PR-622

Soybean Management Verification Program, 2010

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Abstract

The 2010 Soybean Management Verification Program (SoyMVP) consisted of 16 fields across western Kentucky which were split to give seven direct comparisons between University of Kentucky recommendations and producer practices for soybean production. Weekly scouting was done on all fields and recommendations were made on the university portion of the field based on established thresholds and observations from agronomic research. Fields enrolled in the program in 2009 totaled 379 acres, with an average field consisting of just over 27 acres. Our belief is that these farmer fields will serve as an extension of our small plot research and will help to validate and verify the research that is done within the College of Agriculture; to show that results obtained *are* in fact applicable to the conditions that producers see in their fields.

The 2010 growing season was quite varied across the grain growing regions of Kentucky and was considerably drier as a whole than 2009. SoyMVP fields experienced the same challenges that all producers faced during this growing season. Planting was much earlier in 2010 than in 2009, with the earliest field planted in April and the latest in the first week of June. With the hot, dry conditions, harvest was much timelier than the 2009 season as well.

Weed pressure varied across fields. The most common species did not differ from those that we normally see in west Kentucky fields. Johnsongrass, crabgrass, pigweed, marestail, Eastern Black Nightshade, Virginia Copperleaf, and lambsquarters were the typical weed species' across most of the fields.

Disease pressure was comparatively light in the 2010 season, which can most likely be contributed to the hot, dry conditions seen throughout much of the region. Septoria leaf spot (*Septoria glycines)* was seen at some level across most fields, with the higher incidence at the locations that received more early season rainfall. Sudden Death Syndrome and Frogeye Leaf Spot were also present at very low levels.

Fields in production under University of Kentucky recommendations averaged 44.3 bushels per acre on average, compared to 45.6 bushels per acre in those using producer practices. Partial economic net returns per acre averaged $400.56 under University of Kentucky recommendations, compared to $397.38 using producer practices.

Introduction

The 2010 season marked the second year that the Soybean Management Verification Program (SoyMVP) was fully implemented in Kentucky. During the season, 14 Kentucky soybean fields were enrolled in the program, with half in production according to University of Kentucky research-based recommendations and half in production using the practices of the producer. The stated goals for the SoyMVP are:

- To get the most up-to-date research based recommendations to Kentucky soybean producers for implementation in production-based systems.
- To assist researchers in improving research methods and identifying areas of soybean research that require further work.
- To ultimately update current University recommendations based on the results from the production-based systems and subsequent research, in an effort to provide Kentucky soybean producers the knowledge and information to maximize soybean profitability.

Methods

Cooperator and Field Selection

Kentucky County Extension agents are critical to SoyMVP. The agents originally identified and contacted prospective cooperators and arranged meetings between these producers and the program coordinator.

Fields enrolled in the program had to meet two requirements:

- Cover enough area to represent field scale production.
- Have a similar soil types in both plots.

Soil type and field size were determined using producer data, Web Soil Survey, and Farm Works scouting software.

Once the requirements were met, participating producers agreed to use their own equipment and resources for

The Soybean Management Verification Program (SoyMVP) is funded by Kentucky soybean producers through checkoff dollars allocated by the Kentucky Soybean Promotion Board.

all production practices throughout the season. In most cases, fields were split according to size and topography in order to get a valid comparison between producer practices and University of Kentucky recommendations. In those locations where the split didn't occur, two fields which may have been split by a natural feature (drainage ditch, berm, tree line, etc) were utilized for the sake of comparison.

Scouting and Recommendations

Fields were soil sampled and fertility recommendations, if necessary, were made based on soil test results from University of Kentucky Regulatory Services and *2010-2011 Lime and Nutrient Recommendations* (AGR-1). Producers were provided a copy of the university's soybean variety trial results in order to make varietal decisions. Soybean seeding rate decisions were made based mainly on planting date and how it relates to seeding rate versus planting date data obtained at the university. According to university research, a final plant stand of 100,000 plants per acre is sufficient to achieve maximum yields in full season soybean if seeds are planted early June or before.

The coordinator made weekly visits and recorded all insect, weed, disease, and crop physiological observations. If pest thresholds were met, the producer was contacted with a recommendation for the appropriate product and application rate. Tissue samples were pulled from the newest fully developed trifoliate at R1-R2 and were analyzed for nutrient levels. These nutrient levels are displayed along with established reference levels. Pictures were also taken at five set locations in each field for visual comparisons of canopy development. Canopy closure must reach 95 percent prior to soybean reproductive growth.

Fields were harvested and yields were calculated by either the use of yield monitors and/or a weigh wagon where available and adjusted to 13 percent moisture.

Economic Analysis

Economic analyses were done using partial budgets. Variable costs of production were considered for the comparison of practices between the fields. In the interest of confidentiality, input prices reflect an average of prices from area suppliers rather than the price paid by the producer, which may vary due to a number of reasons. Custom application rates for pesticide applications were obtained from the University of Kentucky Agricultural Economics Custom Machinery Rates Applicable to Kentucky (AEC 2010-03) and Corn and Soybean Budgets 2010. Cost of application was split for budget purposes if multiple chemicals were applied as a tank mixture. Fertilization and lime costs were included in the partial budget only if the producer obtained and followed recommendations on their portion of the field from a source other than the University of Kentucky Regulatory Services.

Location	Yield (bu/a)		Partial Net Return ($/a)	
	UK	FP	UK	FP
Muhlenberg	48.1	49.8	440.93	453.99
Trigg	23.9	28.1	190.40	204.69
Marshall	19.7	19.0	145.73	130.28
Calloway	26.7	24.3	222.90	192.72
Butler	44.7	46.6	394.29	403.99
Henderson 1	71.5	70.9	672.05	648.06
Henderson 2	75.3	80.5	737.57	747.90
Average	44.3	45.6	400.56	397.38
Advantage	-1.3		+3.18	

Results

Detailed results can be seen on the following pages. Average yield for the fields using university practices was 44.3 bushels per acre, compared to average yield of 45.6 bushels per acre for producer practice. Average partial return per acre for university practice was $400.56, compared to $397.38 per acre for producer practice.

Acknowledgments

SoyMVP Coordinators

Jason Sarver, Extension Associate, Princeton
Chad Lee, Grain Crops Extension Specialist, Lexington
Jim Herbek, Grain Crops Extension Specialist, Princeton
Lloyd Murdock, Extension Soil Specialist, Princeton
Greg Schwab, Extension Soil Specialist, Lexington

Special Thanks

Thanks to Kentucky Soybean Board and Association for funding this project and for their continued support of soybean production, protection, and promotion throughout the state.

County Extension Agents

Greg Drake
David Fourqurean
Todd Powell
Darrell Simpson
Mike Smith

Producers

David Boggess
John Boggess
Mike Burchett
Rob Klueppel
Phillip Meredith
Seven Springs Farms
Shane Wells

University of Kentucky

Greg Halich, Extension Agricultural Economist, Lexington
Don Hershman, Extension Plant Pathologist, Princeton
Doug Johnson, Extension Entomologist, Princeton
Jim Martin, Extension Weed Scientist, Princeton

For More Information

Soybean Management Verification Program
www.soymvp.blogspot.com

Kentucky Soybean Board
www.kysoy.org

Grain crop production in Kentucky
www.uky.edu/Ag/GrainCrops/

Site 1, Henderson

Producer: Phillip Meredith
County: Henderson
County Agent: Mike Smith
Coordinator: Jason Sarver
Field Location: Latitude: 37.92119
Longitude: -87.455513

Table 1a. Costs and Returns, 2010, Site 1.

Partial Costs/a†	Prod. $/a	Univ. $/a
Seed	50.77	36.92
Herbicide	8.63	8.63
Insecticide	5.90	0.00
Fungicide	12.00	0.00
Fertilizer	12.00	0.00
Total Partial Costs/a	89.30	45.55
Partial Return/a‡	837.20	783.12
Partial Net Return/a	747.90	737.57

† Costs for seeding rate and pest management are included. Any other costs that differed were also included. Costs are an average for input prices from the region. Custom application rates are included for pesticide applications. Additional trucking, storage, and/or drying costs are not included.

‡ Soybean prices are based on the average price for 2010/2011 marketing year for soybean.

Henderson Non-Irrigated Field Notes

April 22—Pioneer 93Y92 planted at 120,000 seeds per acre on UK side and 165,000 seeds per acre on producer practice side. Seeds were treated with Optimize and Apron Maxx on both sides.

May 2—Flood waters are entirely over the field. Replanting will probably be necessary. If the water is off in time we shouldn't lose much as far as planting date is concerned.

May 15—Replanting will most likely not be necessary, as the stand looks good.

May 25—Stand counts showed very good emergence. UK side has 111,200 plants per acre (92.6%) and producer side has 142,300 plants per acre (86.2%).

June 2—Plants have reached V4 and are 7-8 inches in height. There are a few flowers beginning to show. There are some small weeds starting to emerge throughout the field (Smooth Pigweed, Morningglory, Yellow Foxtail) while there are some Giant Ragweed plants that are very large in isolated areas. Phillip says that is where weed seeds collected around debris brought in by the high water. There is some very minor insect defoliation; below 5%.

Crop Development, Site 1

University Practices | **Producer Practices**

May 25 – V2

June 2 – V4

June 10 – V7, R1

June 17 – V10, R2

June 24 – V13, R2

Table 1b. Practices, 2010, Site 1.

		Producer	University
Field size (a)		40	
Previous crop		Corn	
Tillage		Tilled	
Soil type		Huntington Silt Loam, Egam Silty Clay Loam	
Soil test results	P_2O_5 (lb/a)	51	41
	K_2O (lb/a)	278	272
	pH	7.4	7.2
Fertilizer recommended		N/A	30 lb P_2O_5 30 lb K_2O
Fertilizer applied	P_2O_5 (lb/a)	None	
	K_2O (lb/a)		
	Ag lime (tons/a)		
Planting date		22-Apr	
Soybean variety		Pioneer 93Y92	
Row spacing (inches)		15	
Seeding rate (seeds/a)		165,000	120,000
Plant stand (plants/a)		142,300	111,200
Herbicide applications		32 oz Touchdown	
Insecticide applications		4 oz Hero	None
Fungicide applications		6 oz Quadris	None
Harvest date		7-Sep	
Yield (bu/a)		80.5	75.3

Table 1c. Insect Counts, 2010, Site 1.

		Producer					University				
Date	Sweeps	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers
17-Jun	50	2	2	0	0	2	3	2	0	0	4
24-Jun	50	4	3	0	0	3	4	2	0	0	3
8-Jul	50	0	3	0	0	0	0	4	0	0	0
21-Jul	50	0	5	0	2	0	0	7	0	3	1
4-Aug	50	0	7	2	3	0	0	20	2	5	0
11-Aug	50	0	4	0	3	0	0	55	4	5	0
20-Aug	50	0	0	2	2	0	0	5	12	2	0

Table 1d. Physiological Characteristics, 2010, Site 1.

	Producer			University		
Visit Date	Height (in)	Growth Stage	Canopy Closure	Height (in)	Growth Stage	Canopy Closure
25-May	4	V2	--	4	V2	--
2-Jun	7	V4	--	7	V4	--
10-Jun	12	R1, V7	85	12	R1, V7	75
17-Jun	20	R2, V10	Full	19	R2, V10	95
24-Jun	24	R2, V13	Full	22	R2, V13	Full
30-Jun	26	R3, V13	Full	25	R3, V13	Full
8-Jul	32	R4	Full	31	R4	Full
15-Jul	38	R4	Full	38	R4	Full
21-Jul	40	R5	Full	40	R5	Full
28-Jul	41	R5	Full	41	R5	Full
4-Aug	43	R6	Full	43	R6	Full
11-Aug	44	R6	Full	43	R6	Full
20-Aug	44	R7	Full	43	R7	Full
24-Aug	44	R7	Full	43	R7	Full

† VC is unrolled unifoliolate leaves. From ISU Extension publication, *Soybean Growth and Development* (PM 1945).

June 10—The field is starting to progress rapidly. The UK side is 70-85% canopy across the field, compared to 80-90% for the producer practice side. Plants have already reached R2. Crabgrass and Smooth Pigweed have become quite large. The field has just been sprayed, although I fear that glyphosate alone won't be enough considering the size of weeds and recent glyphosate-only observations.

June 17—The UK section has reached 90% canopy at R2, while the producer practice side is nearly 100%. The producer practice section is around 1-2 inches taller than the UK section. The field looks very good overall. Weed control is acceptable everywhere except the area of heavy Giant Ragweeds. They were burned buy probably won't die. There is still very little insect pressure but there were a few Bean Leaf Beetles and Japanese Beetles.

June 24—Full canopy has been reached on both sides. There is still very little pressure from Bean Leaf Beetles and Japanese Beetles. The field looks great overall. Rainfall has been adequate thus far.

June 30—The UK side has caught up in height. The field still looks great overall with no signs of any deficiencies. The Giant Ragweeds did not die in the isolated location. It's not enough to harm yields overall, but does look bad in that area.

July 8—Phillip sprayed fungicide, insecticide, and foliar fertilizer on his side. A recommendation was made for no application on the UK side because scouting did not warrant these products.

July 15—There are no noticeable differences between sides of the field. Plants are still at R4.

July 21—There has been a good deal of rain in the last week. The field is still clean pest wise.

July 28—There is some very light SDS showing up. I have to look for it to find it. Some Smooth Pigweed and Velvetleaf escapes have become evident, although they won't be yield limiting.

August 4—The field still looks good, although more pigweed escapes are showing up. There is still some very light SDS.

August 11—Bean Leaf Beetle and Green Stinkbug numbers rose sharply this week. Numbers are much greater on the UK side.

August 20—Plants have reached R7. Bean Leaf Beetles are gone but stinkbug numbers are still high. Weed escapes are more evident at this point but aren't at high enough numbers to hurt yield.

August 24—Looks very good. The potential is there for 80+ bushel yields.

Table 1e. Leaf Nutrient Analysis, 2010, Site 1.

	Reference Level	Prod.	Univ.
Nutrient	(%)		
P	0.25-0.60	0.48	0.47
K	1.50-2.30	1.91	2.00
Mg	0.25-0.70	0.49	0.47
Ca	0.80-1.40	0.98	0.98
S	0.25-0.60	0.3	0.29
Nutrient	**(ppm)**		
B	20-60	36	35
Zn	21-80	38	39
Mn	17-100	77	68
Fe	25-300	308	223
Cu	4-30	9	8

Date: 7-21
Growth Stage: R2

Site 2, Henderson

Producer: Phillip Meredith
County: Henderson
County Agent: Mike Smith
Coordinator: Jason Sarver
Field Location: Latitude: 37.871742
Longitude: -87.321163

Table 2a. Costs and Returns, 2010, Site 2.

Partial Costs/a†	Prod. $/a	Univ. $/a
Seed	50.77	36.92
Herbicide	8.63	8.63
Insecticide	5.90	0.00
Fungicide	12.00	13.00
Fertilizer	12.00	13.00
Total Partial Costs	89.30	71.55
Partial Return/a‡	737.36	743.60
Partial Net Return	648.06	672.05

† Costs for seeding rate and pest management are included. Any other costs that differed were also included. Costs are an average for input prices from the region. Custom application rates are included for pesticide applications. Additional trucking, storage, and/or drying costs are not included.

‡ Soybean prices are based on the average price for 2010/2011 marketing year for soybean.

Henderson Irrigated Field Notes

May 15—Southern Cross Caleb soybeans were planted at 120,000 seeds per acre on the UK side and 165,000 seeds per acre on the producer practice side. All seeds were treated with Optimize and Apron Maxx.

June 2—This field is super clean and looks good. There are some very small morningglory starting to emerge. The UK side has a standing population of 103,200 (86% emergence) with the producer practice coming in at 140,800 (86%).

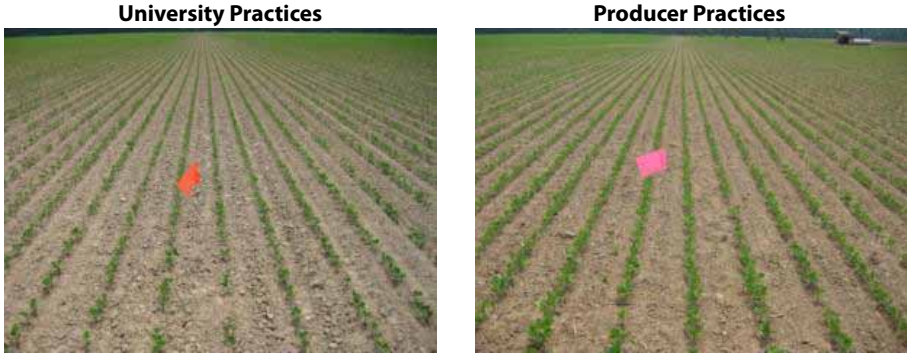
June 10—The pivot is running. Plants have reached V4 and still look good.

June 17—There are some small weeds starting to come in, including Large Crabgrass, Ivyleaf Morningglory, Prickly Sida, and Velvetleaf. The UK side is behind on canopy development (45% vs. 60%) but does have some time to catch up before reproductive growth.

June 24—Glyphosate sprayed this past week did a nice job controlling weeds, which were very small upon application. Canopy is starting to catch up on the UK side, which is at 70%, compared to 80% on the producer side.

Crop Development, Site 2

University Practices | **Producer Practices**



June 2 – V1

June 17 – V5

June 24 – V7

June 30 – V8

July 8 – V10, R2

Table 2b. Practices, 2010, Site 2.

		Producer	University
Field size (a)		46.4	
Previous crop		Corn	
Tillage		Tilled	
Soil type		Ginot Silt Loam/Silty Clay Loam, Melvin Silty Clay Loam	
Soil test results	P_2O_5 (lb/a)	29	27
	K_2O (lb/a)	145	133
	pH	6.5	6.5
Fertilizer recommended		N/A	60 lb P, 100 lb K
Fertilizer applied	P_2O_5 (lb/a)	None	
	K_2O (lb/a)		
	Ag lime (tons/a)		
Planting date		15-May	
Soybean variety		Southern Cross Caleb	
Row spacing (inches)		15	
Seeding rate (seeds/a)		165,000	120,000
Plant stand (plants/a)		140,800	103,200
Herbicide applications		24 oz Touchdown	
Insecticide applications		4 oz Hero	None
Fungicide applications		6 oz Quadris	
Harvest date		23-Sep	
Yield (bu/a)		70.9	71.5

Table2c. Insect Counts, 2010, Site 2.

		Producer					University				
Date	Sweeps	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers
30-Jun	50	4	0	0	0	2	5	0	0	0	4
8-Jul	50	3	0	0	0	3	4	0	0	0	2
21-Jul	50	0	0	0	0	0	0	0	0	0	0
28-Jul	50	0	5	2	0	0	0	8	1	0	0
20-Aug	50	0	0	2	0	0	0	4	4	0	0

Table 2d. Physiological Characteristics, 2010, Site 2.

	Producer			University		
Date	Height (in)	Growth Stage	Canopy Closure	Height (in)	Growth Stage	Canopy Closure
2-Jun	3	V1	--	3	V1	--
10-Jun	5	V4	--	5	V4	--
17-Jun	8	V5	--	7	V5	--
24-Jun	12	V7	80%	10	V7	70%
30-Jun	20	V8	90%	18	V8	80%
8-Jul	23	R2, V10	Full	22	R2, V10	Full
15-Jul	25	R3	Full	24	R3	Full
21-Jul	27	R3	Full	27	R3	Full
28-Jul	34	R4	Full	33	R4	Full
4-Aug	38	R5	Full	38	R5	Full
11-Aug	41	R5	Full	41	R5	Full
20-Aug	44	R6	Full	44	R6	Full
24-Aug	45	R6	Full	45	R6	Full
6-Sep	46	R7	Full	46	R7	Full
16-Sep	46	R7	Full	46	R7	Full

† VC is unrolled unifoliolate leaves. From ISU Extension publication, *Soybean Growth and Development* (PM 1945).

June 30—Weed control was good enough that we should be able to get by with that application alone, as the canopy is nearly full. Canopy closure on the UK side is 85%, compared to 90-95% on the producer practice side. The producer side is consistently 2-3 inches taller across the field. There are a few Japanese Beetles, but insect pressure overall is very low. There is some noticeable Septoria, which has moved up with the rain and running of the pivot. Some plants have flowers starting to show.

July 8—The field is completely canopied. Plant heights are becoming more even with the producer side being around an inch taller on average. The field has reached reproductive growth throughout. There are a few Japanese Beetles but overall insect pressure is still low.

July 15—The UK side was sprayed with fungicide and foliar fertilizer, while the producer side was sprayed with these products and an insecticide. While no deficiency symptoms have shown themselves as of yet, spring soil tests revealed low fertility going into the season. The irrigated environment leads to a higher susceptibility for disease, thus the fungicide application. Insect pressure has been very low to this point; therefore I felt that an insecticide application was not warranted. We did leave a section of the UK side out that received no inputs at this point.

July 21—This field is showing big potential for high yields. Plants are extremely tall, but nodes aren't stacked as tight as they could be. There is still very little insect pressure.

July 28—Both sides still look good, with little disease and insect pressure. There is some of the morningglory that wasn't killed, mainly around field edges, but it shouldn't be an issue. The plants are starting to show the early symptoms of a water deficiency.

August 5—The pivot is running and we have gotten some rain.

August 20—The R6 growth stage has been reached. There are a few stink bugs but nothing to be concerned about. The disease pressure in this field was really limited to Septoria early in the season, even where fungicide was not applied.

August 24—This field may have 80+ bushel potential. It's very clean other than the morningglory vines near field edges.

September 6—As the field starts to dry down, it appears that seed fill wasn't quite as good as I originally thought, but 70 bushel potential should still be there.

September 16—Seeds are around 20% moisture. The field will be ready to harvest soon.

Table 2e. Leaf Nutrient Analysis, 2010, Site 2.

	Reference Level	Prod.	Univ.
Nutrient	(%)		
P	0.25-0.60	0.57	0.64
K	1.50-2.30	1.87	2.18
Mg	0.25-0.70	0.38	0.35
Ca	0.80-1.40	0.83	0.78
S	0.25-0.60	0.3	0.27
Nutrient	**(ppm)**		
B	25-300	40	44
Zn	17-200	47	48
Mn	21-80	87	71
Fe	4-30	94	79
Cu	20-60	16	13

Date: 7-21
Growth Stage: R2

Site 3, Butler

Producer: Shane Wells
County: Butler
County Agent: Greg Drake
Coordinator: Jason Sarver
Field Location: Latitude: 37.237577
Longitude: -86.869093

Table 3a. Costs and Returns, 2010, Site 3.

Partial Costs/a†	Prod. $/a	Univ. $/a
Seed	43.08	36.92
Herbicide	17.67	17.67
Insecticide	6.90	0.00
Fungicide	13.00	16.00
Total Partial Costs	80.65	70.59
Partial Return/a‡	484.64	464.88
Partial Net Return	403.99	394.29

† Costs for seeding rate and pest management are included. Any other costs that differed were also included. Costs are an average for input prices from the region. Custom application rates are included for pesticide applications. Additional trucking, storage, and/or drying costs are not included.

‡ Soybean prices are based on the average price for 2010/2011 marketing year for soybean.

Butler Field Notes

June 7—The UK side was planted at 120,000, while the producer side was planted at 140,000.

June 18—There are some small weeds starting to emerge. It's mostly crabgrass and morningglory, as well as small trees. There are also some large skip areas or poor emergence. It appears to be in lower lying areas where water would have sat.

June 25—The poor areas have been replanted. Shane sprayed June 30 with glyphosate and Cadet.

June 30—The replant beans are coming in and are roughly 2 growth stages behind the initial planting. The UK plant stand is 98,300 plants per acre, compared to 115,400 on the producer side.

July 8—The field is coming along nicely and is growing very fast. The replant beans are still roughly two stages behind the original planting. I suspect there won't be much difference the later the season gets.

July 15—Plants have nearly doubled in height over the last week. Temperatures have been very warm and the field has had adequate moisture. The field is very clean of weeds, as well as insects and disease.

Crop Development, Site 3

University Practices | **Producer Practices**

June 30 – V2

July 8 – V4

July 15 – V6

July 22 – V8, R2

July 22—Reproductive growth has been reached. Canopy closure is varied (70-95%), depending on the area of the field in question. The field has had adequate moisture for most of the season thus far. There is some Septoria that is starting to move up with the rain. There are a few Japanese Beetles and grasshoppers. As a result of the moisture and the heat, plants have nearly doubled in height again.

July 28—Canopy is now fully closed across the field. This will be a very tall variety. Pest pressure is very low.

August 4—Shane will spray fungicide on his half of the field. Given the moisture and the location of the field in bottom, I recommended a fungicide application as well. Shane will also leave a portion untreated as a comparison.

Table 3b. Practices, 2010, Site 3.

		Producer	University
Field size (a)		36	25
Previous crop		Corn	
Tillage		No-Till	
Soil type		Melvin Silt Loam	
Soil test results	P_2O_5 (lb/a)	11	11
	K_2O (lb/a)	156	156
	pH	6.2	6.2
Fertilizer recommended		N/A	*Fertilization done before field enrolled in program
Fertilizer applied	P_2O_5 (lb/a)	80	80
	K_2O (lb/a)	80	80
	Ag lime (tons/a)	-	-
Planting date		7-Jun	
Soybean variety		Asgrow 4630	
Row spacing (inches)		15	
Seeding rate (seeds/a)		140,000	125,000
Plant stand (plants/a)		115,400	98,300
Herbicide applications		24 oz Roundup + 0.6 oz Cadet	
Insecticide applications		4 oz Hero	None
Fungicide applications		6 oz Quadris	
Harvest date		11-Oct	
Yield (bu/a)		46.6	44.7

August 12—There is some moderate insect pressure but the field still looks great overall.
August 24—One thing of note that I have noticed is the incidence of four-bean pods. This won't necessarily equate to yield but I've seen more incidence of this than ever before. Insect and disease pressure is still very low.
September 10—Some very light SDS is starting to show. Plants have reached R6 growth stage.
September 16—There is some light Frogeye Leaf Spot and SDS, as well as moderate Bean Leaf Beetles. The field still has good potential of 50+ bushels per acre.
September 21—The field is starting to dry down. Grain filling wasn't as good as I originally thought, but the field still looks very good, especially for this growing season.

Table 3c. Insect Counts, 2010, Site 3.

		Producer					University				
Date	Sweeps	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers
22-Jul	50	3	0	0	3	2	4	0	0	2	0
28-Jul	50	0	3	0	2	1	0	3	1	3	2
4-Aug	50	0	5	0	1	3	0	6	2	0	4
12-Aug	50	0	2	1	0	2	0	20	1	2	5
24-Aug	50	0	0	1	0	0	0	5	2	2	0

Table 3d. Physiological Characteristics, 2010, Site 3.

	Producer			University		
Date	Height (in)	Growth Stage	Canopy Closure	Height (in)	Growth Stage	Canopy Closure
18-Jun	2	VC	--	2	VC	--
30-Jun	3	V2	--	3	V2	--
8-Jul	5	V4	--	5	V4	--
15-Jul	10	V6	65	10	V6	60
22-Jul	16	V8, R2	85	16	V8, R2	80
28-Jul	22	V11, R3	Full	22	V11, R3	Full
4-Aug	28	R4	Full	28	R4	Full
12-Aug	33	R5	Full	33	R5	Full
24-Aug	37	R5	Full	37	R5	Full
10-Sep	39	R6	Full	38	R6	Full
16-Sep	41	R6	Full	40	R6	Full
21-Sep	42	R7	Full	42	R7	Full

† VC is unrolled unifoliolate leaves. From ISU Extension publication, *Soybean Growth and Development* (PM 1945).

Table 3e. Leaf Nutrient Analysis, 2010, Site 3.

	Reference Level	Prod.	Univ.
Nutrient	(%)		
P	0.25-0.60	0.56	0.58
K	1.50-2.30	2.03	2.25
Mg	0.25-0.70	0.44	0.44
Ca	0.80-1.40	0.95	0.96
S	0.25-0.60	0.25	0.27
Nutrient	(ppm)		
B	20-60	42	45
Zn	21-80	49	57
Mn	17-100	101	74
Fe	25-300	192	145
Cu	4-30	10	13

Date: 7-21
Growth Stage: R2

Site 4, Calloway

Producer: Mike Burchett
County: Calloway
County Agent: Todd Powell
Coordinator: Jason Sarver
Field Location: Latitude: 36.718527
Longitude: -88.372139

Table 4a. Costs and Returns, 2010, Site 4.

Partial Costs/a†	Prod. $/a	Univ. $/a
Seed	43.08	37.86
Herbicide	16.92	16.92
Insecticide	0.00	0.00
Fungicide	0.00	0.00
Total Partial Costs	60.00	54.78
Partial Return/a‡	252.72	277.68
Partial Net Return	192.72	222.90

† Costs for seeding rate and pest management are included. Any other costs that differed were also included. Costs are an average for input prices from the region. Custom application rates are included for pesticide applications. Additional trucking, storage, and/or drying costs are not included.

‡ Soybean prices are based on the average price for 2010/2011 marketing year for soybean.

Calloway Field Notes

May 13—Mike planted Southern Cross 'Caleb' variety. Seeds were planted at 140,000 seeds per acre and treated with Apron Maxx on producer side. Seeds were planted at 123,000 and untreated on the university side. Sharpen and glyphosate were sprayed as a burn-down application prior to soybean planting.

May 28—Most plants that are going to emerge are fully through, but a few are still emerging. This is occurring mainly in the lower lying areas of the field where water was standing. These areas of standing water could be a potential problem for weeds and emergence.

June 3—Some weeds are beginning to emerge; mainly crabgrass, pigweed, and foxtail on the university side and pigweed, foxtail, and Nutsedge on the producer side. These weeds, and particularly the Nutsedge, are most abundant in the lower lying wet areas of the field.

June 10—Emergence throughout the field is not as good as I would have hoped. The UK side has a plant stand of 89,400 (73%), while the producer side has a stand of 100,300 (72%). Weeds are getting somewhat heavy. Mike will spray Classic and glyphosate today.

Crop Development, Site 4

University Practices | **Producer Practices**


June 3 – V1


June 10 – V3


June 16 – V4 | June 16 – V5


June 24 – V8, R2


July 6 – V11, R3

Table 4b. Practices, 2010, Site 4.

		Producer	University
Field size (a)		30.2	
Previous crop		Soybean	
Tillage		No-Till	
Soil type		Grenada Silt Loam	
Soil test results	P_2O_5 (lb/a)	83	89
	K_2O (lb/a)	195	206
	pH	6.1	6.5
Fertilizer recommended		N/A	60 lb K_2O
Fertilizer applied	P_2O_5 (lb/a)	--	
	K_2O (lb/a)	60 lb K_2O	
	Ag lime (tons/a)	--	
Planting date		13-May	
Soybean variety		Southern Cross Caleb	
Row spacing (inches)		15	
Seeding rate (seeds/a)		140,000	123,000
Plant stand (plants/a)		100,300	89,400
Herbicide applications		24 oz Glyphosate + 2/3 oz Classic	
Insecticide applications		None	
Fungicide applications		None	
Harvest date		24-Sep	
Yield (bu/a)		24.3	26.7

Table 4c. Insect Counts, 2010, Site 4.

		Producer					University				
Date	Sweeps	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers
24-Jun	50	5	0	0	0	2	5	0	0	0	3
6-Jul	50	5% def.	3	0	0	3	10% def.	3	0	0	3
14-Jul	50	0	2	0	2	2	5	2	0	0	2
23-Jul	50	0	9	0	6	0	0	5	0	8	0
4-Aug	50	0	8	4	10	0	0	8	5	9	0

Table 4d. Physiological Characteristics, 2010, Site 4.

	Producer			University		
Date	Height (in)	Growth Stage	Canopy Closure	Height (in)	Growth Stage	Canopy Closure
28-May	2	VC	--	2	VC	--
3-Jun	4	V1	--	3	V1	--
10-Jun	6	V3	--	5	V3	--
16-Jun	8	V5	50	7	V4	40
24-Jun	13	R2, V8	85	12	R2, V8	75
6-Jul	18	R2, V11	Full	18	R2, V11	Full
14-Jul	24	R3, V13	Full	23	R3, V13	Full
23-Jul	28	R4, V15	Full	26	R4, V15	Full
4-Aug	30	R5	Full	29	R5	Full
9-Aug	32	R6	Full	31	R6	Full
23-Aug	33	R6	Full	32	R6	Full
9-Sep	34	R7	Full	34	R7	Full
13-Sep	34	R7	Full	34	R7	Full

† VC is unrolled unifoliolate leaves. From ISU Extension publication, *Soybean Growth and Development* (PM 1945).

June 16—There is some yellowing in the beans, post spray. Weed control appears to be quick and acceptable overall. The only potential problem is the Nutsedge, but it may just be dying slower than the others. The producer side is slightly taller.

June 24—The Nutsedge was handled very effectively by the weed control program. The field is now very clean in regards to weeds. Both sides of the field have reached reproductive growth. The producer side is still slightly taller and has developed a better canopy (85%) when compared to the university side (75%). There are some bare spots from the early season wet field conditions that never filled in. Some Japanese Beetles are starting to show up.

July 6—With the lack of moisture, the sides have basically evened up. Full canopy has been reached although the dry conditions are causing the leaves to curl, particularly toward the top. Japanese beetles are getting heavy in spots, with up to 10% defoliation occurring in isolated areas.

July 14—The rain in the last week really made this field look a lot better. The leaves opened back up and pod set is much better than I expected given the recent dry conditions. Insect pressure is minimal and the field is clean of weeds and visible diseases.

July 23—The heat and lack of rain since the last visit has made the plants really curl up again. Drought stress is apparent. Pod set was good but they may not fill well with the overall lack of moisture. The grasshoppers have shown up but damage is limited thus far.

August 4—The field is now extremely dry. Pods are still on but aren't really filling at all yet. Leaves are closed completely.

August 9—Some pods are starting to dry down, most of those are empty. Plants around the drier field edges are dying off.

August 23—The field is still very dry. Pod fill is somewhat better than it looked a couple of weeks ago but many of the pods died off.

September 9—Now that the field has reached R7, it looks better than it did before and better than I expected it to. It may have 30 bushel potential.

September 13—We finally got some rain but it's too late to be very effective. Pods are dry but seeds are still at ~30% moisture.

Table 4e. Leaf Nutrient Analysis, 2010, Site 4.

	Reference Level	Prod.	Univ.
Nutrient	(%)		
P	0.25-0.60	0.63	0.68
K	1.50-2.30	2.11	2.21
Mg	0.25-0.70	0.39	0.41
Ca	0.80-1.40	0.96	0.93
S	0.25-0.60	0.27	0.27
Nutrient	(ppm)		
B	20-60	30	37
Zn	21-80	39	46
Mn	17-100	91	78
Fe	25-300	112	96
Cu	4-30	9	9

Date: 7-21
Growth Stage: R2

Site 5, Marshall

Producer: Mike Burchett
County: Marshall
County Agent: Todd Powell/Lincoln Martin
Coordinator: Jason Sarver
Field Location: Latitude: 36.730411
Longitude: -88.356067

Table 5a. Costs and Returns, 2010, Site 5.

Partial Costs/a†	Prod. $/a	Univ. $/a
Seed	43.08	37.91
Seed Treatment	3.00	0.00
Herbicide	21.24	21.24
Insecticide	0.00	0.00
Fungicide	0.00	0.00
Total Partial Costs	67.32	59.15
Partial Return/a‡	197.60	204.88
Partial Net Return	130.28	145.73

† Costs for seeding rate and pest management are included. Any other costs that differed were also included. Costs are an average for input prices from the region. Custom application rates are included for pesticide applications. Additional trucking, storage, and/or drying costs are not included.

‡ Soybean prices are based on the average price for 2010/2011 marketing year for soybean.

Marshall Field Notes

May 13—Planted at 123,000 on the UK side and 140,000 on the producer side. Producer seeds were treated with Apron Maxx, while UK seeds were not treated. The field received a burn-down weed control application of Sharpen and glyphosate.

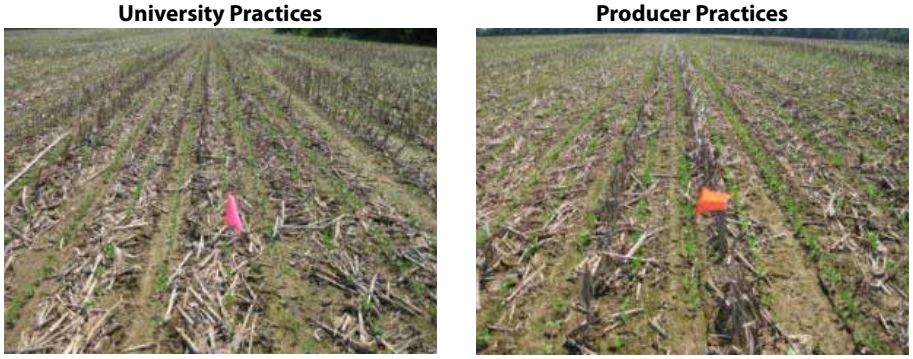
May 24—Some plants have emerged with some others still trying to get out of the ground. Rain after planting has crusted the ground over in some spots. I took penetrometer readings at Mike's request. There were a couple of areas in the field that had a significant hardpan. It will be interesting to see if there are any visual differences between affected and non-affected areas during the growing season. Concerning weeds, the field is very clean.

May 28—Emergence on the UK side was 87,800 (73%) and 110,200 (79%) on the producer side.

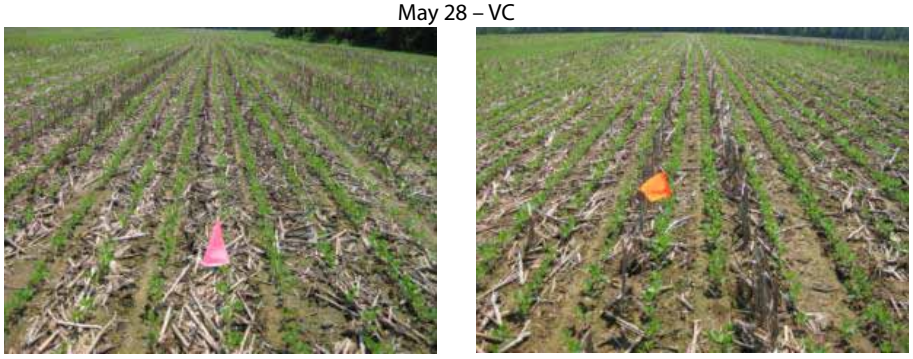
June 3—There are some weeds starting to emerge; mainly pigweed, marestail, crabgrass, and foxtail. Early to mid next week would be the optimum time to spray. Mike will spray glyphosate today. The field needs something for marestail control so we'll see how things look post glyphosate application.

Crop Development, Site 5

University Practices | **Producer Practices**



May 28 – VC



June 3 – V3

June 16 – V5

June 24 – V8

July 6 – V11, R2

Table 5b. Practices, 2010, Site 5.

		Producer	University
Field size (a)		28.5	
Previous crop		Corn	
Tillage		No-Till	
Soil type		Grenada Silt Loam	
Soil test results	P_2O_5 (lb/a)	52	
	K_2O (lb/a)	180	
	pH	6.0	
Fertilizer recommended		N/A	30 lb P_2O_5 70 lb K_2O
Fertilizer applied	P_2O_5 (lb/a)	30	
	K_2O (lb/a)	70	
	Ag lime (tons/a)	--	
Planting date		13-May	
Soybean variety		Southern Cross Caleb	
Row spacing (inches)		15	
Seeding rate (seeds/a)		140,000	123,200
Plant stand (plants/a)		110,200	87,800
Herbicide applications		Glyphosate + 1 oz Sharpen, 32 oz Glyphosate	
Insecticide applications		None	
Fungicide applications		None	
Harvest date		28-Sep	
Yield (bu/a)		19.0	19.7

Table 5c. Insect Counts, 2010, Site 5.

		Producer					University				
Date	Sweeps	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers
24-Jun	50	4	0	0	2	2	3	0	0	1	3
6-Jul		5	0	0	1	3	4	0	0	0	2
14-Jul	50	0	3	0	5	0	0	2	0	5	0
26-Jul	50	0	7	0	2	0	0	6	0	2	1
4-Aug	50	0	9	2	3	2	0	11	2	5	0
9-Aug	50	0	20	1	4	0	0	16	2	3	0

Table 5d. Physiological Characteristics, 2010, Site 5.

	Producer			University		
Date	Height (in)	Growth Stage	Canopy Closure	Height (in)	Growth Stage	Canopy Closure
24-May	1	VC	--	1	VC	--
28-May	2	V1	--	2	V1	--
3-Jun	6	V3	--	6	V3	--
16-Jun	11	V5	60%	9	V5	55%
24-Jun	13	R2, V8	85%	12	R2, V8	80%
6-Jul	21	R2, V11	Full	20	R2, V11	Full
14-Jul	23	R3, V12	Full	22	R3, V12	Full
26-Jul	28	R4	Full	27	R4	Full
4-Aug	30	R5	Full	30	R5	Full
9-Aug	34	R5	Full	33	R5	Full
23-Aug	35	R6	Full	34	R6	Full
9-Sep	36	R7	Full	35	R7	Full

† VC is unrolled unifoliolate leaves. From ISU Extension publication, *Soybean Growth and Development* (PM 1945).

June 16—Weed control was good overall, but there was a section that was missed that will need to be sprayed again. Marestail may not die. The producer side of the field is about two inches taller overall, while the growth stage on both sides is V5.

June 24—Reproductive growth has been reached with both sides of the field looking pretty even. Canopy development has been very good and is at 90% across the field. Weeds were controlled nicely although I still don't think the marestail has been killed completely.

July 6—This field is starting to get very dry and the leaves are starting to fold up. Some of the larger marestail made it through the spray application. There are a few Japanese Beetles flying around but nothing of concern.

July 14—The field looks significantly better than the last visit due to some rain over the last week. The two sides of the field look basically identical. A few grasshoppers and Bean Leaf Beetles are all that showed up in the sweep net. Septoria is starting to move up in some areas.

July 26—Septoria is moving up more than I would have predicted in a field with such a lack of rainfall. A fungicide comparison would have potentially been interesting in this field.

August 4—The field has gone back to being extremely dry. Leaves are folded up and in the end, pod fill will most likely be what limits a field that looked good early in the season.

August 9—The field is still very dry. Some of the lower pods are filling but most of the newer pods are dying off. Leaves are dropping fast with the high heat and lack of moisture.

August 23—We are still terribly dry but the pod fill is better than expected on those pods that did survive. Several insects have come on late but won't amount to any problem as this point.

September 9—The field looks slightly better than I thought it was going to at the height of the dry period. It may have 25-30 potential.

Table 5e. Leaf Nutrient Analysis, 2010, Site 5.

	Reference Level	Prod.	Univ.
Nutrient	(%)		
P	0.25-0.60	0.60	0.65
K	1.50-2.30	2.12	2.29
Mg	0.25-0.70	0.39	0.40
Ca	0.80-1.40	0.93	1.05
S	0.25-0.60	0.25	0.27
Nutrient	**(ppm)**		
B	25-300	29	36
Zn	17-200	43	45
Mn	21-80	80	77
Fe	4-30	93	79
Cu	20-60	18	10

Date: 7-21
Growth Stage: R2

Site 6, Muhlenberg

Producer: David Boggess
County: Muhlenberg
County Agent: Darrell Simpson
Coordinator: Jason Sarver
Field Location: Latitude: 37.206753
Longitude: -87.141219

Table 6a. Costs and Returns, 2010, Site 6.

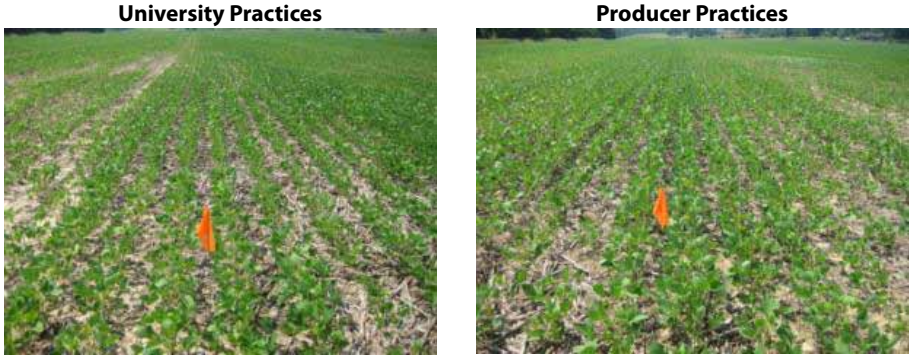
Partial Costs†	Prod. $/a	Univ. $/a
Seed	41.54	36.92
Herbicide	22.39	22.39
Insecticide	0.00	0.00
Fungicide	0.00	0.00
Total Partial Costs	63.93	59.31
Partial Return‡	517.92	500.24
Partial Net Return	453.99	440.93

† Costs for seeding rate and pest management are included. Any other costs that differed were also included. Costs are an average for input prices from the region. Custom application rates are included for pesticide applications. Additional trucking, storage, and/or drying costs are not included.

‡ Soybean prices are based on the average price for 2010/2011 marketing year for soybean.

Crop Development, Site 6

University Practices **Producer Practices**



June 22 – V6

June 29 – V9

July 7 – V12, R2

Muhlenberg Field Notes

May 12—Asgrow AG4703 was planted at 119,500 seeds per acre on the university side, 134,500 seeds per acre on the producer side, and 174,500 in a third section.

May 26—There are large skip areas that don't appear like they will emerge. Weeds are already starting to get somewhat heavy, especially in those spots of poor emergence. David will spray Roundup and Firstrate which should do a good job of controlling the weeds that are present.

June 7—Those plants that did emerge look good. The areas of best emergence are those where corn residue was heavier. I believe there are several reasons for this. The residue didn't allow the seed to get too deep into the ground and it provided protection from crusting from the rains that came post-planting. Also, these were generally higher areas where water could not stand. There hasn't been any rain since the original post-planting event and the ground is already starting to get hot and dry. Overall emergence was not as good as we would have hoped for. Emergence was 90,600 (75%) on the UK side, 102,800 (77%) on the producer practice side, and 118,500 (68%) on the high rate area. The plant number on the producer side is more in line with our target stand number.

June 13—Emergence continues to progress nicely. The field is still drier than I would like it to be but plants are not showing any sign of stress at this point.

June 22—The field is still basically weed free. The UK and producer practice side are essentially even size-wise, while the high rate section is around two inches taller. The ground is still hard and dry. Plants look better in the areas with high levels of corn residue, probably due to moisture.

June 29—We have had some rainfall over the last week. The field looks very good other than those bare spots. There are some weeds starting to emerge in those areas of poor emergence. Johnsongrass will be the main issue there. Reproductive growth has been reached and the field is very close to full canopy.

July 7—The high rate is still noticeably taller than the other two. The field still looks remarkably good for the lack of moisture. Weeds will be an issue in the areas of poor emergence, although the better areas have canopied and should be fine in that regard.

July 15—The Johnsongrass has really started to show itself in those bare spots. It won't affect yield, as those spots have no soybean plants anyway, but it will look bad and could cause problems for future years if it goes to seed.

July 28—Considering the lack of moisture and areas of poor emergence, the field looks very good. The R4 growth stage has been reached. There is still nice potential in this field. The node count is at 19 so they are really stacked up nicely.

Table 6b. Practices, 2010, Site 6.

		Producer	University
Field size (a)		10.0	
Previous crop		Corn	
Tillage		None	
Soil type		Belknap Silt Loam	
Soil test results	P_2O_5 (lb/a)	68	94
	K_2O (lb/a)	153	157
	pH	6.5	7.1
Fertilizer recommended		N/A	80 lb K_2O
Fertilizer applied	P_2O_5 (lb/a)	None	
	K_2O (lb/a)		
	Ag lime (tons/a)		
Planting date		12-May	
Soybean variety		Asgrow 4703	
Row spacing (inches)		15	
Seeding rate (seeds/a)		135,000	120,000
Plant stand (plants/a)		102,800	90,600
Herbicide applications		32 oz Roundup + 0.3 oz Firstrate	
Insecticide applications		None	
Fungicide applications			
Harvest date		1-Oct	
Yield (bu/a)		49.8	48.1

August 5—There is still very little insect and disease pressure. The plants are getting very tall and the Johnsongrass has overtaken the bare spots.
August 12—There is some frogeye leaf spot starting to show up. It appears to be slightly higher in the high rate section. That section is also starting to see a great deal of lodging, whereas the rest of the field is not experiencing the problem at all.
August 24—The field is getting pretty dry again. Some SDS has shown up. There are some Bean Leaf Beetles present, but in low numbers.
September 10—Lodging is really increasing in the high rate field. The field has hit R7 for the most part and is starting to dry down.
September 16—The high rate section is staying green longer than the rest.

Table 6c. Insect Counts, 2010, Site 6.

		Producer					University				
Date	Sweeps	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers
7-Jul	50	2	0	0	0	3	3	0	0	0	2
15-Jul	50	4	0	0	0	2	2	0	0	0	4
28-Jul	50	0	4	0	1	4	0	5	0	1	5
5-Aug	50	0	8	0	4	0	0	11	1	2	1
12-Aug	50	0	10	3	3	0	0	12	2	4	0

Table 6d. Physiological Characteristics, 2010, Site 6.

	Producer			University		
Date	Height (in)	Growth Stage	Canopy Closure	Height (in)	Growth Stage	Canopy Closure
26-May	2	VC	--	2	VC	--
7-Jun	5	V2	--	5	V2	--
13-Jun	7	V3	--	7	V3	--
22-Jun	10	V6	45	10	V6	45
29-Jun	15	V9	75	14	V9	70
7-Jul	22	R2, V12	90	22	R2, V12	95
15-Jul	25	R3, V13	Full	25	R3, V13	Full
28-Jul	35	R4, V19	Full	35	R4, V19	Full
5-Aug	36	R4	Full	36	R4	Full
12-Aug	37	R5	Full	37	R5	Full
24-Aug	39	R6	Full	38	R6	Full
10-Sep	40	R7	Full	39	R7	Full
16-Sep	40	R7	Full	39	R7	Full

† VC is unrolled unifoliolate leaves. From ISU Extension publication, *Soybean Growth and Development* (PM 1945).

Table 6e. Leaf Nutrient Analysis, 2010, Site 6.

	Reference Level	Prod.	Univ.
Nutrient	(%)		
P	0.25-0.60	0.62	0.60
K	1.50-2.30	2.01	2.02
Mg	0.25-0.70	0.37	0.36
Ca	0.80-1.40	0.89	0.89
S	0.25-0.60	0.29	0.28
Nutrient	(ppm)		
B	25-300	33	31
Zn	17-200	47	46
Mn	21-80	84	65
Fe	4-30	85	116
Cu	20-60	11	11

Date: 7-21
Growth Stage: R2

Site 7, Trigg

Producer: Seven Springs Farms
County: Trigg
County Agent: David Fourqurean
Coordinator: Jason Sarver
Field Location: Latitude: 36.967628
Longitude: -87.864566

Table 7a. Costs and Returns, 2010, Site 7.

Partial Costs/a†	Prod. $/a	Univ. $/a
Seed	44.62	36.92
Herbicide	21.24	21.24
Insecticide	4.16	0.00
Fungicide	17.53	0.00
Total Partial Costs	87.55	58.16
Partial Return/a‡	292.24	248.56
Partial Net Return	204.69	190.40

† Costs for seeding rate and pest management are included. Any other costs that differed were also included. Costs are an average for input prices from the region. Custom application rates are included for pesticide applications. Additional trucking, storage, and/or drying costs are not included.

‡ Soybean prices are based on the average price for 2010/2011 marketing year for soybean.

Trigg Field Notes

June 2—The field was planted with a Pioneer 94Y20 variety. The seeding rate was 125,000 on the UK side, 145,000 on the producer practice side, and 225,000 on an extra high rate section. There is quite a bit of variance in the topography of this field. The layout was executed in an attempt to negate this, but differences may be evident if the season is particularly wet or dry.

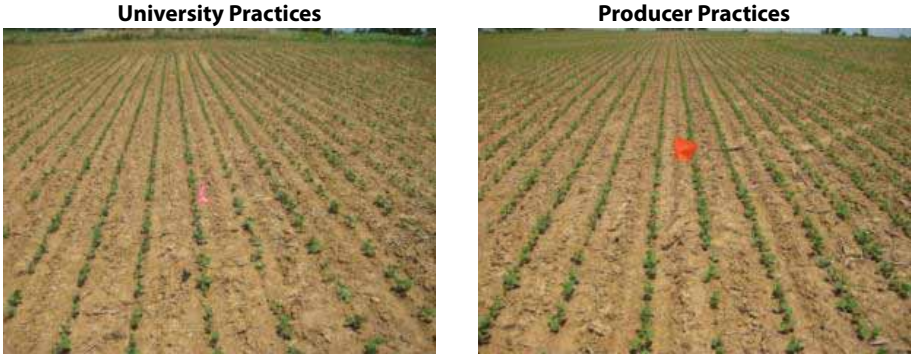
June 15—Plants have emerged nicely and evenly. Stand count was 103,200 (82%) for the UK side, 117,400 (81%) for the producer side, and 176,300 (78%) for the high rate section.

June 22—There is some heavy crabgrass starting to come in. Next week would really be the optimum time to spray as we should still be able to handle what is there and catch anything that is currently emerging.

June 29—The crabgrass is getting quite large and there is some pigweed coming through as well. Canopy is getting close to full in most areas of the field so one application before it closes should do the job. Canopy is ahead in the high rate section, followed by the producer practice and then

Crop Development, Site 7

University Practices | **Producer Practices**

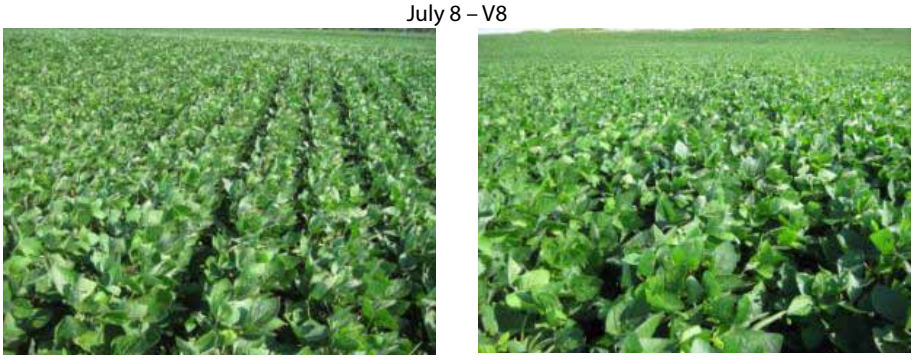


June 15 – V1

June 22 – V2

June 29 – V5

July 8 – V8



July 23 – V14, R2

Table 7b. Practices, 2010, Site 7.

		Producer	University
Field size (a)		3.9	3.8
Previous crop		Corn	Corn
Tillage		Tilled	Tilled
Soil type		Crider Silt Loam, Nolin Silt Loam	Crider Silt Loam, Nolin Silt Loam
Soil test results	P_2O_5 (lb/a)	51	59
	K_2O (lb/a)	306	230
	pH	6.3	6.1
Fertilizer recommended		N/A	
Fertilizer applied	P_2O_5 (lb/a)	None	30
	K_2O (lb/a)		40
	Ag lime (tons/a)		--
Planting date		2-Jun	
Soybean variety		Pioneer 94Y20	
Row spacing (inches)		15	
Seeding rate (seeds/a)		145,000	125,000
Plant stand (plants/a)		117,400	103,200
Herbicide applications		32 oz Glyphosate + 1 oz Sharpen, 32 oz Glyphosate	
Insecticide applications		2 oz Lambda-Cy	
Fungicide applications		6 oz Headline	
Harvest date		5-Oct	
Yield (bu/a)		28.1	23.9

Table 7c. Insect Counts, 2010, Site 7.

		Producer					University				
Date	Sweeps	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers	Japanese Beetle	Bean Leaf Beetle	Green Stink Bug	Grasshopper	Loopers
29-Jun	50	0	0	0	0	2	2	0	0	0	1
8-Jul	50	0	0	0	0	3	3	3	0	0	2
23-Jul	50	2	3	0	0	0	2	4	0	0	0
9-Aug	50	0	2	0	2	0	0	14	0	2	0

Table 7d. Physiological Characteristics, 2010, Site 7.

	Producer			University		
Date	Height (in)	Growth Stage	Canopy Closure	Height (in)	Growth Stage	Canopy Closure
15-Jun	2	V1	--		V1	--
22-Jun	6	V2	--	5	V2	--
29-Jun	9	V5	75	8	V5	85
8-Jul	19	V8	90	19	V8	95
23-Jul	28	R2, V14	Full	26	R2, V14	Full
30-Jul	35	R4	Full	32	R4	Full
9-Aug	38	R5	Full	36	R5	Full
16-Aug	40	R6	Full	38	R6	Full
7-Sep	42	R7	Full	40	R7	Full
14-Sep	42	R7	Full	40	R7	Full

† VC is unrolled unifoliolate leaves. From ISU Extension publication, *Soybean Growth and Development* (PM 1945).

the university side. This is expected, but I also expect all to be full before reproductive growth begins. Insect numbers are very low. Rob will have the field sprayed either today or tomorrow.

July 7—The field has been sprayed. Canopy is nearly full except for hillsides and rockier areas that the dry conditions are affecting. The field still looks good overall, despite the dryness.

July 8—Weed control was very good. Not surprisingly, the field looks much better in low areas, with hillsides looking by far the worst. Lesser canopy development and folded leaves characterize these hillsides.

July 23—Full canopy has been reached. At this point, the producer practice side and the high rate section are noticeably taller than the university side. Reproductive growth has been reached and the canopy has filled in completely. There are a few Bean Leaf Beetles and Japanese Beetles but nothing to be concerned with yet.

July 30—The field is still clean and looks good overall. Like most others, this field has good potential but the rain really needs to turn back on.

August 9—The field looks good across the populations, but is starting to show signs of drought again. Fungicide and insecticide were sprayed on the producer practice side of the field, while additional foliar fertilizers were applied to the high rate section.

August 16—Pod fill will be challenged if moisture doesn't pick up. This field has all of the looks when looking from afar but like many other fields in the area will not yield well if pod fill doesn't pick up.

September 7—Plants have reached R7 but they are still very green in the lower areas. It's apparent that these areas are going to be the highest yielding when examining the plants. There will be extreme yield discrepancies between higher and lower areas.

September 14—The green remains in the lower lying areas while the rest of the field is near ready to harvest.

Table 7e. Leaf Nutrient Analysis, 2010, Site 7.

	Reference Level	Prod.	Univ.
Nutrient	(%)		
P	0.25-0.60	0.53	0.52
K	1.50-2.30	1.84	1.84
Mg	0.25-0.70	0.35	0.32
Ca	0.80-1.40	0.80	0.74
S	0.25-0.60	0.26	0.26
Nutrient	(ppm)		
B	25-300	32	27
Zn	17-200	45	41
Mn	21-80	53	49
Fe	4-30	81	74
Cu	20-60	12	10

Date: 7-21
Growth Stage: R2

Supplemental Tests

Production Year: 2010	**County:** Henderson	**Producer:** Phillip Meredith
Variety: Southern Cross Caleb	**Row Width:** 15 inches	**Soil Type:** Ginot Silt Loam/Silty Clay Loam, Melvin Silty Clay Loam

	Producer Practice	University Practice	Supplemental Field	Producer $/a	University $/a	Supplemental $/a
Partial Costs†						
Seeding Rate (seeds/a)	165,000	120,000	120,000	50.77	36.92	36.92
Herbicide Applications	24 oz Touchdown			8.63	8.63	8.63
Insecticide Application	4 oz Hero	None	None	5.90	0.00	0.00
Fungicide Application	6 oz Quadris	6 oz Quadris	None	12.00	13.00	0.00
Foliar Fertilizer	32 oz Fortified	32 oz Fortified	None	12.00	13.00	0.00
Total Partial Costs ($/a)				89.30	71.55	45.55
Partial Return‡						
Commodity Price, $/bu	10.40	10.40	10.4			
Yield, bu/a	70.9	71.5	65.3	737.36	743.60	679.12
Partial Net Return ($/a)				648.06	672.05	633.57

† Costs for seeding rate and pest management are included. Any other costs that differed were also included. Costs are an average for input prices from the region. Custom application rates are included for pesticide applications. Additional trucking, storage, and/or drying costs are not included.

‡ Soybean prices are based on the average price for 2010/2011 marketing year for soybean.

Production Year: 2010	**County:** Butler	**Producer:** Shane Wells
Variety: Asgrow 4630	**Row Width:** 15 inches	**Soil Type:** Melvin Silt Loam

	Producer Practice	University Practice	Supplemental Field	Producer $/a	University $/a	Supplemental $/a
Partial Costs†						
Seeding Rate (seeds/a)	140,000	120,000	120,000	43.08	36.92	36.92
Herbicide Applications	24 oz Roundup + 0.6 oz Cadet			17.67	17.67	17.67
Insecticide Application	4 oz Hero	None	None	6.90	0.00	0.00
Fungicide Application	6 oz Quadris	6 oz Quadris	None	13.00	16.00	0.00
Total Partial Costs ($/a)				80.65	70.59	54.59
Partial Return‡						
Commodity Price, $/bu	10.40	10.40	10.40			
Yield, bu/a	46.6	44.7	39.0	484.64	464.88	405.60
Partial Net Return ($/a)				403.99	394.29	351.01

† Costs for seeding rate and pest management are included. Any other costs that differed were also included. Costs are an average for input prices from the region. Custom application rates are included for pesticide applications. Additional trucking, storage, and/or drying costs are not included.

‡ Soybean prices are based on the average price for 2010/2011 marketing year for soybean.

Supplemental Tests

Production Year: 2010	**County:** Muhlenberg	**Producer:** David Boggess
Variety: Asgrow 4703	**Row Width:** 15 inches	**Soil Type:** Belknap Silt Loam

	Producer Practice	University Practice	Supplemental Field	Producer $/a	University $/a	Supplemental $/a
Partial Costs†						
Seeding Rate (seeds/a)	135,000	120,000	175,000	41.54	36.92	53.85
Herbicide Applications	32 oz Roundup + 0.3 oz Firstrate			22.39	22.39	22.39
Insecticide Application	None	None	None	0.00	0.00	0.00
Fungicide Application	None	None	None	0.00	0.00	0.00
Total Partial Costs ($/a)				63.93	59.31	76.24
Partial Return‡						
Commodity Price, $/bu	10.40	10.40				
Yield, bu/a	49.8	48.1	49.6	517.92	500.24	515.84
Partial Net Return ($/a)				453.99	440.93	439.60

† Costs for seeding rate and pest management are included. Any other costs that differed were also included. Costs are an average for input prices from the region. Custom application rates are included for pesticide applications. Additional trucking, storage, and/or drying costs are not included.

‡ Soybean prices are based on the average price for 2010/2011 marketing year for soybean.

Production Year: 2010	**County:** Trigg	**Producer:** Seven Springs Farms
Variety: Pioneer 94Y20	**Row Width:** 15 inches	**Soil Type:** Crider Silt Loam, Nolin Silt Loam

	Producer Practice	University Practice	Supplemental Field	Producer $/a	University $/a	Supplemental $/a
Partial Costs†						
Seeding Rate (seeds/a)	145,000	120,000	225,000	44.62	36.92	69.23
Herbicide Applications	32 oz Glyphosate + 1 oz Sharpen, 32 oz Glyphosate			21.24	21.24	21.23
Insecticide Application	2 oz Lambda-Cy	None	2 oz Lambda-Cy	4.16	0.00	4.16
Fungicide Application	6 oz Headline	None	6 oz Headline	17.53	0.00	17.53
Foliar Fertilizer	None	None	2 qt. 5-0-20-13, 2 qt. 26% N fertilizer	0.00	0.00	36.45
Total Partial Costs ($/a)				87.55	58.16	148.60
Partial Return‡						
Commodity Price, $/bu	10.40	10.40	10.40			
Yield, bu/a	28.1	23.9	25.1	292.24	248.56	261.04
Partial Net Return ($/a)				204.69	190.40	112.40

4-2011