

Evaluations of fungicides for the control of soybean rust at Bella Vista, Paraguay, 2004-2005.

Soybean seeds were planted at Bella Vista, Paraguay on 23 Dec 2004 in four row plots, 33 ft. long, with 18 in. row widths and two or four rows of border. The experimental design was a split block with four replications. The main effects were fungicide treatment, i.e. product and rates, with 2-application and 3-application programs as the sub plots. Fungicides were applied in 15 gal/A water with a hand-operated backpack sprayer fitted with a pressure regulator and TeeJet 8002 flat fan nozzles at 40 psi. The first application was at 55 days after planting (DAP), followed by another at 76 DAP, and another at 97 DAP for some plots. Plants were rated for soybean rust at 124 and 134 DAP using a 0-5 severity scale where 0 had no rust and 5 had severe symptoms. The data were not transformed since preliminary analysis indicated it was not warranted. The middle two rows of each plot were harvested (23 ft long) at 151 DAP.

Soybean rust was first recorded in the lower canopy of the non-sprayed plots 121 DAP, so that all three fungicide applications were applied as a protectant. There were significant differences among treatments for soybean rust severity and yield. All treatments had significantly greater yield than the control, and 22 of 23 treatments had significantly lower disease severity than the non-sprayed control. The difference between the 2- and the 3-application program was also significant; mean disease severity and mean defoliation were higher in the 2- than the 3-application program. There was no significant difference in yield between the 2- and the 3-application program.

<i>Treatment and rate/A</i>	<i>Yield (bu/A)^z</i>		<i>SBR severity (124 DAP)^y</i>			<i>SBR severity (134 DAP)^y</i>		
	Mean		2 apps	3 apps	Mean	2 apps	3 apps	Mean
Impact 125 SC 6.9 oz.	39 a ^w		0.0	0.3	0.1 i	1.0	1.0	1.0 ij
Folicur 3.6 F 4 oz ^x	39 ab		1.5	1.3	1.4 fg	2.0	1.5	1.8 fghi
Folicur 3.6 F 4 oz.	39 ab		0.3	0.0	0.1 i	1.3	0.8	1.0 ij
Caramba90SL+Headline250EC 7.8+3.6 oz. .	39 ab		0.8	0.0	0.4 i	1.8	0.3	1.0 ij
Caramba90SL+Headline250EC 8.2+4.8 oz. .	38 ab		0.3	0.0	0.1 i	1.5	0.0	0.8 ij
Headline 250EC (9.2 oz/a).	38 ab		0.5	0.3	0.4 i	2.0	0.5	1.3 ghij
Quadris Xtra 280SC (4.1 oz/a).	38 ab		1.0	0.0	0.5 hi	2.0	0.8	1.4 ghij
Quilt 200SE (13.7 oz/a).	38 ab		3.3	1.5	2.4 de	3.8	2.0	2.9 cde
Domark 230 ME (5.1 oz/a).	38 ab		0.0	0.0	0.0 i	0.8	0.5	0.6 j
Caramba 90 SL (8.2 oz/a).	38 ab		2.0	1.0	1.5 fg	2.8	1.5	2.1 efgh
Echo 720 F (27.4 oz/a).	37 ab		4.0	3.5	3.8 b	4.8	4.0	4.4 ab
Rubigan EC (11 oz/a).	37 ab		3.3	1.8	2.5cde	3.8	2.5	3.1 cde
Stratego 250 EC (12 oz/a).	37 ab		2.3	1.0	1.6 fg	3.3	2.0	2.6 cdef
Caramba90SL+Headline250EC 9.2+4.1 oz ^x . .	37 ab		1.5	1.8	1.6 fg	2.3	2.3	2.3 defg
Tilt 250EC (10 oz/a).	37 ab		3.8	2.5	3.1 bc	4.0	2.8	3.4 bc
Folicur 3.6 F (3 oz/a).	37 ab		0.5	0.0	0.3 i	1.8	1.3	1.5 ghij
Punch EC (3 oz/a).	37 ab		3.0	0.8	1.9 ef	3.8	2.0	2.9 cde
SA 120 201 EC (6.9 oz/a).	36 ab		0.3	0.0	0.1 i	0.5	0.8	0.6 j
Stratego 250 EC (8.4 oz/a).	36 ab		2.3	1.5	1.9 ef	2.8	1.8	2.3 defg
Tilt 250EC (7 oz/a).	36 ab		3.3	2.3	2.8 cd	3.5	3.0	3.3 cd
Punch EC (4.3 oz/a).	36 ab		2.0	0.3	1.1 gh	3.0	1.3	2.1 efgh
Caramba90SL+Headline250EC 9.2+4.1 oz. .	35 b		0.5	0.0	0.3 i	1.8	0.8	1.3 ghij
Caramba90SL+Headline250EC 6.1+3.6oz. .	35 b		0.8	0.0	0.4 i	1.8	0.5	1.1 hij
No fungicide (0 oz/a).	27 c		4.3	5.0	4.6 a	4.5	5.0	4.8 a
Application mean	37		1.7a^u	1.0b^u	1.4	2.5a^u	1.6b^u	2.1

^zYield was calculated at 13% moisture. There were no significant (P=0.05) differences between the 2 and 3 application programs, but there was significant difference between treatments.

^yrust severity was based on a 0-5 severity scale with 0 had no disease and 5 as severe symptoms.

^xThere were two treatments with single applications at R1 or R3.

^wColumn numbers followed by the same letter are not significantly different at P=0.05 determined by Fisher's LSD.

^uThe 2 and 3 application programs were significantly different from each other (P=0.05).