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

T.W. Allen, W.L. Solomon, T.H. Wilkerson, and W.J. Mansour
Delta Research and Extension Center
Mississippi State University
Stoneville, MS 38776

Evaluation of the Cheminova foliar fungicide protocol on soybean 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 6 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 25 Jul (R5) to each plot using a CO_2 sprayer with a multi-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 21 Aug (R6) 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 symptoms from the two center rows of the soybean plot canopy. Plots were rated 2 days following the initial R4 application (27 Aug), 21 days following the initial R4 application (15 Aug) and 42 days post-application (5 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. Green stem was assessed prior to harvest (30 Sep; soybean growth stage R8) based on three counts of the total number of plants within a 36-in. area. The total number of plants exhibiting green stem were then counted from within each area and a percentage of green stem was created for each plot based on an average of the three counts. Plots were harvested with a plot combine on 1 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 green stem were transformed using a square root transformation. Data presented in the table below were back-transformed to percentages for the purposes of presentation.

No significant differences in observable frogeye leaf spot were observed at the first rating period, 2 days following the first fungicide application. However, by 21 days post-treatment Aproach Prima and 6 oz of Headline, both applied at R5, significantly reduced the observable amount of frogeye leaf spot. No significant differences were observed for Cercospora blight. Green stem was significantly increased compared to the nontreated check by applications of Equation at R5 fb R6, Headline at R5, Headline at R5 fb R6, Priaxor, and two applications of Quadris at R5 fb R6. Only the treatment with Aproach Prima significantly increased yield compared to the nontreated check.

		Frogeye leaf spot (0-9)		Cercospora blight (0-9)	Green Stem (%)	Yield (bu/A)[x]
Treatment[z], rate (fl oz/A) @ Soybean growth stage	**27 Jul[y]**	**15 Aug**	**5 Sep**	**5 Sep**	**30 Sep**	
Nontreated check	1.3	5.5 a	8.8 a	7.5	0.8 e	68.0 bc
Aproach 2.08 SC, 6 oz @ R5	1.5	5.0 ab	7.5 bc	7.3	1.4 e	70.3 bc
Aproach Prima 2.34 SC, 6.8 oz @ R5	1.3	3.5 c	6.3 d	6.8	2.2 de	77.6 a
Equation 2.08 SC, 6 oz @ R5	1.5	4.8 ab	8.5 ab	7.3	1.7 e	71.3 bc
Equation 2.08 SC, 6 oz @ R5 fb 6 oz @ R6	1.0	5.0 ab	8.0 ab	6.8	6.2 bcd	69.1 bc
Equation 2.08 SC, 6 oz @ R6	1.3	5.5 a	8.8 a	7.8	0.3 e	67.1 c
Headline 2.09 SC, 6 oz @ R5	1.3	4.5 b	8.0 ab	7.0	7.7 ab	73.8 ab
Headline 2.09 SC, 6 oz @ R5 fb 6 oz @ R6	1.0	5.3 ab	8.0 ab	7.0	2.4 cde	68.8 bc
Priaxor 4.17 SC, 6 oz @ R5	1.3	4.8 ab	8.3 ab	7.3	6.5 bc	73.8 ab
Quadris 2.08 SC, 6 oz @ R5	1.0	5.0 ab	8.3 ab	7.0	2.8 cde	70.5 bc
Quadris 2.08 SC, 6 oz @ R5 fb 6 oz @ R6	1.0	4.8 ab	6.8 cd	6.8	12.5 a	72.9 abc
LSD (P=0.05)	NS	0.9	1.1	NS	6.1	14.7
CV (%)	-	13.8	9.2	-	28.8	14.6

[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] Yields are weight of soybean with moisture content adjusted to 13%.