

XXXVII. FUNGICIDES FOR CONTROL OF SOYBEAN RUST AND COMMON DISEASES OF SOYBEAN IN VIRGINIA (TAREC Research farm)

- 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. Five, 34-ft rows at 15 in. spacing in each plot
- C. APPLICATION OF TREATMENTS: Treatments were applied at beginning seed (R_3 – Aug 29) in a foliar spray with 8002VS nozzles spaced 18 in. apart and delivering a spray volume of 16 gal/A.
- D. TREATMENT AND RATE/A: (Applied)
1. Untreated check
 2. Quilt 1.67SC 14 fl oz + COC 1% v/v
 3. Stratego 250EC 10 fl oz + Induce 0.125% v/v
 4. Headline 2.08EC 4.7 fl oz + Folicur 432SC 3.1 fl oz
 5. Folicur 432SC 4 fl oz
 6. Quadris 2.08SC 6.2 fl oz + COC 1% v/v
 7. Headline 2.08EC 6 fl oz
 8. Laredo 2EC 7 fl oz + Induce 0.125% v/v
 9. MFC Tebuconazole 3.6 F 4 fl oz
 10. MFC Tebuconazole 3.6F 4 fl oz + PGR-IV PLUS 1 oz/A
- E. ADDITIONAL INFORMATION:
1. Location: Tidewater Research farm, Hare Rd., Suffolk
 2. Crop history: wheat/fallow 2004, winter wheat 2004-2005
 3. Planting date and cultivar: 1 Jul 2005, CL 54RR (double-cropped after wheat)
 4. Soil fertility report:

pH.....	6.3
Ca	340 ppm
Mg	59 ppm
P	40 ppm
K.....	50 ppm
Zn	0.6 ppm
Mn	2.3 ppm
Soil type	Eunola loamy fine sand
 5. Herbicide: Roundup Ultra Max 22 fl oz/A (19 Jul)
 6. Harvest date: 12 Nov 2005

Table 123. Disease incidence in fungicide-treated plots.

Treatment and rate ¹	Frogeye leaf spot ² (Sep 8)		Brown spot ² (Sep 8)	
	%	% leaf	%	% leaf
	leaflets	area	leaflets	area
Untreated check	1.3	0.1	11.3	6.3
Quilt 1.67SC 14 fl oz + COC 1% v/v	1.6	0.1	13.8	7.5
Stratego 250EC 10 fl oz + Induce 0.125% v/v .	0.8	0.1	5.0	5.0
Headline 2.08EC 4.7 fl oz				
+ Folicur 432SC 3.1 fl oz	26.4 ³	1.3	7.5	6.3
Folicur 432SC 4 fl oz /A	3.1	0.1	10.0	5.0
Quadris 2.08SC 6.2 fl oz/A + COC 1% v/v	1.6	0.1	11.3	6.3
Headline 2.08EC 6 fl oz /A.....	0.4	0.1	7.5	5.0
Laredo 2EC 7 fl oz/A + Induce 0.125% v/v	1.0	0.1	7.5	4.3
MFC Tebuconazole 3.6 F 4 fl oz/A	20.6 ³	0.3	8.8	5.0
MFC Tebuconazole 3.6F 4 fl oz				
+ PGR-IV PLUS 1 oz/A	25.8 ³	1.3	11.3	7.5
LSD.....	n.s.	n.s.	n.s.	n.s.

¹ Treatments applied at R₃ growth stage (beginning pod) on Aug 29.

² Frogeye leaf spot ratings in the upper third of canopy and Brown spot in the lower third of canopy.

³ Suspect chemical injury not related to treatment.

“n.s.” = not significantly different according to Fisher’s Protected LSD (P=0.05).

Table 124. Disease incidence in fungicide-treated plots.

Treatment and rate*	Frogeye leaf spot** (Oct 14)		Cercospora blight** (Oct 14)	
	%	% leaf	%	% leaf
	leaflets	area	leaflets	area
Untreated check	4.5	0.8	98.8 a	40.0 a
Quilt 1.67SC 14 fl oz + COC 1% v/v	3.0	0.6	33.8 cd	10.0 d
Stratego 250EC 10 fl oz + Induce 0.125% v/v	3.0	0.8	41.3 c	10.0 d
Headline 2.08EC 4.7 fl oz				
+ Folicur 432SC 3.1 fl oz	2.0	0.3	23.8 d	5.0 d
Folicur 432SC 4 fl oz /A	3.5	0.3	86.3 b	20.0 bc
Quadris 2.08SC 6.2 fl oz/A + COC 1% v/v	4.5	1.0	23.8 d	6.3 d
Headline 2.08EC 6 fl oz /A.....	2.3	0.3	25.0 d	7.5 d
Laredo 2EC 7 fl oz/A + Induce 0.125% v/v	3.3	0.6	80.0 b	23.8 b
MFC Tebuconazole 3.6 F 4 fl oz/A	5.0	1.0	81.3 b	17.5 c
MFC Tebuconazole 3.6F 4 fl oz				
+ PGR-IV PLUS 1 oz/A	3.8	0.8	82.5 b	21.3 bc
LSD.....	n.s.	n.s.	9.5	6.0

* Treatments applied at R₃ growth stage (beginning pod) on Aug 29.

** Ratings were made in the upper third of the 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 was used in analysis to determine statistical significance.

Table 125. Defoliation, pod discoloration and yield of soybeans in fungicide-treated plots.

Treatment and rate ¹	% defoliation ² (Oct 14)	Pod discoloration ³ (0-10)	Yield ⁴ (bu/A)
Untreated check	72.5 a	7.8 a	34.9
Quilt 1.67SC 14 fl oz + COC 1% v/v	26.3 d	2.0 c	37.4
Stratego 250EC 10 fl oz + Induce 0.125% v/v	25.0 d	1.8 c	33.5
Headline 2.08EC 4.7 fl oz + Folicur 432SC 3.1 fl oz	17.5 d	1.3 c	38.0
Folicur 432SC 4 fl oz /A	50.0 b	5.3 b	37.0
Quadris 2.08SC 6.2 fl oz/A + COC 1% v/v	23.8 d	1.8 c	33.4
Headline 2.08EC 6 fl oz /A.....	20.0 d	2.0 c	35.1
Laredo 2EC 7 fl oz/A + Induce 0.125% v/v	45.0 bc	5.5 b	34.1
MFC Tebuconazole 3.6 F 4 fl oz/A	40.0 c	5.5 b	35.1
MFC Tebuconazole 3.6F 4 fl oz + PGR-IV PLUS 1 oz/A	41.3 bc	6.0 b	33.5
LSD.....	9.8	1.1	n.s.

¹ Treatments applied at R₃ growth stage (beginning pod) on Aug 29.

² Defoliation rating scale: 0=none, 100=no leaves on plants.

³ Pod discoloration rating scale: 0=none, 10=all pods discolored with sooty mold. Ratings were made on 14 Oct.

⁴ Yield of soybeans with 13.5% moisture. Soybeans were harvested on 12 Nov 2005.

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 for statistical significance.

Table 126. Grade characteristics of soybeans in fungicide-treated plots.

Treatment and rate*	Weight/ 100 seed (g)	% purple seed stain**	% phomopsis seed blight**
Untreated check	15.19 c	39.3 a	1.0 d
Quilt 1.67SC 14 fl oz + COC 1% v/v	15.98 a	9.3 c	3.8 a
Stratego 250EC 10 fl oz + Induce 0.125% v/v	15.75 a-c	4.8 c	3.3 ab
Headline 2.08EC 4.7 fl oz + Folicur 432SC 3.1 fl oz	15.96 ab	7.0 c	2.0 b-d
Folicur 432SC 4 fl oz /A	15.56 a-c	25.3 b	2.0 b-d
Quadris 2.08SC 6.2 fl oz/A + COC 1% v/v	16.09 a	5.0 c	1.0 d
Headline 2.08EC 6 fl oz /A.....	15.89 ab	7.8 c	2.8 a-c
Laredo 2EC 7 fl oz/A + Induce 0.125% v/v	15.28 c	26.0 b	1.8 b-d
MFC Tebuconazole 3.6 F 4 fl oz/A	15.90 ab	21.8 b	2.5 a-d
MFC Tebuconazole 3.6F 4 fl oz + PGR-IV PLUS 1 oz/A	15.39 bc	25.0 b	1.5 cd
LSD.....	0.57	9.0	1.6

* Treatments applied at R₃ growth stage (beginning pod) on Aug 29.

** 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.