

Comparison of BASF protocol to evaluate fungicide efficacy against frogeye leaf spot in Mississippi, 2013.

Foliar fungicides were evaluated at the Delta Research and Extension Center (DREC) in Washington County, Mississippi. The previous crop was soybean followed by winter wheat. The trial was planted on a Tunica clay on 27 Jun to the soybean variety Armor DK 4744, a frogeye leaf spot susceptible variety. Plots consisted of four rows spaced 40-in apart and were 20 ft in length. Treatments were replicated four times in a randomized complete block design. Plots were irrigated as needed throughout the season. Fungicide treatments were applied on 28 Aug (approximately R5) to each plot using a tractor-mounted sprayer fitted with TeeJet 8003VS nozzles spaced 20 in apart and delivering 15 gal/A at 38 psi. A non-ionic surfactant was added to each treatment at 0.25% v/v. Disease severity ratings were visually assessed based on the presence of symptoms from the two center rows of each soybean plot. Plots were rated 14 days (11 Sep), and 29 days (26 Sep) post-treatment. Assessments were made based on a scale of 0 to 9 where 0 = no disease present and 9 = plants exhibiting 90% of the foliage covered with lesions. Visual assessments of phytotoxicity present in each plot were made post-application on a scale of 0 to 100% based on foliar tissue affected in each plot as a whole. Plots were harvested with a plot combine on 14 Oct and yields were adjusted to 13% moisture. Data were subjected to analysis of variance and means were compared at the 0.05 significance level using Fisher's protected least significant difference (LSD) test. Prior to statistical analysis assessments of phytotoxicity were transformed using a square root transformation. Data presented in the table below were back-transformed to percentages for the purposes of presentation.

Frogeye leaf spot was the predominant disease during the 2013 season. Fungicide application was observed to significantly reduce disease severity 14 days post-treatment with applications of Fortix, Priaxor, Quadris, Quadris Top, Stratego YLD, and Topguard compared to the non-treated. Additionally, when ratings were conducted 29 days post-treatment, observable symptoms were significantly reduced compared to the non-treated check with applications of Domark, Fortix, Priaxor, Quadris + Domark and Quadris Top. Yield was significantly increased over the non-treated check with applications of the BASF experimental, Quadris Top and Stratego YLD. Phytotoxicity was observed as a result of applying Fortix, Muscle ADV, Proline, and Stratego YLD; however, phytotoxicity did not impact yield.

Treatment ^z , rate (fl oz/A)	Frogeye leaf spot severity rating (0-9)		Phytotoxicity rating (0-100%)		Yield (bu/A) ^x
	11 Sep ^y	26 Sep	11 Sep	26 Sep	
Non-treated check	6.8 a	8.2 a	0.0 d	0.0 d	44.0 de
Approach 250SC, 6	6.5 ab	8.2 a	0.0 d	0.0 d	46.7 abcde
BASF experimental 70004F, 2.2	6.5 ab	8.0 ab	0.0 d	0.0 d	48.6 ab
Domark 230ME, 4	6.3 abc	7.7 bc	0.0 d	0.0 d	45.8 abcde
Fortix 3.22SC, 5	6.0 bc	7.0 e	0.2 d	1.2 c	46.6 abcde
Gem 500SC, 3	6.8 a	8.0 ab	0.0 d	0.0 d	45.0 bcde
Headline 2.09SC, 6	6.5 ab	8.0 ab	0.0 d	0.0 d	46.2 abcde
Muscle ADV 3.84SC, 16	6.3 abc	8.0 ab	25.0 a	18.3 a	47.6 abcd
Priaxor 4.17SC, 4	5.8 c	7.7 bc	0.0 c	0.0 d	47.1 abcd
Proline 480SC, 4	6.8 a	8.0 ab	10.0 b	8.7 b	47.1 abcd
Quadris 2.08SC, 6	6.0 bc	8.0 ab	0.0 c	0.0 d	43.3 e
Quadris 2.08SC, 4 + Domark 230 ME,4	6.7 abc	7.5 cd	0.0 c	0.0 d	44.8 cde
Quadris Top 2.72SC, 8	5.7 c	7.7 bc	0.0 c	0.0 d	48.9 a
Quilt Xcel 2.20SC 10.5	6.3 abc	8.0 ab	0.0 c	0.0 d	43.3 e
Stratego YLD 4.18SC, 4	6.0 bc	8.0 ab	6.0 b	7.0 b	47.8 abc
Tilt 3.6S, 4	6.5 ab	8.0 ab	0.0 c	0.0 d	46.5 abcde
Topguard 1.04SC, 7	6.0 bc	7.2 de	1.5 c	0.0 d	43.3 e
LSD (0.05)	0.71	2.01	0.32	0.26	3.7
CV (%)	7.4	4.24	16.79	13.89	5.39
R ²	0.4711	0.5751	0.9607	0.9672	0.4302
P-value for F-statistic	0.0389	0.0001	<0.0001	<0.0001	0.0453
Standard Deviation	0.54	0.43	5.58	4.18	2.74

^z All fungicide treatments included a non-ionic surfactant at 0.25% v/v.

^y Means followed by the same letter(s) within a column are not significantly different according to Fisher's Protected LSD ($P=0.05$).

^x Yields are weight of soybean with moisture content adjusted to 13%.