

Efficacy of foliar fungicides for management of *Cercospora sojina* on soybean in east Mississippi II, 2014.

Foliar fungicides were evaluated on soybean at the North Farm in Starkville, Mississippi. The previous crop was soybean. The trial was planted on a Marietta fine sandy loam on 22 May to the soybean variety Armor DK 4744, a frogeye leaf spot susceptible variety. Plots consisted of four rows spaced 38 in apart and 40 ft. in length. Treatments were replicated four times in a randomized complete block design. Plots were not irrigated. The first fungicide application, made at R3 was applied on 30 Jun to each plot using a CO₂-pressurized, Bowman MudMaster sprayer fitted with TeeJet 110015AIXR nozzles spaced 20 in. apart and delivering 15 gal/A at 40 psi. The second fungicide application was made at R5 (16 Jul). The non-ionic surfactant Induce was added to each treatment at 0.25% v/v. Disease severity ratings were visually assessed from the two center rows based on the presence of disease symptoms of the soybean plant canopy. Plots were rated pre-application (30 Jun), 16 days (16 Jul) and 50 days (19 Aug) post-treatment. Visual assessments of disease were made based on a scale of 0 to 9 where 0 = no disease present and 9 = approximately 90% of the leaf surface covered with lesions. Visual assessments of phytotoxicity present in each plot post-application were made on a scale of 0 to 100% based on the percentage of foliar tissue affected in each plot. Plots were harvested with a plot combine on 16 Sep 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.

Frogeye leaf spot was the predominant disease throughout the 2014 season. Post-treatment ratings conducted 16 days after fungicide application determined that fungicide applications made with Headline 4 and 6 oz, Quadris, and Topguard significantly reduced disease severity compared to the nontreated check. By the last rating date, only the R3 application of Headline fb an R5 application of Topguard significantly reduced observable frogeye leaf spot. Applications with 4 oz of Headline at R3 fb 7 oz of Topguard at R5 and 6 oz of Quadris at R3 fb R5 significantly reduced observable *Cercospora* blight. Specific fungicide treatments significantly increased yield when compared to the nontreated check; however, when considered by growth stage at application, at the R3 timing, only application with Domark and Topguard resulted in a significant increase in yield. At the single R5 application timing only treatment with Topsin XTR significantly increased yield compared to the nontreated. Dual applications, made at R3 fb R5 with 4 oz of Headline, 4 oz of Headline fb 4 oz of Domark, 4 oz of Headline fb 4 oz of Topguard, 6 oz of Headline at R3 fb R5, 4 oz of Quadris fb 4 oz of Domark, 4 oz of Quadris fb 4 oz of Topguard, 4 oz of Quadris fb 7 oz of Topguard, and 6 oz of Quadris fb 7 oz of Topguard all significantly increased yield compared to the nontreated check.

Treatment ^z , rate (fl oz/A) @ Soybean growth stage	Frogeye leaf spot (0-9)			Cercospora blight (0-9)	Yield (bu/A) ^x
	30 Jun	16 Jul ^y	19 Aug	19 Aug	
Nontreated check	1.0	2.5	6.0	5.3	53.6 de
Domark 230 ME, 4 oz @ R3	1.0	2.5	5.0	5.0	60.7 a
Domark 230 ME, 4 oz @ R3 fb 4 oz @ R5	1.3	2.0	5.3	5.0	52.8 def
Headline 2.09 SC, 4 oz @ R3 fb 4 oz @ R5	0.8	1.3	5.0	5.0	58.7 abc
Headline 2.09 SC, 4 oz @ R3 fb Domark 230 ME, 4 oz @ R5	0.3	1.3	4.5	4.5	60.1 a
Headline 2.09 SC, 4 oz @ R3 fb Topguard 1.04 SC, 4 oz @ R5	0.5	2.0	6.3	4.8	60.0 ab
Headline 2.09 SC, 4 oz @ R3 fb Topguard 1.04 SC, 7 oz @ R5	0.8	1.8	3.0	4.8	52.3 ef
Headline 2.09 SC, 6 oz @ R3	0.8	1.0	6.0	5.0	51.6 ef
Headline 2.09 SC, 6 oz @ R3 fb 6 oz @ R5	0.5	1.8	5.3	5.0	59.6 abc
Headline 2.09 SC, 6 oz @ R3 fb Topguard 1.04 SC, 7 oz @ R5	0.8	1.8	7.5	5.0	49.3 f
Quadris 2.08 SC, 4 oz @ R3 fb 4 oz @ R5	1.0	1.3	4.3	5.0	51.1 ef
Quadris 2.08 SC, 4 oz @ R3 fb Domark 230 ME, 4 oz @ R5	0.8	1.5	5.8	5.0	57.7 abc
Quadris 2.08 SC, 4 oz @ R3 fb Topguard 1.04 SC, 4 oz @ R5	0.8	2.0	4.3	5.0	60.0 ab
Quadris 2.08 SC, 4 oz @ R3 fb Topguard 1.04 SC, 7 oz @ R5	0.8	1.0	3.8	5.0	58.7 abc
Quadris 2.08 SC, 6 oz @ R3	0.5	1.3	5.5	4.8	49.3 f
Quadris 2.08 SC, 6 oz @ R3 fb 6 oz @ R5	0.8	1.5	4.0	4.5	52.8 def
Quadris 2.08 SC, 6 oz @ R3 fb Topguard 1.04 SC, 7 oz @ R5	0.5	1.5	5.3	5.0	58.7 abc
Topguard 1.04 SC, 7 oz @ R3	1.0	1.3	5.3	5.5	59.8 abc
Topsin 4.5 FL, 10 oz @ R5	1.3	2.0	4.5	5.0	56.4 bcd
Topsin 4.5 FL, 20 oz @ R5	0.8	1.3	5.0	5.0	56.2 cd
Topsin XTR 4.3 F, 20 oz @ R5	1.0	1.5	5.8	5.0	59.8 abc
LSD (<i>P</i> =0.05)	0.7	1.2	3.0	0.5	3.7
CV (%)	58.3	53.4	41.6	7.3	4.6

^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 Yield is weight of soybean with moisture content adjusted to 13%.