistance (formerly HGR, HGG and VDUN)

**Impact (1):** The restructuring will lead to even greater collaboration and communication, and more rapid attainment of the Initiative's primary goal: "To develop as quickly as possible effective control measures that minimize the threat of Fusarium head blight (scab), including the reduction of mycotoxins, to the producers, processors, and consumers of wheat and barley."

**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?**

This restructuring provides a more flexible mechanism for addressing stakeholder concerns. The restructuring should also improve resource allocation by stakeholders to research deemed most effective in meeting the USWBSI's mission.

**Accomplishment (2):** One of the NFO's most important accomplishments was the successful facilitation of the development of the USWBSI's FY07 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 FY07 Research Plan and Budget

**Impact (2):**

One-hundred and sixteen research projects across, eight research areas, and the USWBSI Headquarters, received funding in the amount of \$4,999,027 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.

**Table 1.** Summary of Meetings, Conference Calls and Workshops facilitated by the Networking & Facilitation Office (NFO) during FY06.

<b>Committee</b>	<b># of Meetings/ Conference Call (CC)</b>	<b>Description/Purpose of Meeting</b>
Steering Committee (SC)	2 Meetings	5-26-06: Semi-Annual Meeting 12-12-07: Semi-Annual Meeting – Review FY07 Research Plan and Budget
Executive Committee (EC)	3 Meetings  5 CC	Meetings: Meet with review panels to discuss their recommendations; follow-up of Annual Forum and USWBSI’s recommendation for FY07 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 Co-Chairs/NFO	5 CC	Administrative business
RAC/Review Panels	13 CC	Discuss FY07 Funding Recommendation
RA Workshops	3 Workshops	08-06 – Host Genetic Resources, Fargo, ND 08-06 – Chemical, Biological and Cultural Control, Minneapolis, MN 10-06 – Etiology, Epidemiology and Disease Forecasting, Detroit, MN

**Accomplishment (3):** In December of 2006, the NFO working with the Forum Organizing Committee facilitated the USWBSI’s annual scientific Forum, which was held in Research Triangle Park, North Carolina. Over 170 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 2006 National FHB Forum. Most of the 2006 Forum was devoted to the development of an Action Plan for the USWBSI. Research results and findings were presented to the forum participants in the form of poster (74) presentations, accompanied by abstracts or papers published in the Forum proceedings. Along with the brainstorming session devoted to the development of the Action Plan, there were also sessions covering the following topics:

- FHB Disease Forecasting Models;
- Biocontrol Group;
- Fungicide Uniform Testing and Application; 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
- Genetic Engineering and Transformation
- Etiology, Epidemiology and Disease Forecasting
- Pathogen Genetics and Genomics
- Food Safety, Toxicology and Utilization of Mycotoxin-contaminated Grain
- Chemical, Biological and Cultural Control

**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.**

**Abstract:**

Hane, D., S. Canty, D. Hummel, D. Matthews, G. Lazo, V. Carollo, R. Ward, O. Anderson and D. Van Sanford. 2006. "The U.S. Wheat and Barley Scab Initiative Website." In: Canty, S., A. Clark, and D. Van Sanford (Eds.), Proceedings from the 2006 National Fusarium Head Blight Forum; 2006 Dec 10-12; Research Triangle Park, NC. Lexington, KY: University of Kentucky. p. 147.

**Forum Proceedings:**

Canty, S., A. Clark, and D. Van Sanford (Eds.). 2006. Proceedings from the 2006 National Fusarium Head Blight Forum, Research Triangle Park, NC; December 10-12. University of Kentucky, Lexington, KY. 149pp.

**Invited Talks:**

Van Sanford, D. A. 2007. Head scab update. Presented at the North American Wheat Worker's Workshop, Saskatoon, Saskatchewan, CANADA, March 12-14.

**Newsletters:**

Lilleboe, D., S. Canty, and D. Van Sanford. Spring 2007. *Fusarium Focus*. U.S. Wheat & Barley Scab Initiative. Volume 7, Issue 1.

**On-Line Articles:**

Lilleboe, D.. 2006, June. *USWBSI Co-Chair Outlines Initiative's Recent Progress & Current Challenges*. U.S. Wheat & Barley Scab Initiative. Website:  
[http://www.scabusa.org/pdfs/dvs\\_article\\_5-06.pdf](http://www.scabusa.org/pdfs/dvs_article_5-06.pdf)

Lilleboe, D.. 2006, June. *VIGS System Promises to Hasten Development of Varieties Resistant to Fusarium Head Blight*. U.S. Wheat & Barley Scab Initiative. Website:  
[http://www.scabusa.org/pdfs/vigs\\_article\\_6-06.pdf](http://www.scabusa.org/pdfs/vigs_article_6-06.pdf)

Lilleboe, D.. 2006, June. *Wheat Grower & USWBSI Co-Chair Reflects Upon Scab Initiative's Origin, Progress & Challenges*. U.S. Wheat & Barley Scab Initiative. Website:  
[http://www.scabusa.org/pdfs/ta\\_article\\_6-06.pdf](http://www.scabusa.org/pdfs/ta_article_6-06.pdf)