

EFFECTS OF FUNGICIDE TREATMENT ON WHEAT YIELD AND GRADE 2001-02

J. W. CHAPIN AND J. S. THOMAS

DEPARTMENT OF ENTOMOLOGY
CLEMSON UNIVERSITY

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

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

Soil Type: Varina sandy loam.

Rotation: 2001 strip-till corn; 2000 peanut, fallow; 1999 strip-till corn; 1998 wheat, fallow; 1997 corn, wheat

Planting

Date: Dec 5, 2001

Seeding

Rate: 24 seed / row foot

General

Fertility: 30 lbs./acre P + 90 lbs./acre K applied pre-plant. 30 lbs./acre N (11.3 gal S-25) was applied 4 Dec and 70 lbs./acre N (26.4 gal S-25) was applied 13 Feb (GS 23). Total N = 100 lbs./acre, total S = 14 lbs./acre.

Herbicide: 0.33 oz Express 75DF was applied with N on 24 Jan.

Insecticide: None

Methods: Fungicides were applied at flag leaf emergence (FL) 29 Mar (GS 39, ligules showing on approximately 30% of plants) and at heading (HD) 11-April with a tractor-mounted CO₂ pressurized sprayer delivering 20 gpa @ 30 psi through Tee Jet 11003 flat fan tips. The boom was shielded with Red Ball broadcast hoods to prevent drift. Pre-treatment powdery mildew (PM) was rated by examining F-3 and F-2 leaves within several plots across the entire test area 28. Disease ratings were taken in the untreated check April 8 by examining ten F-1 and ten flag leaves (FL) for the presence of PM and leaf rust. Percent leaf area affected with PM lesions was estimated and the number of rust pustules per leaf were recorded. The inner six rows of each 8-row plot were harvested 21 May 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 13.5% moisture before analysis.

Analysis: ANOVA, using SAS PROC GLM.
Fisher's protected LSD was used for mean separation ($P=0.05$).

Table 1. Wheat fungicide effects on yield and test weight, Blackville, SC 2001-02.

Treatment *	Powdery Mildew				Rust			
	% severity F-3 28 Mar	% severity F-2 28 Mar	% severity F-1 8 Apr	% severity FL 8 Apr	Pustules (% inc) F-1 8-Apr	Pustules (% inc) FL 8-Apr	Pustules per FL 26-Apr	% inc. 26-Apr
Untreated Check	32.5	3.3	2.5	0.3	4.2 (46)	2.5 (22)	133 a	100 a
Tilt 4 oz FL	--	--	--	--	--	--	26 b	100 a
Stratego 10oz FL	--	--	--	--	--	--	22 b	100 a
Folicur 4 oz FL	--	--	--	--	--	--	6 c	78 ab
Headline 6 oz HD	--	--	--	--	--	--	4 cd	65 bc
Quadris 6.2oz HD	--	--	--	--	--	--	3 cd	63 bc
Headline 6 oz FL	--	--	--	--	--	--	2 de	53 c
Quadris 6.2oz FL	--	--	--	--	--	--	1 ef	20 d
Quilt FL (Quadris 6.2 oz + Tilt 4.0 oz)	--	--	--	--	--	--	< 1 f	23 d

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Means followed by the same letter are not significantly different, Fisher's protected LSD ($P=0.05$).

Coker 9835 planted 5 Dec 2001; harvested 21 May 2002.

* Fungicide treatments were applied 29 Mar and 11 Apr.

** 100% stem incidence 28 Mar.

Disease ratings taken in untreated check 11 April (F-1 leaf) = 13.7 % PM chlorosis; 6.6 rust pustules / leaf, 68% rust incidence.

Powdery mildew did not progress after 11 April ratings.

Table 2. Effects of fungicide treatment on wheat yield, Blackville, SC 2001-02.

Treatment*	Yield bu/ac	Test Weight lbs/ac	Yield Response vs. Untreated (bu/ac)
Untreated Check	41.7 b	55.4 c	---
Tilt 4 oz FL	41.7 b	56.1 b	0
Stratego 10oz FL	44.3 a	56.5 ab	2.6
Folicur 4 oz FL	44.4 a	56.2 b	2.7
Headline 6 oz HD	44.5 a	56.9 ab	2.8
Quadris 6.2oz HD	43.0 ab	56.6 ab	1.3
Headline 6 oz FL	44.1 a	56.6 ab	2.4
Quadris 6.2oz FL	43.6 ab	56.3 ab	1.9
Quilt FL (Quadris 6.2 oz + Tilt 4.0 oz)	43.7 ab	56.2 b	2.0

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Means followed by the same letter are not significantly different, Fisher's protected LSD ($P=0.05$), Yield LSD = 2.1 bu/ac.

Coker 9835 planted 5 Dec 2001; harvested 21 May 2002.

* Fungicide treatments were applied 29 Mar and 11 Apr .