

1998-99 NATIONAL FUSARIUM HEAD BLIGHT UNIFORM FUNGICIDE TEST

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OBJECTIVE:

To evaluate the role of various foliar fungicide treatments in the management of Fusarium head blight (FHB). The effort is part of a "uniform" test being administered by the National Fusarium Head Blight Initiative.

METHODS:

The test was established at the Research and Education Center in Princeton, Caldwell County, Kentucky and on the Larry Thompson Farm, located near Keysburg, Logan County, Kentucky. Both test locations were in corn during 1998. In Princeton, a reduced till seedbed was prepared by discing the soil/corn stubble three times prior to seeding wheat. In Keysburg, the corn stalks were mowed and wheat was planted no-till. Seed of the soft red winter wheat varieties Patterson and Becker were planted at Princeton (October 14, 1998) and Keysburg (October 13, 1998), respectively. At Princeton, the seeding rate used was 35 seed/ft². In Keysburg, a higher seeding rate of 47 seed/ft² was used to compensate for planting into a non-tilled seedbed. Fungicide treatments were the same for both locations and these are indicated in the data tables along with the specific dates and crop stages at the time of application. Fungicides were applied with CO²-pressurized backpack sprayers delivering 20 gpa at 40 psi (Princeton) and 15 gpa at 35 psi (Keysburg); at both locations, fungicides were delivered via spray booms fitted with flat-fan nozzles. Treatments were replicated four times and were arranged following a randomized complete block design. In Princeton, plots were 4-ft -wide x 10-ft-long. In Keysburg, plots were 5-ft-wide x 15-ft-long. No insecticides or herbicides were applied to the Princeton test, but the herbicide Harmony extra and the insecticide Warrior were applied on March 31 to the Keysburg test; a second application of Warrior was made on May 2. In Princeton, nitrogen fertility was a split application of 35 lbs actual N per acre applied on February 19, 1999, followed by 70 lbs actual N applied on March 19. In Keysburg, 35 lbs of actual N per acre were applied on February 23, followed by 70 lbs actual N on March 22. Entire plots (Princeton) or plots trimmed to 14

ft (Keysburg) were harvested on June 15 using a Hege small plot combine; seed yields were calculated based on a moisture of 13.5%. Foliar disease ratings were made by D. Hershman at both locations during just prior to the soft dough stage of grain development. FHB was rated by evaluating 100 consecutive heads in the center row and middle of each plot. FHB severity was estimated, visually, as percent surface area affected.

RESULTS:

FHB levels were very low at both test locations. FHB incidence ranged from 1.5% - 2.5% at Princeton and 1.5% - 3.5% at Keysburg. There were no significant differences among any of the treatments in regards to FHB incidence, severity, or field severity. Extremely low FHB pressure probably existed because of an extended period of dry, low humidity conditions which existed while tests test crops were flowering in May. Overall, the prevalence of other diseases remained low at Princeton (data not presented), but there was slightly more leaf rust on the flag leaves in the check plots compared with other treatments. Nonetheless, there were no significant differences among treatments in terms of treatment yield or test weight. Plot yields were probably reduced somewhat across the Princeton study slightly due to a general infection of plots by barley yellow dwarf virus. At Keysburg, late-season disease pressure was significant. However, the fact that no significant differences were detected among treatment yields (which were very high), test weights, or foliar disease (data not presented) suggest that late-season disease was of little importance in the test.

CONCLUSION:

FHB levels were not sufficient to permit evaluation of the fungicide treatments against FHB.

FHB UNIFORM FUNGICIDE TEST - PRINCETON, KY

Treatment and rate*	Timing of app.*	% Fusarium Head Blight ¹			(bu/a)	(lbs/bu)
		Inc	Sev	Field Sev		
Non-treated	--	2.3	49.3	0.8	79.8	57.6
Folicur 3.6F, 6.0 fl oz + Induce 0.06% v/v	10.51	1.8	40.8	0.8	80.1	56.8
Folicur 3.6F, 4.0 fl oz + Induce 0.06% v/v	10.51	1.8	37.0	0.9	81.8	57.1
Benlate 50SP, 0.5 lb + Manzate 200, 1.0 lb + DPX adjuvant, 0.25% v/v	10.51	1.8	47.5	0.7	76.8	57.1
BAS 500 00F, 15.4 fl oz + Agridex 1.0% v/v	10.30	1.8	55.5	0.7	83.4	57.9
BAS 500 00F, 15.4 fl oz + Agridex 1.0 v/v	10.51	2.5	58.0	0.7	74.6	57.4
Stratego 2.1E, 10.0 fl oz	10.51	2.0	47.3	0.9	74.7	56.1
Stratego 2.1E, 14.0 fl oz	10.51	1.5	23.8	0.6	77.4	57.1
Quadris 2.08SC, 12.3 fl oz	10.51	3.3	58.8	1.8	84.9	57.1
Quadris 2.08SC, 9.2 fl oz	10.51	1.8	51.8	1.0	77.2	56.8

LSD P =	0.05	NS	NS	NS	NS	NS
Treatment Prob (F)		0.7	0.5	0.1	0.7	0.7

*Product rate per acre **Feeke's stage. 10.3 application was applied on April 28, 1999; 10.51 application was made on May 1. ¹Inc=incidence; sev=severity (ave surface area diseased of infected heads only); field sev=field severity (ave % surface area diseased of all heads in plots).

FHB UNIFORM FUNGICIDE TEST - KEYSBURG, KY

Treatment and rate*	Timing of app.**	% Fusarium Head Blight ¹			(bu/ac)	(lbs/bu)
		Inc	Sev	Field Sev		
Non-treated	--	1.5	60.0	0.6	97.6	55.8
Folicur 3.6F, 6.0 fl oz + Induce 0.06% v/v	10.51	2.3	62.0	0.4	96.2	56.1
Folicur 3.6F, 4.0 fl oz + Induce 0.06% v/v	10.51	2.0	38.5	0.4	95.7	55.1
Benlate 50SP, 0.5 lb + Manzate 200, 1.0 lb + DPX adjuvant, 0.25% v/v	10.51	3.0	45.5	0.5	96.7	55.4
BAS 500 00F, 15.4 fl oz + Agridex 1.0% v/v	10.30	3.0	37.5	0.4	96.7	55.9
BAS 500 00F, 15.4 fl oz + Agridex 1.0 v/v	10.51	2.5	54.5	0.6	98.7	56.3
Stratego 2.1E, 10.0 fl oz	10.51	2.8	47.0	0.5	97.0	54.8
Stratego 2.1E, 14.0 fl oz	10.51	3.0	53.5	0.5	96.8	55.3
Quadris 2.08SC, 12.3 fl oz	10.51	3.0	48.8	0.5	92.0	55.3
Quadris 2.08SC, 9.2 fl oz	10.51	3.5	46.8	0.5	94.1	54.9

LSD P =	0.05	NS	NS	NS	NS	NS
Treatment Prob (F)		0.1	0.6	0.6	0.9	0.1

*Product rate per acre. **Feeke's stage. 10.3 application was applied on April 29, 1999; 10.51 application was made on May 4. ¹Inc=incidence; sev=severity (ave surface area diseased of infected heads only); field sev=field severity (ave % surface area diseased of all heads in plots).

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