U.S. Wheat and Barley Scab Initiative
Annual Progress Report
September 15, 1999

Cover Page

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Year:	**FY1999**
Grant Number:	**59-0790-9-047**
Grant Title:	**Fusarium Head Blight Research**
Amount Granted:	**$18,537.00**

Project

Program Area	Objective	Requested Amount
Chemical & Biological Control	Identify safe, effective fungicides for FHB through evaluation across of wheat and/or barley varieties grown in relevant environments.	$8,000
Chemical & Biological Control	To identify application technologies that will maximize fungicide coverage and efficacy against FHB.	$10,000
Chemical & Biological Control	Develop and implement systems for disseminating research information in a timely fashion to producers.	$1,000
	Requested Total	$19,000[1]

Principle Investigator Date

[1] Note: The Requested Total and the Amount Granted are not equal.

(Form – PR1)

Project 1: Identify safe, effective fungicides for FHB through evaluation across of wheat and/or barley varieties grown in relevant environments.

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

   Currently, Folicur (Tebuconazole) is registered for use on wheat and barley to suppress FHB development. Tilt fungicide (propiconazole) is registered through special local need (SLN24c) registrations. A major issue is to continue research into the comparative efficiency of these active ingredients on currently grown varieties. Varieties with partial resistance to FHB (scab). Also to test new compounds.

2. Please provide a comparison of the actual accomplishments with the objectives established.

   Folicur was tested at 6 and 4 oz rates in 1999. Tilt was tested in combination with Maxim (Fludioxonil – an e-oncogen that has shown activity against FHB in previous studies). Additional fungicides were also tested.

3. What were the reasons established objectives were not met? If applicable.

   Objectives were met.

   Data analysis not yet complete. Still awaiting deoxynivalenol analysis.

4. What were the most significant accomplishments this past year?

   Trials were established on wheat and barley. Assessments were completed and experiments harvested.

Project 2: To identify application technologies that will maximize fungicide coverage and efficacy against FHB.

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

   Fungicide applications to suppress FHB in wheat and barley are not always profitable. In addition, the source of inoculum, on a mesoscale (regional, county, township, field) is not well understood. The purpose of this research is to assess individual collections of heads (twenty heads) from commercial fields throughout Northwest Minnesota (just after head emergence but prior to anthesis) and to analyze these heads with quantitative PCR and determine relationships between ascospore DNA present at this growth stage and disease as it develops through to the soft dough stage.

2. Please provide a comparison of the actual accomplishments with the objectives established.

   Fields sampled = 138. Fields where F. *graminearum* detected = 54. Negative = 84. Our objective was to sample between 100 and 150 fields. Collections were made by certified crop consultants (Centrol, Inc. Twin Valley, MN).

   Sampling, shipment of samples to collaborator Jim Beck (Novartis, Inc., Greensboro, NC) and electronic positions of the PCR results all went well.

3. What were the reasons established objectives were not met? If applicable.

   I have not completed analysis of this data. Grain from harvested fields that were sampled (positives and negatives) is still being shipped to my lab. It will likely be December before all results are in, including DON analysis on samples.

4. What were the most significant accomplishments this past year?

   The collaborative relationship that developed between this group of 12 crop consultants, Jim Beck and his lab and my lab. We proved that we can handle the turn around time fast enough to still make a fungicide treatment decision (72 hours). Other accomplishments will require all the data to get in.

Project 3: Develop and implement systems for disseminating research information in a timely fashion to producers.

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

   A. Distribution of information regarding fungicide trials to producers in Minnesota
   B. Involvement of producers in head-sampling project so they can sample their own fields or have access to results in time to make treatment decisions.

2. Please provide a comparison of the actual accomplishments with the objectives established.

   A. results not yet completed
   B. results not yet completed

3. What were the reasons established objectives were not met? If applicable.

   A. Too soon after harvest, data and data analysis not complete.
   B. Too soon after harvest, data and data and data analysis not complete

4. What were the most significant accomplishments this past year?

   None to date. Results will be distributed to producers and crop consultants at winter meetings. Dissemination of information will also include results from principle investigators in other states who participated in the uniform FHB Fungicide Trials.

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.