U.S. Wheat and Barley Scab Initiative
Annual Progress Report
September 18, 2000

Cover Page

PI:	**Gary P. Munkvold**
Institution:	**Iowa State University**
Address:	**Dept. of Plant Pathology** **351 Bessey Hall** **Ames, IA 50011**
Email:	**munkvold@iastate.edu**
Phone:	**515-294-6708**
Fax:	**515-294-9420**
Year:	**FY2000**
Grant Number:	**59-0790-0-065**
Grant Title:	**Fusarium Head Blight Research**
Amount Granted:	**$9,000.00**

Project

Program Area	Objective	Requested Amount
Variety Development & Uniform Nurseries	Establish a unform scab nursery for the purpose of evaluating varieties, advanced breeding lines, and germplasm imtroductios for reactions to Fusarium head blight.	$4,000.00
Chemical & Biological Control	Identify safe products that are effective against Fusarium head blight.	$5,000.00
	Requested Total	$9,000.00

Gary Munkvold 17 Sep 2000

Principal Investigator Date

(Form – PR1)

Project 1: Establish a unform scab nursery for the purpose of evaluating varieties, advanced breeding lines, and germplasm introductions for reactions to Fusarium head blight.

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

   Currently available commercial wheat varieties are not sufficiently resistant to Fusarium head blight. I am collaborating with other researchers in an attempt to solve this problem by developing wheat varieties with improved resistance to Fusarium head blight. My role is to provide data on head blight reactions of what varieties, breeding lines, and introductions in the Iowa environment. It is essential to evaluate these genotypes under a wide variety of environments in order to ensure that their performance is reliable and consistent.

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

   We have made progress toward the objective of accelerating the development of resistant wheat varieties by accumulating data on scab reactions of the entries in the spring wheat nursery. We have not yet collected data on the most appropriate partially resistant varieties for Iowa because we have not yet evaluated the winter wheat entries. They will be planted during the next 2 weeks.

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

   We have not yet planted the winter wheat entries.

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

   Successful completion of the spring wheat scab nursery evaluations. We collected data on disease severity, scabby kernels, 100-kernel weights, and deoxynivalenol (in progress) for 43 entries.

Project 2: Identify safe products that are effective against Fusarium head blight.

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

   Fusarium head blight currently cannot be controlled adequately by non-chemical methods. It is uncertain whether currently available fungicides and those under development can provide effective, economical control of Fusarium head blight under a variety of environmental conditions. We are resolving the problem by conducting experiments to identify fungicdes that can do so.

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

   We were not successful in contributing to the objectives of the project because Fusarium head blight symptoms were virtually nonexistent in our research plot in 2000.

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

   Weather conditions early in the season were very dry. In the past we have observed consistent, substantial Fusarium head blight development without using artificial inoculation. Apparently the weather was too dry for head blight development. We have an irrigation system that we can use for promoting head blight, but it was not set up and operational soon enough to influence the disease.

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

   We learned that our Fusarium head blight experiments should be conducted at a different location.

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.