

**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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Year:	FY2000 (approx. May 00 – April 01)
Grant Number:	59-0790-9-072
Grant Title:	Fusarium Head Blight Research
2000 ARS Award Amount:	\$9,756

Project

Program Area	Project Title	Requested Amount
Chemical & Biological Control	Control wheat scab with improved fungicide application technology.	\$10,000.00
	Requested Total	\$10,000.00¹

Principal Investigator

Date

¹ Note: The Requested Total and the Award Amount are not equal.

Project 1: Control wheat scab with improved fungicide application technology.

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

The primary objective of this project is to improve the efficacy of available labeled fungicides by improving the deposition efficiency and uniformity of the spraying equipment. A tower type ultra-low-volume orchard sprayer was modified for the 2000 production season field tests. The sprayer was significantly less powerful than the “planned” truck mounted sprayer but it did enable the research team to evaluate the concept of a “horizontal air boom”. The sprayer was used to apply 10 gallons of spray solution per acre at a ground speed of 4.5 miles per hour while spraying a 50 foot wide swath.

2. What were the most significant accomplishments?

Two field experiments were conducted during the 2000 production season:

First was a 20 acre commercial field that was divided into four blocks. Folicur at 4 oz. per acre plus Induce (0.06% v/v) was used as a full rate on two, non adjacent plots. The other two blocks consisted of a half rate and “unsprayed” control. Due to critical timing of the fungicide application, adverse weather conditions were encountered during the spraying operation. Winds varied from 10 to 15 mph, thus the air boom was operated only in a “downwind” configuration. A rain event followed the application by a few hours. Preliminary observations showed; Unsprayed - 40% incidence 70% severity and Sprayed - 20% incidence 86% severity. Hand harvested samples are being analyzed for vomitoxin data. A contract “harvester” unexpectedly harvested the field in a manor that mixed all the grain from the individual plots.

Second was a 1 acre study conducted on the MSU Mason Wheat Research Farm. The research plot was a 50 foot wide border between two varietal studies. This study consisted of 4 “full rate” plots and one unsprayed control. On two of the plots, the “50 foot wide air-boom swaths” were sprayed from both sides, while the other two plots were sprayed from one side only. A rain event followed the application by approximately 30 minutes. Field staff unexpectedly destroyed the study before evaluations were made.

The construction of the pickup truck mount sprayer was delayed until Fall 2000 because of a 12 week delivery schedule for critical hydraulic drive components. The new sprayer was completed and will be used in the 2001 field trials.

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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.

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