U.S. Wheat and Barley Scab Initiative
FY01 Final Performance Report (approx. May 01 – April 02)
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Cover Page

PI:	**John R. Lukach**
Institution:	**North Dakota State University**
Address:	**Langdon Res. Ext. Center** **Box 310, Hwy 5 East** **Langdon, ND 58249**
Email:	**jlukach@ndsuext.nodak.edu**
Phone:	**701-256-2582**
Fax:	**701-256-2580**
Year:	**FY2001 (approx. May 01 – April 02)**
Grant Number:	**59-0790-1-072**
Grant Title:	**Fusarium Head Blight Research**
FY01 ARS Award Amount:	**$ 4,456**

Project

Program Area	Project Title	Requested Amount
Chem/Bio	Effects of Dew, Spray Volume and Adjuvant on Fungicide Control of FHB in Durum Wheat	$ 4,577
	Total Amount Requested	**$ 4,577**

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Principal Investigator Date

(Form – FPR01)

Project 1: Effects of Dew, Spray Volume and Adjuvant on Fungicide Control of FHB in Durum Wheat

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

The volume of water present on a grain head covered by dew is many times greater than the water applied during a fungicide application. The potential to manage the presence of dew to increase spike coverage or uptake of fungicide on the head offers small grain producers a technique to increase the efficacy of fungicides. Spray solution volume and adjuvant are important parts of fungicide application techniques which producers can easily adjust to periods during a day to accommodate the environmental conditions at time of application.

The objectives were:
1) Evaluate the effect time-of-day for fungicide application has on FHB control in respect to the presence, absence or imminent formation of dew. Applications would have morning, mid-day and evening timings.
2) Evaluate management of spray volume and/or adjuvant as a tool to compensate or enhance time-of-day effects on FHB control.

2. What were the most significant accomplishments?

The quantity of morning dew was measured for three experiments on different days and crops on which time-of-day treatments were applied. The Robust barley had 272 gallons water per acre on heads. There were water droplets visible "in" the spiklets but few water droplets on the beards. Water droplets were visible on the flag and other leaves. The Grandin HRSW had 1111 gallons water per acre on heads. The spiklets were full and the beards covered with water droplets due to 0.61 inches rain ending at 11:00 pm the previous night. The crop canopy was covered with water droplets and run-off of water from the beards and leaves occurred during the morning spraying operation. The Plaza durum had 113 gallons water per acre on heads. The beards were heavy with water droplets but no water was visible in the spiklets. Water droplets were visible on the flag and other leaves. No run-off of water during the spraying operation was apparent for the durum or barley.

Reduction of leaf and FHB diseases due to fungicide application resulted in significant yield increases for the HRSW and barley but not the durum wheat. The disease differences and yield between treatments with fungicide and different timing, solution volume and adjuvant rates were non-significant.

This research indicates the producer should not consider time-of-day as a factor in fungicide application strategy for small grain production. Common sense is not to perform a spray application which causes water to run off the heads, carrying fungicide to the ground with it.

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.

Full Paper Published
2001 National Fusarium Head Blight Forum, Cincinnati, Kentucky, December 8-10, 2001.

Data presented at regional farm producer meetings and the paper was distributed to all regional extension agents.