

2014 Evaluation of Fungicides for Target Spot Disease Control in Cotton, Jay, FL

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This report includes a summary of the 2014 foliar fungicide programs for control of target spot in cotton at Jay, Florida. It shows the effectiveness of four fungicide programs for disease control. This data represents only one year and one location, and readers are cautioned that test results should be considered over several locations and year before final conclusions are valid.

Fungicide treatments, treatment rates, and application timing:

1. Untreated check
2. Headline AMP 6 fl oz/A at first bloom +
Headline AMP 6 fl oz/A 21 days after first bloom
3. Topguard 14 fl oz/A at first bloom +
Topguard 14 fl oz/A 21 days after first bloom
4. Headline AMP 6 fl oz/A at first bloom +
Topguard 14 fl oz/A 21 days after first bloom
5. Headline AMP 6 fl oz/A at pinhead square +
Topguard 14 fl oz/A at first bloom +
Headline AMP 6 fl oz/A 21 days after first bloom

2014 Growing Conditions and Experimental Design:

The study area soil type was a Red Bay sandy loam with 2% organic matter and pH 6.5 and a history of peanut production during 2013. Fertilizer was applied according to soil test results (350 lb/A 18.8-3.6-14.5 with 8.6% S applied 7 July). Cotton (DP 12R224) planted on 20 June under strip tillage. Plots were four, 25-ft rows with 36-in. row spacing and replicated in four randomized complete blocks. Standard production practices for non-irrigated cotton production were followed throughout the season. Dual at 1.3 pt/A + Ignite at 30 oz/A were applied 20 June and Roundup at 26 oz/A was applied 5 August. Sherpa insecticide was applied at 8 oz/A on 11 August. The plant growth regulator Potenza was applied 1 pt/A on 5 September. Cotton was harvested with a conventional spindle picker on 20 November and samples were sent to a commercial lab for fiber analysis.

Fungicide treatments were applied with a CO₂ backpack sprayer with 11002 nozzles, operated at 3 mph and 20 psi. Broadcast treatments were applied using a six foot boom with nozzles spaced 12 inches apart. Visual target spot disease evaluations were made periodically during the season using a rating scale of 1 to 10 where 1 = no disease and 10 = dead plants.

Rainfall in June, August, October and November was 2.13, 1.58, 0.15 and 2.31 in. below normal, respectively; rainfall in July and September was 0.65 and 0.32 in. above normal, respectively. Rainfall during the cotton growing season totaled 28.96 in., which was 7.24 in. below normal. Weather data was obtained from Florida Automated Weather Network (FAWN) station located on Jay research farm and normal represents the mean for the past 54 years of records (Table 1).

Table 1. Weather conditions during 2014 cotton trial.

Month	Total Rainfall (in)	Average minimum air temperature (°F)	Average maximum air temperature (°F)
June	5.27 (2.13 below normal)	66.6	94.4
July	8.70 (0.65 above normal)	62.1	94.9
August	4.94 (1.58 below normal)	66.9	96.0
September	4.11 (0.32 above normal)	57.4	92.5
October	4.05 (0.15 below normal)	42.6	87.9
November	1.89 (2.31 below normal)	22.3	78.9

Summary

There were relatively low levels of target spot infestation in this study. No differences between the treated plots and untreated check were observed at the first three evaluation dates. When evaluated on 23 September, the treatments with Headline were significantly better than the untreated check and the Topguard treatment. By 24 October all treatments were again better than the untreated but there were no differences among the fungicide treatments. There were no differences in yield for any of the treatments and none of the treatments yielded better than the untreated check.

Treatment and rate/A	Application timing ^a	Target Spot Rating ^a					Seed Cotton	Gin	Lint/A
		28 July	19 Aug	5 Sept	23 Sept	24 Oct	lb/A	Turnout (%)	
Untreated check		1	1	2	4 a	6 a	4548	42.2	1918
Headline AMP 6 fl oz/A + Headline AMP 6 fl oz/A	at first bloom + 21 days after first bloom	1	2	2	2 c	5 bc	4683	43.2	2021
Topguard 14 fl oz/A + Topguard 14 fl ozA	at first bloom + 21 days after first bloom	1	2	2	4 ab	4 c	4629	43.2	2000
Headline AMP 6 fl oz/A + Topguard 14 fl oz/A	at first bloom + 21 days after first bloom	1	2	2	3 bc	5 bc	4538	41.7	1892
Headline AMP 6 fl oz/A + Topguard 14 fl oz/A + Headline AMP 6 fl oz/A	at pinhead square + at first bloom + 21 days after first bloom	1	1	2	3 bc	5 bc	4411	42.0	1852
<i>Mean</i>		<i>1</i>	<i>1.6</i>	<i>2</i>	<i>3</i>	<i>4.7</i>	<i>4562</i>	<i>42.45</i>	<i>1937</i>
<i>LSD</i>		<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>0.8</i>	<i>0.8</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>
<i>CV</i>			<i>26</i>		<i>18</i>	<i>11.0</i>	<i>8.1</i>		<i>8.1</i>
<i>P(F)</i>			<i>0.102</i>		<i>0.0032</i>	<i>0.014</i>	<i>0.867</i>		<i>0.53</i>

^a Target spot disease was assessed using a 1 to 10 scale (1= no disease; 10 = completely dead plants). Means followed by the same letter(s) in a column are not significantly different according to Fisher's Protected LSD (P=0.05).