

SOYBEAN (*Glycine max* ‘Armor DK 4744’)
 Frogeye Leaf spot; *Cercospora sojina*
 Cercospora Leaf Blight; *Cercospora kikuchii*
 Target Spot; *Corynespora cassiicola*

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Evaluation of the Cheminova foliar fungicide protocol in western Mississippi, 2013.

Foliar fungicides were evaluated at the Delta Research and Extension Center (DREC) in Washington County, Mississippi. The previous crop was soybean. The trial was planted on a Sharkey clay on 3 May to the soybean variety Armor DK 4744 a frogeye leaf spot susceptible variety. Plots consisted of four rows spaced 40-in apart and 30 ft in length. Replicates were separated by a 10 ft alley. Treatments were replicated four times in a randomized complete block design. Plots were furrow irrigated throughout the season as needed. Fungicide treatments were applied on 13 Jul (approximately R4) to each plot using a CO₂ sprayer with a mutli-boom system fitted with TeeJet 8003VS nozzles spaced 20 in apart and delivering 15 gal/A at 38 psi. A second fungicide application was made 20 Jul (approximately R5) using the same spray application. A non-ionic surfactant was added to each treatment at a rate of 0.25% v/v. Disease severity ratings were visually assessed on the presence of disease symptoms from the two center rows of the soybean plot canopy. Plots were rated 36 days following the initial R4 application (25 Aug) and 52 days following the initial R4 application (10 Sep). Disease assessments were made based on a scale of 0 to 9 where 0 = no disease present and 9 = severe disease characterized by approximately 90% leaf coverage. Visual assessments of phytotoxicity present in each plot post-application were made 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 10 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, Cercospora blight and target spot were observed during the growing season. Frogeye leaf spot symptoms were significantly reduced compared to the non-treated check at the first observation period by Domark, Fortix applied at both R4 and R5, Priaxor, Quadris Top, and Topguard. At the second rating, significant reductions in frogeye leaf spot compared to the non-treated check were achieved with applications of Domark, Fortix @ R5, Quadris Top, Stratego YLD, and Topguard. Symptoms of target spot were not reduced by fungicide application regardless of product or application timing. Fungicide application did not significantly reduce Cercospora blight regardless of the treatment applied. Applications of Domark, Fortix @ R4 and R5, Priaxor, Quilt Xcel, and Stratego YLD significantly increased yield compared to the non-treated check. Applications of Stratego YLD, Topguard and Fortix at R4 resulted in significant phytotoxicity compared to the non-treated, but did not negatively impact yield.

Treatment ^z , rate (fl oz/A)	Severity rating (0-9)				Phytotoxicity rating (0-100%)		Yield (bu/A) ^x
	Frogeye leaf spot		Target spot	Cercospora blight	25 Aug	10 Sep	
	25 Aug ^y	10 Sep	10 Sep	10 Sep	25 Aug	10 Sep	
Non-treated check	5.3 a	6.8 a	2.0 b	5.8	0.0 c	0.0 d	55.8 d
Domark 230 ME, 4	4.0 cd	5.5 cd	2.5 a	6.0	0.5 c	0.8 d	62.9 ab
Fortix 3.22 SC, 5 @ R4	4.5 bc	6.3 abc	2.0 b	6.3	1.8 c	0.0 d	61.9 abc
Fortix 3.22 SC, 5 @R5	2.5 e	4.3 e	2.0 b	5.8	21.7 a	15.3 b	65.1 ab
Headline 2.09SC 6	5.3 a	7.0 a	2.0 b	6.3	0.0 c	0.0 d	56.9 cd
Priaxor 4.17SC 4	4.5 bc	6.5 ab	2.0 b	6.0	0.0 c	0.0 d	63.6 ab
Quadris 2.08 SC, 6	4.8 ab	6.8 a	2.0 b	6.0	0.0 c	0.0 d	61.2 abcd
Quadris Top 2.72 SC, 10	3.5 d	5.5 cd	2.0 b	5.8	0.0 c	0.0 d	60.1 bcd
Quilt Xcel 2.20 SC, 10.5	5.0 ab	6.3 abc	2.0 b	5.8	0.0 c	0.0 d	65.9 a
Stratego YLD 4.18 SC, 4	4.8 ab	5.8 bcd	2.0 b	6.0	18.3 ab	30.0 a	62.9 ab
Topguard 1.04 SC, 6	2.8 e	5.0 de	2.0 b	5.8	17.0 b	6.8 c	59.7 bcd
LSD (0.05)	0.74	0.88	0.27	0.54	0.25	0.685	5.51
CV (%)	11.78	10.19	8.77	6.36	9.00	25.15	5.64
R ²	0.8398	0.7232	0.5258	0.3712	0.9921	0.9465	0.5229
P-value for F-statistic	<0.0001	<0.0001	0.0144	0.4037	<0.0001	<0.0001	0.0275
St Dev.	1.02	0.96	0.21	0.39	8.33	9.90	4.05

^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%.