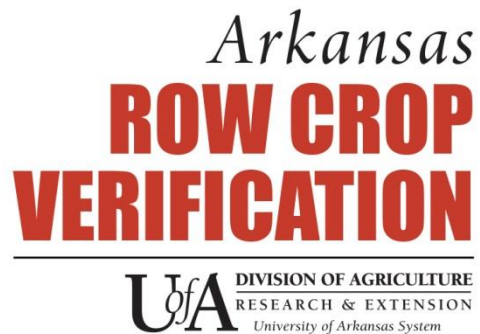




# 2015 University of Arkansas Soybean Research Verification Program

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U.S. Department of Agriculture  
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## SOYBEAN RESEARCH VERIFICATION PROGRAM, 2015

Conducted by:

Chris Grimes, Program Associate  
Chad Norton, Program Associate  
Dr. Jeremy Ross, Extension Agronomist – Soybean  
Dr. Bob Stark, Professor – Agricultural Economics

### Acknowledgments:

#### Cooperating Soybean Producers:

Earl Bennett	Jason Smith	Brock Russell
Perry Galloway	Todd & Larry Gibson	Robert Moore
Keith & Bradley Watkins	Lewis Holt	Shawn Decker
Larry Rasberry	Steve Stevens	Nathan Reed
Steve Guest	Tony Richards	JURA Farms
Buddy & Brian Pribble	John Carroll	Sonny Throesch

#### Cooperating County Extension Agents:

Grant Beckwith – Arkansas County	Herb Ginn – Lawrence County
Rick Wimberley – Cross County	Andy Vangilder – Clay County
Branon Thiesse – Craighead County	Mike Andrews – Randolph County
Stan Baker – Lee County	Shawn Payne – Phillips County
Steve Kelley – Drew County	Wes Kirkpatrick – Desha County
Brett Gordon – White County	Brent Griffin – Prairie County
Anthony Whittington – Jefferson County	Gus Wilson - Chicot County
Steven Stone – Lincoln County	Van Banks – Monroe County
Richard Klerk – Woodruff County	

#### Cooperative Extension Service:

Dr. Rick Cartwright, Assoc Director – Ag & Natural Resources  
Dr. Gus Lorenz III, Extension Entomology – Lonoke  
Dr. Glenn Studebaker, Extension Entomologist – NEREC  
Dr. Nick Seiter, Extension Entomologist – SEREC  
Dr. Travis Faske, Extension Plant Pathologist – Lonoke  
Dr. Terry Spurlock, Extension Plant Pathologist – SEREC  
Dr. Leo Espinoza, Extension Soil Scientist – Little Rock  
Dr. Bob Scott, Extension Weed Scientist – Lonoke  
Dr. Tom Barber, Extension Weed Scientist – Lonoke  
Dr. Archie Flanders, Extension Economist – NEREC  
Mr. Scott Stiles, Instructor, Agriculture Economics – Jonesboro  
Mr. Chris Meux, Extension Design Specialist – Little Rock  
Dr. Martha Ray Sartor, Asst. Director County Operations – Little Rock  
Beth Phelps, Ouachita District Director – Little Rock  
Sharon Reynolds, Ozark District Director – Little Rock

Agricultural Experiment Station:

Dr. Robert Bacon, Professor and Dept Head – Crop, Soil & Environmental Science – UAF  
Dr. Richard Roeder, Associate Director, Agriculture Experiment Station - UAF  
Dr. Terry Kirkpatrick, Professor/ Nematologist – SWREC  
Dr. Pengyin Chen, Professor/ Soybean Breeding and Genetics - UAF  
Dr. Rick Bennett, Departmental Chairperson, Plant Pathology - UAF  
Dr. Larry Purcell, Professor, Crop, Soil & Environmental Science - UAF  
Dr. J.C. Rupe, Professor, Plant Pathology – UAF  
Dr. Nathan Slaton, Professor, Crop, Soil & Environmental Science – UAF  
Dr. R.T. Robbins, Professor, Plant Pathology – UAF  
Dr. Chris Henry, Assistant Professor, Bio & Agriculture Engineering – RREC  
Dr. Trent Roberts, Assistant Professor, Crop, Soil & Environmental Science - UAF

Arkansas Soybean Promotion Board:

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## INTRODUCTION

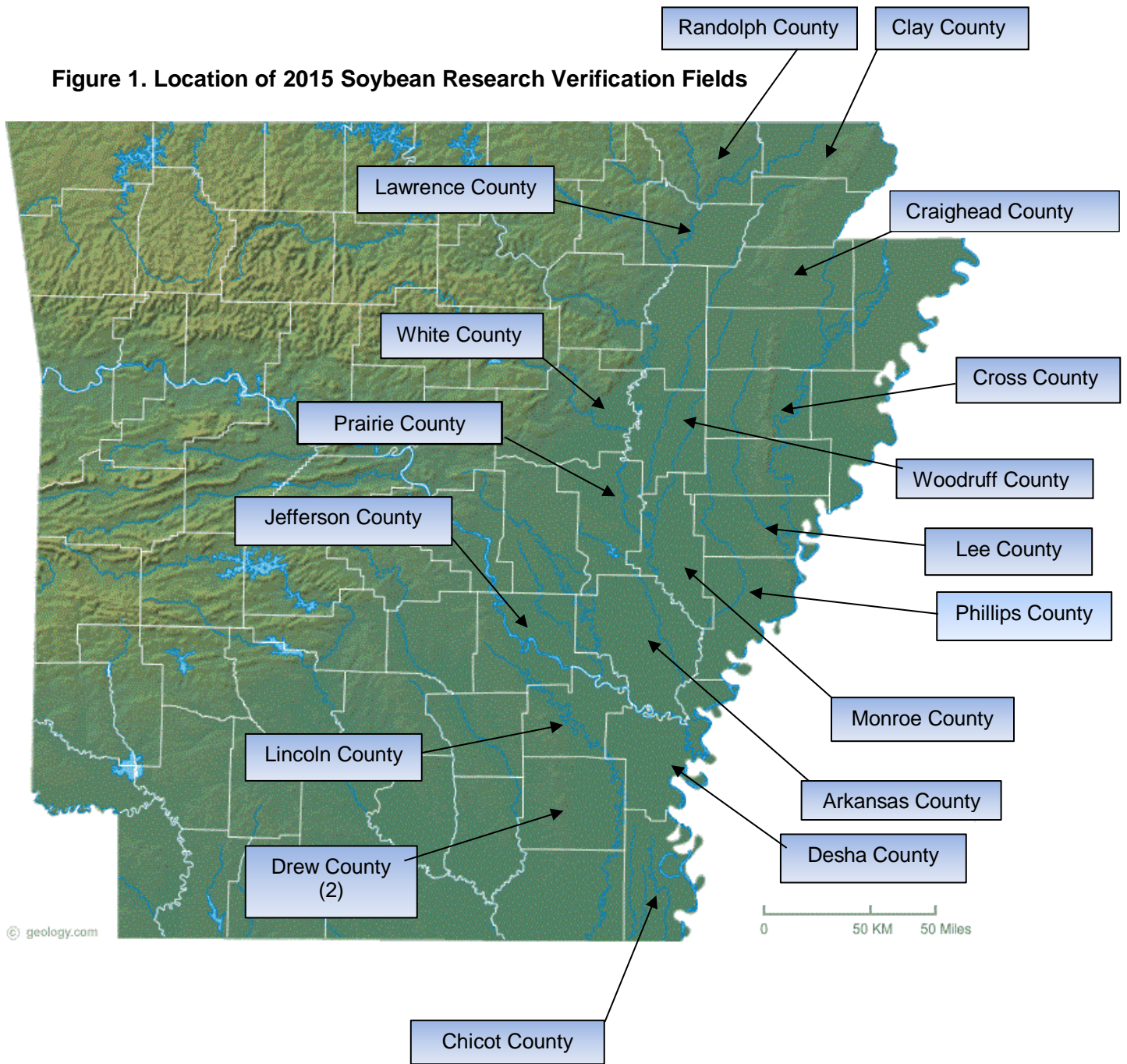
The 2015 growing season was the thirty first year for the Soybean Research Verification Program (SRVP). The SRVP is an interdisciplinary effort between growers, county Extension agents, Extension specialists, and researchers. The SRVP is an on-farm demonstration of all the research-based recommendations required to grow soybeans profitably in Arkansas. The specific objectives of the program are:

1. To verify research-based recommendations for profitable soybean production in all soybean producing areas of Arkansas.
2. To develop a database for economic analysis of all aspects of soybean production.
3. To demonstrate that consistently high yields of soybeans can be produced economically with the use of available technology and inputs.
4. To identify specific problems and opportunities in Arkansas soybeans for further investigation.
5. To promote timely implementation of cultural and management practices among soybean growers.
6. To provide training and assistance to county agents with limited expertise in soybean production.

Each SRVP field and cooperator was selected prior to planting. Cooperators agreed to pay production expenses, provide crop expense data for economic analysis and implement the recommended production practices in a timely manner from seedbed preparation to harvest. Eighteen farms were enrolled in the SRVP in 2015. The fields were located on commercial farms ranging in size from 20 to 103 acres. The average field size was 51 acres.

The 2015 SRVP fields were conducted in Arkansas, Chicot, Clay, Craighead, Cross, Desha, Drew (2), Jefferson, Lawrence, Lee, Lincoln, Monroe, Phillips, Prairie, Randolph, White and Woodruff Counties. Nine different roundup ready varieties (Armor 46R42, Asgrow 4632, Asgrow 4232, NK S47-K5, NK S52-Y2 Pioneer 47T36, Pioneer 54T94 Progeny 4900 & UA 5414), three liberty link variety (Delta Grow DG 4967LL, Delta Grow DG 4990LL & Halo 4:95) and two conventional (UA 5014C & UA 5612) were planted. Management decisions were based on field history, soil test results, variety, and data collected from each individual field during the growing season.

**Figure 1. Location of 2015 Soybean Research Verification Fields**



## FIELD REVIEWS

### Northern Fields – Chris Grimes

#### Clay County

The Clay County field was located in Piggott. The field was 25 acres and the previous crop was corn. The soil type was Falaya silt loam. 0-0-120 was applied preplant according to soil test recommendations. The field was planted on June 5 with Armor 46R42 at 60 pounds per acre on 38" rows. The final plant population was 140,000 plants per acre. 2oz/a Zidua plus 1oz/a Valor was applied as a pre-emergence and received two post emergence applications for weed control. 28oz/a Roundup PowerMax plus 0.33oz/a Classic was applied on June 16 and 28oz/a Roundup PowerMax was applied on July 2. Frogeye Leafspot reached treatment levels and 8oz/a Quadris Top was applied for control. The field was furrow irrigated 4 times and was harvested on October 16 yielding 63.3 bushels per acre adjusted to 13% moisture.

#### Craighead County

The Craighead County field was located Southwest of Jonesboro. The field was 46 acres and the previous crop was soybeans. The soil type was Hillemann/Tichnor silt loam. The field was planted on June 11 with Armor 46R42 at 140,000 seeds per acre on 7.5" row spacing. The final plant population was 115,000 plants per acre. 32oz/a Roundup PowerMax was applied on June 25 and 32oz/a Roundup PowerMax plus 16oz/a Flexstar was applied on July 16. Frogeye Leafspot reached treatment levels and 4oz/a Priaxor was applied for control. The field was furrow irrigated 2 times with and was harvested on October 15 yielding 58.8 bushels per acre adjusted to 13% moisture.

#### Cross County

The Cross County field was located in Fair Oaks. The field was 108 acres and the previous crop was rice. The soil type was Henry silt loam. 0-0-60 was applied preplant according to soil test recommendations. The field was planted June 15 with Progeny 4900 at 60 pounds per acre on 7.5" rows. The final plant population was of 80,000 plants per acre. 5oz/a Verdict was applied after planting for residual. 32oz/a Roundup PowerMax plus 0.33oz/a Classic was applied on July 13 for weed control. Another application of 40oz/a Roundup PowerMax plus 24oz/a Ultra Blazer was applied on July 30. The field required 9oz/a Beseige for bollworm control. The field was furrow irrigated 3 times and was harvested on October 15 yielding 34.5 bushels per acre adjusted to 13% moisture.

#### Lawrence County

The Lawrence County field was located northwest of Hoxie. The field was 63 acres and the previous crop was soybeans. The soil type was a Foley-Calhoun silt loam. A 0-40-60 was applied preplant according to soil test recommendations. The field was planted on June 18 with Delta Grow 4967 LL at 52 pounds per acre on 30" rows. The final plant population was 147,000 plants per acre. The field received 2 over the top applications of Liberty for weed control. The field required 2oz/a Belt for bollworm control. Furrow irrigated 3 times and was harvested on November 12 yielding 51 bushels per acre adjusted to 13% moisture.



## **Prairie County**

The Prairie County field was located north of Des Arc. The field was 30 acres and the previous crop was rice. The soil type was a Stuttgart silt loam. 0-30-60 fertilizer was applied preplant according to soil sample results. The field was planted on June 16 with UofA 5414 at 58 pounds per acre on 38 inch row spacing. The final plant population was 97,000 plants per acre. On June 30 the producer applied 32oz/a Roundup PowerMax plus 16oz/a Metolachlor was applied post for weed control and residual. Another 32oz/a Roundup PowerMax was applied on July 14 to clean up escapes from previous application. Frogeye reached treatment level and 9oz/a Quadris Top was applied and provided good control. 2oz/a Belt was required for bollworm control. The field was irrigated 5 times and harvested on October 15 yielding 77 bushels per acre adjusted to 13% moisture.

## **Randolph County**

The Randolph County field was located southeast of Reyno. The field was 105 acres and the previous crop was soybeans. The soil type was Bosket fine sandy loam. According to soil test a 0-0-90 was applied preplant. The field was planted on June 3 with NK S52-Y2 at 60 pounds per acre on 7.5 inch row spacing. The final plant population was 120,000 plants per acre. 2oz/a Valor was applied after planting for residual. 56oz/a Flexstar GT followed by 40oz/a Glyphosate tankmixed with 16oz/a Ultra Blazer was applied for over the top weed control. Frogeye leafspot reached treatment level and 10oz/a Quadris Top was applied for control. Field was irrigated 6 times and harvested on November 23 yielding 55 bushels per acre adjusted to 13% moisture.

## **White County**

The White County field was located southeast of Griffithville. It was 38 acres and the previous crop was corn. The soil type was a Calhoun silt loam. According to UofA soil test recommendation a 0-0-60 was applied preplant. The field was planted on June 6 with Halo 4:95 at 42 pounds per acre on 30" rows. The final plant stand was 105,000 plants per acre. 16oz/a Generic Dual was applied after planting for residual. 26oz/a Liberty followed by 29oz/a Liberty was applied for weed control. 10oz/a Quadris Top was applied for frogeye control. The field was furrow irrigated 5 times and was harvested October 7 yielding 66 bushels per acre adjusted to 13% moisture.

## **Woodruff County**

The Woodruff County field was located in Gregory. The field was 90 acres and the previous crop was wheat. The soil type was a Wiville & Dubbs silt loam. The field was planted on June 24 with Pioneer 47T36 at 150K seeds per acre on 7.5 inch row spacing. The final plant population was 120,000 plants per acre. After planting the producer applied 20oz/a Gramoxone plus 2oz/a Valor for weed control and residual. The first post herbicide application of 16oz/a Ultra Blazer plus 16oz/a Me-too-Lachlor was applied on July 3 followed 32oz/a Roundup PowerMax plus 32oz/a Prefix on July 13 to clean up escapes from previous application. 8oz/a Quadris Top & 2oz/a Belt was applied for frogeye & bollworm control. The field was irrigated 9 times and harvested on October 21 yielding 61 bushels per acre adjusted to 13% moisture.

## **Southern Fields – Chad Norton**

### **Arkansas County**

The 41 acre field, soil type Dewitt silt loam, was located northeast of Stuttgart and followed the previous year rice crop. Following a fertilizer application of 0-80-120 per acre, according to soil test recommendations, the field was planted on May 5 with Asgrow 4632RR/STS, CruiserMaxx seed treatment, at 60 pounds/acre on 30" beds along with Enlite at 2.8 oz/a application for residual weed control. Final plant population was 128,000 plants/acre. A post-emergence application of 22 oz/a RoundUp PowerMaxx plus 1.5 pts/a Flexstar on June 18 was also used for weed control. The field required a 6.4 oz/a Brigade on August 20 for stink bug control. Disease pressure remained below treatment threshold so no fungicide application was warranted. The field was furrow irrigated 3 times and harvested on October 1 yielding 71.6 bushels/acre adjusted to 13% moisture.

### **Chicot County**

The 45 acre field, soil type Sharkey clay, was located south of Lake Village and followed the previous year soybean crop. A 1 qt/a 2,4-D plus 26 oz/a RoundUp PowerMaxx application was utilized as a burndown treatment in early spring. Following a fertilizer application of 0-30-90, according to soil test recommendations, the field was planted on April 4 with Asgrow 4632RR/STS, CruiserMaxx seed treatment, at 58 pounds/acre on 38" twin row beds along with a 2 oz/a Valor plus 26 oz/a RoundUp PowerMaxx for residual and post-emergence weed control. Final plant population was 138,000 plants/acre. An early post-emergence application of 26 oz/a RoundUp PowerMaxx was applied on May 5. The field required a 4.27 oz/a Brigade plus .5 lb/a acephate application on July 11 for stink bug control. Disease pressure remained below treatment thresholds so no fungicide application was warranted. The field was furrow irrigated 6 times and harvested on August 27 yielding 89.9 bushels/acre adjusted to 13% moisture.

### **Desha County**

The 25 acre field, soil types McGehee and Rilla silt loam, was located west of Dumas and followed the previous year corn crop. A 1.5 pt/a. 2,4-D plus 22 oz/a RoundUp PowerMaxx was used for a burndown treatment in early spring. Following a fertilizer application of 0-0-60, according to soil test recommendations, the field was planted on April 22 with Pioneer 47T36RR, Optimize plus Innovate seed treatment, at 42 pounds/acre on 30" beds along with a 1.25 pt/a metolachlor plus 22 oz/a RoundUp PowerMaxx for residual and post-emergence weed control. Final plant population was 105,000 plants/acre. A post-emergence application of 22 oz/a RoundUp PowerMaxx plus 1 qt/a Prefix on June 6 was also used for weed control. Neither insect or disease pressure reached treatment thresholds, so insecticide or fungicide applications were unwarranted. The field was furrow irrigated 8 times and harvested on September 18 yielding 83 bushels/acre adjusted to 13% moisture.

### **Drew County - 1**

The 22 acre dryland field, soil types Grenada and Henry silt loam, was located west of Pine Hill and followed the previous year soybean crop. A 1 qt/a glyphosate application was used as a burndown treatment in early spring. Following a fertilizer application of 0-0-60, according to soil test recommendations, the field was planted on May 4 with the conventional variety UA 5612C, Spirato seed treatment, at 60 pounds/acre on 38" rows along with a 2 oz/a Envive plus 1 pt/a metolachlor plus 1 pt/a glyphosate for residual and post-emergence weed control. Final plant population was 135,000 plants/acre. A post-emergence application of 1 qt. Prefix/a on

June 12 was also used for weed control. Neither insect or disease pressure reached treatment thresholds, so insecticide or fungicide applications were unwarranted. The field was harvested on October 5 yielding 16 bushels/acre adjusted to 13% moisture.

## **Drew County - 2**

The 25 acre field, soil type Rilla silt loam, as located west of Tillar and followed the previous year cotton crop. A 1 pt/a 2,4-D plus 22 oz/a RoundUp PowerMaxx application was used as a burndown treatment in early spring. Following a fertilizer application of 0-60-60, according to soil test recommendations, the field was planted on May 23 with Pioneer 54T94R, CruiserMaxx seed treatment, at 50 pounds/acre on 38" rows. Two post-emergence applications of 10 oz/a Prefix plus 22 oz/a RoundUp PowerMaxx, applied June 18 and July 1, were used for weed control. The field required an application of 9.5 oz/a Quadris Top plus 2 oz/a Belt on July 26 for control of Frogeye Leaf Spot and bollworms, respectively. The field was furrow irrigated 5 times and harvested on October 8 yielding 61.1 bushels/acre adjusted to 13% moisture.

## **Jefferson County**

The 64 acre field, soil types McGehee silt loam and Perry clay, was located northeast of Gethsemane and followed the previous year soybean crop. Following a fertilizer application of 0-23-90, according to soil test recommendations, the field was planted on May 5 with Delta Grow 4990 LL, CruiserMaxx seed treatment, at 55 pounds/acre on 30" beds along with a 2 oz/a Zidua application for residual weed control. Final plant population was 124,000 plants/acre. Post-emergence applications of 1qt/a Liberty plus 1 pt/a Dual Magnum on June 19, and 1qt/a Liberty plus 1.5 pts/a Flexstar on June 30 were used for weed control. The field required a 10 oz/a Besiege application on August 28 for bollworm and stink bug control. Disease pressure remained below treatment thresholds so no fungicide application was warranted. Field was furrow irrigated 6 times and harvested on October 10 yielding 62.4 bushels/acre adjusted to 13% moisture.

## **Lee County**

The 13 acre field, soil types Dubbs loam and Dundee silt loam, was located northeast of Marianna and followed the previous year cotton crop. According to soil test recommendations, the field received no fertilizer application. It was planted on April 4 with Asgrow 4232RR/STS, Primo plus CruiserMaxx seed treatment, at 59 pounds/acre on 38" twin row beds along with a 3.5 oz/a Envive plus 40 oz/a Gramoxone application for residual and post-emergence weed control. Final plant population was 129,000 plants/acre. A post-emergence application of 24 oz/a RoundUp PowerMaxx plus 1.3 pt/a metolachlor on May 8 was also used for weed control. The field required a 3.66 oz/a Lambda-Cy application on June 30 for stink bug control. No fungicide application was warranted. The field was furrow irrigated 3 times and harvested on August 26 yielding 58.2 bushels/acre adjusted to 13% moisture.

## **Lincoln County**

The 71 acre field, soil type Herbert silt loam, was located north of Grady and followed the previous year cotton crop. A 24 oz/a RoundUp PowerMaxx plus 1 oz/a Sharpen application was used as a burndown treatment in early spring. Following a fertilizer application of 0-0-60, according to soil test recommendations, the field was planted on April 2 with NK S47-K5 RR, Vault HP plus Magnum seed treatment, at 59 pounds/acre on 38" twin row beds along with a 1.25 pt/a metolachlor application for residual weed control. Post-emergence applications of 2 oz/a Zidua plus 22 oz/a RoundUp PowerMaxx on May 8, and 1 qt/a Prefix plus 22 oz/a RoundUp PowerMaxx on June 6 were used for weed control. Insect and disease pressure did

not reach treatment thresholds so no treatment applications were warranted. The field was furrow irrigated 6 times and harvested on August 25 yielding 86.7 bushels/acre adjusted to 13% moisture.

### **Monroe County**

The 40 acre field, soil type Foley-Calhoun-Bonn complex, was located southeast of Brinkley and followed the previous year rice crop. Following a fertilizer application of 0-36-72, according to soil test recommendations, the field was planted on June 8 with the conventional variety UA 5014C, CruiserMaxx seed treatment, at 58 pounds/acre on 30" beds. Final plant population was 127,000 plants/acre. An early post-emergence application of 1.5 pts/a Storm plus 1 pt/a Dual Magnum on June 29 was used for weed control. Insect and disease pressure remained below treatment thresholds so treatment applications were unwarranted. The field was furrow irrigated 5 times and harvested on October 20 yielding 63 bushels/acre adjusted to 13% moisture.

### **Phillips County**

The 34 acre field, soil types Henry silt loam and Lagrange sandy loam, was located south of Turkey Scratch and followed the previous year soybean crop. Following a fertilizer application of 0-30-60, according to soil test recommendations, the field was planted on April 8 with Asgrow 4632 RR/STS, CruiserMaxx seed treatment, at 58 pounds/acre on 38" twin row beds along with a 2 pt/a Boundary application for residual weed control. Final plant population was 132,000 plants/acre. Post-emergence applications of 1 qt/a glyphosate plus 1.3 pt/a metolachlor on May 8, and 1.5 pts/a Flexstar plus 1 qt/a glyphosate on June 2 were used for weed control. An application of 4.74 oz/a Brigade on July 9 was needed for stink bug control. No fungicide application was warranted. The field was furrow irrigated 5 times and harvested on September 29 yielding 60.3 bushels/acre adjusted to 13% moisture.

**Table 1. Agronomic information for the 2015 Soybean Research Verification Fields.**

County	Variety	Field size (ac)	Previous crop	Production system	Seeding rate (lb/acre)	Stand density (plants/ac)	Planting date	Emergence date	Harvest date	Yield adj. to 13% moisture (bu/ac)
Arkansas	Asgrow 4632	50	Rice	FSI	60	128K	5/5	5/13	10/1	72
Chicot	Asgrow 4632	60	Soybean	ESI	58	138K	4/4	4/13	8/27	90
Clay	Armor 46R42	25	Corn	FSI	60	140K	6/5	6/9	10/16	63
Craighead	Armor 46R42	46	Soybean	FSI	58	115K	6/11	6/16	10/15	59
Cross	Progeny 4900	108	Rice	FSI	60	90K	6/15	6/25	10/15	35
Desha	Pioneer 47T36	25	Corn	ESI	42	105K	4/22	5/1	9/23	83
Drew – 1	UA 5612	22	Soybean	FSNI	60	135K	5/4	5/13	10/5	16
Drew – 2	Pioneer 54T94R	40	Cotton	FSI	50	129K	5/23	5/30	10/8	61
Jefferson	Delta Grow 4990 LL	64	Soybean	FSI	55	124K	5/5	5/13	10/10	62
Lawrence	Delta Grow 4967 LL	60	Soybean	FSI	60	145K	6/18	6/23	11/12	51
Lee	Asgrow 4232	20	Cotton	ESI	59	129K	4/4	4/13	8/27	58
Lincoln	NK S47-K5	75	Cotton	ESI	59	115K	4/2	4/11	8/26	87
Monroe	UA 5014C	40	Rice	FSI	58	127K	6/8	6/15	10/20	63
Phillips	Asgrow 4632	34	Soybean	ESI	58	132K	4/8	4/16	9/23	60
Prairie	UA 5414	30	Rice	FSI	60	97K	6/16	6/21	10/15	77
Randolph	NK S52Y2	105	Soybean	FSI	54	120K	6/03	6/9	11/23	55
White	Halo 4:95 LL	38	Corn	FSI	42	105K	6/6	6/11	10/07	66
Woodruff	Pioneer 47T36	90	Wheat	DCI	54	120K	6/24	6/29	10/21	61
<b>Average</b>		<b>52</b>			<b>56</b>	<b>122K</b>	<b>5/17</b>	<b>5/24</b>	<b>10/6</b>	<b>62</b>

State Avg. – 51bu/ac

**Table 2. Soil tests results, applied fertilize and soil classification for the 2015 Soybean Research Verification Fields**

County	Applied Fertilize N-P-K (lb/acre)				Soil Classification
	pH	P	K	Pre-plant	
Arkansas	6.6	11	72	0-80-120	Dewitt silt loam
Chicot	6.8	34	92	0-30-90	Sharkey clay
Clay	6.5	104	172	0-0-120	Falaya silt loam
Craighead	0	0	0	0-0-0	Hillemann & Tichnor silt loam
Cross	6.4	121	300	0-0-60	Henry silt loam
Desha	6.5	56	128	0-0-60	McGehee, Rilla silt loam
Drew - 1	6.0	54	130	0-0-60	Grenada, Henry silt loam
Drew - 2	6.3	20	116	0-60-60	Rilla silt loam
Jefferson	6.1	36	92	0-23-90	McGehee silt loam, Perry clay
Lawrence	6.2	17	104	0-40-60	Foley-Calhoun silt loam
Lee	6.4	60	204	0-0-0	Dubbs loam, Dundee silt loam
Lincoln	6.8	52	122	0-0-60	Herbert silt loam
Monroe	6.3	34	96	0-36-72	Foley-Calhoun-Bonn complex
Phillips	6.0	21	179	0-30-60	Henry silt loam, Lagrange sandy loam
Prairie	6.3	21	179	0-30-60	Stuttgart silt loam
Randolph	6.0	85	181	0-0-90	Bosket fine sandy loam
White	7.3	87	219	0-0-60	Silt loam
Woodruff	6.2	54	174	0-0-0	Wiville & Dubbs silt loam

**Table 3. Herbicide rates and timings for 2015 Soybean Research Verification Program fields by county.**

County	Herbicide	
	Burndown/Pre-emergence	Post-emergence
Arkansas	2.8oz/A Enlight	24oz/A Flexstar plus 22oz/A Roundup PowerMax
Chicot	Burndown:26oz/A Roundup PowerMax plus 32oz/A 2,4-D Pre-emerge:26oz/A Roundup PowerMax plus 2oz/A Valor	26oz/A RoundupPowerMax
Clay	2oz/A Zidua plus 1oz/A Valor	1 <sup>st</sup> :28oz/A Roundup PowerMax plus 0.33oz/A Classic 2 <sup>nd</sup> :28oz/A Roundup PowerMax
Craighead	-----	1 <sup>st</sup> :32oz/A Roundup PowerMax 2 <sup>nd</sup> :32oz/A Roundup PowerMax plus 16oz/A Flexstar
Cross	5oz/A Verdict	1 <sup>st</sup> :32oz/A Roundup PowerMax plus 0.33oz/A Classic 2 <sup>nd</sup> :40oz/A Glyphosate plus 24oz/A Ultra Blazer
Desha	Burndown:22oz/A Roundup PowerMax plus 24oz/A 2,4-D Pre-emerge:22oz/A Roundup PowerMax plus 20oz/A Metolachlor	22oz/A Roundup PowerMax plus 32oz/A Prefix
Drew - 1	Burndown:32oz/A Glyphosate Pre-emerge:32oz/A Glyphosate plus 2oz/A Envive plus 16oz/A Metolachlor	32oz/A Prefix
Drew - 2	22oz/A Roundup PowerMax plus16oz/A 2,4-D	1 <sup>st</sup> :22oz/A Roundup PowerMax plus10oz/A Prefix 2 <sup>nd</sup> :22oz/A Roundup PowerMax plus 10oz/A Prefix
Jefferson	2oz/A Zidua	1 <sup>st</sup> :32oz/A Liberty plus 16oz/A Dual Magnum 2 <sup>nd</sup> :32oz/A Liberty plus 24oz/A Flexstar
Lawrence	-----	1 <sup>st</sup> :32oz/A Liberty 2 <sup>nd</sup> :32oz/A Liberty
Lee	40oz/A Gramoxone plus 3.5oz/A Envive	24oz/A Roundup PowerMax plus 21oz/A Metolachlor
Lincoln	Burndown:24oz/A Roundup PowerMax plus 1oz/A Sharpen plus1%MSO Pre-emerge: 20oz/A Metolachlor	1 <sup>st</sup> :22oz/A Roundup PowerMax plus 2oz/A Zidua 2 <sup>nd</sup> :22oz/A Roundup PowerMax plus 32oz/A Prefix
Monroe	-----	24oz/A Storm plus 16oz/A Dual Magnum
Phillips	32oz/A Boundary	1 <sup>st</sup> :32oz/A Glyphosate plus 21oz/A Metolachlor 2 <sup>nd</sup> :32oz/A Glyphosate plus 24oz/A Flexstar
Prairie	-----	1 <sup>st</sup> :32oz/A Roundup PowerMax plus 16oz/A Me-Too-Lachlor 2 <sup>nd</sup> :32oz/A Roundup PowerMax
Randolph	56oz/A Flexstar GT plus 2oz/A Valor	40oz/A Glyphosate plus 16oz/A Ultra Blazer
White	16oz/A Me-Too-Lachlor	1 <sup>st</sup> :26oz/A Liberty 2 <sup>nd</sup> :29oz/A Liberty
Woodruff	20oz/A Gramoxone plus 2oz/A Valor	1 <sup>st</sup> :16oz/A Ultra Blazer plus 16oz/A Me-Too-Lachlor 2 <sup>nd</sup> :32oz/A Roundup PowerMax plus 32oz/A Prefix

**Table 4. Fungicide and insecticides applications in 2015 Soybean Research Verification fields by county.**

County	Aerial Web Blight	Frogeye	Bollworm/Defoliators	Stink Bug
Arkansas	-----	-----	-----	6.4oz/A Brigade
Chicot	-----	-----	-----	4.27oz/A Brigade plus 0.5#/A Acephate
Clay	-----	8oz/A Quadris Top	1.9oz/A Lambda-Cy	-----
Craighead	-----	4oz/A Priaxor	2oz/A Belt	-----
Cross	-----	-----	9oz/A Beseige	-----
Desha	-----	-----	-----	-----
Drew - 1	-----	-----	-----	-----
Drew - 2	-----	9.5oz/A Quadris Top	2oz/A Belt	-----
Jefferson	-----	-----	10oz/A Besiege	-----
Lawrence	-----	-----	2oz/A Belt	-----
Lee	-----	-----	-----	3.66oz/A Lambda-Cy
Lincoln	-----	-----	-----	-----
Monroe	-----	-----	-----	-----
Phillips	-----	-----	-----	4.74oz/A Brigade
Prairie	-----	9oz/A Quadris Top	2oz/A Belt	-----
Randolph	-----	10oz/A Quadris Top	-----	-----
White	-----	10oz/A Quadris Top	-----	-----
Woodruff	-----	8oz/A Quadris Top	2oz/A Belt	-----



**Table 5. Irrigation information and rainfall for the 2015 Soybean Research Verification Fields.**

County	Irrigation Type	Number of Irrigations	Rainfall (in)
Arkansas	Furrow	3	10
Chicot	Furrow	6	12
Clay	Furrow	5	10
Craighead	Furrow	2	11
Cross	Furrow	3	10
Desha	Furrow	8	12
Drew – 1	Dry Land	N/A	11
Drew – 2	Furrow	5	9
Jefferson	Furrow	6	15
Lawrence	Furrow	3	12
Lee	Furrow	3	13
Lincoln	Furrow	6	11
Monroe	Furrow	5	4
Phillips	Furrow	5	13
Prairie	Furrow	5	9
Randolph	Pivot	6	12
White	Furrow	5	9
Woodruff	Pivot	9	8

## ECONOMIC ANALYSIS

This section provides information on production costs and returns for the 2015 SRVP. Records of field operations on each field provided the basis for estimating production costs. The field records were compiled by the SRVP coordinators, county extension agents, and cooperators. Production data from the 18 fields were applied to determine costs and returns above operating costs, as well as total specified costs. Operating costs and total costs per bushel indicate the commodity price needed to meet each costs type.

Operating costs are those expenditures that would generally require annual cash outlays and would be included on an annual operating loan application. Actual quantities of all operating inputs as reported by the cooperators are used in this analysis. Input prices are determined by data from the 2015 Crop Enterprise Budgets published by the Cooperative Extension Service and information provided by the producer cooperators. Fuel and repair costs for machinery are calculated using a budget calculator based on parameters and standards established by the American Society of Agricultural and Biological Engineers. Machinery repair costs should be regarded as estimated values for full service repairs, and actual cash outlays could differ as producers provide unpaid labor for equipment maintenance.

Fixed costs of machinery are determined by a capital recovery method, which determines the amount of money that should be set aside each year to replace the value of equipment used in production. Machinery costs are estimated by applying engineering formulas to representative prices of new equipment. This measure differs from typical depreciation methods, as well as actual annual cash expenses for machinery.

Operating costs, fixed costs, costs per bushel, and returns above operating and total specified costs are presented in Table 6. Costs in this report do not include land costs, management, or other expenses and fees not associated with production. Averages in the final row of Table 6 are simple averages across all SRVP fields. Operating costs per acre range from \$124.40/acre for Drew County-1-Moore to \$345.47/acre for Arkansas County-Smith & Dickson, while operating costs per bushel range from \$2.96/bu for Desha County-Decker to \$7.77/bu for Drew County-1-Moore. Total costs per acre (operating plus fixed) range from \$163.97/acre for Drew County-1-Moore to \$426.03/acre for Arkansas County-Smith & Dickson, and total costs per bushel range from \$3.87/bu for Desha County-Decker to \$10.25/bu for Drew County-1-Moore. Returns above operating costs range from \$24.72/acre for Drew County-1-Moore to \$543.90/acre for Chicot County-Bennett, and returns above total costs range from -\$21.12 for Cross County-Pribble to \$456.33/acre for Chicot County-Bennett.

A summary of yield, soybean price, revenues, and expenses by expense type for each SRVP field is presented in Table 7. Averages in final column of Table 7 are simple averages across all SRVP fields. The average soybean yield for the 2015 SRVP was 62.35 bushels, but ranged from 16.0 bushels/acre for Drew County-1-Moore to 89.9 bushels/acre for Chicot County-Bennett. The Arkansas average cash price for the 2015 SRVP was estimated from January through October 31 daily price quotes of the cash market price or cash booking price to be \$9.32/bu. Arkansas producers set the price for portions of their crop throughout the year. The Little Rock office of the National Agriculture Statistics Service began reporting 2015 Arkansas crop booking prices on January 2 and switched to cash market quotes for the 2015 crop on October 30.

The average operating expense for the 18 SRVP fields was \$265.55/acre (Table 7). Seed accounted for the largest share of operating expenses on average (29.77 percent) followed by herbicides (13.04 percent), fertilizers & nutrients (12.67 percent), irrigation energy costs (8.72 percent), repairs & maintenance (7.12 percent), and post-harvest expenses (6.96 percent). The average return above operating expenses for the 18 fields was \$315.55/acre and

ranged from \$24.72/acre for Drew County-1- Moore to \$543.90/acre for Chicot County-Bennett. The average return above total specified expenses for the 18 fields was \$246.10/acre, and ranged from -\$21.12 for Cross County-Pribble to \$456.33/acre for Chicot County-Bennett.

**Table 6. Operating Costs, Total Costs, and Returns for Soybean Research Verification Program, 2015**

County	Operating Costs (\$/acre)	Operating Costs (\$/bushel)	Returns to Operating (\$/acre)	Fixed Costs (\$/bushel)	Total Costs (\$/acre)	Returns to Total Costs (\$/acre)	Total Costs per Bushel (\$/bushel)
Arkansas	345.47	4.82	321.84	80.56	426.03	241.28	5.95
Chicot	293.97	3.27	543.90	87.57	381.54	456.33	4.24
Clay	288.06	4.55	301.90	71.70	359.75	230.20	5.68
Craighead	235.04	3.98	314.84	57.88	292.91	256.97	4.96
Cross	260.95	7.46	65.25	86.37	347.32	-21.12	9.92
Desha	246.02	2.96	527.54	75.09	321.12	452.44	3.87
Drew – 1	124.40	7.77	24.72	39.57	163.97	-14.85	10.25
Drew – 2	281.03	4.60	288.42	56.76	337.80	231.65	5.53
Jefferson	329.08	5.27	252.49	56.20	385.28	196.29	6.17
Lawrence	263.08	5.16	212.24	58.73	321.81	153.51	6.31
Lee	233.55	4.01	308.87	70.92	304.48	237.95	5.23
Lincoln	280.41	3.23	527.64	85.51	365.92	442.13	4.22
Monroe	231.02	3.62	363.60	68.43	299.45	295.17	4.69
Phillips	266.15	4.41	295.85	55.89	322.04	239.96	5.34
Prairie	286.42	3.63	449.86	64.83	351.25	385.03	4.45
Randolph	319.68	5.81	192.92	105.18	424.86	87.74	7.72
White	251.26	3.81	363.86	55.75	307.01	308.11	4.65
Woodruff	244.33	4.01	324.19	73.22	317.55	250.97	5.21
<b>Simple Average</b>	<b>265.55</b>	<b>4.58</b>	<b>315.55</b>	<b>69.45</b>	<b>335.01</b>	<b>246.10</b>	<b>5.80</b>

**Table 7. Summary of Revenue and Expenses per Acre, Soybean Research Verification Program, 2015** <sup>(1)</sup>

	Arkansas	Chicot	Clay	Craighead	Cross	Desha	Drew-1	Drew-2
<b>Receipts</b>								
Yield (bu.)	71.6	89.9	63.3	59.0	35.0	83.0	16.0	61.1
Price	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.32
<b>Total Crop Revenue</b>	<b>667.31</b>	<b>837.87</b>	<b>589.96</b>	<b>549.88</b>	<b>326.20</b>	<b>773.56</b>	<b>149.12</b>	<b>569.45</b>
Seed	90.00	87.00	90.00	87.00	90.00	63.00	45.60	75.00
Fertilizers & Nutrients	84.40	48.30	33.30	0.00	22.20	22.20	22.20	52.20
Herbicides <sup>(2)</sup>	47.77	28.03	36.94	20.41	24.38	31.31	18.64	20.03
Insecticides <sup>(2)</sup>	3.83	5.55	2.97	12.00	17.23	0.00	0.00	12.00
Other Chemicals <sup>(2)</sup>	1.70	0.00	11.88	15.83	0.00	0.00	0.00	14.10
Custom Applications	25.00	7.00	7.00	19.00	7.00	0.00	0.00	14.00
Diesel Fuel <sup>(3)</sup>	25.13	24.63	18.19	13.16	27.35	17.11	9.19	12.92
Repairs & Maintenance	19.66	22.28	18.34	14.94	21.66	19.35	13.01	15.09
Irrigation Energy Costs	3.47	23.18	29.29	17.58	19.32	46.87	0.00	29.29
Labor, Field Activities	12.31	11.67	11.68	9.13	12.16	12.78	8.24	8.72
Interest	7.52	6.20	6.25	5.05	5.81	5.14	2.78	6.10
Other Inputs & Fees, Pre-harvest	3.45	3.45	3.45	3.45	3.45	3.45	0.00	3.45
Post-harvest Expenses	21.24	26.66	18.77	17.50	10.38	24.62	4.75	18.12
<b>Total Operating Expenses</b>	<b>345.47</b>	<b>293.97</b>	<b>288.06</b>	<b>235.04</b>	<b>260.95</b>	<b>246.02</b>	<b>124.40</b>	<b>281.03</b>
<b>Returns to Operating Expenses</b>	<b>321.84</b>	<b>543.90</b>	<b>301.90</b>	<b>314.84</b>	<b>65.25</b>	<b>527.54</b>	<b>24.72</b>	<b>288.42</b>
Capital Recovery & Fixed Costs	80.56	87.57	71.70	57.88	86.37	75.09	39.57	56.76
<b>Total Specified Expenses<sub>z</sub></b>	<b>426.03</b>	<b>381.54</b>	<b>359.75</b>	<b>292.91</b>	<b>347.32</b>	<b>321.12</b>	<b>163.97</b>	<b>337.80</b>
<b>Returns to Specified Expenses</b>	<b>241.28</b>	<b>456.33</b>	<b>230.20</b>	<b>256.97</b>	<b>-21.12</b>	<b>452.44</b>	<b>-14.85</b>	<b>231.65</b>
Operating Expenses/Yield Unit	4.82	3.27	4.55	3.98	7.46	2.96	7.77	4.60
Total Expenses/Yield Unit	5.95	4.24	5.68	4.96	9.92	3.87	10.25	5.53

1. Does not include land costs, management, or other expenses and fees not associated with production.

2. Combined as Chemicals in some previous year reports

3. Listed as Fuel & Lube in previous year reports

**Table 7 (Continued). Summary of Revenue and Expenses per Acre, Soybean Research Verification Program, 2014 <sup>(1)</sup>**

<b>Receipts</b>	Jefferson	Lawrence	Lee	Lincoln	Monroe	Phillips	Prairie	Randolph	White	Woodruff	Simple Average
Yield (bu.)	62.4	51.0	58.2	86.7	63.8	60.3	79.0	55.0	66.0	61.0	62.35
Price	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.32	9.32
<b>Total Crop Revenue</b>	<b>581.57</b>	<b>476.32</b>	<b>542.42</b>	<b>808.04</b>	<b>594.62</b>	<b>562.00</b>	<b>736.28</b>	<b>512.60</b>	<b>615.12</b>	<b>568.52</b>	<b>581.10</b>
Seed	80.30	75.92	88.50	88.50	44.08	87.00	90.00	90.00	61.32	90.00	79.07
Fertilizers & Nutrients	44.80	42.20	0.00	22.20	44.64	37.20	37.20	55.50	37.00	0.00	33.64
Herbicides <sup>(2)</sup>	78.36	37.50	35.87	34.30	26.88	40.34	16.00	43.31	38.98	44.06	34.62
Insecticides <sup>(2)</sup>	19.14	12.00	5.72	0.00	0.00	2.83	12.00	0.00	0.00	12.00	6.52
Other Chemicals <sup>(2)</sup>	1.70	0.00	15.38	1.59	0.00	0.40	13.36	14.84	14.84	11.88	6.53
Custom Applications	13.00	13.00	0.00	7.00	6.00	13.00	13.00	7.00	13.00	7.00	9.50
Diesel Fuel <sup>(3)</sup>	12.40	14.30	18.07	21.61	17.32	13.50	14.59	19.83	14.28	7.00	16.70
Repairs & Maintenance	16.46	16.89	22.89	24.04	17.74	17.61	17.32	30.22	15.89	16.85	18.91
Irrigation Energy Costs	23.18	17.58	11.59	35.15	37.69	19.32	29.29	26.70	19.32	27.88	23.15
Labor, Field Activities	10.58	9.37	9.80	10.94	9.38	7.84	10.67	8.93	8.22	4.32	9.82
Interest	7.20	5.75	5.02	5.91	4.92	5.76	6.10	7.04	5.37	5.25	5.73
Other Inputs & Fees, Pre-harvest	3.45	3.45	3.45	3.45	3.45	3.45	3.45	0.00	3.45	0.00	2.88
Post-harvest Expenses	18.51	15.13	17.26	25.72	18.92	17.88	23.43	16.31	19.58	18.09	18.49
<b>Total Operating Expenses</b>	<b>329.08</b>	<b>263.08</b>	<b>233.55</b>	<b>280.41</b>	<b>231.02</b>	<b>266.15</b>	<b>286.42</b>	<b>319.68</b>	<b>251.26</b>	<b>244.33</b>	<b>265.55</b>
<b>Returns to Operating Expenses</b>	<b>252.49</b>	<b>212.24</b>	<b>308.87</b>	<b>527.64</b>	<b>363.60</b>	<b>295.85</b>	<b>449.86</b>	<b>192.92</b>	<b>363.86</b>	<b>324.19</b>	<b>315.55</b>
Capital Recovery & Fixed Costs	56.20	58.73	70.92	85.51	68.43	55.89	64.83	105.18	55.75	73.22	69.45
<b>Total Specified Expenses</b>	<b>385.28</b>	<b>321.81</b>	<b>304.48</b>	<b>365.92</b>	<b>299.45</b>	<b>322.04</b>	<b>351.25</b>	<b>424.86</b>	<b>307.01</b>	<b>317.55</b>	<b>335.01</b>
<b>Returns to Specified Expenses</b>	<b>196.29</b>	<b>153.51</b>	<b>237.95</b>	<b>442.13</b>	<b>295.17</b>	<b>239.96</b>	<b>385.03</b>	<b>87.74</b>	<b>308.11</b>	<b>250.97</b>	<b>246.10</b>
Operating Expenses/Yield Unit	5.27	5.16	4.01	3.23	3.62	4.41	3.63	5.81	3.81	4.01	4.58
Total Expenses/Yield Unit	6.17	6.31	5.23	4.22	4.69	5.34	4.45	7.72	4.65	5.21	5.80