

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

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Evaluation of the Viva, Inc. 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 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 2 days following application (27 Jul), 21 days post-application (15 Aug), and 42 days following the R5 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. 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. Green stem (30 Sep) was assessed immediately prior to harvest (soybean growth stage R8; physiological maturity) 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 phytotoxicity and 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.

Frogeye leaf spot, Cercospora blight phytotoxicity, and % green stem were evaluated during the growing season. Frogeye leaf spot was significantly reduced compared to the nontreated check by applications with Headline and Viathon as assessed 21 days post-treatment. In addition, Viathon significantly reduced observable frogeye leaf spot 42 days post-application compared to the nontreated check. Even though phytotoxicity was observed following application with Viathon, there were no significant differences between Viathon and the nontreated check. Treatment with Aproach Prima and Viathon significantly increased % green stem compared to the nontreated check. Yield was significantly increased following an application of Aproach, Aproach Prima, or Viathon.

Treatment ^z , rate (fl oz/A) @ Soybean growth stage	Frogeye leaf spot (0-9)			Phytotoxicity rating (0-100%)		Cercospora blight (0-9)	Green stem (%)	Yield (bu/A) ^x
	27 Jul	15 Aug ^y	5 Sep	15 Aug	25 Aug	5 Sep	30 Sep	
Nontreated check	1.3	5.8 a	9.0 a	0.0	0.0	7.3	0.5 b	66.1 b
Aproach 250 SC, 6 oz @ R5	1.3	5.3 ab	8.5 ab	0.0	0.0	7.0	2.7 b	70.3 a
Aproach Prima 2.34 SC, 6.8 oz @ R5	1.0	5.0 ab	8.5 ab	0.5	0.0	7.3	10.2 a	73.1 a
Headline 2.09 SC, 6 oz @ R5	1.0	5.0 b	8.3 ab	0.0	0.0	7.0	3.8 b	65.2 b
Quadris 2.08 SC, 6 oz @ R5	1.5	5.8 a	9.0 a	0.0	0.0	7.0	1.6 b	69.0 ab
Viathon 4.1 SC, 32 oz @ R5	1.0	4.5 b	7.3 b	36.3	32.5	7.0	11.8 a	73.3 a
LSD (0.05)	NS	1.2	1.5	NS	NS	NS	5.3	6.11
CV (%)	-	15.1	11.2	-	-	-	70.2	5.15

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

^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%.