

**U.S. Wheat and Barley Scab Initiative
 FY02 Final Performance Report (approx. May 02 – April 03)
 July 15, 2003**

Cover Page

| | |
|-------------------------------|--|
| PI: | Martin A. Draper |
| Institution: | South Dakota State University |
| Address: | Plant Science Department Box 5012, PSB 113 Brookings, SD 57007-1090 |
| E-mail: | martin_draper@sdsstate.edu |
| Phone: | 605-688-5157 |
| Fax: | 605-688-4024 |
| Year: | FY2002 (approx. May 02– April 03) |
| Grant Number: | 59-0790-9-032 |
| Grant Title: | Fusarium Head Blight Research |
| FY02 ARS Award Amount: | \$ 10,732 |

Project

| Program Area | Project Title | USWBSI Recommended Amount |
|---------------------|---|----------------------------------|
| CBC | Chemical and biological trials for Fusarium head blight (FHB) management. | \$11,000 |
| | Total Amount Recommended | \$11,000 |

 Principal Investigator

 Date

Project 1: Chemical and biological trials for Fusarium head blight (FHB) management.

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

FHB has been a periodic and significant problem in localized areas of South Dakota. So far, producers have received the best relief from the disease from fungicide applications. The availability of Folicur has become widely accepted among growers and a common production input in some parts of the state. More effective fungicides or application methods are needed to provide better disease control and improving the profit margin of producers.

We have continued to screen products through the uniform fungicide trial, participated in the “mini”-uniform biological trial, screened SDSU biological products in the field for Dr. Bruce Bleakley, and tested droplet patterns from aerial applicators using standard nozzle configurations.

2. What were the most significant accomplishments?

Due to extreme drought and heat in SD in 2002, insignificant levels of FHB developed in test plots at any location including a misted nursery at Brookings. However, good preliminary data was generated from the aerial application droplet pattern study. A graduate student has joined the project and will continue with the studies on application technology. We found that applicators generally flew too high for good fungicide coverage and were applying too large a droplet size with conventional aerial nozzles. However, changing nozzles from CP nozzles to Accu-Flow drift reduction nozzles did not improve coverage. CP nozzles with a 30° deflection shield provided the best head coverage at about 8.4% of the head and 9.1% of the flag leaf as measured on head and leaf simulation droplet collectors. CP nozzles are commonly used by aerial applicators with a straight stream configuration and converting to a 30° deflection could help improve their efficacy.

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.

Research Reports

M.A. Draper, B.H. Bleakley, K.R. Ruden, N.L. Baye, A.L. LeBouc, and S.M. Schilling. 2002. Uniform Trials For Biological Control Agent Performance In The Suppression Of Fusarium Head Blight In South Dakota – 2002. US Wheat and Barley Scab Forum. December 7-9, 2002, Cincinnati, OH.

M.A. Draper, K.D. Glover, K.R. Ruden, A.L. LeBouc, S.M. Schilling, and G. Lammers. 2002. Uniform Fungicide Performance Trials In South Dakota – 2002. US Wheat and Barley Scab Forum. December 7-9, 2002, Cincinnati, OH.

M.A. Draper, D.S. Humburg, J.A. Wilson, B.E. Ruden, K.R. Ruden, and S.M. Schilling. 2002. Aerial Spray Coverage Trials In South Dakota – 2002. US Wheat and Barley Scab Forum. December 7-9, 2002, Cincinnati, OH.

M.A. Draper, K.R. Ruden, and S. Schilling. 2003. 2002 Field Plot Summaries: Plant Disease and Fungicide Trials. 54 pp.

Presentations

M.A. Draper. 2003. Do you have it covered? The coverage key for fungicide application. SD Aerial Applicators Association. February 25, 2003, Pierre, SD.

M.A. Draper. 2003. Managing diseases when there aren't any... or are there? SD Commercial Pesticide Applicators Training. January 23 - February 3, 2003, Aberdeen, Watertown, Brookings, Pierre, Mitchell, Yankton and Sioux Falls, SD.

M.A. Draper. 2003. Wheat disease management in South Dakota, 2003. February 25, 2003, Bristol, SD.

M.A. Draper. 2003. Wheat disease management in South Dakota, 2003. February 27, 2003, Eureka, SD.

M.A. Draper. 2003. Wheat disease management in South Dakota, 2003. February 28, 2003, Gettysburg, SD.

M.A. Draper. 2003. Wheat disease management in South Dakota, 2003. March 5, 2003, Watertown, SD.