

## Soybean Project Report, Funded 2007

**TITLE:** Soybean Production Tools for Alabama

### INVESTIGATORS:

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### OBJECTIVES AND RESULTS:

1. To evaluate soybean cultivars suitable for Alabama growing conditions under producer practices and growing conditions. While Auburn University/ AAES conducts soybean cultivar trials at several Experiment Stations and Fields, evaluation of selected cultivars in large blocks provides needed information under local soil and environmental conditions.

Several on-farm variety trials were planned for locations across the state. However, due to drought conditions, only the trials in Pickens, Baldwin, and Houston Counties were harvested.

#### Pickens County Conventional MG V and late IV Varieties, Warren Griffith, REA:

This trial was planted at the Dee River Ranch near Aliceville on 06 April, with 12 \* 30-inch rows of each cultivar the length of the field (approx. 1400 ft.). The cultivar "Holladay" was used as a check variety, in alternating 12-row strips. The field was harvested on 18 September using the combine yield monitor. Extreme drought severely affected plant heights, but soybean yields were better than expected for the weather conditions.

Table 1. Pickens County Conventional MG V and Late IV Soybean Varieties, 2007

Variety	Bu/A @ 13.0%	Ht. (in)*
DPL 5110 S	36.7	24
Holladay	33.5	20
Hutcheson	35.5	20
Holladay	40.4	20
Ozark	31.1	18
Holladay	31.9	20
UA 4805	40.6	15
Holladay	38.0	20
USG 5601T	37.9	12
Holladay	39.4	20
Anand	34.6	12
Holladay	38.1	20
* Height is approximate, varied within strips		

**Houston County Irrigated MG VI RR Soybean Varieties, Brandon Dillard, REA:**

This trial was planted on 03 May on the Jerry Best farm near Pansey on a deep sandy soil following peanuts. Row pattern was 4 pairs of twin rows on 36-inch main centers. Each variety was planted in two field length Complete Blocks (2376 feet total length). Southern Stem Blight / White Mold (*Sclerotinia rolfisii*) severely damaged the field in late summer, with much of the field killed or stunted. The trial was desiccated on 02 October. Both reps were harvested together on 30 October, using a weighing grain buggy.

Table 2. Houston County Irrigated MG VI RR Soybean Varieties, 2007

<b>Company</b>	<b>Variety</b>	<b>Bu/A @ 13.0%</b>
Asgrow	6301 RR	37.5
DeKalb	DK 64-51 RR	33.6
DeltaPine	5915 RR	28.9
DeltaPine	6568 RR	25.9
DeltaPine	6880 RR	23.1
Syngenta	NK S65-L1 RR	22.9
Pioneer	96M60 (RR)	21.8
Syngenta	NK S68-D4 RR	19.6
Dyna-Gro	34A66 RR	19.5
Asgrow	6702 RR	18.3

**Baldwin County MG V RR Soybean Varieties, Richard Petcher, REA:**

This trial was planted on 26 June on the Bob, William and Ben Griffiths farm near Foley. Each cultivar were planted in a field length block of 8 rows \* 36-inches, of 425 ft or greater. The field was subsoiled prior to planting. Growing conditions were generally good, with plots sprayed as needed for Asian Soybean Rust, which was found in the area. Plots were harvested on 08 November, using a weighing grain buggy.

Table 3. Baldwin County MG V RR Soybean Varieties, 2007

<b>Company</b>	<b>Variety</b>	<b>Bu/A @ 13.0%</b>
DeltaKing	5083	36.6
Terral	TV 55R15	36.5
DeltaPine	5634	36.5
Dyna-Gro	DG 33X55	35.2
Progeny	5650	35.2
Dyna-Gro	36N57	33.5
Terral	TV 59R16	32.8
DeltaPine	DP 5808	31.0
DeltaKing	5567 RR	30.7
DeltaPine	DP 5915	30.4
Marks	MRX 50CTA	30.1
DeltaPine	DP 5914	28.7
DeltaPine	DP 5414	28.7
Progeny	5706	26.5

- To evaluate the use of various desiccants and combinations and rates, particularly with early maturing and strobiluron fungicide-treated soybeans. The increasing use of these practices in Alabama has led to many fields with harvest ready pods, but green leaves, stems and sometimes weeds which slow harvest and can affect grain quality. Application of desiccants may speed harvest and lower harvest costs and discounts, but little information is available to recommend the most effective and economical products and mixtures.

Three locations were selected for these trials – Gulf Coast REC, EVS Field Crops, and Sand Mountain REC. All trials were sprayed two to three times during the growing season with a strobiluron or strobiluron/triazole tank-mix to encourage the greening effect noted in 2005. At Gulf Coast, leaf drop was complete at pod maturity, so this location was dropped. Trials at EVS and Sand Mountain were sprayed with 10 combinations of labeled desiccants at pod maturity, then rated for soybean and weed desiccation.

All treatments increased leaf and grass desiccation at 7 days after treatment (DAT) at EVS and SMS, and stem desiccation at EVS. However, only treatments with paraquat @ 0.5 lb a.i./A greater, or sodium chlorate @ 3 lb a.i./A or greater, increased stem desiccation at SMS. Plots were harvested approximately two weeks after application, with moisture content, trash, seed weights, and yield measured.

There was no significant difference in harvest moisture, trash content or 100-seed weights or grain yield between treatments at either location. Very good harvest conditions likely contributed to the lack of differences for grain yield and quality.

- Experiments were conducted at Tennessee Valley (TVS) and Sand Mountain (SMS) RECs to determine the effects of late applications of glyphosate on soybean yields. Current guidelines call for ceasing glyphosate applications at the R3 or beginning pod stage, until maturity, but producers often ask about applications to control late maturing weeds. Plots were sprayed with Roundup WeatherMax (glyphosate) applied at 1X and 2X rates (22 and 44 oz/A) at the R5 = beginning seed stage. Application of both the 1X and 2X rates of glyphosate at the R5 stage decreased yield and 100-seed weights at SMS (Table 4), but not at TVS.

Table 4. Soybean Yields and 100-seed Weights After Glyphosate Application at the R5 growth Stage at Tennessee Valley REC (TVS) and Sand Mountain REC (SMS) in 2007

			SMS		TVS	
			YIELD	100 seed	YIELD	100 seed
<b>Treatment</b>	<b>Rate</b>		<b>BU/A</b>	<b>g</b>	<b>BU/A</b>	<b>g</b>
Untreated Check			39.7	10.46	21.2	9.71
Roundup Weather Max	22	oz/a	35.8	9.59	23.5	9.23
Roundup Weather Max	44	oz/a	35.6	9.78	21.3	9.20
<i>LSD (P=.10)</i>			2.3	0.51	NS	NS