

XXXII. FUNGICIDES FOR CONTROL OF SOYBEAN RUST AND COMMON DISEASES OF SOYBEAN IN VIRGINIA (TAREC, Swine Unit Field)

A. PURPOSE: To collect data needed to recommend fungicides for control of soybean rust, brown spot, anthracnose, frogeye leaf spot, pod and stem blight, and other soybean diseases in Virginia

B. EXPERIMENTAL DESIGN:

1. Four randomized complete blocks
2. Fifteen-ft alleyways between blocks
3. Two, 30-ft rows at 36 in. spacing in each plot

C. APPLICATION OF TREATMENTS: Treatments were applied in a foliar spray with 8002VS nozzles spaced 18 in. apart and delivering a spray volume of 16 gal/A.

1<sup>st</sup> Preventative = Aug 16 (R<sub>3</sub>)

2<sup>nd</sup> Preventative = Aug 29 (R<sub>5</sub>)

1<sup>st</sup> Curative = Aug 29 (R<sub>5</sub>)

D. TREATMENT AND RATE/A:

1. Untreated check
2. Folicur 432SC 4 fl oz (1<sup>st</sup> spray-preventative, 2<sup>nd</sup> spray-preventative)
3. Folicur 432SC 4 fl oz (1<sup>st</sup> spray-preventative)  
Stratego 250EC 7 fl oz + Induce 0.125% v/v (2<sup>nd</sup> spray-preventative)
4. Folicur 432SC 4 fl oz (1<sup>st</sup> spray-preventative)  
Stratego 250EC 10 fl oz + Induce 0.125% v/v (2<sup>nd</sup> spray-preventative)
5. Stratego 250EC 7 fl oz + Induce 0.125% v/v (1<sup>st</sup> spray-preventative)  
Folicur 432SC 4 fl oz (2<sup>nd</sup> spray-preventative)
6. Stratego 250EC 10 fl oz + Induce 0.125% v/v (1<sup>st</sup> spray-preventative)  
Folicur 432SC 4 fl oz (2<sup>nd</sup> spray-preventative)
7. Stratego 250EC 7 fl oz + Induce 0.125% v/v (1<sup>st</sup> spray-preventative)
8. Absolute 500SC 3.5 fl oz (1<sup>st</sup> spray-preventative, 2<sup>nd</sup> spray-preventative)
9. Absolute 500SC 5 fl oz (1<sup>st</sup> spray-preventative, 2<sup>nd</sup> spray-preventative)
10. Folicur 432SC 4 fl oz (1<sup>st</sup> spray-curative)
11. Stratego 250EC 7 fl oz + Induce 0.125% v/v (1<sup>st</sup> spray-curative)
12. Stratego 250EC 10 fl oz + Induce 0.125 v/v (1<sup>st</sup> spray-curative)
13. Absolute 500 SC 8.3 ml (1<sup>st</sup> spray-curative)

E. ADDITIONAL INFORMATION:

1. Location: TAREC, Suffolk
2. Crop history: corn 2004
3. Planting date and cultivar: 23 May 2005, Asgrow 5603 RR
4. Soil fertility report:
 

pH.....	6.1
Ca .....	585 ppm
Mg .....	71 ppm
P .....	32 ppm
K.....	113 ppm
Zn .....	1.0 ppm
Mn .....	3.7 ppm
Soil type .....	Nansemond fine sandy loam
5. Herbicide: Roundup Ultra Max 22 fl oz/A (13 Jun, 27 Jul)
6. Harvest date: 26 Oct & 11 Nov 2005 due to combine breakdown and weather

Table 111. Incidence of frogeye leaf spot in soybeans.

Treatment, rate/A and spray date	% frogeye leaf spot*				
	Top leaves (Sep 7)		Bottom leaves (Sep 7)		Top leaves (Sep 30)
	% incidence	% leaf area	% incidence	% leaf area	
Untreated check .....	1.1	1.5	0.4	0.6	11.3 a
Folicur 432SC 4 fl oz (8/16, 8/29).....	1.0	1.3	0.5	0.4	3.8 d
Folicur 432SC 4 fl oz (8/16) Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/29).....	0.6	1.4	0.3	0.3	8.0 ab
Folicur 432SC 4 fl oz (8/16) Stratego 250EC 10 fl oz + Induce 0.125% v/v (8/29).....	0.6	0.9	0.1	0.4	5.5 b-d
Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/16) Folicur 432SC 4 fl oz (8/29).....	0.6	1.4	0.5	0.0	6.0 b-d
Stratego 250EC 10 fl oz + Induce 0.125% v/v (8/16) Folicur 432SC 4 fl oz (8/29).....	0.6	0.6	0.1	0.0	4.5 cd
Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/16).....	1.1	0.5	0.5	0.3	4.3 d
Absolute 500SC 3.5 fl oz (8/16, 8/29)..	0.6	0.8	0.4	0.1	6.3 b-d
Absolute 500SC 5 fl oz (8/16, 8/29).....	0.4	0.8	0.5	0.6	6.5 b-d
Folicur 432SC 4 fl oz (8/29).....	1.6	1.5	0.6	0.6	7.8 bc
Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/29).....	0.9	1.0	0.4	0.0	4.5 cd
Stratego 250EC 10 fl oz + Induce 0.125 v/v (8/29).....	0.9	0.8	0.1	0.4	6.5 b-d
Absolute 500 SC 8.3 ml (8/29).....	0.8	1.6	0.5	0.9	7.0 b-d
<b>LSD.....</b>	<b>n.s.</b>	<b>n.s.</b>	<b>n.s.</b>	<b>n.s.</b>	<b>3.4</b>

\* Data are percent leaf area with disease symptoms.

Means followed by the same letter(s) in a column are not significantly different at P=0.05 according to Fisher's Protected LSD. "n.s." = not significant. Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 112. Incidence of brown spot and Cercospora blight in soybeans.

Treatment, rate/A and spray date	Brown spot*			Cercospora blight*
	% incidence (Sep 7)	% leaf area		% leaf area (Sep 30)
		Sep 7	Sep 30	
Untreated check .....	2.3	2.0	7.0 a	22.5 a
Folicur 432SC 4 fl oz (8/16, 8/29).....	1.0	1.8	3.8 b-d	15.5 b
Folicur 432SC 4 fl oz (8/16) Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/29).....	1.1	2.0	5.3 ab	13.8 bc
Folicur 432SC 4 fl oz (8/16) Stratego 250EC 10 fl oz + Induce 0.125% v/v (8/29).....	0.8	1.3	3.8 b-d	9.5 d
Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/16) Folicur 432SC 4 fl oz (8/29).....	0.8	1.3	3.0 cd	8.3 d
Stratego 250EC 10 fl oz + Induce 0.125% v/v (8/16) Folicur 432SC 4 fl oz (8/29).....	0.9	0.6	3.8 b-d	11.3 cd
Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/16).....	0.8	2.0	4.0 b-d	9.5 d
Absolute 500SC 3.5 fl oz (8/16, 8/29)...	1.1	1.3	3.5 b-d	11.8 b-d
Absolute 500SC 5 fl oz (8/16, 8/29).....	1.4	0.8	2.8 d	8.3 d
Folicur 432SC 4 fl oz (8/29).....	0.9	1.4	5.0 a-c	15.0 bc
Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/29).....	1.0	0.9	4.0 b-d	8.8 d
Stratego 250EC 10 fl oz + Induce 0.125 v/v (8/29).....	0.8	0.5	3.8 b-d	15.5 b
Absolute 500 SC 8.3 ml (8/29).....	2.0	2.0	3.3 b-d	15.5 b
<b>LSD.....</b>	<b>n.s.</b>	<b>n.s.</b>	<b>2.0</b>	<b>4.2</b>

\* Brown spot occurred mostly in the lower canopy only. Cercospora blight was most prevalent in the upper canopy. Means followed by the same letter(s) in a column are not significantly different at P=0.05 according to Fisher's Protected LSD. "n.s." = not significant. Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 113. Leaf area with foliar disease, defoliation, blackened pods and the yield of response of soybeans.

Treatment, rate/A and spray date	Total % leaf area w/disease <sup>1</sup> (Sep 30)	% defoliation <sup>2</sup>		% black pods <sup>3</sup> (Oct 16)	Yield <sup>4</sup> (bu/A)
		Sep 30	Oct 16		
Untreated check .....	40.8 a	26.3 a	97.0 a	61.3 a	38.4
Folicur 432SC 4 fl oz (8/16, 8/29).....	23.0 b-e	12.5 bc	89.3 ab	48.8 ab	36.2
Folicur 432SC 4 fl oz (8/16) Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/29).....	27.0 b	15.0 b	97.5 a	42.5 b-e	39.5
Folicur 432SC 4 fl oz (8/16) Stratego 250EC 10 fl oz + Induce 0.125% v/v (8/29).....	19.0 de	9.5 cd	89.5 ab	31.3 ef	45.1
Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/16) Folicur 432SC 4 fl oz (8/29).....	16.5 e	8.5 cd	90.0 ab	32.5 d-f	35.8
Stratego 250EC 10 fl oz + Induce 0.125% v/v (8/16) Folicur 432SC 4 fl oz (8/29).....	19.5 c-e	10.3 b-d	83.8 bc	36.3 b-f	39.7
Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/16) .....	17.8 e	7.0 d	91.3 ab	30.0 ef	32.7
Absolute 500SC 3.5 fl oz (8/16, 8/29)..	21.5 b-e	8.5 cd	93.0 ab	30.0 ef	36.6
Absolute 500SC 5 fl oz (8/16, 8/29).....	17.5 e	9.8 cd	75.3 c	28.8 f	34.2
Folicur 432SC 4 fl oz (8/29).....	25.3 b-d	11.3 b-d	91.0 ab	46.3 bc	31.6
Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/29).....	17.3 e	10.0 b-d	94.3 ab	45.0 b-d	37.1
Stratego 250EC 10 fl oz + Induce 0.125 v/v (8/29).....	25.0 b-d	12.5 bc	95.8 a	32.5 d-f	35.4
Absolute 500 SC 8.3 ml (8/29).....	26.0 bc	10.8 b-d	94.3 ab	33.8 c-f	46.9
<b>LSD</b> .....	<b>6.7</b>	<b>5.0</b>	<b>11.0</b>	<b>13.4</b>	<b>n.s.</b>

<sup>1</sup> Leaf area with symptoms of foliar disease in the upper canopy.

<sup>2</sup> Defoliation rating scale: 0=none, 100=no leaves on plants.

<sup>3</sup> Percent of plants with blackened pods caused by growth of sooty molds in wet weather (4 Oct – 12 Oct).

<sup>4</sup> Yields of soybeans with 13.5% moisture. One bushel equals 60 lb.

Means followed by the same letter(s) in a column are not significantly different at P=0.05 according to Fisher's Protected LSD. Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 114. Seed weight and grade characteristics in soybeans.

Treatment, rate/A and spray date	Wt./100 seed (g)	% purple seed stain*	% phomopsis seed blight*
Untreated check .....	12.46 e	8.8 ab	1.3
Folicur 432SC 4 fl oz (8/16, 8/29).....	13.07 c-e	11.8 a	0.5
Folicur 432SC 4 fl oz (8/16) Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/29).....	13.04 de	11.3 a	0.5
Folicur 432SC 4 fl oz (8/16) Stratego 250EC 10 fl oz + Induce 0.125% v/v (8/29).....	12.89 de	4.0 cd	1.0
Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/16) Folicur 432SC 4 fl oz (8/29).....	13.05 de	8.8 ab	0.8
Stratego 250EC 10 fl oz + Induce 0.125% v/v (8/16) Folicur 432SC 4 fl oz (8/29).....	13.69 a-c	4.5 cd	0.8
Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/16).....	13.14 cd	7.0 bc	0.8
Absolute 500SC 3.5 fl oz (8/16, 8/29).....	13.98 a	2.3 d	0.5
Absolute 500SC 5 fl oz (8/16, 8/29).....	13.86 ab	2.5 d	0.8
Folicur 432SC 4 fl oz (8/29).....	13.04 de	12.3 a	0.3
Stratego 250EC 7 fl oz + Induce 0.125% v/v (8/29).....	13.25 b-d	4.0 cd	0.8
Stratego 250EC 10 fl oz + Induce 0.125 v/v (8/29) .....	13.10 cd	3.5 cd	1.5
Absolute 500 SC 8.3 ml (8/29).....	13.36 a-d	4.3 cd	0.5
<b>LSD.....</b>	<b>0.62</b>	<b>4.2</b>	<b>n.s.</b>

\* Data are percent of 100 seed with symptoms of each disease.

Means followed by the same letter(s) in a column are not significantly different at P=0.05 according to Fisher's Protected LSD. "n.s." = not significant.