

EFFECTS OF FOLIAR FUNGICIDES ON LEAF RUST AND WHEAT YIELD

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Test 1

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

Design: RCB with 6 replicates; plot size 5.33 x 35' (8 rows x 8" spacing)

Soil Type: Varina loamy sand

Insecticides: Warrior T (1 gal / 33 ac) was applied Feb 23.

Planting date: Nov 25

Treatments:

Treatment timing	Application	Rate (oz. product / acre)
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1. Tilt 41.6%	FL emergence April 3	4.0
2. Quadris 2.08F	FL emergence	7.7
3. Quadris 2.08F	FL emergence	4.0
4. Folicur 3.6F	FL emergence	4.0
5. Untreated Check	---	---
6. Tilt 41.6%	Early anthesis Apr 13	4.0
7. Folicur 3.6F	Early anthesis	4.0
8. Quadris 2.08F	Early anthesis	4.0
9. Quadris 2.08F	Early anthesis	7.7

Test 2

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

Design: RCB with 9 replicates; plot size 5.33 x 35' (8 rows x 8" spacing)

Soil Type: Varina loamy sand

Insecticides: None

Planting date: Nov 20

Treatments:

Treatment timing	Application	Rate (oz. product / acre)
1. Quadris 2.08F	3/4 kernel Apr 20	4.0
2. Quadris 2.08F	3/4 kernel Apr 20	2.0
3. Untreated Check	---	---

Test 3

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

Design: RCB with 9 replicates; plot size 5.33 x 35' (8 rows x 8" spacing)

Soil Type: Varina loamy sand

Insecticides: None

Planting date: Nov 27

Treatments:

Treatment timing	Application	Rate (oz. product / acre)
1. Quadris 2.08F	1/4 kernel Apr 20	4.0
2. Quadris 2.08F	1/4 kernel Apr 20	2.0
3. Untreated Check	---	---

Tests 1, 2, and 3

Variety: Coker 9835

Seeding

Rate: 24 seed / row foot (79 / row meter)

Rotation: Previous crops - corn 1999; peanut 1998; corn 1997

Land

Preparation: Disk 2X , Terra-max Worksaver 12 - 13 inches deep perpendicular to plots. Plots were laid out with a 5-shank (12" spacing) chisel plow equipped with a spring-loaded leveling board.

General

Fertility: No pre-plant fertilizer.
30 lbs N (11.3 gpa S-25) were applied Dec 20. 66 lbs N (25 gal S-25) were applied Feb 23 (GS 23). **Total N = 96 lbs / ac. Total S = 13.5 lbs/ac.**

Herbicide: Express 75DF - 0.25 oz /ac Jan 17(GS 2.2).

Application: Herbicide and nitrogen applications were made with a tractor-mounted, three-point-hitch sprayer delivering 20 gallons per acre (gpa) through Tee Jet 8003 flat fan nozzles at 40 psi. Fungicide treatments were applied with a tractor-mounted CO₂ pressurized sprayer through Tee Jet 11003 (20.0 gpa @ 30 psi). The spray boom was protected with a shield to minimize drift.

Sampling: Disease symptoms were rated by counting rust pustules from five or ten flag leaves / experimental unit.

Plots were harvested with an Almaco plot combine. Test weight was taken by funneling a subsample 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, Fisher's protected LSD, (P=0.05).

Table 1. Wheat fungicide and timing efficacy against leaf rust and effects on grain yield and test weight. Test 1 Blackville, SC, 1999-00.

Treatment	Timing	pustules / FL Apr 27 (24 DAT)	% FL incidence Apr 27 (24 DAT)	Yield (bu/ac)	Test Wt. (lb/bu)
Folicur 4.0 oz / ac	Flag leaf	2.0 b	15.0 b	80 a	58.5 ab
Quadris 4 oz / ac	Flag leaf	4.0 b	33.0 b	79 a	58.6 ab
Quadris 7.7 oz / ac	Flag leaf	3.0 b	20.0 b	78 a	58.2 ab
Quadris 4 oz / ac	Heading	5.0 b	28.0 b	78 a	57.7 bc
Quadris 7.7 oz / ac	Heading	2.0 b	18.0 b	76 ab	58.9 a
Folicur 4.0 oz / ac	Heading	27.0 b	88.0 a	74 bc	56.8 cd
Tilt 4 oz / ac	Flag leaf	59.0 b	100.0 a	69 c	56.8 d
Tilt 4 oz / ac	Heading	72.0 b	85.0 a	66 c	56.7 d
Check	----	778.0 a	100.0 a	56 d	55.2 e

Column means followed by the same letter are not significantly different. (P = 0.05).

Treatments were applied to emerged flag leaves (GS 40) April 3 and to emerged heads (anthesis) April 13 with 11003 flat fan tips (20 gpa @ 30 psi)

Table 2. Yield and test weight effects of late season fungicide application on Coker 9835 wheat with severe leaf rust infection. Blackville, SC 1999-00.

Planting date Treatment	Timing	Leaf rust pustules / FL Apr 21 (1 DAT)	Leaf rust % FL incidence Apr 21 (1 DAT)	Leaf rust severity notes Apr 21 (1 DAT)	Yield (bu/ac)	Test Wt. (lb/bu)
Test 2-Nov 20 Quadris 4.0 oz/ac	3/4 kernel	---	---	---	89.7 a	57.1 a
Nov 20 Quadris 2.0 oz/ac	3/4 kernel	---	---	---	87.9 a	57.4 a
Nov 20 Untreated Check	---	62.4	100	FL 10-80% chlorotic Below FL 80-100% chlorotic	80.0 b	55.9 b
Test 3- Nov 27 Quadris 4.0 oz/ac	1/4 kernel	---	---	---	93.0 a	57.2 a
Nov 27 Quadris 2.0 oz/ac	1/4 kernel	---	---	---	88.8 a	57.2 a
Nov 27 Untreated Check	---	32.4	100	FL 5% chlorotic F-1 10-20% chlorotic F-2 and below 90% chlorotic	76.4 b	55.2 b

Column means followed by the same letter within the same test are not significantly different. (P = 0.05).

Treatments were applied April 20 with 11003 flat fan tips (20 gpa @ 30 psi).