

EFFECT OF FUNGICIDE TREATMENTS ON WHEAT 2004-05

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Location: Edisto Research and Education Center, Barnwell Co. SC, Field B-5 Ab.

Design: RCB with six replicates; plot size 8 rows (8" spacing) x 40'

Soil Type: Dothan loamy sandy.

Rotation: 2004 strip-till corn; 2003 peanut, fallow; 2002 strip-till corn, fallow; 2001 wheat, fallow.

Planting

Date: 16 Nov 2004

Seeding

Rate: 24 seed / row foot

General

Fertility: 30 lbs./acre N (11.3 gal S-25) was applied 22 Nov and 70 lbs./acre N (26.4 gal S-25) was applied 11 Feb (GS 23). Total N = 100 lbs./acre, total S = 14 lbs./acre.

Herbicide: 0.33 oz Express 75DF was applied 12 Jan.

Insecticide: Warrior T (3.87 oz /ac) applied 15 Feb.

Methods: Fungicides were applied after flag leaf emergence 4 April (GS 40, ligules showing on approximately 100 % of plants) and 20 April (GS 70, ¼ kernel) with a tractor-mounted CO₂ pressurized sprayer delivering 10.0 gpa @ 50 psi through Tee Jet TX-8 hollow cone tips. The boom was shielded with Red Ball broadcast hoods to prevent drift. Tan spot was the only leaf disease observed throughout the season. Pre-treatment (4-April) severity (20% leaf area symptomatic on F-2, less than one lesion / F-1 leaf, and FL asymptomatic) was estimated by two observers randomly examining several areas within the test area. Disease ratings 10 May were taken by two observers each estimating symptomatic (chlorotic) leaf area from 5 flag leaves per plot. Plots were also rated for an unidentified, secondary fungus which darkened the wheat heads by giving a head brightness score (1 = bright, 2 = dark, 1.5 = in-between) just prior to harvest. The inner six rows of each 8-row plot were harvested 14 June after a prolonged warm, wet period with an Almaco plot combine. Yield samples were weighed on an electronic balance. Test weight was taken by funneling a sub-sample of grain through a Seedburo No. 151 filling hopper and weighing one dry pint of grain on an electronic scale. Grain moisture content was measured with a Burrows DMC-700 moisture meter. All yields were adjusted to 12.0 % moisture before analysis.

Analysis: ANOVA, using SAS PROC GLM and Fisher's protected LSD ($P=0.05$).

Notes: Test weight was affected by late season rainfall and delayed harvest. Prolonged cloudy, humid conditions after maturity resulted in approximately 10 % sprouts at harvest. Natural senescence, accelerated by hot, dry conditions in early May possibly reduced tan spot effects.

Table 1. Monthly rainfall and degree day accumulation.

| Month | Rainfall (in) | Growing Degree Days (Base = 0° C) |
|----------------|------------------------|-----------------------------------|
| Nov (16-30) | 3.9 | 194.5 |
| Dec | 1.7 | 247.9 |
| Jan | 1.7 | 290.3 |
| Feb | 3.9 | 266.8 |
| Mar | 5.2 | 361.9 |
| Apr | 2.4 | 475.6 |
| May | 4.1 | 625.1 |
| June (1-15) | 6.1 | -- |
| Seasonal Total | 22.9 (thru May) | 2462.2 |

Seasonal Daily Temperatures and Rainfall

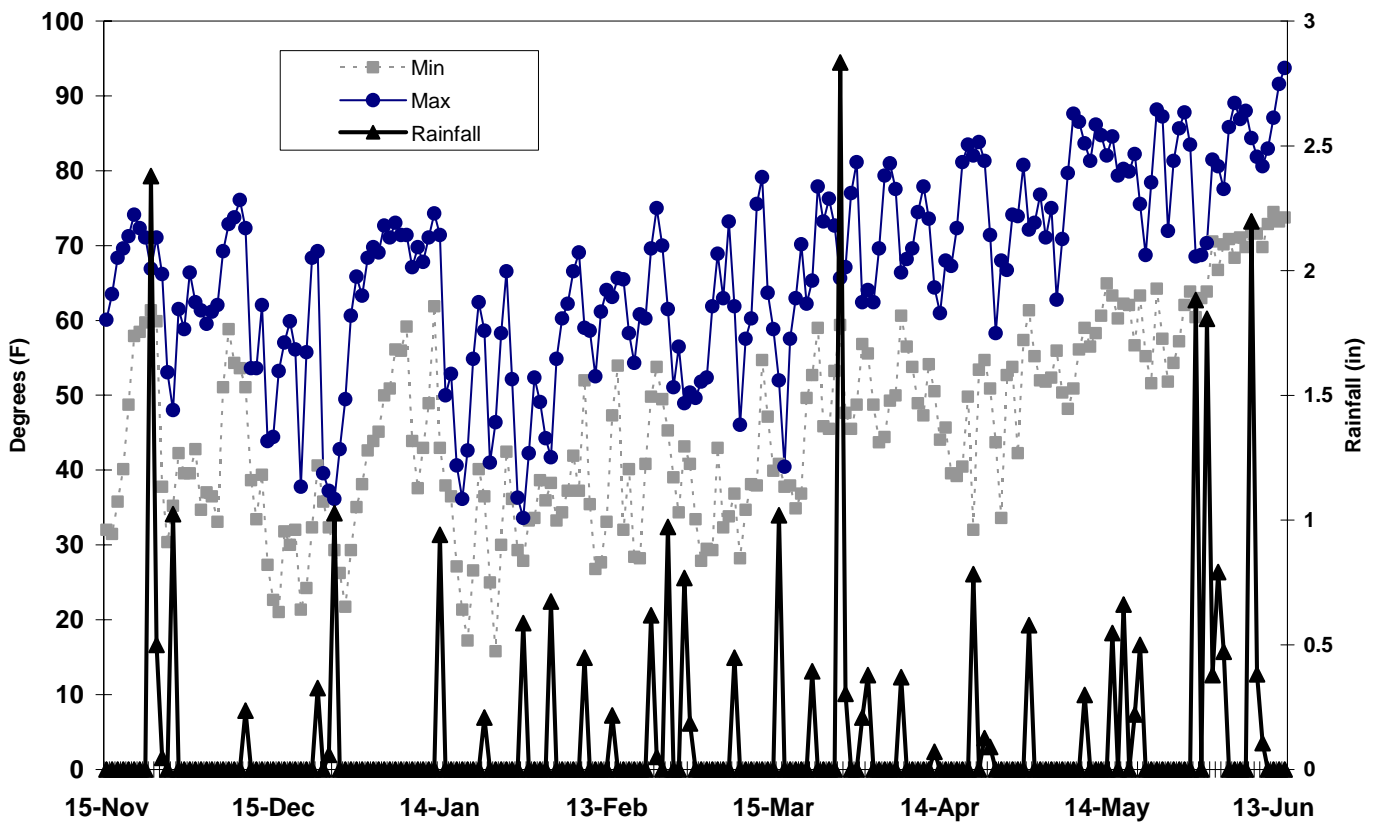


Table 2. Effect of fungicide treatment on tan spot, head brightness, wheat grain yield, and test weight, Blackville, SC 2004-05.

| Treatment | Rate oz. product /acre | Application Timing ² | Tan spot % FL chlorosis 10 May | Head Brightness Score (1 = bright, 2 = dark) 14 June | Yield (bu/ac) | Test Weight (lb/bu) |
|---|---------------------------------------|--|---|---|--------------------------|------------------------------------|
| Caramba + surfactant ¹ | 6.0 | FL | 12.7 | 2.0 a | 80.4 | 55.8 |
| Caramba +surf. ¹ | 13.5 | FL | 8.3 | 2.0 a | 81.4 | 55.5 |
| Caramba + Headline + surf. ¹ | 6.0 + 6.0 | FL | 0.8 | 2.0 a | 79.7 | 55.1 |
| Headline | 4.0 | FL | 1.8 | 2.0 a | 81.0 | 55.4 |
| Headline | 6.0 | FL | 1.1 | 2.0 a | 81.9 | 56.0 |
| Headline + surf. ¹ | 6.0 | FL | 1.0 | 2.0 a | 80.5 | 55.4 |
| Headline | 9.0 | FL | 0.8 | 1.8 a | 83.9 | 55.9 |
| Headline | 6.0 | HD | 1.4 | 1.1 c | 84.2 | 56.1 |
| Prosaro | 6.5 | HD | 4.8 | 1.4 bc | 82.0 | 55.1 |
| Folicur | 4.0 | HD | 19.1 | 1.9 ab | 80.2 | 56.5 |
| Quadris | 6.0 | FL | 2.3 | 2.0 a | 80.6 | 56.1 |
| Quadris + surf. ¹ | 6.0 | FL | 1.9 | 2.0 a | 81.7 | 56.0 |
| Quilt | 7.0 | FL | 2.9 | 2.0 a | 81.8 | 55.0 |
| Quilt | 10.5 | FL | 1.5 | 2.0 a | 84.2 | 54.8 |
| Quilt | 14.0 | FL | 1.6 | 1.8 ab | 81.6 | 55.1 |
| Stratego | 10.0 | FL | 1.5 | 2.0 a | 82.6 | 55.8 |
| Tilt | 4.0 | FL | 7.0 | 2.0 a | 81.8 | 55.1 |
| Untreated Check | --- | --- | 22.8 | 2.0 a | 80.6 | 55.4 |
| mean | --- | --- | 5.2 | 1.9 | 81.7 | 55.6 |
| LSD (<i>P</i>=0.05) | --- | --- | 4.6 | --- | N.S. | N.S. |

Pioneer 2684 wheat was planted 16 November 2004; harvested 14 June 2005.

1. Non-ionic surfactant (0.25% v:v)

2. FL = 4April (GS 40); HD = 20 April (GS 70).

Pre-treatment (4-April) tan spot severity: F-2 - 20% leaf area symptomatic; F-1 - less than one lesion /leaf; FL - asymptomatic.

Column means followed by the same letter are not significantly different, Fisher's protected LSD (*P*=0.05). Yield LSD = 4.4 bu/ac.