

**USDA-ARS/  
U.S. Wheat and Barley Scab Initiative  
FY06 Final Performance Report (approx. May 06 – April 07)  
July 16, 2007**

**Cover Page**

<b>PI:</b>	Arvydas Grybauskas
<b>Institution:</b>	University of Maryland
<b>Address:</b>	Dept. of Plant Science and Landscape Arch. 2102 Plant Sci. Bldg. 036 College Park, MD 20742-4452
<b>E-mail:</b>	arvydas@umd.edu
<b>Phone:</b>	301-405-1602
<b>Fax:</b>	301-314-9308
<b>Fiscal Year:</b>	2006
<b>USDA-ARS Agreement ID:</b>	59-0790-4-103
<b>USDA-ARS Agreement Title:</b>	Fusarium Head Blight Uniform Fungicide Trial in Maryland.
<b>FY06 ARS Award Amount:</b>	\$ 11,556

**USWBSI Individual Project(s)**

<b>USWBSI Research Area*</b>	<b>Project Title</b>	<b>ARS Award Amount</b>
CBCC	Fusarium Head Blight Uniform Fungicide Trial - Maryland.	\$ 11,556
	<b>Total Award Amount</b>	<b>\$ 11,556</b>

\_\_\_\_\_  
Principal Investigator

\_\_\_\_\_  
Date

\_\_\_\_\_  
\* CBCC – Chemical, Biological & Cultural Control  
EEDF – Etiology, Epidemiology & Disease Forecasting  
FSTU – Food Safety, Toxicology, & Utilization of Mycotoxin-contaminated Grain  
GET – Genetic Engineering & Transformation  
HGR – Host Genetics Resources  
HGG – Host Genetics & Genomics  
PGG – Pathogen Genetics & Genomics  
VDUN – Variety Development & Uniform Nurseries

**Project 1:** *Fusarium Head Blight Uniform Fungicide Trial - Maryland.*

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

This project examines which fungicides can be used to manage Fusarium head blight in wheat by reducing yield losses and toxin accumulation in the grain. This is being accomplished by testing products in fields that are deliberately inoculated with the pathogen and maintained artificially moist to enhance disease development. The Maryland trials are conducted with soft red winter wheat in a uniform manner as those conducted at other locations and market classes of wheat to ensure that data is obtained and is applicable to all regions and classes.

**2. List the most important accomplishment and its impact (how is it being used?). Complete all three sections (repeat sections for each major accomplishment):**

**Accomplishment:**

Two triazole class fungicides, Prosaro and Caramba, are more effective than any other materials including Folicur, which has been registered in some states under emergency use guidelines (section 18). In fact, Folicur will often be no better than the control in our region. However, neither of the best performing materials will completely protect plants under heavy disease pressure, and they work best when applied at the initiation of flowering.

**Impact:**

These results have led us to not pursue section 18 registration for Folicur. The very narrow window of opportunity to protect plants with the best products has led us to examine the integration of moderately resistant varieties with fungicides for disease management.

**As a result of that accomplishment, what does your particular clientele, the scientific community, and agriculture as a whole have now that they didn't have before?**

It is now clear that fungicides alone will not be adequate for disease management in all situations, and that integration needs to be seriously pursued.

**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.**

Grybauskas, A.P. 2006. Fungicide application timing for Fusarium head blight of wheat. A report to the Maryland Grain Producers Utilization Board.

Grybauskas, A.P. 2006. Stripe rust outbreak and FHB fungicide management concerns. Presentation at the APS Potomac division annual meeting, March 15-17, 2006, Rehoboth Beach, DE.

Grybauskas, A. P. 2007. Fusarium head blight of small grains. Presentation at the meeting of the Southern Association of Seed Certification and Technology. April 12, 2007, Annapolis, MD.

Grybauskas, A. P. 2007. Wheat Scab and Soybean rust – current research and outlook. Presentation at the Maryland Crop Improvement Association 100<sup>th</sup> Annual meeting, Ruthsburg, MD, February 8, 2007.