

**U.S. Wheat and Barley Scab Initiative  
 FY00 Final Performance Report (approx. May 00 – April 01)  
 July 30, 2001**

**Cover Page**

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<b>Year:</b>	<b>FY2000 (approx. May 00 – April 01)</b>
<b>Grant Number:</b>	
<b>Grant Title:</b>	<b>Fusarium Head Blight Research</b>
<b>2000 ARS Award Amount:</b>	<b>\$43,902</b>

**Project**

<b>Program Area</b>	<b>Project Title</b>	<b>Requested Amount</b>
Biotechnology	Genomics of Gibberella zeae, the head scab fungus.	\$25,000.00
Information Technology	Improve research results by increasing information hosted on the Initiative's website.	\$20,000.00
	<b>Requested Total</b>	<b>\$45,000.00<sup>1</sup></b>

\_\_\_\_\_  
Principal Investigator

\_\_\_\_\_  
Date

<sup>1</sup> Note: The Requested Total and the Award Amount are not equal.

**Project 1: Genomics of *Gibberella zeae*, the head scab fungus.**

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

Although *Gibberella zeae* is a major plant pathogen, very little is known of the fungus, its genome structure, or the pattern of activity of its genes. The project is providing a database of ESTs (Expressed Sequence Tags) to identify a large number of *Gibberella* genes. This is being accomplished by performing single DNA sequencing reactions on cDNA clones from the fungus. The project includes the sequencing reactions, processing the DNA sequences, and providing the data and other bioinformatics assistance to the research community.

2. What were the most significant accomplishments?

The project goal was to perform sequencing reactions on 5000 *Gibberella* cDNA clones. Currently approximately 7000 reactions have been accomplished. For unknown reasons, the quality of the sequences obtained from the *Fusarium* cDNA libraries continues to be generally poor. From the 7000 reactions, approximately 2300 sequences had been judged of sufficient quality to pass on as confirmed sequences. The data has been transmitted to Dr. Frances Trail for evaluation. New clones, from different libraries have been obtained from Corby Kistler (collaborator of Frances Trail) and test sequencing of these new clones is underway. Although the original plan was for 5000 reactions and approximately 3500-4000 successful sequences, the reduced cost of sequencing and our commitment to generate as much information as possible for Initiative researchers has led us to commit to continuing to try and bring the total number of sequences up to 5000. This will continue without additional funds from the Initiative.

**Project 2: Improve research results by increasing information hosted on the Initiative's website.**

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

- a) Communication among Scab Initiative biotechnology laboratories needs to be as efficient as possible to make most effective use of Initiative resources. In addition, data on certain types of data (molecular markers such as microsatellites; transformation protocols; etc) are not readily available to Initiative projects. The objective of this project is to develop a set of web resources to address these issues.
- b) Initiative main office operation and Initiative web pages require database support and updating. Such support and updating will assist in Initiative operations, foster better communication with projects, and allow easier future modifications of Initiative web pages.

2. What were the most significant accomplishments?

- c) Rewriting of the original MS FrontPage site in clean html. The appearance and overall interface is substantially improved. Side-panel navigation allows quick access to different parts of the site.
- d) Implementation of web-enabled database facilities now allows better browsing of contacts, progress reports, and other information.
- e) A site for online forum registration has been set up.
- f) Currently, integration of the scabusa.org site with the scab information database site is in progress.
- g) In development are a searchable scab literature database, biotechnology research area pages for transformation/mapping, microsatellites, and *Fusarium* ESTs.
- h) The administration and serving of the web site (www.scabusa.org) is currently being carried out from the Sun server at the WRRRC in Albany, CA.
- i) At the request of Corby Kistler, a *Fusarium* BLAST site is being established to allow easier and faster analysis of new *Fusarium* sequences.

PI: Olin Anderson

Grant:

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.

None.