

EFFECT OF FUNGICIDE TREATMENTS ON WHEAT 2005-06

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Location: Edisto Research and Education Center, Barnwell Co. SC, Field B-6 C.

Design: RCB with five replicates; plot size 8 rows (8" spacing) x 35'

Soil Type: Dothan loamy sandy.

Rotation: 2005 strip-till corn; 2004 peanut, fallow; 2003 strip-till corn, fallow; 2002 wheat, fallow.

Planting

Date: 28 Nov 2005

Variety and

Seeding Rate: Pioneer 2684; 24 seed / row ft.

General

Fertility: No preplant fertilizer based on soil test; 30 lbs N applied 14 Dec and 60 lbs N applied 10 Feb.

Herbicide: 0.33 oz Express 75DF was applied 11 Jan.

Insecticide: Warrior T (3.87 oz /ac) applied 17 Feb.

Methods: Fungicides were applied after flag leaf emergence 24 March (GS 40, ligules showing on approximately 50 % of plants) and 5 April (GS 59) 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 disease evident season long. Observations in the untreated check 2 May documented 50% stems were symptomatic and less than 5% leaf area (F-1 and FL) was affected. Percent senesced flag leaf area was estimated 2 May from all plots in four replicates. Percent green score in the following table was calculated by subtracting the "brown score" from 100. The inner six rows of each 8-row plot were harvested 30 May with a Kincaid 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 for each plot was measured with a Burrows DMC-700 moisture meter. The meter was factory calibrated to measure wheat grain moisture down to 5 %. All samples were calculated below 5 %. Since the exact moisture was not determined, yields were not adjusted for moisture content in the following table.

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

Notes: There were no apparent disease symptoms (leaf rust, powdery mildew, tan spot or leaf / glume blotch) in any of the treatments prior to plant senescence. Nor were there any measurable differences in plant senescence (based on "green score") due to treatment. Despite the lack of

observable disease or physiological effect, all treatments were numerically greater than the check and 8 treatments had significantly greater yield than the check.

Slight phytotoxicity was evident in some plots after flag leaf emergence-timed treatments. The following are listed in order of severity from worst to least: Quilt 10.5 and 14.0 (oz/ac) > Tilt 4 > Headline 4 + Tilt 4 > Stratego > all other treatments. It was assumed that symptoms would not affect yield.

Table 2. Effect of fungicide treatment on wheat grain yield, and test weight, Blackville, SC 2005-06.

Treatment	Rate oz. product /acre	Application Timing ¹	“Green score” % green FL area 2 May	Yield (bu/ac)	Test Weight (lb/bu)
Quilt	10.5	HD	37.5	82.7*	61.6
Headline + Tilt	3.0 + 4.0	FL	37.5	80.6*	61.2
Quadris	6.0	FL	40.0	80.3*	61.7
Headline	6.0	HD	35.0	80.2*	62.0*
Quilt	14.0	FL	32.5	79.6*	61.3
Tilt	4.0	FL	35.0	79.4*	61.1
Headline	4.0	FL	36.7	78.8*	60.2
Quilt	7.0	FL	40.0	78.5*	61.9
Stratego	10.0	FL	37.5	77.4	61.3
Headline + Tilt	4.0 + 3.0	FL	35.0	77.1	61.6
Headline	9.0	FL	40.0	77.1	61.5
Headline + Tilt	4.0 + 2.0	FL	37.5	76.8	60.9
Quilt	10.5	FL	30.0	76.8	61.5
Headline	6.0	FL	35.0	76.6	61.2
Headline + Tilt	4.0 + 4.0	HD	35.0	76.0	61.2
Headline + Tilt	3.0 + 4.0	HD	32.5	75.6	61.7
Headline + Tilt	4.0 + 4.0	FL	32.5	73.8	61.1
Check	---	---	32.5	73.1	61.0
mean	---	---	35.7	77.8	61.3
LSD (P=0.05)	---	---	N.S.	4.8	0.95

Pioneer 2684 wheat was planted 28 November 2005; harvested 30 May 2006.

1. FL = 24 March (GS 40); HD = 5 April (GS 59).

* Significantly different from untreated check; Fisher’s protected LSD (P=0.05).