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

Cover Page

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Year:	**FY1999**
Grant Number:	**59-0790-9-070**
Grant Title:	**Fusarium Head Blight Research**
Amount Granted:	**$27,317.00**

Project

Program Area	Objective	Requested Amount
Epidemiology	Investigate the influence of residue decomposition rates on Fusarium survival.	$28,000
	Requested Total	$28,000[1]

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Principle Investigator Date

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

Project 1: Investigate the influence of residue decomposition rates on Fusarium survival.

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

   Since 1993 the Midwest farmer has suffered severe losses in cereal grain production due to Fusarium Head Blight (FHB). This disease, caused by the fungus *Fusarium graminearum*, is often referred to as "Scab". Fusarium also produces vomitoxin and other toxins that represent a food safety issue.
   In cereal grains, Fusarium has been associated with previous crop residue left on the soil surface. This microorganism appears to have the potential to colonize residue, survive the winter months and wait for the proper soil moisture and temperature conditions to develop during the following growing season. When this development coincides with small grain flowering, infection is greatly increased resulting in severe grain yield and quality reductions. Many approaches have been taken to control the disease such as development of resistant-varieties, chemical control, crop rotation, and recently, attention to residue management. It is the consensus of many investigators that Fusarium survives in residues of cereal grains. This research seeks to establish the correlation between residue management and the survivability of Fusarium.

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

   A method has been established for quantification of Fusarium in plant residues. Field studies to determine the decomposition rates of wheat, barley and corn residue began following the fall crop harvest.

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

   In spite of the fact that funding was delayed, the project is well underway. We will need to apply for a no-cost extension in order to collect a full year data set.

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

   - Development of a quantification method for Fusarium in residue.
   - Collection and chemical analyses of corn, wheat and barley residues.
   - Preparation and field placement of 450 "bags" of each residue.
   - In September began a 24 month field decomposition study.

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.

Due to delayed funding, this project has just gotten underway and consequently no publications/presentations are reported.