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VARIETY TRIALS

MG VI and VII Roundup Ready® Soybean Varieties, High pH Soils, Dallas County, Alabama, 2008

D. P. Delaney and R. P. Yates

This trial was planted on June 19, 2008 following a wheat grain crop on the Sam Givhan Farm near Safford, Alabama. Each cultivar was planted in a single, field-length strip 15 to 25 feet wide approximately 1500 feet long. Soil type was a Leeper silty clay with a pH of 7.8 to 8.0 Rows were spaced 20 inches apart with a no-till planter equipped with row cleaners. A windstorm had severely lodged the wheat straw, causing difficult planting conditions and poor stands in some strips across the field. Plots were maintained according to Alabama Cooperative Extension System recommendations. Plots were harvested on October 29, 2008 with the producers' combine and a weighing grain buggy. No significant lodging was noted for any variety. Yields were adjusted to 13 percent moisture and 60 pounds per bushel.

While early summer rainfall was generally good, dry weather during pod fill impacted yields. Some yellowing from iron chlorosis was observed and was rated on August 20 (see table).

MG VI and VII RR Soybean Varieties on High pH Soils, Dallas County, 2008

Variety	Yield[1]	Chlorosis[2]
	bu/A	
DeltaPine 6880 RR	26.5	1
DeltaPine 6568 RR	24.2	2
Asgrow 6702 RR	22.3	1
DeKalb- DKB 64-51 RR	21.7	3
Pioneer 96M60 (RR)	18.9	1
Asgrow 6301 RR	18.1	1

[1] Adjusted to 13 percent moisture and 60 pounds per bushel.
[2] Rated 20 Aug: 1 = green, 5 = very yellow.

Irrigated MG V to VII Roundup Ready® Soybean Varieties, Barbour County, Alabama, 2008

D. P. Delaney, B. Dillard, W. C. Birdsong, and K. S. Lawrence

This trial was planted on May 5, 2008 on the Walt and Tom Corcoran Farm near Eufaula, Alabama. Four replications of each variety were planted in a randomized complete block pattern. Each plot was 19 feet wide and 900 to 1100 feet long with a twin-row pattern (38-inch main centers) used at planting. Soil type was a Dothan fine sandy loam with corn planted in 2007. Plots were irrigated and maintained according to Alabama Cooperative Extension System recommendations. Samples of roots and soil for root-knot nematodes were taken from each plot on October 3. There were no significant differences in root galling between plots, and nematodes were below detectable levels at the time of sampling. Plots were harvested on October 28, 2008 using the producers' combine and a weighing grain buggy. No significant lodging was noted for any variety. Yields were adjusted to 13 percent moisture and 60 pounds per bushel.

Irrigated MG V to VII RR Soybean Varieties, Barbour County, 2008

Variety	Advertised maturity	Yield[1] *bu/A*
Asgrow 7501 RR	7.5	70.2
Asgrow 6702 RR	6.7	70.2
DeltaPine 7330 RR[2]	7.3	67.6
Dyna-Gro 35K73 RR	7.3	65.7
Croplan RC 7355 RR	7.3	63.9
Pioneer 97M50 (RR)	7.5	63.3
DeltaPine 5914 RR[2]	5.9	59.5
Dyna-Gro 32R74 RR	7.4	57.5
LSD (P = 0.10)		***4.2***

[1] Adjusted to 13 percent moisture and 60 pounds per bushel.
[2] Due to limited seed at planting, only two replications were planted for these two varieties.

Irrigated MG V to VII Roundup Ready® Soybean Varieties, Escambia County, Alabama, 2008

D. P. Delaney and R. Petcher

This trial was planted on June 18, 2008 following a wheat grain crop on the Bennie and Matt Watson Farm near Atmore, Alabama. Each cultivar was planted in a single block 36 feet wide and 725 feet long in 7.5-inch rows using a grain drill. Plots were maintained according to Alabama Cooperative Extension System recommendations. Plots were harvested on November 6, 2008 using the producers' combine and a weighing grain buggy. No significant lodging was noted for any variety. Yields were adjusted to 13 percent moisture and 60 pounds per bushel.

MG V to VII RR Soybean Varieties, Escambia County, 2008

Variety	Yield[1]
	buA
NK S 74-W6 RR	58.8
NK S 78-G6 RR	58.5
Asgrow 7601 RR	57.4
Asgrow 6702 RR	56.8
Asgrow - DeKalb 6301 RR	56.0
DeKalb- DKB 64-51 RR	55.8
Pioneer 96M60 (RR)	55.7
NK S 65-M3 RR	55.2
Terral 59R16 RR	55.1
Dyna-Gro 35K73v	54.1
Terral 55R15v	53.7
NK S 61-Q2 RR	53.1
NK S 68-D4 RR	52.8
NK S 80-P2 RR	51.9
DeltaPine 6568 RR	51.9

[1] Adjusted to 13 percent moisture and 60 pounds per bushel.

DISEASE MANAGEMENT

STROBILURON FUNGICIDE GREENING EFFECTS ON SOYBEANS AT CROSSVILLE, 2008

D. P. Delaney, E. J. Sikora, T. Dawkins, and J. Ducar

Many producers have noted retention of green leaves after pod maturity where strobiluron fungicides have been applied, leading to seed deterioration, shattering losses, and greatly reduced speeds with increased fuel and machinery costs and foreign material dockage. This problem has been linked to plant physiological changes and secondary disease control accompanying the use of strobiluron fungicides.

This trial at the Sand Mountain Research and Extension Center (SMREC) investigated the use of three strobiluron-containing fungicides (see table) applied at two growth stages. Dyna-Gro 3443nRR soybean seed was planted on May 2 in a Wynville sandy loam using strip-tillage, and managed according to Alabama Cooperative Extension System recommendations. Plots were four 36-inch rows, 25 feet long, arranged in a randomized complete block design with four replications. The three fungicides were applied in a factorial design at either the R2 growth stage (full bloom) on June 26, or the R2 + R5 (beginning seed fill) growth stage on July 17. Fungicides were applied in 20 gallons per acre of water using a backpack CO_2 sprayer equipped with TeeJet 8002VS flat fan nozzles on 19-inch centers at 55 psi. Per resistance management guidelines, a triazole fungicide (Folicur at a rate of 3 fluid ounces per acre) was added to the second strobiluron spray of Headline and Quadris. (Stratego is a premix containing a strobiluron and a triazole.)

The trial was rated at pod maturity, with ratings on September 17 and 26. The center two rows of each plot were harvested with a plot combine on September 30 and weighed with samples dried and analyzed for seed weights. (see table).

Fungicide applications at R2 + R5 compared to R2 alone or the untreated check increased retention of green leaves at both rating dates. Fungicide applications at R2 + R5 compared to R2 alone or the untreated check also increased yields (27.5 versus 25.6 bushels per acre) and 100-seed weights (13.4 versus 13.1 grams) with no significant interactions between treatments and application timing.

STROBILURON EFFECT ON SOYBEAN YIELD WHEN APPLIED AT DIFFERENT TIMINGS, SMREC, 2008

		—Greening[1]—		Yield	100-seed
Treatment (Rate)	Timing	17 Sep	26 Sep	bu/A	grams
Headline (9 oz/A)	R2 only	8.8	9.3	26.6	13.2
Headline (9 oz/A)	R2 + R5	7.5	7.8	26.7	14.0
Quadris (9 oz/A)	R2 only	9.0	9.3	24.6	13.3
Quadris (9 oz/A)	R2 + R5	8.5	8.8	28.4	13.3
Stratego (10 oz/A)	R2	9.3	9.3	25.7	12.8
Stratego (10 oz/A)	R2 + R5	8.5	8.8	27.5	13.0
Untreated check		9.5	9.8	25.6	12.7
LSD (0.10)		***0.9***	***0.8***	***2.4***	***0.6***

[1] Greening rating: 1 = lush green, 10 = brown and dry.

Strobiluron Fungicide Greening Effects on Soybeans at Belle Mina, 2008

D. P. Delaney, E. J. Sikora, B. E. Norris, and D. Harkins

Many producers have noted retention of green leaves after pod maturity where strobiluron fungicides have been applied, leading to seed deterioration, shattering losses, and greatly reduced harvest speeds with increased fuel and machinery costs and foreign material dockage. This problem has been linked to plant physiological changes and secondary disease control accompanying the use of strobiluron fungicides.

This trial at the Tennessee Valley Research and Extension Center (TVREC) investigated the use of three strobiluron-containing fungicides (see table) applied at two growth stages. DeltaKing 5068 RR soybean seed was planted on May 7 in a Decatur silt loam, and managed according to Alabama Cooperative Extension System recommendations. Plots were four 30-inch rows, 30 feet long, arranged in a randomized complete block design with four replications. Three fungicides were applied in a factorial design at either the R2 growth stage (full bloom) on July 3, or the R2 + R5 (beginning seed fill) growth stage on July 25. Fungicides were applied in 20 gallons per acre of water using a backpack CO_2 sprayer equipped with TeeJet 8002VS flat fan nozzles on 19-inch centers at 60 psi. Per disease resistance management guidelines, a triazole fungicide (Folicur at a rate of 3 fluid ounces per acre) was added to the second strobiluron spray of Headline and Quadris. (Stratego is a premix containing a strobiluron and a triazole.)

The trial was rated at pod maturity, with ratings at approximately 60 percent brown pods on October 2. The center two rows of each plot were harvested with a plot combine on October 22 and weighed, with samples dried and analyzed for seed weights (see table).

Retention of green leaves was increased by all fungicide applications, with R2 +R5 greater than R2 alone with no interactions between treatments and timing.

Yields were not affected by strobiluron fungicide applications, while 100-seed weights were slightly increased by both Headline applications as well as Quadris at R2 only.

Strobiluron Effect on Soybean Yield When Applied at Different Timings, TVREC, 2008

Treatment (Rate)	Timing	Greening[1] 3 Oct	Yield *bu/A*	100-seed *grams*
Headline (9 oz/A)	R2 only	5.8	51.4	16.7
Headline (9 oz/A)	R2 + R5	5.5	48.7	16.7
Quadris (9 oz/A)	R2 only	6.3	54.1	16.5
Quadris (9 oz/A)	R2 + R5	6.0	56.9	16.2
Stratego (10 oz/A)	R2	6.5	54.6	15.9
Stratego (10 oz/A)	R2 + R5	5.8	54.1	16.2
Untreated check		7.8	48.6	15.6
LSD (0.10)		***0.7***	***85***	***0.8***

[1] Greening rating: 1 = lush green, 10 = brown and dry.

STROBILURON FUNGICIDE GREENING EFFECTS ON SOYBEANS AT SHORTER, 2008

D. P. Delaney, E. J. Sikora, and B. Durbin

Many producers have noted retention of green leaves after pod maturity where strobiluron fungicides have been applied, leading to seed deterioration, shattering losses, and greatly reduced harvest speeds with increased fuel and machinery costs and foreign material dockage. This problem has been linked to plant physiological changes and secondary disease control accompanying the use of strobiluron fungicides.

This trial the E.V. Smith Field Crops Unit (EVS) investigated the use of three strobiluron-containing fungicides (see table) applied at two growth stages. Pioneer 94M80 (RR) soybean seed was planted on April 24 at 10 seed per foot in a Compass loamy sand, and managed according to Alabama Cooperative Extension System recommendations. Plots were four 36-inch rows, 25 feet long, arranged in a randomized complete block design with four replications. Three fungicides were applied in a factorial design at either the R2 growth stage (full bloom) on June 23, or the R2 + R5 (beginning seed fill) growth stage on July 15. Fungicides were applied in 18 gallons per acre of water using a Lee Spider high clearance sprayer with Turbodrop TDXL 10002 flat fan nozzles on 20-inch centers at 60 psi. Per disease resistance management guidelines, a triazole fungicide (Folicur at a rate of 3 fluid ounces per acre) was added to the second strobiluron spray of Headline and Quadris. (Stratego is a premix containing a strobiluron and a triazole.)

The trial was rated at pod maturity, with ratings at approximately 60 percent brown pods and again just prior to harvest. The center two rows were harvested with a plot combine, weighed before and after drying, and samples taken for seed weights (see table).

Retention of green leaves was increased at the first rating by all fungicide applications compared to the check, with Quadris greater than Stratego (6.9 versus 5.4) and R2 + R5 greater than R2 alone (6.8 versus 5.8) with no interactions between treatments and timing. At the second rating, greening was again increased by fungicides: Headline and Quadris had greater greening than Stratego (5.6 and 5.4 versus 4.0, respectively), with R2 +R5 greater than R2 alone (5.3 versus 4.7) with no interactions.

Yields and 100-seed weights were not affected by strobiluron fungicide applications.

STROBILURON EFFECT ON SOYBEAN YIELD WHEN APPLIED AT DIFFERENT TIMINGS, EVS, 2008

		–Greening[1]–		Yield	100-seed
Treatment (Rate)	Timing	3 Sep	8 Sep	*bu/A*	grams
Headline (9 oz/A)	R2 only	6.3	5.5	49.0	15.6
Headline (9 oz/A)	R2 + R5	7.0	5.8	48.0	15.8
Quadris (9 oz/A)	R2 only	6.3	4.8	49.4	15.5
Quadris (9 oz/A)	R2 + R5	7.5	6.0	50.8	16.0
Stratego (10 oz/A)	R2	5.0	3.8	53.0	15.4
Stratego (10 oz/A)	R2 + R5	5.8	4.3	49.5	15.8
Untreated check		3.3	2.5	51.2	15.3
LSD (0.10)		***1.2***	***1.0***	***4.1***	***0.7***

[1] Greening rating: 10 = lush green, 1 = brown and dry.

WEED MANAGEMENT

Late Glyphosate Applications on Soybeans at Belle Mina, 2008

D. P. Delaney, E. J. Sikora, B. E. Norris, and D. Harkins

Many soybean producers in Alabama use a glyphosate-based weed control system using Roundup Ready soybeans, with many relying entirely on postemergence applications for weed control. Although there is the potential for yield loss with late applications (postbloom), many producers are faced with escaped weeds late in the season, and apply glyphosate over-the-top later than recommended. The potential for yield loss with late applications under Alabama conditions has not been clearly documented. The objective of this trial was to evaluate the use of late applications of glyphosate on soybean yield.

This trial at the Tennessee Valley Research and Extension Center investigated the use of two rates of glyphosate (one and two times the normal rates) at two postbloom growth stages. DeltaKing 5068 RR was planted on May 7 in a Decatur silt loam, and managed according to Alabama Cooperative Extension System recommendations. Plots were four 30-inch rows, 30 feet long, arranged in a randomized complete block design with four replications. Roundup WeatherMax (5.5 pounds per gallon glyphosate) applications were applied in a factorial design at either the R3 or R5 growth stages at 22 or 44 fluid ounces per acre. R4 growth stage (full-size pod stage) applications were made on July 25, while R5 (beginning seed fill) growth stage applications were made on July 31.

Herbicides were applied in 20 gallons per acre of water using a backpack CO_2 sprayer equipped with TeeJet 8002VS flat fan nozzles on 19-inch centers at 55 psi. The center two rows were harvested with a plot combine on October 22, weighed, and sampled for seed weights.

Plant growth and yields were limited by dry weather, with no significant differences between treatments or factors for yield or 100-seed weight (see table).

Soybean Yields and 100-seed Weights After Glyphosate Application at the R3 and R5 Growth Stages, TVREC, 2008

Treatment	Rate	Stage	Yield *bu/A*	100-seed grams
Untreated check			49.9	14.2
Roundup WeatherMax	22 oz/A	R4	49.8	14.9
Roundup WeatherMax	22 oz/A	R5	48.1	14.6
Roundup WeatherMax	44 oz/A	R4	50.4	15.1
Roundup WeatherMax	44 oz/A	R5	49.5	14.8
LSD (P=.10)			***NS***	***NS***

Late Glyphosate Applications on Soybeans at Crossville, 2008

D. P. Delaney, E. J. Sikora, T. Dawkins, and J. Ducar

Many soybean producers in Alabama use a glyphosate-based weed control system using Roundup Ready soybeans, with many relying entirely on postemergence applications for weed control. Although there is the potential for yield loss with late applications (postbloom), many producers are faced with escaped weeds late in the season, and apply glyphosate over-the-top later than recommended. The potential for yield loss with late applications under Alabama conditions has not been clearly documented. The objective of this trial was to evaluate the use of late applications of glyphosate on soybean yield.

This trial at the Sand Mountain Research and Extension Center investigated the use of two rates of glyphosate (one time and two times normal rates) at two postbloom growth stages. Dyna-Gro 3443nRR was planted on May 2 using strip tillage in a Wynnville sandy loam, and managed according to Alabama Cooperative Extension System recommendations. Plots were four 36-inch rows, 25 feet long, arranged in a randomized complete block design with four replications. Roundup WeatherMax (5.5 pounds per gallon glyphosate) applications were applied in a factorial design at either the R3 or R5 growth stages at 22 or 44 fluid ounces per acre. R3 growth stage (3/16-inch pod stage) applications were made on July 17, while R5 (beginning seed fill) growth stage applications were made on July 29.

Herbicides were applied in 20 gallons per acre of water using a backpack CO_2 sprayer equipped with TeeJet 8002VS flat fan nozzles on 19-inch centers at 55 psi. The center two rows were harvested on September 30 with a plot combine, weighed, and sampled for seed weights.

Plant growth and yields were limited by extremely dry weather, with no significant differences between treatments or factors for yield or 100-seed weight (see table).

Soybean Yields and 100-seed Weights After Glyphosate Application at the R3 and R5 Growth Stages, SMREC, 2008

Treatment	Rate	Stage	Yield *bu/A*	100-seed grams
Untreated check			18.7	13.1
Roundup WeatherMax	22 oz/A	R3	18.6	12.8
Roundup WeatherMax	22 oz/A	R5	16.9	12.9
Roundup WeatherMax	44 oz/A	R3	17.8	13.0
Roundup WeatherMax	44 oz/A	R5	17.5	13.0
LSD (P=.10)			***NS***	***NS***

Evaluation of Foliar Fungicides for Soybean Rust Management and Yield in South Alabama, 2008

K. S. Lawrence, E. J. Sikora, D. P. Delaney, G. W. Lawrence, J. Jones, and M. Pegues

A soybean fungicide trial was planted on June 9 at the Auburn University Gulf Coast Research and Education Center at Fairhope, Alabama. The variety selected was DP 7870 RR and the soil type was a Malbis fine sandy loam. Plots were four rows, 25 feet long, with a row spacing of 38 inches. Plots were arranged in a randomized complete-block design with four replications. The fungicide treatments were applied as a foliar spray at the R3 and R5 plant growth stages. Fungicides were applied in 18 gallons per acre of water using a Lee Spider high clearance sprayer with Turbodrop TDXL 10002 flat fan nozzles on 20-inch centers at 60 psi. Soybean foliar diseases were evaluated by rating severity of each disease in the plot at the R6 to R7 growth stage. All plots were maintained throughout the season with standard herbicide, insecticide, and fertility production practices as recommended by the Alabama Cooperative Extension System. Plots were harvested on November 19. Data were statistically analyzed using the general linear models procedure (PROC GLM) in SAS, and means were compared with Fisher's protected least significant difference test ($P \leq 0.10$).

Weather conditions were favorable for moderate incidence of foliar disease on soybean with 22.3, 7.6, 13.5, 33.1, and 17.9 inches of rainfall in May through September, respectively. Soybean rust leaf symptoms were first observed in the lower leaf canopy of the untreated control plots in mid-September at the R6 full seed growth stage. Rust severity was greater in the untreated control as compared to all of the fungicide treatments ($P \leq 0.10$). Two weeks later on September 24, soybean plants had matured to the R7 growth stage. Rust severity had increased in most treatments but continued to be significantly more severe ($P \leq 0.10$) in the untreated control as compared to the fungicide treatments. Punch 3.3 EC and Headline 3.3 ED produced the lowest severity ratings numerically. Picoxystrobin rust incidence was not affected by the increased rate from 6 to 12 fluid ounces per acre. The reduction of rust with the fungicide treatments also increased soybean yield. Headline 3.3 ED (9) Punch 3.3 EC + Headline 3.3 ED (7), and LEM17 SC 9.6 fluid ounces per acre (1) produced greater yields ($P \leq 0.10$) than the untreated control. These treatments increased yields by an average of 2.9 bushels per acre. However, all fungicide treatments numerically increased yield over the untreated control. Rust developed later in the season this year, which is likely the reason the yields were not as severely reduced as compared to soybean yields in 2007.

Foliar Fungicide Effect on Soybean Rust Severity and Yield

	Treatment	Rate/A	Growth stage	—Soybean rust severity[1]— 10 Sep	24 Sep	Yield *bu/A*
1	LEM17 SC	9.6 fl oz	R3 + R5	2.6 b	3.4 b	45.8 a
2	LEM17 SC	16.8 fl oz	R3 + R5	2.4 b	3.0 b	44.9 ab
3	LEM17 SC	9.6 fl oz +				
	Punch 3.3 EC	3 fl oz	R3 + R5	2.6 b	2.6 b	43.7 ab
4	Picoxystrobin	6 fl oz	R3 + R5	2.4 b	2.6 b	43.7 ab
5	Picoxystrobin	8 fl oz	R3 + R5	2.4 b	2.8 b	42.9 b
6	Picoxystrobin	12 fl oz	R3 + R5	2.6 b	2.6 b	43.8 ab
7	Punch 3.3 EC	3 fl oz +				
	Headline 2.09 EC	4.5 fl oz	R3 + R5	2.4 b	2.6 b	45.7 a
8	Punch 3.3 EC	3 fl oz		2.4 b	2.0 b	44.3 ab
9	Headline 3.3 EC	4.5 fl oz	R3 + R5	2.0 b	2.0 b	45.4 a
10	Untreated control			4.0 a	5.0 a	42.7 b
LSD P ≤ 0.10				***0.5***	***0.9***	***2.52***

[1] Disease severity: 1= no rust; 2 < 2.5%, 3 = 2.5 - 5%, 4 = 5 - 10%, 5 = 10 - 15%, 6 = 15- 25%, 7 = 25 - 35%, 8 = 35 - 67%, 9 = 67- 100%.

Means within columns followed by different letters are significantly different according to Fisher's LSD ($P \leq 0.10$).

SOYBEAN RUST MANAGEMENT AND YIELD AFFECTS IN SOUTH ALABAMA

K. S. Lawrence, E. J. Sikora, D. P. Delaney, J. Jones, and M. Pegues

A soybean fungicide trial was planted with DP 7870 RR soybean seed on June 9 at the Auburn University Gulf Coast Research and Extension Center at Fairhope, Alabama. The soil type was a Malbis fine sandy loam. Plots were four rows, 25 feet long, with a row spacing of 38 inches. Plots were arranged in a randomized complete-block design with four replications. The fungicide treatments were applied as a foliar spray at the R3 (August 19) plant growth stage. Fungicides were applied in 18 gallons per acre of water using a Lee Spider high clearance sprayer with Turbodrop TDXL 10002 flat fan nozzles on 20-inch centers at 60 psi. Soybean foliar diseases were evaluated by rating disease severity at the R6 to R7 growth stage. All plots were maintained throughout the season with standard herbicide, insecticide, and fertility production practices as recommended by the Alabama Cooperative Extension System. Plots were harvested on November 19. Data were statistically analyzed using the general linear models procedure (PROC GLM) in SAS, and means were compared with Fisher's protected least significant difference test ($P \leq 0.10$).

Weather conditions were favorable for moderate incidence of foliar disease on soybean with 9.3, 3.3, 5.4, 14.1 7.7, and 4.1 inches of rainfall in May through September, respectively. Soybean rust leaf symptoms were first observed in mid September on the lower leaf canopy of the untreated control plots. Rust severity on October 1 was greater in the untreated control (1), Tebuzol (2), and KFD-21-03 (4) as compared to all of the other fungicide treatments ($P \leq 0.10$). By October 9 rust severity in the control was up to 25 to 35 percent which was higher than all the fungicide treatments. Topguard (7) and Domark applied at 4 and 5 fluid ounces per acre (8 and 9) further suppressed rust severity to less than 2.5 percent which was less than ($P \leq 0.10$) all other fungicide treatments. The Topguard and Domark treatments continued to suppress rust through the last rating on October 16 as compared to Tebuzol (2), Topsin M (3), KFD-21-03 (4), Topsin M + Tebuzol (5) and Headline (6). Defoliation was also reduced in the Topguard (7) Domark (8 and 9) and the Topsin M + Tebuzol combination (5) as compared to all other treatments and the control. Yields were affected by prolonged wet soil conditions during pod-fill, as well as green stems interfering with timely and efficient harvesting. All fungicide treatments produced similar yields with an average increase of 2.7 bushels per acre over the control.

EFFECT OF FOLIAR FUNGICIDES ON SOYBEAN RUST SEVERITY, DEFOLIATION, AND YIELD

				Rust severity[1]				Defoliation *(%)*	Yield
	Treatment	Rate/A	Timing	16 Sep	1 Oct	9 Oct	16 Oct	16 Oct	*bu/A*
1	Untreated check			0.10 a	5.4 a	7.28 a	8.0 a	90.3 a	31.1 a
2	Tebuzol	4 fl oz	R3	0.00 b	3.4 a	4.80 b	7.5 ab	82.8 ab	33.4 a
3	Topsin M	16 fl oz	R3	0.00 b	1.4 b	4.45 b	7.4 ab	61.8 c	34.7 a
4	KFD-21-03	20 fl oz	R3	0.00 b	4.4 a	4.39 b	6.8 ab	73.0 abc	32.5 a
5	Topsin M	16 fl oz	R3	0.00 b	0.4 b	2.80 b	6.4 b	35.0 d	34.9 a
	Tebuzol	4 fl oz	R3						
6	Headline	6 fl oz	R3	0.03 b	0.4 b	3.72 b	7.1 ab	63.9 bc	33.5 a
7	Topguard	7 fl oz	R3	0.00 b	0.0 b	0.13 c	0.7 d	19.3 d	34.6 a
8	Domark	4 fl oz	R3	0.00 b	0.1 b	0.48 c	2.0 c	28.0 d	34.4 a
9	Domark	5 fl oz	R3	0.00 b	0.0 b	0.00 c	1.3 cd	28.5 d	32.7 a
	LSD ≤ 0.10			***0.0***	***2.0***	***2.1***	***1.2***	***19.0***	***4.8***
	CV			***234.7***	***76.5***	***54.7***	***18.1***	***29.0***	***11.5***

[1] Rust severity: 1= no rust; 2 < 2.5%, 3 = 2.5 - 5%, 4 = 5 - 10%, 5 = 10 - 15%, 6 = 15- 25%, 7 = 25 - 35%, 8 = 35 - 67%, 9 = 67- 100%.
Means within columns followed by different letters are significantly different according to Fisher's LSD ($P \leq 0.10$).

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Soybean Rust Fungicide Disease Management and Yield Affects in Alabama

K. S. Lawrence, E. J. Sikora, D. P. Delaney, J. Jones, and M. Pegues

A soybean fungicide trial was planted with DP 7870 RR soybeans on June 9 at the Auburn University Gulf Coast Research and Extension Center at Fairhope, Alabama. The variety selected was DP 7870 RR and the soil type was a Malbis fine sandy loam. Plots were four rows, 25 feet long, with a row spacing of 38 inches. Plots were arranged in a randomized complete-block design with four replications.The fungicide treatments were applied as a foliar spray on August 19 at R3 and again 10 days later. Fungicides were applied in 18 gallons per acre of water using a Lee Spider high clearance sprayer with Turbodrop TDXL 10002 flat fan nozzles on 20-inch centers at 60 psi. Soybean foliar diseases were evaluated by rating disease severity at the R6 to R7 growth stage. All plots were maintained throughout the season with standard herbicide, insecticide, and fertility production practices as recommended by the Alabama Cooperative Extension System. Plots were harvested on November 19. Data were statistically analyzed using the general linear models procedure (PROC GLM) in SAS, and means were compared with Fisher's protected least significant difference test ($P \leq 0.10$).

Weather conditions were favorable for moderate incidence of foliar disease on soybean with 9.3, 3.3, 5.4, 14.1, 7.7, and 4.1 inches of rainfall in May through September, respectively. Soybean rust leaf symptoms were first observed in mid September on the lower leaf canopy of the untreated control plots and rating were begun on October 1 at the R7 full seed growth stage. Rust severity was greater in the untreated control (13), Quadris (2), and Alto (6) as compared to all of the other fungicide treatments ($P \leq 0.10$). By October 9, Topguard applied at R3 or R5 and Domark applied at R5 suppressed rust severity more than ($P \leq 0.10$) all other fungicide treatments. The Topguard treatment applied at R5 continued to suppress rust severity through October 16. Defoliation ranged from 36.8 to 97.5 percent with the eight fungicide treatments reducing leaf senescence ($P \leq 0.10$) as compared to the control. Yields were affected by prolonged wet soil conditions during pod-fill, as well as green stems interfering with timely and efficient harvesting. Six fungicide treatments increased yields over the untreated control. Topguard (11), Domark (12), and Stratego (14) all applied at R3 +10 and Domark (3), Folicur (7), and Stratego + Proline (8) applied at R3 produced greater yields ($P \leq 0.10$) than the control. All fungicide treatment yields averaged together indicate the use of a fungicide increased yields by 4.7 bushels per acre over the untreated control.

Effect of Foliar Fungicides on Soybean Rust Severity, Defoliation, and Yield

	Treatment	Rate/A	Growth stage	——Soybean rust severity[1]—— 1 Oct	9 Oct	16 Oct	Defoliation *(%)* 16 Oct	Yield *bu/A*
1	Headline 3.3 EC	6.0 fl oz		3.4 b	5.9 bc	7.5 a	77.5 a-d	35.5 ab
2	Quadris	6 fl oz	R3	6.4 a	7.6 a	7.3 a	92.3 ab	29.0 bc
3	Domark	5 fl oz	R3	0.1 c	1.8 d	4.9 cd	69.0 b-e	39.7 a
4	Topguard	7.0 fl oz	R3	0.0 c	0.1 e	5.0 cd	36.8 f	36.5 ab
5	Punch + Picoxystrobin	4 fl oz + 6 fl oz	R3	1.6 c	4.7 c	7.1 ab	58.5 c-f	33.7 bc
6	Alto 100	4.0 fl oz	R3	4.8 b	6.8 ab	6.6 abc	79.0 abc	31.1 bc
7	Folicur	4.0 fl oz	R3	1.1 c	5.1 c	6.3 abc	79.0 abc	39.5 a
8	Stratego + Proline	10 fl oz + 1 fl oz	R3	1.1 c	4.7 c	5.4 de	74.1 a-e	40.2 a
9	Quadris + Alto 100	6 fl oz + 4.0 fl oz	R3 + R5	0.7 c	2.0 d	4.0 de	37.5 f	33.1 bc
10	Headline 3.3 EC + Folicur	4.5 fl oz + 4 fl oz	R3 + R3 +10	0.4 c	2.3 d	5.0 cd	53.0 def	35.4 ab
11	Topguard	7.0 fl oz	R3 +10	0.2 c	0.1 e	2.7 e	51.5 ef	39.5 a
12	Domark	5 fl oz	R3 +10	0.4 c	0.2 e	4.5 d	40.8 f	39.6 a
13	Untreated control			7.5 a	7.9 a	7.1 ab	97.5 a	31.5 bc
14	Stratego	10 fl oz	R3+10	1.2 c	3.1 d	5.3 cd	70.3 b-e	37.9 a
	LSD (P ≤ 0.10)			***1.5***	***1.5***	***1.6***	***51.5***	***6.3***
	CV			***61.5***	***33.3***	***23.4***	***40.8***	***14.8***

[1] Rust severity: 1= no rust; 2 < 2.5%, 3 = 2.5 - 5%, 4 = 5 - 10%, 5 = 10 - 15%, 6 = 15- 25%, 7 = 25 - 35%, 8 = 35 - 67%, 9 = 67- 100%.
Means within columns followed by different letters are significantly different according to Fisher's LSD ($P \leq 0.10$)

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EVALUATION OF AVICTA® SEED TREATMENTS FOR RENIFORM NEMATODE MANAGEMENT IN SOYBEAN IN SOUTH ALABAMA, 2008

K. S. Lawrence, S. R. Moore, G. W. Lawrence, and J. R. Akridge

Experimental seed treatments were evaluated for the management of reniform nematodes in a naturally infested producer's field near Huxford, Alabama. The field has a history of reniform nematode infestation, and the soil type is a Ruston very fine sandy loam (59 percent sand, 33 percent silt, 8 percent clay). The seed treatments were applied to the DP 7870 RR seed from Syngenta. Plots were four rows, 25 feet long, with 36- inch row spacing and were arranged in a randomized complete block design with six replications. All plots were maintained throughout the season with standard herbicide, insecticide, and fertility production practices as recommended by the Alabama Cooperative Extension System. Population densities of the reniform nematode were determined at 63 days after planting (DAP). Ten soil cores, 1 inch diameter and 6 inches deep, were collected from the two rows of each plot in a systematic sampling pattern. Nematodes were extracted using the gravity sieving and sucrose centrifugation technique. Plots were harvested on October 30. Data were statistically analyzed by PROC GLM and means compared using Fisher's protected least significant difference test ($P \leq 0.10$). Monthly average maximum temperatures from planting in May through harvest in October were 87.4, 93.3, 92.8, 90.4, 88.0, and 83.9 degrees F with average minimum temperatures of 64.8, 69.6, 71.5, 71.4, 67.3, and 59.4 degrees F, respectively. Rainfall accumulation for each month was 2.8, 7.3, 5.0, 9.5, 1.7 inches with a total of 27.9 inches.

The drought continued in 2008; thus, reniform nematode pressure was moderate and secondary to the lack of rainfall during bloom. Reniform nematode numbers at planting averaged 56 vermiform life stages per 150 cm^3 of soil at planting. Plant stand was similar between all experimental seed treatments and the control (data not shown). Reniform numbers varied between the nematicide treatments; however, the control treatment of the fungicide with an insecticide—Apron Maxx RTA + Moly 0.166 + Cruiser (1)—supported lower populations. At mid-season on July 9, all seed treatments with Avicta supported fewer reniform ($P \leq 0.10$) than the treatments with the experimental compounds A15945 and ASF271B. Soybean yields varied by 5.8 bushels per acre at harvest with an average of 44.2 bushels per acre produced over all nematicide treatments. The A15945 (3) treatment increased yields by 3.4 bushels per acre ($P \leq 0.10$) as compared to the control.

EFFECT OF SEED TREATMENTS ON SOYBEAN YIELD AND NEMATODE NUMBERS

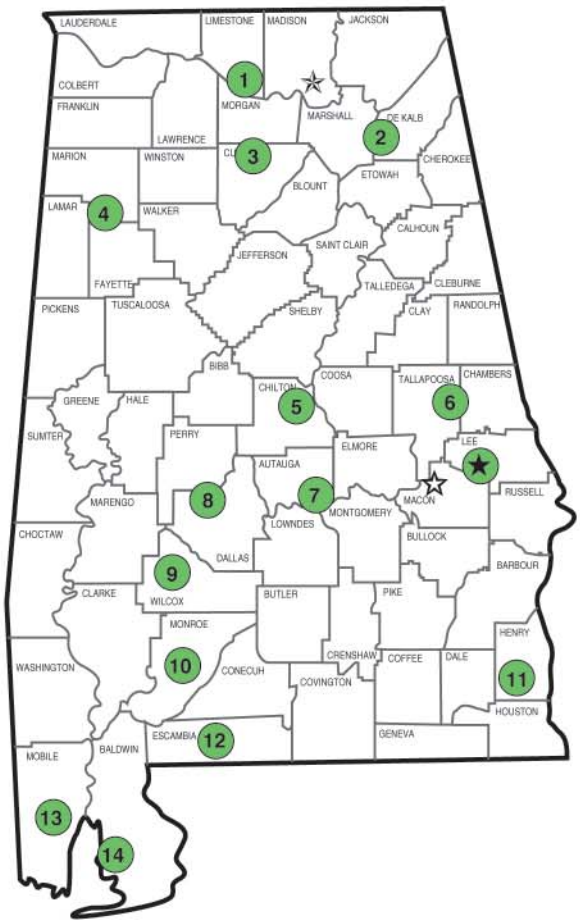
	Treatment	Rate	*Rotylenchulus reniformis*/ 150cm^3 soil 9 Jul	Yield *bu/A* 30 Oct
1	Apron Maxx RTA+Moly 0.166 ES	6.25 g ai/100 kg	923 c	43.9 bc
	Cruiser 5 FS	50 g ai/100 kg		
2	Apron Maxx RTA+Moly 0.166 ES	6.25 g ai/100 kg	1082 c	46.7 ab
	Cruiser 5 FS	50 g ai/100 kg		
	Avicta 4.17 FS	0.15 g ai/100 kg		
3	Apron Maxx RTA+Moly 0.166 ES	6.25 g ai/100 kg	3051 b	47.3 a
	Cruiser 5 FS	50 g ai/100 kg		
	A15945	0.6 g ai/100 kg		
4	Apron Maxx RTA+Moly 0.166 ES	6.25 g ai/100 kg	3092 b	43.2 c
	Cruiser 5 FS	50 g ai/100 kg		
	ASF271B	20 g ai/100 kg		
5	Apron Maxx RTA+Moly 0.166 ES	6.25 g ai/100 kg	5021 a	43.8 b
	Cruiser 5 FS	50 g ai/100 kg		
	Avicta 4.17 FS	0.15 g ai/100 kg		
	A15945	0.6 g ai/100 kg		
6	Apron Maxx RTA+Moly 0.166 ES	6.25 g ai/100 kg	2408 bc	41.5 c
	Cruiser 5 FS	50 g ai/100 kg		
	Avicta 4.17 FS	0.15 g ai/100 kg		
	ASF271B	20 g ai/100 kg		
7	Apron Maxx RTA+Moly 0.166 ES	6.25 g ai/100 kg	914 c	42.9 c
	Cruiser 5 FS	50 g ai/100 kg		
	Avicta 4.17 FS	0.15 g ai/100 kg		
	A15945	0.6 g ai/100 kg		
	ASF271B	20 g ai/100 kg		
	LSD (P ≤ 0.10)		***1243***	***2.3***

Means followed by same letter do not differ significantly according to Fishers least significance test ($P \leq 0.10$).

Contributors Index

Alabama's Agricultural Experiment Station
AUBURN UNIVERSITY

With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, livestock, forestry, and horticultural producers in each region in Alabama. Every citizen of the state has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



Research Unit Identification

★ Main Agricultural Experiment Station, Auburn.
☆ Alabama A&M University.
☆ E. V. Smith Research Center, Shorter.

1. Tennessee Valley Research and Extension Center, Belle Mina.
2. Sand Mountain Research and Extension Center, Crossville.
3. North Alabama Horticulture Research Center, Cullman.
4. Upper Coastal Plain Agricultural Research Center, Winfield.
5. Chilton Research and Extension Center, Clanton.
6. Piedmont Substation, Camp Hill.
7. Prattville Agricultural Research Unit, Prattville.
8. Black Belt Research and Extension Center, Marion Junction.
9. Lower Coastal Plain Substation, Camden.
10. Monroeville Agricultural Research Unit, Monroeville.
11. Wiregrass Research and Extension Center, Headland.
12. Brewton Agricultural Research Unit, Brewton.
13. Ornamental Horticulture Research Center, Spring Hill.
14. Gulf Coast Research and Extension Center, Fairhope.