

**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:	59-0790-9-070
Grant Title:	Fusarium Head Blight Research
2000 ARS Award Amount:	\$24,390

Project

Program Area	Project Title	Requested Amount
Epidemiology & Disease Management	Plant Residue in the Control of Fusarium Head Blight - Year 2.	\$25,000.00
	Requested Total	\$25,000.00¹

Principal Investigator

Date

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

Project 1: Plant Residue in the Control of Fusarium Head Blight - Year 2.

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

Many factors appear related to the development of Fusarium Head Blight, including greater use of minimum tillage and rotations planted to susceptible host crops. Production techniques that maintain crop residues at or near the soil surface can be related to high incidents of this disease. It is the consensus of many investigators that *Fusarium* control via residue management may provide one means of control.

If *Fusarium graminearum* survival is related to residue decomposition, then residue management strategies which enhance displacement of *Fusarium* might be developed. Since residue decomposition is a microbial process, manipulation of the microorganisms might accelerate the loss of *Fusarium*. Management options might include “plowing down” residue or use of nitrogen fertilization to enhance the decomposition process.

2. What were the most significant accomplishments?

An investigation, funded by the U.S. Wheat and Barley Scab Initiative, was begun in September 1999 to determine the decomposition rates of wheat, barley and corn residues left on the surface of the soil and that which is “plowed” down. *Fusarium* populations were quantified in the respective residues.

Preliminary assessment of this data indicates buried residue is decomposing at a faster rate than residue left on the surface. In the first year of field incubation, nearly all corn residue was decomposed while 20% of the barley and wheat residues were present in the buried bags. Thirty percent of the corn and wheat surface residues and 50% of the surface barley residue remained over the same time period. Nitrogen fertilizer slightly enhanced the decomposition rate. *Fusarium* populations appear consistent with the level of residue present.

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.

Todd, R. L., R. Stack, E. Deibert and J. Enz. 2000. Control of Fusarium Head Blight using Plant Residues. *In* Proceedings of International Wheat Scab Symposium, Suzhou & Nanjing, China, pages 274-278.

Todd, R., E. Deibert, R. Stack and J. Enz. Fusarium Head Blight and Plant Residue Management. *In* Proceedings of the National Wheat Industry Research Forum, New Orleans, Louisiana, February 1-2, 2001.