



# Agronomy Notes

March 2007

University of California  
Cooperative Extension

Colusa, Sutter, Yuba and  
Glenn Counties



## Wheat Stripe Rust---

### When does it pay to treat with fungicides?

This is the question that Sacramento Valley farm advisors Jerry Schmierer, Doug Munier and Kent Brittan have been trying to answer with their research for the last four years. The answer is—it depends! Many different factors go into making the decision to treat wheat with a fungicide. Is the disease prevalent in the field? Is the wheat variety susceptible to the current races of the stripe rust pathogen? Are the weather conditions conducive to stripe rust development? All three of these factors must be present for stripe rust to develop and reduce wheat yield, quality and profit. Controlling the disease and lessening economic loss can be accomplished by breaking up this disease triangle. We can't do much about the weather, other than observe it. Resistant varieties can be planted, but this can change with new pathogen races. Fungicides can be applied to temporally prevent the disease from infecting the plants, but these are expensive. We are back to the original question—when does it pay to treat with fungicides?

### What have we learned so far?

- Every year has been different. 2006 and 2003 were the worst years for stripe rust with cool temperatures and rainy conditions in March and April. Conversely, 2004 was hot and dry in March and April and stripe rust was not a serious problem.

Wheat yield response by year.

Year	All Fungicide Yields (% control)
2006	166
2005	137
2004	103
2003	135
2003-06	135
LSD <sub>.05</sub>	13

Wheat yield response to different fungicides.

Fungicide	All Timings Yield (% control)
Headline	140
Quilt	139
Stratego	133
Quadris	133
Tilt	130
LSD <sub>.05</sub>	NS

- Fungicide applications have been effective in controlling stripe rust. Averaging all of the fungicide treatments from 2003 to 2006, fungicide treatments increased wheat grain yields by 35% overall.
- Comparing the fungicides tested, there was no significant difference between the disease control attained by any particular fungicide. We also tested several rates of each fungicide and did not measure a significant difference in the labeled rates for each fungicide.

This newsletter is produced by:

**Jerry Schmierer**  
**Farm Advisor**

PO Box 180,  
100 Sunrise Blvd., Suite E  
Colusa, CA 95932

Phone: 530-458-0575  
Cell: 530-519-9229

E-mail:  
jlschmierer@ucdavis.edu

*The University of California in accordance with applicable Federal and State law and University policy, does not discriminate on the basis of race, color, national origin, religion, sex, disability, age, medical condition (cancer-related), ancestry, marital status, citizenship, sexual orientation, or status as a Vietnam-era veteran or special disabled veteran.*

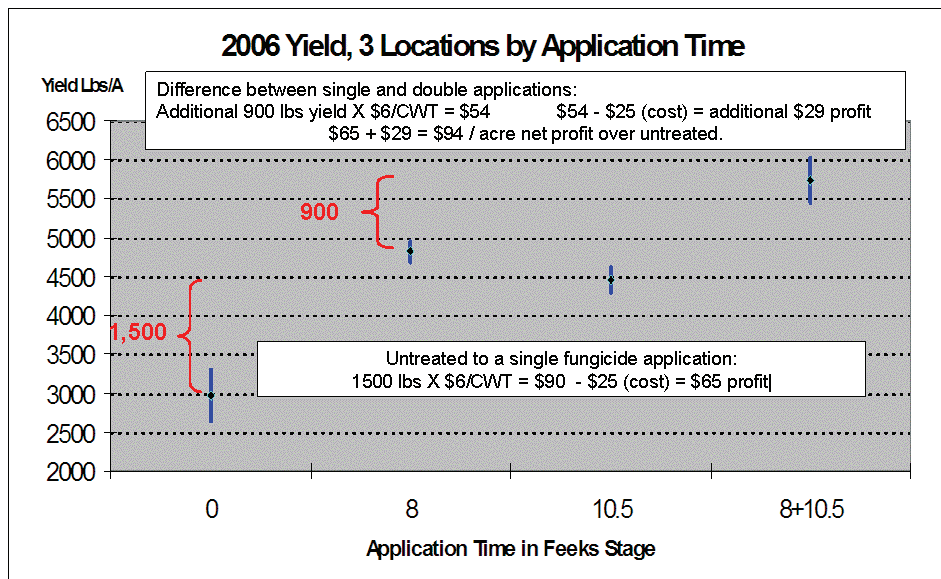
*Inquiries regarding the University's nondiscrimination policies may be directed to the Affirmative Action Director, University of California, Agriculture and Natural Resources, 1111 Franklin, 6<sup>th</sup> Floor, Oakland, CA 94607-5200 (510) 987-0096.*

*To simplify information, trade names of products have been used. No endorsement of named products is intended, nor is criticism implied of similar products which are not mentioned.*

**University of California,  
United States Department  
of Agriculture, Colusa,  
Sutter, Yuba and Glenn  
Counties Cooperating.**

For special assistance regarding our programs, please contact us.

- When stripe rust is present in wheat fields, fungicide applications have more than paid for their cost including application. In the very wet 2006, a single fungicide application made a net return on investment of \$65 per acre over the cost. Two sequential fungicide applications provided \$94 per acre in profit compared to the untreated.



- As new races of the stripe rust pathogen develop, the varieties that once were resistant have become susceptible. We can no longer rely solely on variety resistance to stripe rust for the control of this disease.
- Wheat yield and quality increase over the untreated plots that more than paid for the cost of the fungicide and application when: a) timely applications of fungicides applied to wheat fields that are showing signs of stripe rust infection and b) weather conditions are conducive to disease development.
- In 2004, when there was a low incidence level of stripe rust in the fields and the temperatures were hot with very little rain in March and April, the fungicide applications did not pay. The yield increase was not sufficient to cover the cost of the material and application.

### What about this year?

The very cold and dry January may have been a blessing to wheat growers in 2007. The freezing temperatures combined with no rain were not conducive to early stripe rust development. The warm temperatures and very little rain in March are also not favorable for stripe rust development. So far, this looks more like 2004 as far as the need to treat with fungicides. Yes, conditions can change, so growers and PCA's need to keep watch on their wheat fields. The timing for fungicide application is most cost effective when the flag leaf of the wheat is protected. The latest fungicide application must be made before wheat flowering. If wheat fields are stripe rust free through this period, it will probably be a very lucky year for wheat growers.

# UC Davis Small Grains and Alfalfa/Forage Field Day

Date: **Wednesday, April 25, 2007**

Contacts: Lee Jackson ([lfjackson@ucdavis.edu](mailto:lfjackson@ucdavis.edu)) and Dan Putnam ([dhputnam@ucdavis.edu](mailto:dhputnam@ucdavis.edu))

Time: 8:30 am – 4:00 pm

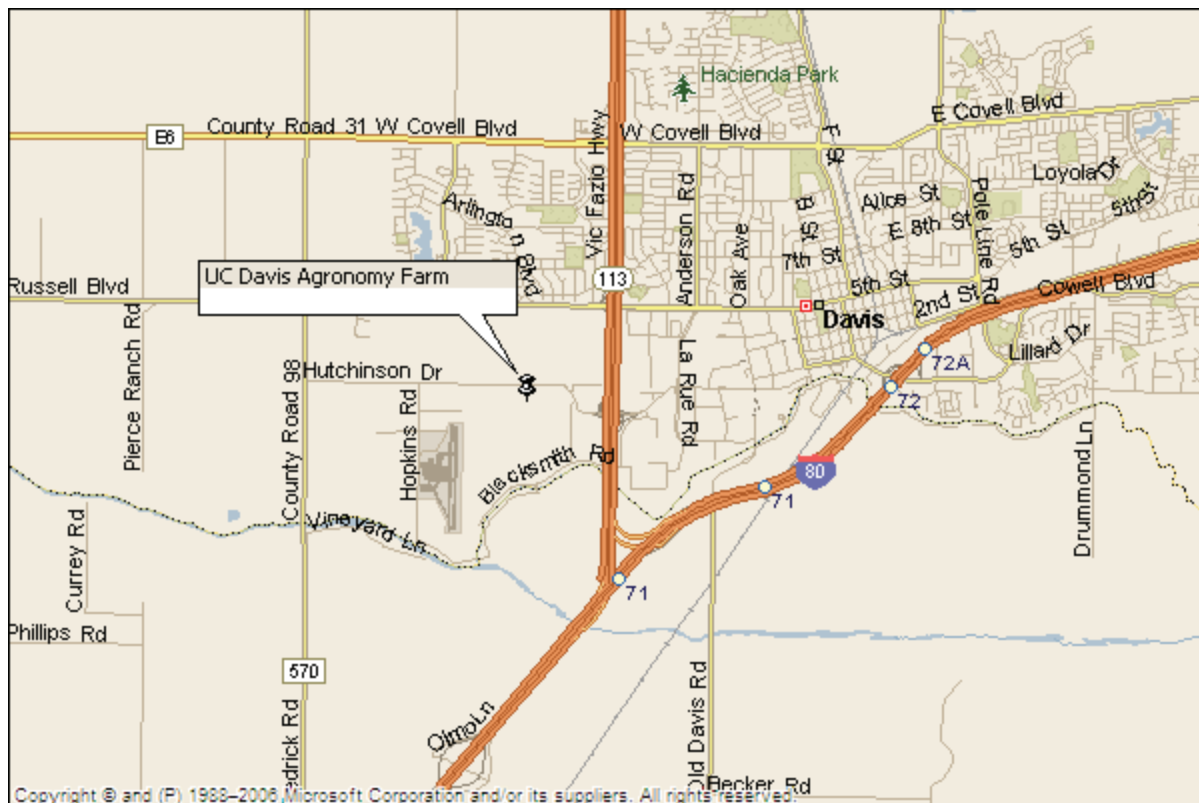
Location: **UC Davis Agronomy Farm**

Address:

The UC Davis Agronomy Field Headquarters, UC Davis (on the south side of Hutchison Drive next to the Foundation Seed Warehouse, about ½ mile west of HW 113).

Description:

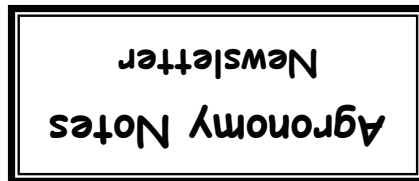
The Field Day is designed primarily for grain and alfalfa growers, PCA's, seed companies, and handlers of certified seed. Campus-based faculty and students, farm advisors, and others interested in small grain and alfalfa production and research, also are invited.



Wednesday, April 25, 2007

**UC Davis Small Grains and Alfalfa Field Day**

Reminder



**COOPERATIVE EXTENSION**

**University of California**

**142A Garden Hwy**

**Yuba City, CA 95991**

**Non-Profit Org.**

**USDA POSTAGE**

**P A I D**

**Yuba City, CA**

**95991**

**Permit No. 268**