

SOYBEAN (*Glycine max* 'Armor DK 4744')
Cercospora leaf blight; *Cercospora kikuchii*
Frogeye leaf spot; *Cercospora sojina*

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Evaluation of Priaxor foliar fungicide plus demethylation-inhibitor products in western Mississippi, 2014.

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 21 Jun 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 17 Aug (R3) to each plot using a CO₂ sprayer with a multi-boom system 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 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 every 7 days following fungicide application, but specifically made 7 (24 Aug), 14 (31 Aug), 24 (10 Sep), 31 (17 Sep), 38 (24 Sep), and 45 (1 Oct) days post-treatment. 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 21 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 main targeted disease. Frogeye leaf spot ratings conducted following applications at 7 days post-treatment were not significantly different than the nontreated check. However, observations following fungicide application 14 days post-treatment determined that Proline and Topguard alone significantly reduced observable frogeye compared to the nontreated check. In addition, applications of Monsoon, Proline and Topguard in combination with Priaxor significantly reduced observable frogeye leaf spot compared to the nontreated check. All fungicide applications save for Priaxor alone and Priaxor + Domark significantly reduced observable frogeye leaf spot 24 days post treatment. The ratings conducted 31 days post-treatment determined that Domark alone, Priaxor + Proline, Priaxor + Topguard, Proline alone, Quadris Top, Tilt alone, and Topguard alone significantly reduced observable frogeye leaf spot compared to the nontreated check. Ratings conducted 38 days post-treatment determined that all fungicide product applications reduced observable frogeye except for Monsoon alone and Priaxor + Monsoon. The final ratings, conducted 45 days post-treatment, determined that Priaxor + Alto, Domark, Monsoon, Proline, and Topguard, in addition to Proline and Topguard alone as well as Quadris Top significantly reduced observable frogeye leaf spot compared to the nontreated check. Monsoon and Proline applications significantly increased observable phytotoxicity as early as 7 days post-treatment. In addition, Proline in combination with Priaxor as well as Monsoon in combination with Priaxor significantly increased observable phytotoxicity 7 days post treatment. Observable phytotoxicity increased over time as a result of Monsoon and Proline applications both alone and in combination with Priaxor. Observations of phytotoxicity as a result of these products and product combinations significantly increased phytotoxicity compared to the nontreated check. Even though *Cercospora* blight was observed in the trial there were no significant differences between the treatments applied nor the nontreated check. Yield, regardless of fungicide product applied, did not significantly differ between the treated plots and the nontreated check.

Treatment ^z , rate (fl oz/A)	Frogeye leaf spot severity rating (0-9)						Phytotoxicity rating (0-100%)						Cercospora blight (0-9)				Yield (bu/A) ^x
	17 Aug ^y	24 Aug	31 Aug	10 Sep	17 Sep	24 Sep	1 Oct	24 Aug	31 Aug	10 Sep	17 Sep	24 Sep	10 Sep	17 Sep	24 Sep	1 Oct	
Nontreated check	3.0 abc	4.5	5.0 a	6.5 a	7.5	8.3	8.0 ab	0.0 d	0.0 c	0.0 c	0.0 c	0.0 d	3.8	5.8	6.0	8.0	40.6
Alto 100 SL, 4 oz	3.5 a	4.0	4.8 ab	5.3 bc	6.8	7.0	8.0 ab	0.0 d	0.0 c	0.0 c	0.3 c	0.5 d	4.0	5.3	6.0	8.0	40.9
Domark 230 ME, 4 oz	2.3 c	3.5	4.3 a-d	5.0 bc	6.3	7.0	7.8 abc	0.0 d	0.0 c	0.0 c	0.0 c	0.0 d	3.8	5.5	6.0	8.0	41.0
Monsoon 3.6 F, 4 oz	3.3 ab	4.5	4.5 abc	4.8 bc	6.8	8.0	8.3 a	0.5 d	16.3 b	13.0 b	19.3 b	16.8 bc	4.3	5.8	6.0	8.0	47.1
Priaxor 4.17 SC, 4 oz	2.5 c	3.5	4.3 a-d	5.5 ab	6.8	7.3	8.0 ab	0.0 d	0.0 c	0.0 c	0.0 c	0.0 d	3.8	5.8	6.0	8.0	40.2
Priaxor 4.17 SC, 4 oz + Alto 100 SL, 4 oz	3.3 ab	4.3	4.8 ab	5.3 bc	6.5	7.3	7.3 cde	0.0 d	0.8 c	0.8 c	1.5 c	0.0 d	4.3	5.8	6.0	8.0	40.5
Priaxor 4.17 SC, 4 oz + Domark 230 ME, 4 oz	3.0 abc	4.3	5.0 a	5.5 ab	7.3	7.0	7.5 bcd	0.0 d	0.0 c	0.0 c	0.0 c	0.0 d	4.0	5.5	6.0	8.0	37.8
Priaxor 4.17 SC, 4 oz + Monsoon 3.6 F, 4 oz	3.3 ab	4.5	4.0 b-e	5.0 bc	6.8	7.5	7.3 cde	2.5 cd	17.5 b	15.0 b	27.5 a	11.0 c	4.0	6.0	6.3	8.0	38.2
Priaxor 4.17 SC, 4 oz + Proline 480 SC, 3 oz	3.3 ab	3.8	3.8 cde	5.0 bc	6.5	7.3	7.5 bcd	10.3 b	35.0 a	32.3 b	35.0 a	33.8 a	4.0	5.3	6.0	8.0	41.0
Priaxor 4.17 SC, 4 oz + Tilt 3.6 EC, 4 oz	3.3 ab	4.0	4.5 abc	5.3 bc	7.0	7.3	8.0 ab	0.0 d	0.0 c	0.3 c	0.0 c	0.8 d	4.0	5.8	6.0	8.0	42.9
Priaxor 4.17 SC, 4 oz + Topguard 1.04 SC, 7 oz	3.5 a	4.3	4.0 b-e	5.0 bc	6.3	7.0	7.0 de	0.0 d	0.0 c	0.0 c	0.3 c	0.5 d	4.0	5.8	6.0	8.0	41.6
Proline 480 SC, 3 oz	2.8 abc	3.0	3.3 e	4.3 c	6.3	7.3	6.8 e	15.0 a	35.5 a	33.8 a	37.5 a	26.3 b	3.8	5.3	5.8	8.0	38.2
Quadris Top 2.72 SC, 8 oz	3.0 abc	3.5	4.3 a-d	4.8 bc	6.5	6.8	7.3 cde	0.0 d	0.0 c	0.3 c	1.0 c	0.0 d	4.0	5.8	6.0	8.0	36.1
Tilt 3.6 EC, 4 oz	2.8 abc	3.0	4.3 a-d	5.0 bc	6.5	6.8	7.5 bcd	0.0 d	2.0 c	1.5 c	0.8 c	1.3 d	4.3	5.5	6.0	8.0	43.7
Topguard 1.04 SC, 7 oz	2.3 c	3.8	3.5 de	4.8 bc	5.8	6.5	6.8 e	0.0 d	0.5 c	1.3 c	0.5 c	0.3 d	4.3	5.3	6.0	8.0	34.8
LSD (0.05)	0.8	NS	0.8	1.0	NS	NS	0.7	3.5	7.5	7.9	9.6	7.6	NS	NS	NS	NS	NS
CV (%)	19.5	-	13.6	13.9	-	-	6.5	17.1	20.5	29.0	22.1	23.9	-	-	-	-	-

^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%.