

Evaluation of the BASF foliar fungicide protocol 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 17 Jul (R4) 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 second fungicide application was made to the appropriate treatments on 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 disease symptoms from the two center rows of the soybean plot canopy. Plots were rated 10 days following the initial R4 application (27 Aug), 29 days after the initial R4 application (15 Aug) and 50 days following the initial R4 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 (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 ease of presentation.

Treatment with Aproach Prima, Fortix, Proline, Quadris Top, Stratego YLD, and Topguard significantly reduced observable frogeye leaf spot at both the 29 and 50 day post-treatment rating. In addition, Custodia, 4 oz of Quadris, 4 oz of Priaxor at R4 fb 4 oz of Priaxor + 4 oz of Domark at R6, Priaxor + Domark, and Quadris + Domark significantly reduced observable frogeye at the 50 day post-treatment rating. No significant differences were observed in phytotoxicity 10 days post-treatment; however, significant differences were observed in the observable phytotoxicity compared to the nontreated check 29 days post treatment in the Custodia, Proline, and Stratego YLD treated plots. Even though *Cercospora* blight was present, visual assessments of *Cercospora* blight regardless of fungicide applied did not determine that a particular fungicide application reduced observable disease. Several fungicides significantly increased observable green stem. Fortix, 4 oz of Priaxor at R4 fb 4 oz of Priaxor + 4 oz of Domark at R6, Priaxor + Domark, 4 oz of Quadris at R4, Quadris + Domark, Quadris Top, and Topguard all significantly increased % green stem compared to the nontreated. Several fungicide treatments significantly increased yield compared to the nontreated check. However, treatment with Aproach, Dimilin (an insecticide), 4 and 6 oz of Headline, 4 oz of Quadris, Quadris + Dimilin, and Quilt Xcel did not significantly increase yield compared to the nontreated check.

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 ^y	15 Aug	5 Sep	27 Jul	15 Aug	5 Sep	5 Sep	30 Sep	
Nontreated check	2.0	4.8 a	9.0 a	0.0	0.0 c	0.0	6.8	1.1 h-j	69.3 k
Aproach 250 SC, 6 oz @ R4	1.8	4.8 a	8.8 ab	0.0	0.0 c	1.3	7.0	0.6 ij	70.8 ijk
Aproach Prima 6.8 oz @ R4	1.3	3.3 cd	7.0 d	0.0	0.0 c	0.0	6.5	3.0 d-j	77.1 b-e
Custodia 6.8 oz @ R4	1.3	4.0 abc	8.0 bc	0.3	4.3 b	6.8	7.0	3.3 e-j	73.6 f-i
Dimilin 2 L, 2 oz @ R4	1.5	5.0 a	9.0 a	0.0	0.0c	0.0	7.0	1.6 f-j	69.5 k
Fortix 3.22 SC, 5 oz @ R4	1.0	2.5 d	5.3 e	0.0	1.0 c	1.5	6.8	9.7 b-d	80.2 ab
Headline 2.09 SC, 4 oz @ R4	1.8	4.3 abc	8.8 ab	0.0	0.0 c	0.0	7.0	2.6 e-j	69.7 jk
Headline 2.09 SC, 6 oz @ R4	1.5	4.0 abc	8.3 abc	0.0	0.0 c	0.0	6.8	5.6 d-j	71.5 h-k
Priaxor 4.17 SC, 4 oz @ + Fastac EC, 3.8 oz @ R4	1.3	4.5 ab	8.3 abc	0.0	0.0 c	0.0	7.0	3.3 d-j	72.9 g-j
Priaxor 4.17 SC, 4 oz @ R4	1.3	4.8 a	8.3 abc	0.0	0.0 c	0.0	7.0	7.4 c-g	73.1 ghi
Priaxor 4.17 SC, 4 oz @ R4 fb Priaxor 4.17 SC, 4 oz + Domark 230 ME, 4 oz @ R6	1.8	4.8 a	7.5 cd	0.0	0.0 c	0.0	7.0	10.9 a-c	74.0 e-i
Priaxor 4.17 SC, 4 oz + Domark 230 ME, 4 oz @ R4	1.3	4.0 abc	7.5 cd	0.0	0.0 c	0.0	6.8	7.0 b-f	77.8 bcd
Proline 480 SC, 3 oz @ R4	1.3	3.5 bcd	7.8 cd	1.3	9.8 a	5.3	6.8	5.4 c-h	76.8 c-f
Quadris 2.08 SC, 4 oz @ R4	1.0	4.3 abc	7.8 cd	0.0	0.0 c	0.0	6.5	9.1 b-f	74.7 d-h
Quadris 2.08 SC, 4 oz + Domark 230 ME, 3 oz @ R4	1.3	4.0 abc	7.0 d	0.0	0.0 c	0.0	7.0	20.3 a	77.6 bcd
Quadris 2.08 SC, 6 oz @ R4	1.5	4.8 a	9.0 a	0.0	0.0 c	0.0	7.0	1.1 g-j	70.9 ijk
Quadris 2.08 SC, 6 oz + Dimilin 2 L, 2 oz @ R4	1.8	4.8 a	8.8 ab	0.0	0.0 c	0.0	7.0	0.5 j	71.8 g-k
Quadris Top 2.72 SC, 8 oz @ R4	1.8	3.3 cd	7.5 cd	0.0	1.0 c	0.0	6.3	9.7 b-d	78.1 bc
Quilt Xcel 2.20 SC, 10.5 oz @ R4	1.3	4.3 abc	8.3 abc	0.0	0.0 c	0.0	6.8	5.4 c-i	71.8 g-k
Stratego YLD 4.18 SC, 4 oz @ R4	1.5	3.3 cd	7.8 cd	0.0	5.8 ab	13.8	6.8	7.0 b-f	75.0 c-f
Topguard 1.04 SC, 7 oz @ R4	1.0	2.5 d	5.3 e	0.0	0.0 c	0.0	7.0	14.2 ab	82.6 a
LSD (0.05)	NS	1.1	1.0	NS	3.7	NS	NS	6.9	1.4
CV (%)	-	19.2	8.8	-	41.3	-	-	35.0	3.1

^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%.