

**2016 SOYBEAN VARIETY TRIAL REPORT**  
**ROUNDUP READY AND CONVENTIONAL SOYBEAN VARIETY TRIALS**

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**ABSTRACT:** Ninety-five Roundup Ready and thirty-six Conventional/Liberty-Link soybean varieties were evaluated on a Leeper silty clay loam soil at Verona, MS in 2016. The Roundup Ready varieties were evaluated in separate maturity group (MG) studies (MG early IV, MG late IV, MG early V, and MG late V). The Conventional/Liberty-Link varieties were evaluated as MG IV and MG V studies. Rainfall was 88%, 16%, 59%, 21%, 105%, and 3% of normal for April, May, June, July, August, and September, respectively. Only slight lodging and little (less than 2%) or no shattering in most studies was observed at harvest. Seed shatter greater than 2% are noted in all tables. The tables also include 2012 - 2016 yield results where applicable. The overall mean yield for Roundup Ready MG early IV, MG late IV, MG early V, and MG late V studies were 65.0, 63.6, 63.1, and 64.4 bu/ac, respectively. The overall mean yield for the Conventional/Liberty-Link Variety MG IV and MG V Trials were 52.3 and 63.4 bu/ac, respectively. The greatest conventional/Liberty-Link MG IV and MG V variety yield was 62.1 and 71.6 bu/ac, respectively. The greatest yield for Roundup Ready varieties across all maturity groups ranged from 69.4 to 76.7 bu/ac. The early MG IV varieties' yield ranged from 55.3 to 73.1 bu/ac. The late MG IV yield ranged from 53.2 to 71.0 bu/ac. The early MG V yield ranged from 48.9 to 76.7 bu/ac. The late MG V yield ranged from 57.2 to 69.4 bu/ac. The Roundup Ready varieties producing the lowest yield across all studies ranged from 48.9 to 55.3 bu/ac. The Conventional/Liberty-Link MG IV Variety Trial yield ranged from 23.7 to 62.1 bu/ac. The Conventional/Liberty-Link MG V Variety Trial yield ranged from 55.9 to 71.6 bu/ac. When compared to the varieties producing the lowest yield in each study, selecting the most productive variety has the potential to increase yield between 12.2 and 27.8 bu/ac given similar environmental conditions in a given year. In 2016 green stem was more problematic in the Roundup MG late IV varieties and MG IV conventional/Liberty-Link varieties. Some varieties exhibited moderate green stem (see Tables 3 and 6). *Cercospora* blight (late-season *Cercospora*; *Cercospora kikuchii*) and frog-eye leaf spot (*Cercospora sojina*) were the predominant diseases observed in all varieties planted. However, where present, *Septoria* brown spot (*Septoria*; *Septoria glycines*) and target spot (*Corynespora cassiicola*) were also observed in some entries. Variety selection for high yield and appropriate disease resistance is essential for soybean profitability.

**MATERIALS AND METHODS:** Six field studies were conducted in 2016 on a Leeper silty clay loam soil, at the North Mississippi Research and Extension Center, Verona, MS. Roundup tolerant soybean varieties of Maturity Group (MG) early IV, MG late IV, MG early V, and MG late V varieties were evaluated in separate studies. In addition, Conventional/Liberty-Link soybean MG IV and MG V varieties were evaluated separately. All experiments were conducted as randomized complete block designs with four replications. Each plot consisted of two 8-inch

twin rows on 38-inch beds × 20 feet in length. Seed was treated with Vitavax (carboxin) /Thiram (thiram) plus Apron (mefenoxam) fungicides before planting.

Potassium and triple super phosphate at 100 lb/acre each was applied 10/19/15. The entire study area was tilled with the TerraTill (in-row-subsoil-bed-roller) on 10/21/15. A burndown application of Roundup + Sharpen + Dicamba + Battery + methylated seed oil at 32 + 1.5 + 6 + 2 + 16 oz/acre was applied to the study area on 3/21/16. The study area received a pre-emergence application of Gramoxone + Dual II Magnum (metolachlor) + Tricor 70DF (metribuzin) + surfactant at 32 + 20 + 5.3 + 4.8 oz/ac on 4/28/16. The Conventional/Liberty-Link MG IV and MG V were planted 4/22/16 and 5/17/16, respectively. The Roundup Ready early and late MG IV varieties were planted 5/17/16 and 5/16/16, respectively. The Roundup Ready early and late MG V varieties were planted 5/16/16 and 4/27/16, respectively.

The Roundup tolerant varieties received a post-emergence application of Roundup PowerMax + First Rate (cloransulam) at 24 + 0.3 oz/ac on 6/01/16 and repeated applications of Roundup PowerMax at 24 oz/ac on 6/9/16, 6/21/16 and 7/13/16. The Conventional/Liberty-Link studies received a post-emergence application of Section (clethodim) + crop oil at 12 oz/ac (0.1875 lb ai/ac) + 1 pt/ac on 6/01/16, 6/21/16 and 7/07/16 and an application of First Rate + crop oil at 0.3 oz + 19 oz/ac on 6/08/16. Both Conventional/Liberty-Link and Roundup studies received an application of Intrepid + Radiant + Hero + Orthene at 16 oz + 5 oz + 6 oz + 1 lb product/ac was applied 8/18/16.

Variety maturity dates, plant height, lodging, shattering and green stem ratings at harvest were recorded for one replication. Lodging was rated on a scale of 1 to 5: 1 = most plants erect; 2 = all plants leaning slightly or only a few plants down; 3 = all plants leaning moderately or 25 to 50% of plants down; 4 = all plants leaning considerably with 50 to 80% of plants down; and 5 = all plants down. Green stem was rated on a visual scale of 1 to 5: 1 = complete absence of measure to 5 = maximum value. The maturity date was recorded when all pods were dry. Plant height of 10 consecutive plants, selected at a random spot from one of the center 2 rows, was measured from the soil surface to the upper most extremity in the first replication of each study. All four replications were rated prior to harvest (between R6 and R6.5 depending on variety) for Cercospora leaf blight (CLB) and frogeye leaf spot (FLS) on a scale of 0 to 9: 0 = no observable disease present and 9 = severe disease characterized by the majority of the leaf surface area covered with lesions. Cercospora blight was specifically rated as an additive observation whereby 4-5=symptoms of Cercospora blight only on leaf tissues, 6=purpling of petioles, 7=purpling of petioles and pods, and 8-9=purpling of petioles, stems, and severe purple coloration of pods. In addition, Septoria brown spot and target spot were observed throughout the trials and were rated using a 0 to 9 scale similar to the one outlined above; however, whereby 0 = no disease, 5 = disease in the middle of the canopy and 9 = disease in the upper canopy with severe defoliation.

Each study was harvested when all varieties had matured. The Roundup Ready early MG IV, late MG V, early MG V, and late MG V variety trial studies were harvested 9/21/16, 10/03/16, 10/10/16 and 10/06/16, respectively. The conventional/Liberty-Link MG IV and V studies were harvested 10/03/16 and 10/06/16, respectively. The plot harvest combine was equipped with an on-board electronic weight, test weight and seed moisture recording system. Yield was

calculated for the harvested area (6.33 ft × 20 ft) and adjusted to 13% seed moisture. Mean variety yield and disease ratings in each study were separated using Fisher's Protected Least Significant Difference (LSD) at the 10% significance level and 5% significance level, respectively.

**RESULTS AND DISCUSSION:** Rainfall during the growing season was 4.38, 0.90, 2.81, 0.98, 4.02, and 0.13 inches for April, May, June, July, August, and September, respectively (Table 1). The rainfall amount ranged from 3% for September to 105% of normal for August. Below normal rainfall occurred in April, May, June, July, and September. Only slight lodging and little less than 2% seed shatter were observed at harvest in all studies (data not reported) except the conventional/Liberty-Link MG IV variety study, Roundup Ready early MG IV and the conventional/Liberty-Link MG V study. In the Roundup Ready early MG IV (Table 2), late MG IV (Table 3), and Conventional/Liberty-Link MG V (Table 7), varieties are footnoted that had greater than 2% seed shatter. In Conventional/Liberty-Link MG IV study, the seed shatter ranged from 0 to 58% (Table 6). This year's ratings showed green stem was prevalent in Roundup Ready late MG IV and MG IV conventional/Liberty-Link study (Tables 3 and 6). In both studies, green stem was prevalent in a few varieties.

Twenty-six varieties in the Roundup Ready MG early IV Variety Trial were evaluated (Table 2). The yield ranged from 55.3 to 73.1 bu/ac with an overall mean yield of 65.0 bu/ac. Maturity dates ranged from 9/13/16 to 9/26/16. Plant height at maturity ranged from 32 to 46 inches. The greatest yield was achieved with Asgrow AG4632 producing 73.1 bu/ac. Varieties which were not different in yield from AG4632 were Asgrow AG46X6, Delta Grow DG4670 R2Y, Dyna-Gro S43RY95, NK S42-P6, Dyna-Gro 31RY45, Mycogen 5N452R2, and NK S49-W9.

Thirty-eight varieties in Roundup Ready MG late IV Variety Trial were evaluated (Table 3). Maturity dates ranged from 9/26/16 to 10/01/16. Plant height at maturity ranged from 27 to 44 inches. Yields ranged from 53.2 to 71.0 bu/ac. The greatest yielding variety was Delta Grow DG4790 RR2 with 71.0 bu/ac. Varieties that were not different from DG4790 RR2 were NK S48-D9, Armor 47-R70, Croplan R2C4775, Armor 47-D17, Pioneer 47T89R and NK S47-K5. Green stem ratings ranged from 1 to a 3 using a rating scale of 1 (none present) to 5 (all plants exhibited green stems). Most varieties were rated a 2 with a few rated a 3.

Twenty-six varieties were evaluated in the Roundup Ready MG early V Variety Trial (Table 4). Maturity dates ranged from 9/26/16 to 10/06/16. Plant height at maturity ranged from 27 to 47 inches. The yields ranged from 48.9 to 76.7 bu/ac with an overall mean yield of 63.1 bu/ac. The highest yielding variety was Delta Grow DG5580 RR2 with 76.7 bu/ac yield. This variety was greater in yield than the other varieties.

Five varieties were evaluated in the Roundup Ready MG late V Variety Trial (Table 5). Maturity dates ranged from 10/04/16 to 10/06/16. Plant height at maturity ranged from 21 to 27 inches. The yields ranged from 57.2 to 69.4 bu/ac with an overall mean yield of 64.4 bu/ac. Dyna-Gro S57RY26 was the highest yielding variety with 69.4 bu/ac. Varieties which had yields equal to Dyna-Gro S57RY26 were USG 75B75R and Progeny 5752 RY.

Eighteen varieties were evaluated in the Conventional/Liberty-Link Maturity Group IV Variety Trial (Table 6). The yields ranged from 23.7 to 62.1 bu/ac with an overall mean yield of 52.3 bu/ac. Maturity dates ranged from 9/07/16 to 10/01/16. Plant height at maturity ranged from 22 to 41 inches. The highest yielding variety was Delta Grow DG4781LL with 62.1 bu/ac. Varieties not different in yield from DG 4781LL were Go Soy 4714LL, Progeny P4930LL, Go Soy 4913LL, Delta Grow DG4967 LL, Progeny 4814 LLS, Go Soy 4912LL, Credenz CZ4748 LL, Hornbeck HBK LL 4953, and Delta Grow DG4977 LL/STS. Seed shatter ranged from none to 58%. Green stem ratings ranged from 1 (no plants with green stems) to 3 on a 1 to 5 scale (all plants with green stems). Most varieties had low levels of green stems.

Eighteen varieties were evaluated in the Conventional/Liberty-Link Maturity Group V Variety Trial (Table 7). The yields ranged from 55.9 to 71.6 bu/ac with an overall mean yield of 63.4 bu/ac. Maturity dates ranged from 9/26/16 to 10/05/16. Plant height ranged from 23 to 52 inches. University of Arkansas R09-430 was the highest yielding variety with 71.6 bu/ac. Varieties that were not different from University of Arkansas R09-430 were University of Arkansas UA 5014 C, UA 5213 C, UA 5612 C, Osage, Credenz CZ5150 LL, CZ5147 LL, Go Soy 5115LL and Go Soy 5515LL.

All varieties were rated for the presence of Cercospora leaf blight and frogeye leaf spot. Cercospora blight was present throughout all trials and ranged from 5.0 (present only on leaves) to 7.8 (present on pods, petioles and leaves). Frogeye leaf spot was also present throughout all trials and ranged from 0 (no observable frogeye) to 6.8 (moderate frogeye). Depending on MG Septoria brown spot and target spot were observed throughout the plant canopy; however, observations tended to be in the middle of the canopy (rating of 4-5) for the most part. A lack of resistance in commercially available varieties presents challenges for soybean farmers throughout MS.

These results indicate soybean growers have a good selection of productive varieties to choose from that range in maturity from late August to late September/early October. The most productive varieties' yields ranged from 65.0 to 76.7 bu/ac. The least productive varieties ranged in yield from 23.1 to 55.3 bu/ac. Selection of varieties with the greatest yield potential and appropriate disease resistance is essential for soybean profitability.

Table 1. 2016 Rainfall for Verona, MS.

Month	Days of Month			Total	% Normal <sup>1</sup>
	1-10	11-20	21-30		
Rainfall (inches)					
April	0.15	1.89	2.34	4.38	88
May	0.41	0.35	0.14	0.90	16
June	0.50	0.53	1.78	2.81	59
July	0.59	0.34	0.05	0.98	21
August	2.01	0.91	1.10	4.02	105
September	0.00	0.13	0.00	0.13	3

Total	3.66	4.15	5.41	13.22
% Total	28	31	41	

<sup>1</sup>Based on the historical (1974-2015) monthly average rainfall.

Table 2. Roundup Ready Early Maturity Group IV Soybean Variety Trial planted May 17, 2016 on a Leeper silty clay loam soil, Verona, MS.

Brand	Variety	Yield (bu/acre)					2016	
		2016	2015	2014	2013	2012	Maturity Date	Plant ht. (inches)
Asgrow	AG4632	73.1	61.2	74.3	79.2	62.3	9/26	44
Asgrow	AG46X6	71.1	----	----	----	----	9/26	41
Delta Grow	DG4670 R2Y	70.4	67.7	74.7	67.9	64.8	9/26	41
Dyna-Gro	S43RY95	68.8	64.8	70.5	----	----	9/26	44
NK Brand	S49-W9	68.4	----	----	----	----	9/19	30
Mycogen	5N452R2	68.3	68.3	72.0	----	----	9/22	40
Dyna-Gro	31RY45	68.2	71.7	71.7	87.6	64.2	9/26	40
NK Brand	S42-P6	68.1	----	----	----	----	9/20	40
Pioneer	P41T33R	67.5	----	----	----	----	9/19	37
Asgrow	AG45X6	67.1	----	----	----	----	9/20	36
Mycogen	5N414R2	67.0	----	----	----	----	9/19	46
Delta Grow	DG4680 RR2	66.6	----	----	----	----	9/26	40
Terral <sup>1</sup>	REV 45A46	65.8	----	----	----	----	9/26	39
Asgrow	AG44X6	64.9	----	----	----	----	9/22	41
Progeny <sup>1</sup>	4613RYS	64.8	59.8	72.3	76.1	----	9/22	40
Mycogen	5N433R2	64.5	64.4	----	----	----	9/22	42
Progeny <sup>1</sup>	4211 RY	63.8	38.0	58.9	84.9	49.2	9/20	41
Progeny <sup>1</sup>	4588 RY	63.3	----	----	----	----	9/22	40
Credenz	CZ 4181 RY	63.2	----	----	----	----	9/20	39
NK Brand	S39-T3	62.5	----	----	----	----	9/13	36
AGS	GS 45R216	61.5	----	----	----	----	9/22	36
Asgrow	AG42X6	61.0	----	----	----	----	9/19	41
Credenz	CZ 4590 RY	59.6	59.5	----	----	----	9/22	35
Credenz	CZ 4656 RY	59.5	----	----	----	----	9/22	42
Mycogen	5N424R2	56.6	----	----	----	----	9/19	32
NK Brand <sup>2</sup>	S39-C4	55.3	----	----	----	----	9/13	36
LSD ( $P=0.10$ )		5.0						
Standard Deviation		4.3						
CV		6.5						
Grand Mean		65.0						

Shaded values are not different from the greatest value at the 10% probability level.

<sup>1</sup>Visual estimate of 5% pod shatter seed loss prior to harvest.

<sup>2</sup>Visual estimate of 10% pod shatter seed loss prior to harvest.

Table 3. Roundup Ready Late Maturity Group IV Soybean Variety Trial planted May 16, 2016 on a Leeper silty clay loam soil, Verona, MS.

Brand	Variety	Yield (bu/acre)				G.S. <sup>2</sup>	2016	
		2016	2015	2014	2013		Maturity Date	Plant ht. (inches)
Delta Grow	DG4790 RR2	71.0	64.5	----	----	2	9/26	43
NK Brand	S48-D9	69.1	----	----	----	3	9/30	35
Armor	47-R70	68.9	----	----	----	2	9/30	38
Croplan	R2C4775	68.7	----	----	----	2	9/30	44
Armor	47-D17	68.6	----	----	----	1	9/26	39
Pioneer	47T89R	68.6	----	----	----	2	9/26	39
NK Brand	S47-K5	68.6	68.1	----	----	2	9/26	36
Armor	49-D90	67.6	----	----	----	2	9/30	39
Progeny	4757 RY	67.3	66.5	----	----	2	10/01	35
Go Soy	48R216	67.2	----	----	----	3	9/30	33
Dyna-Gro	S48RS53	66.9	60.4	65.9	77.7	1	9/26	41
Dyna-Gro	S48XT56	66.4	----	----	----	2	9/26	33
Asgrow	AG49X6	66.2	----	----	----	1	9/30	38
Asgrow	AG47X6	65.8	----	----	----	1	9/26	42
Armor	48-D24	65.5	----	----	----	3	9/30	31
USG	74K95RS	65.4	68.4	----	----	2	10/01	34
Terral	REV 49R94	64.7	65.6	67.2	77.9	2	10/01	37
Progeny	4900 RY	64.6	62.0	58.8	63.9	3	10/01	34
Terral	REV 49A75 <sup>1</sup>	64.3	56.8	----	----	2	10/01	40
Delta Grow	DG4825 RR2/STS	64.2	53.1	57.4	81.6	2	9/30	39
Go Soy	4915R2	64.1	64.2	----	----	1	9/26	37
NK Brand	S49-B1	63.2	----	----	----	2	9/26	36
Armor	49-D66	62.3	----	----	----	1	9/26	33
Pioneer	47T36R	61.9	----	----	----	2	9/30	34
Croplan	R2C4700S	61.9	----	----	----	1	9/26	42
Progeny	4788 RY	61.4	63.9	71.8	----	3	9/30	36
Dyna-Gro	S49X707	61.2	----	----	----	1	9/26	32
Credenz	CZ 4898 RY	61.0	----	----	----	1	9/26	41
Go Soy	47R216	60.9	----	----	----	1	9/26	31
Terral <sup>1</sup>	REV 47R34	60.5	62.6	68.9	65.9	3	10/01	35
Delta Grow	DG4880 RR	59.8	59.3	61.3	61.3	3	9/30	37
Delta Grow	DG4970 RR	58.3	65.4	66.2	71.5	3	10/01	36
Credenz	CZ 4957 RY	58.2	----	----	----	2	9/26	42
Mycogen	5N480R2	58.2	----	----	----	2	9/26	39
Armor	48-D80	57.9	----	----	----	1	9/26	40
Go Soy	49G16	57.6	----	----	----	2	9/30	27
Delta Grow	DG4995 RR	55.5	47.9	----	----	3	10/01	28
Go Soy	4814 GTS	53.2	----	----	----	2	9/26	33
LSD ( $P=0.10$ )		4.7						
Standard Deviation		4.0						
CV		6.3						
Grand Mean		63.6						

Shaded Values are not different from the greatest value at the 10% probability level.

<sup>1</sup>Visual estimate of 5% seed shatter loss prior to harvest.

<sup>2</sup>G.S. = green stem rating of 1 equals no green stem present up to 5 equal all plant exhibit green stems.

Table 4. Roundup Ready Early Maturity Group V Variety Trial planted May 16, 2016 on a Leeper silty clay loam soil, Verona, MS.

Brand	Variety	Yield				2016	
		(bu/acre)				Maturity	Plant ht.
		2016	2015	2014	2013	Date	(inches)
Delta Grow	DG5580 RR2	76.7	----	----	----	10/04	34
Dyna-Gro	S52RY75	69.0	63.2	67.1	----	10/01	32
Delta Grow	DG5625 RR2	68.6	57.3	----	----	10/04	29
Armor	55-R68	67.9	----	----	----	9/30	24
NK Brand	S52-Y2	67.6	63.8	62.0	81.6	9/30	43
Mycogen	5N523R2	67.5	----	----	----	10/04	47
Delta Grow	DG5230 RR2	67.3	63.2	64.6	----	9/26	27
Croplan	R2C5225S	66.5	----	----	----	10/01	42
Progeny	5226 RYS	66.2	59.5	----	----	10/04	44
Credenz	CZ 5375 RY	65.8	----	----	----	10/01	26
Asgrow	AG53X6	65.7	----	----	----	9/30	28
NK Brand	S56-M8	65.4	----	----	----	10/06	33
Croplan	R2C5265	65.4	----	----	----	9/26	29
NK Brand	S55-Q3	65.1	67.2	----	----	10/04	33
Delta Grow	DG5555 RR	63.7	----	----	----	10/04	38
Progeny	5555 RY	63.3	65.5	64.4	77.9	10/06	28
Terral	REV 51A56	63.2	----	----	----	9/26	32
Dyna-Gro	S56RY84	61.6	62.5	73.6	78.7	10/04	34
Pioneer	52T50R	61.6	----	----	----	10/04	26
Delta Grow	DG5170 RR2/STS	60.5	60.9	----	----	10/04	38
Pioneer	55T81R	58.2	----	----	----	10/04	32
Terral	REV 56R63	56.8	63.6	71.0	80.1	10/04	31
Terral	REV 52A94	55.5	51.9	61.9	----	9/26	27
Asgrow	AG54X6	51.5	----	----	----	10/06	41
Go Soy	5214GTS	51.4	----	----	----	9/26	40
U. of Arkansas	UA 5414RR	48.9	45.2	----	----	10/04	26
	LSD ( $P=0.10$ )	6.0					
	Standard Deviation	5.1					
	CV	8.1					
	Grand Mean	63.1					

Table 5. Roundup Ready Late Maturity Group V Soybean Variety Trial planted on April 28, 2016 on a Leeper silty clay loam soil, Verona, MS.

Brand	Variety	Yield (bu/acre)				2016	
		2016	2015	2014	2013	Maturity Date	Plant ht. (inches)
Dyna-Gro	S57RY26	69.4	59.6	----	----	10/04	23
USG	75B75R	67.1	62.0	----	----	10/04	22
Progeny	5752 RY	66.5	----	----	----	10/04	24
Terral	REV 57R21	61.8	31.2	44.2	77.8	10/04	27
NK Brand	S58-Z4	57.2	54.2	----	----	10/06	21
LSD ( $P=0.10$ )		7.0					
Standard Deviation		5.6					
CV		8.6					
Grand Mean		64.4					

Shaded values are not different from the greatest value at the 10% probability level.

Table 6. Conventional/Liberty-Link Maturity Group IV Soybean Variety Trial planted April 27, 2016 on a Leeper silty clay loam soil, Verona, MS.

Brand	Variety	Yield (bu/acre)			G.S. <sup>1</sup>	% seed shatter <sup>2</sup>	2016	
		2016	2015	2014			Maturity Date	Plant ht. (inches)
Delta Grow	DG4781 LL	62.1	61.0	----	2	5	9/26	34
Go Soy	4714LL	61.8	62.8	----	2	4	9/26	31
Progeny	P4930LL	61.6	60.9	69.0	2	0	9/26	34
Go Soy	4913LL	60.4	----	----	2	0	9/26	34
Delta Grow	DG4967 LL	60.2	61.5	67.2	2	0	9/26	38
Progeny	4814 LLS	59.8	61.8	----	2	0	10/01	37
Go Soy	4912LL	58.9	----	----	2	0	9/26	36
Credenz	CZ 4748 LL	57.7	62.3	----	2	3	9/26	34
Hornbeck	HBK LL 4953	57.3	63.8	66.9	2	0	9/26	37
Delta Grow	DG4977 LL/STS	56.3	50.4	----	1	0	9/26	39
Delta Grow	DG4587 LL/STS	54.3	----	----	2	4	9/20	35
Credenz	CZ 4818 LL	53.3	60.2	----	2	2	9/19	41
Terral	REV 49L29	53.1	54.2	55.7	3	5	9/26	31
Credenz	CZ 4540 LL	47.0	----	----	2	2	9/19	35
Progeny	4247 LL	45.6	----	----	3	20	9/13	29
Credenz	CZ 4044 LL	36.4	----	----	2	58	9/09	27
Credenz	CZ 4222 LL	31.1	----	----	3	53	9/08	24
Credenz	CZ 4105 LL	23.7	60.4	----	1	55	9/07	22
LSD ( $P=0.10$ )		6.2						
Standard Deviation		5.2						
CV		10.0						
Grand Mean		52.3						

Shaded values are not different from the greatest value at the 10% probability level.

<sup>1</sup>G.S. = green stem rating of 1 equals no green stem up to a 5, all plants with green stems at harvest.

<sup>2</sup>% seed shatter is a visual percent estimate of pod-seed shatter prior to harvest.



Table 7. Conventional/Liberty-Link Maturity Group V Soybean Variety Trial planted May 17, 2016 on a Leeper silty clay loam soil, Verona, MS.

Brand	Variety	Yield (bu/acre)				2016	
		2016	2015	2014	2013	Maturity Date	Plant ht. (inches)
U. of Arkansas	R09-430	71.6	----	----	----	10/04	26
U. of Arkansas	UA 5014 C	70.0	----	----	----	10/04	27
U. of Arkansas	UA 5213 C	68.3	----	----	----	10/04	29
U. of Arkansas	UA 5612 C	67.3	61.5	62.7	86.1	10/04	30
U. of Arkansas	Osage	66.9	----	----	----	10/04	27
Credenz <sup>1</sup>	CZ 5150 LL	66.7	64.8	----	----	9/26	32
Go Soy	5115LL	66.7	66.2	----	----	10/04	39
Credenz <sup>2</sup>	CZ 5147 LL	65.8	55.3	----	----	9/26	23
Go Soy	5515LL	65.8	62.7	----	----	10/04	34
Dyna-Gro	S55LS75	62.5	----	----	----	10/04	40
Delta Grow	DG5067 LL	62.3	52.1	----	----	9/30	42
Go Soy	5215LL	60.0	52.8	----	----	10/04	43
Dyna-Gro	S52LL66	59.0	54.9	----	----	10/04	44
Credenz	CZ 5445 LL	58.9	51.4	----	----	9/30	33
Credenz	CZ 5225 LL	58.3	----	----	----	9/26	27
U. of Arkansas	UA 5814 HP	57.9	----	----	----	10/05	29
Credenz	CZ 5515 LL	57.3	58.7	----	----	10/04	52
Credenz	CZ 5242 LL	55.9	53.8	----	----	9/26	40
	LSD ( $P=0.10$ )	5.8					
	Standard Deviation	4.9					
	CV	7.8					
	Grand Mean	63.4					

Shaded values are not different from the greatest value at the 10% probability level.

<sup>1</sup>Visual estimate of 5% seed shatter prior to harvest.

<sup>2</sup>Visual estimate of 3% seed shatter prior to harvest.

Table 8. Foliar disease ratings for Roundup Ready Early Maturity Group IV Soybean Variety Trial planted May 17, 2016 on a Leeper silty clay loam soil, Verona, MS.

<b>Company/Cultivar</b>	<b>CLB<sup>1</sup> rating</b>	<b>FLS<sup>1</sup> rating<sup>z</sup></b>	<b>SBS<sup>2</sup> rating</b>	<b>TS<sup>2</sup> rating</b>
AGS GS 45R216	6.0 de	3.5 a-f	6.3 b-e	5.8
Asgrow AG 42X6	6.0 de	2.5 d-i	6.5 b-e	6.5
Asgrow AG 44X6	6.0 de	2.3 e-j	6.8 a-d	6.0
Asgrow AG 45X6	6.0 de	3.3 b-f	7.0 abc	6.8
Asgrow AG 4632	6.0 de	0.8 jk	6.5 b-e	6.5
Asgrow AG 46X6	5.8 e	2.0 f-k	5.5 e	5.5
Credenz CZ 4181 RY	6.5 c	4.0 a-d	7.8 a	7.3
Credenz CZ 4590 RY	6.0 de	3.0 b-g	6.3 b-e	6.3
Credenz CZ 4656 RY	6.0 de	4.5 ab	6.8 a-d	6.5
Delta Grow DG 4670 RR2	6.0 de	1.5 g-k	6.0 cde	5.8
Delta Grow DG 4680 RR2	6.5 c	3.5 a-f	5.8 de	5.8
Dyna-Gro 31RY45	5.8 e	1.3 h-k	6.5 b-e	6.3
Dyna-Gro S43RY95	6.0 de	3.5 a-f	6.8 a-d	6.3
Mycogen 5N414RR	6.5 c	3.5 a-f	6.8 a-d	6.5
Mycogen 5N424R2	6.5 c	1.5 g-k	7.0 abc	6.5
Mycogen 5N433R2	6.0 de	3.3 b-f	7.0 abc	6.8
Mycogen 5N452R2	6.5 c	2.3 e-j	5.8 de	5.8
NK Brand S39C4	7.5 a	3.0 b-g	7.3 ab	7.0
NK Brand S39T3	7.0 b	5.0 a	6.5 b-e	5.5
NK Brand S42P6	6.0 de	1.3 h-k	7.8 a	7.0
NK Brand S49W9	6.0 de	1.0 ijk	7.3 ab	6.5
Pioneer P41T33R	6.3 cd	0.5 k	7.0 abc	6.5
Progeny P4211RY	6.0 de	2.8 c-h	6.3 b-e	6.3
Progeny P4588RY	6.3 cd	1.5 g-k	6.5 b-e	6.3
Progeny P4613RYS	6.0 de	3.8 a-e	6.0 cde	6.0
Terral REV 45A46	6.0 de	4.3 abc	6.3 b-e	6.3
LSD (0.05)	0.5	1.6	1.1	1.0
CV (%)	5.4	42.1	11.8	11.5
<i>P</i> -value for F-statistic	<0.0001	<0.0001	0.0061	0.0584

<sup>1</sup>Ratings for CLB (Cercospora blight) and FLS (frogeye leaf spot) were based on a scale whereby 0=no disease and 9=severe disease. CLB was rated based on the presence of disease on leaves (0 to 5), petioles (6), and on pods and stems (7 to 9) based on disease intensity as assessed by coloration of plant material (leaves with distinct purple coloration and petioles, pods and main stems with purple to near black coloration).

<sup>2</sup>Ratings for Septoria (Septoria brown spot) and target spot were based on a scale whereby 0=no disease, 5= disease in the middle of the canopy and 9=disease in the upper canopy with severe defoliation.

<sup>3</sup>Means followed by the same letter(s) within a column are not significantly different according to Fisher's Protected LSD ( $P=0.05$ ).

Table 9. Foliar disease ratings for Roundup Ready Late Maturity Group IV Soybean Variety Trial planted May 16, 2016 on a Leeper silty clay loam soil, Verona, MS.

<b>Company/Cultivar</b>	<b>CLB<sup>1</sup> rating</b>	<b>FLS<sup>1</sup> rating<sup>z</sup></b>	<b>SBS<sup>2</sup> rating</b>	<b>TS<sup>2</sup> rating</b>
Armor 47-D17	5.8 ab	0.8 lmn	6.0 abc	5.8 abc
Armor 47-R70	6.0 a	1.0 k-n	6.0 abc	5.3 b-e
Armor 48-D24	6.0 a	2.0 g-k	6.0 abc	5.3 b-e
Armor 48-D80	5.8 ab	2.5 e-i	5.3 cde	4.8 def
Armor 49-D66	6.0 a	1.3 j-n	5.8 a-d	6.0 ab
Armor 49-D90	6.0 a	3.0 d-g	5.3 cde	5.0 c-f
Asgrow AG 47X6	6.0 a	1.0 k-n	6.3 ab	5.5 bcd
Asgrow AG 49X6	5.8 ab	1.0 k-n	5.8 a-d	5.5 bcd
Credenz CZ 4898 RY	5.8 ab	5.3 a	5.8 a-d	5.5 bcd
Credenz CZ 4957 RY	5.8 ab	3.3 c-f	6.0 abc	5.8 abc
Croplan R2C4700	6.0 a	3.8 bcd	5.3 cde	5.3 b-e
Croplan R2C4775	5.8 ab	1.3 j-n	5.8 a-d	5.0 c-f
Delta Grow DG 4790 RR2	5.3 b	0.8 lmn	4.8 e	4.8 def
Delta Grow DG 4825 RR2	5.8 ab	5.3 a	4.8 e	4.3 f
Delta Grow DG 4880 RR	5.8 ab	0.8 lmn	6.5 a	5.5 bcd
Delta Grow DG 4970 RR	5.8 ab	0.8 lmn	5.5 b-e	5.0 c-f
Delta Grow DG 4995 RR	5.8 ab	0.5 mn	4.8 e	4.8 def
Dyna-Gro S48R53	5.8 ab	3.5 cde	5.5 b-e	5.5 bcd
Dyna-Gro S48XT56	5.3 b	1.8 h-l	4.8 e	4.5 ef
Dyna-Gro S49X707	5.5 ab	1.0 k-n	6.0 abc	6.5 a
GoSoy 47R216	5.5 ab	4.8 ab	5.8 a-d	5.3 b-e
GoSoy 4814 GTS	5.5 ab	5.3 a	5.3 cde	4.8 def
GoSoy 48R216	5.8 ab	0.5 mn	5.3 cde	5.3 b-e
GoSoy 4915R2	5.8 ab	2.8 d-h	5.5 b-e	5.0 c-f
GoSoy 49G16	5.8 ab	0.3 n	5.0 de	4.8 def
Mycogen 5N480R2	5.8 ab	2.3 f-j	5.5 b-e	5.3 b-e
NK Brand S47-K5	6.0 a	0.8 lmn	5.5 b-e	5.0 c-f
NK Brand S48-9D	6.0 a	0.8 lmn	6.0 abc	5.5 bcd
NK Brand S49-B1	6.0 a	4.8 ab	5.5 b-e	5.5 bcd
Pioneer 47T89R	6.0 a	0.8 lmn	5.5 b-e	5.0 c-f
Pioneer P47T36R	6.0 a	1.5 i-m	5.8 a-d	5.8 abc
Progeny P4757RY	5.5 ab	0.3 n	5.5 b-e	5.0 c-f
Progeny P4788RY	5.5 ab	1.8 h-l	5.3 cde	5.3 b-e
Progeny P4900RY	6.0 a	4.3 abc	5.5 b-e	5.3 b-e
Terral REV 49R94	5.3 b	1.0 k-n	6.3 ab	5.8 abc
Terral REV 47R34	5.5 ab	1.5 i-m	6.0 abc	5.8 abc
Terral REV 49A75	5.5 ab	3.3 c-f	6.0 abc	5.3 b-e
USG 74K95RS	5.3 b	2.8 d-h	5.3 cde	5.0 c-f
LSD (0.05)	0.5	1.1	1.0	1.0
CV (%)	6.8	38.5	12.7	13.3
P-value for F-statistic	0.0386	<0.0001	0.0420	0.0349

<sup>1</sup>Ratings for CLB (*Cercospora blight*) and FLS (*frogeye leaf spot*) were based on a scale whereby 0=no disease and 9=severe disease. CLB was rated based on the presence of disease on leaves (0 to 5), petioles (6), and on pods and stems (7 to 9) based on disease intensity as assessed by coloration of plant material (leaves with distinct purple coloration and petioles, pods and main stems with purple to near black coloration).

<sup>2</sup>Ratings for Septoria (*Septoria brown spot*) and target spot were based on a scale whereby 0=no disease, 5=disease in the middle of the canopy and 9=disease in the upper canopy with severe defoliation.

<sup>3</sup>Means followed by the same letter(s) within a column are not significantly different according to Fisher's Protected LSD ( $P=0.05$ ).

Table 10. Foliar disease ratings for Roundup Ready Maturity Group Early V Soybean Variety Trial planted May 16, 2016 on a Leeper silty clay loam soil, Verona, MS.

<b>Company/Cultivar</b>	<b>CLB<sup>1</sup> rating</b>	<b>FLS<sup>1</sup> rating<sup>z</sup></b>	<b>SBS<sup>2</sup> rating</b>	<b>TS<sup>2</sup> rating</b>
Armor 55-R68	6.0 c	0.5 de	7.0 cd	7.5 abc
Asgrow AG53X6	6.3 bc	0.3 de	8.0 ab	8.0 ab
Asgrow AG54X6	6.0 c	0.0 e	7.0 cd	5.8 e
Credenz CZ 5375 RY	6.0 c	0.5 de	7.8 abc	7.3 a-d
Croplan R2C5225S	6.0 c	4.8 abc	6.8 de	6.5 cde
Croplan R2C5265	6.0 c	0.0 e	8.3 a	8.3 a
Delta Grow DG 5170RR2/STS	6.0 c	5.0 ab	7.0 cd	7.0 bcd
Delta Grow DG 5230RR2	6.3 bc	1.3 d	7.8 abc	7.5 abc
Delta Grow DG 5555RR	6.0 c	0.5 de	7.5 a-d	7.0 bcd
Delta Grow DG 5580RR2	6.0 c	0.5 de	7.5 a-d	7.3 a-d
Delta Grow DG 5625RR2	6.0 c	1.0 de	7.5 a-d	7.3 a-d
Dyna-Gro S52RY75	6.5 ab	0.0 e	8.3 a	7.3 a-d
Dyna-Gro S56RY84	6.0 c	0.3 de	7.8 abc	7.0 bcd
GoSoy 5214GTS	6.0 c	4.0 bc	7.3 bcd	7.0 bcd
Mycogen 5N523R2	6.0 c	5.5 a	6.8 de	6.5 cde
NK Brand S52-Y2	6.0 c	5.8 a	7.0 cd	6.8 cde
NK Brand S55-Q3	6.0 c	0.3 de	7.5 a-d	7.3 a-d
NK Brand S56-M8	6.0 c	0.8 de	6.0 e	6.3 de
Pioneer P52T50R	6.0 c	3.8 c	7.5 a-d	7.0 bcd
Pioneer P55T81R	6.0 c	0.3 de	7.3 bcd	7.3 a-d
Progeny Ag Products P 5226RYS	6.0 c	5.5 a	6.8 de	6.8 cde
Progeny Ag Products P 5555RY	6.0 c	0.5 de	7.5 a-d	7.5 abc
Terral REV 51A56	6.8 a	0.0 e	7.3 bcd	7.5 abc
Terral REV 52A94	6.3 bc	0.3 de	7.0 cd	6.3 de
Terral REV 56R63	6.3 bc	0.0 e	8.0 ab	7.5 abc
U. of Arkansas UA 5414RR(R04-1268RR)	6.0 c	0.3 de	7.5 a-d	7.5 abc
LSD (0.05)	0.4	1.1	0.9	1.0
CV (%)	4.1	49.4	8.6	10.4
<i>P</i> -value for F-statistic	0.0039	<0.0001	0.0007	0.0049

<sup>1</sup>Ratings for CLB (Cercospora blight) and FLS (frog-eye leaf spot) were based on a scale whereby 0=no disease and 9=severe disease. CLB was rated based on the presence of disease on leaves (0 to 5), petioles (6), and on pods and stems (7 to 9) based on disease intensity as assessed by coloration of plant material (leaves with distinct purple coloration and petioles, pods and main stems with purple to near black coloration).

<sup>2</sup>Ratings for Septoria (Septoria brown spot) and target spot were based on a scale whereby 0=no disease, 5= disease in the middle of the canopy and 9=disease in the upper canopy with severe defoliation.

<sup>3</sup>Means followed by the same letter(s) within a column are not significantly different according to Fisher's Protected LSD ( $P=0.05$ ).

Table 11. Foliar disease ratings for Roundup Ready Late Maturity Group V Soybean Variety Trial planted on April 28, 2016 a Leeper silty clay loam soil, Verona, MS.

<b>Company/Cultivar</b>	<b>CLB<sup>1</sup> rating</b>	<b>FLS<sup>1</sup> rating<sup>z</sup></b>	<b>SBS<sup>2</sup> rating</b>	<b>TS<sup>2</sup> rating</b>
Dyna-Gro S57RY26	6.0	0.0	8.3	7.5
NK Brand S58-Z4	6.0	0.0	8.0	8.0
Progeny Ag Products P 5752RY	6.0	0.3	8.0	7.0
Terral REV 57R21	6.0	0.0	8.0	8.0
USG 75B75R	6.0	0.0	8.3	7.3
LSD (0.05)	0.0	0.3	0.8	1.4
CV (%)	-	447.2	6.1	12.3
<i>P</i> -value for F-statistic	-	0.4449	0.8656	0.4823

<sup>1</sup>Ratings for CLB (Cercospora blight) and FLS (frogeye leaf spot) were based on a scale whereby 0=no disease and 9=severe disease. CLB was rated based on the presence of disease on leaves (0 to 5), petioles (6), and on pods and stems (7 to 9) based on disease intensity as assessed by coloration of plant material (leaves with distinct purple coloration and petioles, pods and main stems with purple to near black coloration).

<sup>2</sup>Ratings for Septoria (Septoria brown spot) and target spot were based on a scale whereby 0=no disease, 5= disease in the middle of the canopy and 9=disease in the upper canopy with severe defoliation.

<sup>3</sup>Means followed by the same letter(s) within a column are not significantly different according to Fisher's Protected LSD ( $P=0.05$ ).

Table 12. Foliar disease ratings for Conventional and Liberty-Link Maturity Group IV Soybean Variety

Trial planted April 27, 2016 on a Leeper silty clay loam soil, Verona, MS.

<b>Company/Cultivar</b>	<b>CLB<sup>1</sup> rating</b>	<b>FLS<sup>1</sup> rating</b>	<b>SBS<sup>2</sup> rating</b>	<b>TS<sup>2</sup> rating</b>
Credenz CZ 4044 LL	7.0 a <sup>3</sup>	0.7 bc	7.7 ab	8.0 a
Credenz CZ 4105 LL	6.3 abc	0.8 bc	6.5 cde	6.5 bc
Credenz CZ 4222 LL	7.0 a	3.3 a	7.0 bcd	6.5 bc
Credenz CZ 4540 LL	5.7 cde	0.7 bc	7.0 bcd	6.0 cd
Credenz CZ 4748 LL	6.3 abc	1.5 b	6.8 bcd	6.3 bcd
Credenz CZ 4818 LL	6.3 abc	1.5 b	6.8 bcd	6.0 cd
Credenz HBK LL4953	5.0 e	0.8 bc	5.5 ef	5.3 d
Delta Grow DG 4587LL/STS	5.8 b-e	0.5 c	6.8 bcd	6.0 cd
Delta Grow DG 4781LL	6.0 bcd	1.3 bc	7.0 bcd	6.7 bc
Delta Grow DG 4967LL	5.8 b-e	1.5 b	5.3 f	5.3 d
Delta Grow DG 4977LL/STS	5.8 b-e	1.3 bc	6.0 def	6.0 cd
GoSoy 4714LL	6.5 ab	1.5 b	7.3 bc	7.3 ab
GoSoy 4912LL	5.8 b-e	1.3 bc	5.3 f	5.3 d
GoSoy 4913LL	6.0 bcd	0.8 bc	6.3 c-f	6.3 bcd
Progeny Ag Products P 4247LL	7.0 a	0.8 bc	8.5 a	8.3 a
Progeny Ag Products P 4814LLS	5.3 de	1.0 bc	6.3 c-f	5.8 cd
Progeny Ag Products P 4930LL	5.0 e	1.3 bc	6.0 def	5.8 cd
REV 49L49	5.3 de	1.0 bc	6.3 c-f	6.0 cd
LSD (0.05)	0.8	0.9	1.0	1.1
CV (%)	9.1	51.0	10.9	11.8
<i>P</i> -value for F-statistic	<0.0001	<0.0001	<0.0001	<0.0001

<sup>1</sup>Ratings for CLB (Cercospora blight) and FLS (frog-eye leaf spot) were based on a scale whereby 0=no disease and 9=severe disease. CLB was rated based on the presence of disease on leaves (0 to 5), petioles (6), and on pods and stems (7 to 9) based on disease intensity as assessed by coloration of plant material (leaves with distinct purple coloration and petioles, pods and main stems with purple to near black coloration).

<sup>2</sup>Ratings for Septoria (Septoria brown spot) and target spot were based on a scale whereby 0=no disease, 5= disease in the middle of the canopy and 9=disease in the upper canopy with severe defoliation.

<sup>3</sup>Means followed by the same letter(s) within a column are not significantly different according to Fisher's Protected LSD (*P*=0.05).

Table 13. Foliar disease ratings for Conventional and Liberty-Link Maturity Group V Soybean Variety

Trial planted May 16, 2016 on a Leeper silty clay loam soil, Verona, MS.

<b>Company/Cultivar</b>	<b>CLB<sup>1</sup> rating</b>	<b>FLS<sup>1</sup> rating</b>	<b>SBS<sup>2</sup> rating</b>	<b>TS<sup>2</sup> rating</b>
Credenz CZ 5147 LL	6.3	0.3	7.0 cde <sup>3</sup>	6.0 c
Credenz CZ 5150 LL	6.0	0.0	7.8 abc	6.8 abc
Credenz CZ 5225 LL	6.0	0.3	7.3 b-e	6.8 abc
Credenz CZ 5242 LL	6.0	0.0	7.3 b-e	6.3 c
Credenz CZ 5445 LL	6.0	0.0	7.3 b-e	6.5 bc
Credenz CZ 5515 LL	6.0	0.5	6.5 e	3.0 d
Delta Grow DG5067LL	6.0	0.5	7.3 b-e	6.3 c
Dyna-Gro S52LL66	6.0	0.3	7.8 abc	7.0 abc
Dyna-Gro S55LS75	6.0	0.3	7.5 a-d	6.5 bc
GO SOY 5115LL	6.3	0.5	7.8 abc	7.8 a
GO SOY 5215LL	6.0	0.5	7.0 cde	7.0 abc
GO SOY 5515LL	6.0	0.8	7.3 b-e	6.5 bc
U. of Arkansas OSAGE	6.0	1.0	7.3 b-e	6.5 bc
U. of Arkansas R09-430	6.0	0.3	7.8 abc	6.3 c
U. of Arkansas UA 5014C	6.0	0.5	8.0 ab	7.5 ab
U. of Arkansas UA 5213C	6.0	0.5	8.3 a	6.0 c
U. of Arkansas UA 5612	6.0	0.3	7.3 b-e	6.0 c
U. of Arkansas UA 5814HP	6.0	0.0	6.8 de	6.3 c
LSD (0.05)	0.2	0.7	0.8	1.2
CV (%)	2.7	139.6	7.9	13.6
<i>P</i> -value for F-statistic	0.4736	0.2502	0.0121	<0.0001

<sup>1</sup>Ratings for CLB (Cercospora blight) and FLS (frog-eye leaf spot) were based on a scale whereby 0=no disease and 9=severe disease. CLB was rated based on the presence of disease on leaves (0 to 5), petioles (6), and on pods and stems (7 to 9) based on disease intensity as assessed by coloration of plant material (leaves with distinct purple coloration and petioles, pods and main stems with purple to near black coloration).

<sup>2</sup>Ratings for Septoria (Septoria brown spot) and target spot were based on a scale whereby 0=no disease, 5= disease in the middle of the canopy and 9=disease in the upper canopy with severe defoliation.

<sup>3</sup>Means followed by the same letter(s) within a column are not significantly different according to Fisher's Protected LSD ( $P=0.05$ ).