

## Report

### 2015 soybean insect losses in the southern US

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**Abstract** Survey-based soybean insect losses were collected following the 2015 growing season to provide a record of insect pressure and soybean management practices for the year. This survey has been done annually in all participating states for at least the last 5 years and since 2004 in Mississippi. The 2015 survey represents 11.7 million soybean acres across the southern United States. Overall, stink bugs re-emerged as the most expensive pest in soybean followed closely by corn earworm and soybean looper. The proportion of fields planted with insecticide seed treatments decreased slightly for the second consecutive year to 60% of all acreage. The number of foliar applications also declined, as has been the trend, to 1.34 applications during the season. Total insect management costs totaled \$23.85 per acre during 2015 with an additional cost of \$14.25 in estimated yield lost to insects, resulting in total costs and losses of \$38.11 per acre during 2015, the lowest overall insect loss estimates since the current states began recording losses five years ago.

**Key Words:** soybean, yield loss, pest management

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#### Introduction

Soybean losses have been compiled annually since 2004 in Mississippi (MS) (Musser and Catchot 2008), 2008 in Tennessee (TN) (Musser et al. 2009), 2009 in Arkansas (AR) (Musser et al. 2010), and 2011 in Alabama (AL), Louisiana (LA), North Carolina (NC) and Virginia (VA) (Musser et al. 2012). These survey-based losses provide an annual record of insect pressure and management decisions. While the costs and losses estimated for a pest in any given year are somewhat subjective, these losses provide an historical record of pest pressure and management practices and provide an estimate of the economic

impact of the various soybean pests. Over time, the changes in estimated losses and insecticide applications provide a reliable record of shifts in pest spectrums and grower management.

### Materials and Methods

An informal telephone or written survey was conducted with numerous crop consultants and extension personnel in the fall of the year. Surveyed people were those who actively scouted soybean fields and those who assisted growers in making soybean pest management decisions. These surveys were compiled and then combined with the author's own experience to estimate the various fields in the table. Acreage, yield and price data were drawn from Agricultural Statistics Service publications (USDA NASS) before final estimates were published, so values in the tables may differ from final NASS values. The estimates were placed in an Excel spreadsheet (Microsoft Office 2013, Microsoft Corp.) to make the various calculations. Actual formulas used in the spreadsheet were published by Musser and Catchot (2008). Additional columns added in 2013 were columns for acres above economic threshold (ET) and % acres above ET and these are defined in Musser et al (2014).

### Results and Discussion

Planted acreage and yields in the surveyed states were the highest recorded by this survey, totally 11.7 million acres, which represents 14% of the U.S. soybean acreage. Prices declined for the third consecutive year to \$8.98/bu. Estimated yield lost to insects of 3.51% was the lowest recorded overall in the five years the current states have been publishing estimates. Likewise, the 1.34 foliar insecticide applications per crop was the lowest number of applications recorded in the last 5 years. Together these data suggest that 2015 was a relatively mild insect year for soybean. Insect scouting levels were about constant at 64% of all acres and insecticidal seed treatment usage decreased to 60%. These averages however are not very representative of any state in the region as the easternmost states of Virginia and North Carolina had low scouting rates (15-20%), low seed treatment usage rates (10-20%), few foliar applications (<0.5) and minimal insect losses (<3.1%) while the lower Mid-South states of Louisiana and Mississippi used insecticidal seed treatments on more acreage (90-95%), had scouts on more of the acreage (90%), applied more foliar insecticides (1.9-2.5) and still suffered more insect losses (3.4 – 3.8%). The other states were intermediate between these extremes in most areas. The highest insect yield losses were reported from AR (5.37%) and the lowest losses were reported from VA (0.62%). The most pesticide applications were made in LA (2.5 applications) while the fewest were made in VA (0.07 applications) (Table 1).

During the last several years, corn earworm, *Helicoverpa zea* (Boddie) (Lepidoptera: Noctuidae), was the most expensive insect pest of soybean overall in terms of lost yield and control costs. However, stink bugs (Hemiptera: Pentatomidae) resumed their place as the most expensive pest in 2015 at a cost plus loss of \$6.71/ac. They were closely followed by corn earworm (\$6.10/ac) and soybean looper (*Chrysodeixis includens* (Walker)) (Lepidoptera: Noctuidae) (\$5.35/ac). The primary stink bug species overall was green stink bug (*Acrosternum hilare* (Say)) representing 54% of the complex. Estimated losses and costs from corn earworm continued a decline that has been observed since 2011. Stink bugs were the most frequently sprayed insect during 2014, receiving 0.46 applications per acre which was more than twice as many applications as the second most sprayed insect (soybean looper).

While kudzu bug, *Megacopta cribraria* (Fabricius) (Hemiptera: Plataspidae), was found infesting soybean in all surveyed states except Virginia during 2015, it was the target of treatment on less than 0.5% of acres.

**Table 1.** Soybean management and losses in surveyed states, 2004-2015.

Year	% soybeans scouted	% soybeans with insect. seed treatment	No. foliar insecticide applications	% yield loss to insects	\$ loss + cost/acre <sup>1</sup>
<b>Combined States</b>					
2011-13	59	57	1.60	5.67	43.42
2014	65	64	1.38	4.09	32.89
2015	64	60	1.34	3.51	27.21
<b>Alabama</b>					
2011-13	41	20	0.46	3.46	27.12
2014	60	30	0.18	1.83	7.69
2015	60	30	0.47	1.36	10.81
<b>Arkansas</b>					
2009-10	63	46	1.36	8.97	46.33
2011-13	72	70	1.41	8.61	63.29
2014	80	70	1.45	6.83	55.44
2015	82	65	1.50	5.37	38.20
<b>Louisiana</b>					
2011-13	75	87	3.93	3.04	55.88
2014	85	90	2.34	2.59	37.52
2015	90	95	2.52	3.43	41.37
<b>Mississippi</b>					
2004-07	15	1	1.19	6.74	26.16
2008-10	68	62	2.29	4.69	39.79
2011-13	83	83	1.65	4.35	42.88
2014	90	90	1.21	2.77	28.08
2015	90	90	1.90	3.76	40.33
<b>North Carolina</b>					
2011-13	14	11	1.50	5.53	39.87
2014	15	31	1.25	5.15	34.65
2015	15	20	0.48	3.05	13.59
<b>Tennessee</b>					
2008-10	33	47	0.75	5.40	27.09
2011-13	43	50	0.91	3.88	27.48
2014	45	52	1.05	2.05	16.10
2015	42	50	0.87	1.82	11.08
<b>Virginia</b>					
2011-13	46	13	0.30	4.16	23.63
2014	30	25	0.08	1.25	7.21
2015	20	10	0.07	0.62	2.20

<sup>1</sup> 1 acre = 0.405 ha

State Highlights

*Alabama.* Insect pressure was relatively light, with 75% of all insecticide applications being directed at soybean loopers.

*Arkansas.* Stink bugs were the most widely sprayed insect, but corn earworm caused the greatest losses. Armyworms and bean leaf beetle were also important pests.

*Louisiana.* Insect costs plus losses were slightly higher than in 2014, with stink bugs, primarily redbanded stink bug, and soybean looper being the most costly pests.

*Mississippi.* Insecticide applications and losses returned to more typical levels after a light insect year in 2014. Soybean looper and stink bugs were responsible for more than half of all insect costs plus losses.

*North Carolina.* A very light insect year with less than 0.5 insecticide applications made per field. Corn earworm remained the primary pest.

*Tennessee.* A light insect year. The primary use of insecticides was an automatic application made during reproductive growth with no appreciable quantity of any insects in the field (reported as “Other”). Stink bugs were responsible for most of the yield losses.

*Virginia.* Another very light insect year with 7% of acres sprayed with an insecticide, mostly targeting stink bugs and corn earworm.

The complete data for each state and all states combined are in the appendices following this report.

### Acknowledgements

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**List of Appendices**

**Appendix 1.** Overall soybean insect losses from seven surveyed southern states, 2015.

**Appendix 2.** Alabama soybean insect losses, 2015.

**Appendix 3.** Arkansas soybean insect losses, 2015.

**Appendix 4.** Louisiana soybean insect losses, 2015.

**Appendix 5.** Mississippi soybean insect losses, 2015.

**Appendix 6.** North Carolina soybean insect losses, 2015.

**Appendix 7.** Tennessee soybean insect losses, 2015.

**Appendix 8.** Virginia soybean insect losses, 2015.

Appendix 1. Overall soybean insect losses from seven surveyed southern states, 2015.

Pest	Acres Infested	% Acres Infested	Acres above ET	% Acres above ET	Acres Treated	% Acres Treated	# of apps/acres treated	Cost of 1 Insecticide	% loss per acre infested	# of apps per total soy acres	cost/acre	Overall % reduction	bushel lost per pest	Loss + Cost	Loss + Cost Cost/acre	% Total Loss + Cost
Armyworm complex	2,991,483	25.5%	531,391	4.5%	560,310	4.8%	1.00	\$8.96	1.502	0.048	\$0.43	0.38%	2,029,361	\$23,248,764	\$1.99	7.3%
Banded Cucumber Beetle	2,100,000	17.9%	0	0.0%	0	0.0%	0.00	\$0.00	0.002	0.000	\$0.00	0.00%	2,258	\$20,285	\$0.00	0.0%
Bean Leaf Beetle	7,308,024	62.4%	1,431,540	12.2%	1,523,557	13.0%	1.15	\$8.90	0.564	0.150	\$1.33	0.35%	1,861,263	\$32,330,147	\$2.76	10.1%
Blister Beetle	575,037	4.9%	34,348	0.3%	25,000	0.2%	1.00	\$3.00	0.000	0.002	\$0.01	0.00%	5	\$75,041	\$0.01	0.0%
Corn Earworm	3,666,965	31.3%	1,331,749	11.4%	1,749,928	14.9%	1.13	\$12.48	3.147	0.169	\$2.11	0.99%	5,211,352	\$71,467,338	\$6.10	22.4%
Cutworms	655,102	5.6%	105,000	0.9%	100,000	0.9%	1.00	\$5.94	0.032	0.009	\$0.05	0.00%	9,393	\$678,135	\$0.06	0.2%
Dectes Stem Borer	6,687,576	57.1%	2,000	0.0%	301,500	2.6%	1.00	\$3.10	0.103	0.026	\$0.08	0.06%	311,815	\$3,736,594	\$0.32	1.2%
Garden Webworms	772,002	6.6%	40,000	0.3%	40,000	0.3%	1.00	\$3.00	0.021	0.003	\$0.01	0.00%	7,451	\$186,940	\$0.02	0.1%
Grape Colaspis	4,468,838	38.2%	13,348	0.1%	14,687	0.1%	1.00	\$8.51	0.008	0.001	\$0.01	0.00%	16,099	\$269,627	\$0.02	0.1%
Grasshopper	5,552,683	47.4%	147,788	1.3%	145,431	1.2%	1.00	\$7.15	0.078	0.012	\$0.09	0.04%	195,211	\$2,794,147	\$0.24	0.9%
Green Cloverworm	8,927,438	76.2%	1,159,059	9.9%	443,372	3.8%	1.00	\$8.47	0.270	0.038	\$0.32	0.21%	1,089,588	\$13,545,405	\$1.16	4.3%
Kudzu Bug	870,080	7.4%	62,500	0.5%	44,000	0.4%	0.50	\$8.52	0.122	0.002	\$0.02	0.01%	48,099	\$619,600	\$0.05	0.2%
Lesser Cornstalk Borer	68,676	0.6%	7,500	0.1%	0	0.0%	0.00	\$0.00	0.728	0.000	\$0.00	0.00%	22,580	\$202,848	\$0.02	0.1%
Mexican Bean Beetle	33,061	0.3%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	4,827,817	41.2%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	3,395,481	29.0%	96,000	0.8%	50,000	0.4%	1.00	\$12.00	0.088	0.004	\$0.05	0.03%	135,479	\$1,817,091	\$0.16	0.6%
Soybean Aphid	92,000	0.8%	4,500	0.0%	4,500	0.0%	1.00	\$7.33	0.036	0.000	\$0.00	0.00%	1,490	\$46,388	\$0.00	0.0%
Soybean Looper	6,682,935	57.1%	2,281,178	19.5%	2,489,201	21.3%	1.01	\$14.29	0.989	0.214	\$3.06	0.56%	2,985,111	\$62,601,609	\$5.35	19.6%
Spider Mites	477,024	4.1%	5,623	0.0%	3,609	0.0%	1.00	\$8.55	0.025	0.000	\$0.00	0.00%	5,425	\$79,604	\$0.01	0.0%
Spotted Cucumber Beetle	7,347,534	62.7%	0	0.0%	0	0.0%	0.00	\$0.00	0.033	0.000	\$0.00	0.02%	108,272	\$972,672	\$0.08	0.3%
Stink Bugs (see box below)	9,585,414	81.9%	3,519,427	30.1%	4,214,728	36.0%	1.28	\$8.72	0.812	0.460	\$4.01	0.66%	3,512,842	\$78,532,022	\$6.71	24.6%
Threecornered Alfalfa Hopper	7,619,994	65.1%	841,343	7.2%	815,350	7.0%	1.00	\$8.93	0.076	0.070	\$0.62	0.05%	259,983	\$9,613,385	\$0.82	3.0%
Thrips	8,758,988	74.8%	0	0.0%	32,000	0.3%	1.00	\$7.25	0.019	0.003	\$0.02	0.01%	74,965	\$905,457	\$0.08	0.3%
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	2,066,524	17.6%	688,695	5.9%	609,000	5.2%	1.00	\$9.83	0.742	0.052	\$0.51	0.13%	692,214	\$12,202,572	\$1.04	3.8%
Other	0	0.0%	0	0.0%	890,000	7.6%	1.00	\$3.00	0.000	0.076	\$0.23	0.00%	0	\$2,670,000	\$0.23	0.8%
							<b>1.339</b>				<b>\$12.95</b>	<b>3.51%</b>	<b>18,580,256</b>	<b>\$318,615,671</b>	<b>\$27.21</b>	<b>100.0%</b>

SUMMARY DATA

Data Input	
State	Combined
Year	2015
Total Acres	11,710,000
Yield/acre	43.57
Price/Bushel	\$8.98
% Acres Scouted	64
Scouting Fee/scouted acre	\$6.88
% Acres Insect Seed Trt.	60
Seed Trt Cost/treated ac	\$10.77

Yield & Management Results	
Total Bushels Harvested	510,240,000
Total Bushels Lost to Insects	18,580,256
Percent Yield Loss	3.51%
Yield w/o Insects	45.16
Ave. # Spray Applications	1.339
Seed Treated Acres	7,044,000
Scouted Acres	7,518,700

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$151,698,015	\$12.95
Seed Treatment Costs	\$75,865,865	\$6.48
Scouting costs	\$51,764,099	\$4.42
Total Costs	\$279,327,978	\$23.85
Yield Lost to insects	\$166,917,656	\$14.25
Total Losses + Costs	\$446,245,634	\$38.11

Stink Bug Composition	
Species	% of SB
Brown	25.6
Brown Marmorated	0.6
Green	54.4
Redbanded	7.9
Redshouldered	1.8
Southern Green	9.8
Total	100

Appendix 2. Alabama soybean insect losses, 2015.

Pest	Acres Infested	% Acres Infested	Acres above ET	% Acres above ET	Acres Treated	% Acres Treated	# of apps/acres treated	Cost of 1 Insecticide	% loss per acre infested	# of apps per total soy acres	Overall % reduction	bushel lost per pest	Loss + Cost	Loss + Cost Cost/acre	% Total Loss + Cost			
Armyworm complex	20,000	4.1%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Bean Leaf Beetle	100,000	20.4%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Blister Beetle	50,000	10.2%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Corn Earworm	25,000	5.1%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Cutworms	25,000	5.1%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Dectes Stem Borer	40,000	8.2%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Grasshopper	490,000	100.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Green Cloverworm	390,000	79.6%	0	0.0%	0	0.0%	0	\$0.00	0.10	0.000	\$0.00	0.08%	16,606	\$153,604	\$0.31	2.9%		
Kudzu Bug	100,000	20.4%	4,000	0.8%	5,000	1.0%	1	\$8.50	0.05	0.010	\$0.09	0.01%	2,129	\$62,193	\$0.13	1.2%		
Lesser Cornstalk Borer	20,000	4.1%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Potato Leafhopper	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Soybean Looper	200,000	40.8%	200,000	40.8%	175,000	35.7%	1	\$12.50	2.00	0.357	\$4.46	0.82%	170,317	\$3,762,929	\$7.68	71.0%		
Spider Mites	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Spotted Cucumber Beetle	150,000	30.6%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Stink Bugs (see box below)	490,000	100.0%	50,000	10.2%	30,000	6.1%	1	\$8.50	0.15	0.061	\$0.52	0.15%	31,296	\$544,485	\$1.11	10.3%		
Threecornered Alfalfa Hopper	490,000	100.0%	40,000	8.2%	10,000	2.0%	1	\$8.50	0.10	0.020	\$0.17	0.10%	20,864	\$277,990	\$0.57	5.2%		
Thrips	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Velvetbean Caterpillar	100,000	20.4%	15,000	3.1%	12,000	2.4%	1	\$8.50	1.00	0.024	\$0.21	0.20%	42,579	\$495,857	\$1.01	9.4%		
Other	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
												<b>0.473</b>	<b>\$5.45</b>	<b>1.36%</b>	<b>283,790</b>	<b>\$5,297,059</b>	<b>\$10.81</b>	<b>100.0%</b>

SUMMARY DATA

Data Input	
State	AL
Year	2015
Total Acres	490,000
Yield/acre	42
Price/Bushel	\$9.25
% Acres Scouted	60
Scouting Fee/scouted acre	\$6.00
% Acres Insect Seed Trt.	30
Seed Trt Cost/treated ac	\$10.00

Yield & Management Results	
Total Bushels Harvested	20,580,000
Total Bushels Lost to Insects	283,790
Percent Yield Loss	1.36%
Yield w/o Insects	42.58
Ave. # Spray Applications	0.473
Seed Treated Acres	147,000
Scouted Acres	294,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$2,672,000	\$5.45
Seed Treatment Costs	\$1,470,000	\$3.00
Scouting costs	\$1,764,000	\$3.60
Total Costs	\$5,906,000	\$12.05
Yield Lost to insects	\$2,625,059	\$5.36
Total Losses + Costs	\$8,531,059	\$17.41

Stink Bug Composition	
Species	% of SB
Brown	25
Brown Marmorated	1
Green	35
Redbanded	1
Redshouldered	1
Southern Green	37
Total	100

Appendix 3. Arkansas soybean insect losses, 2015.

Pest	Acres Infested	% Acres Infested	Acres above ET	% Acres above ET	Acres Treated	% Acres Treated	# of apps/acres treated	Cost of 1 Insecticide	% loss per acre infested	# of apps per total soy acres	cost/acre	Overall % reduction	bushel lost per pest	Loss + Cost	Loss + Cost/acre	% Total Loss + Cost
Armyworm complex	2,132,000	64.6%	333,000	10.1%	375,000	11.4%	1	\$9.00	2.00	0.114	\$1.02	1.29%	2,343,219	\$23,690,710	\$7.18	18.8%
Banded Cucumber Beetle	100,000	3.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	3,300,000	100.0%	661,000	20.0%	720,000	21.8%	1.1	\$7.00	1.00	0.240	\$1.68	1.00%	1,813,467	\$21,266,759	\$6.44	16.9%
Blister Beetle	150,000	4.5%	21,000	0.6%	25,000	0.8%	1	\$3.00	0.00	0.008	\$0.02	0.00%	0	\$75,000	\$0.02	0.1%
Corn Earworm	2,500,000	75.8%	600,000	18.2%	1,100,000	33.3%	1.2	\$12.00	3.00	0.400	\$4.80	2.27%	4,121,516	\$51,573,543	\$15.63	40.9%
Cutworms	340,000	10.3%	25,000	0.8%	35,000	1.1%	1	\$3.00	0.00	0.011	\$0.03	0.00%	0	\$105,000	\$0.03	0.1%
Dectes Stem Borer	2,800,500	84.9%	0	0.0%	295,000	8.9%	1	\$3.00	0.00	0.089	\$0.27	0.00%	0	\$885,000	\$0.27	0.7%
Garden Webworms	654,000	19.8%	40,000	1.2%	40,000	1.2%	1	\$3.00	0.00	0.012	\$0.04	0.00%	0	\$120,000	\$0.04	0.1%
Grape Colaspis	2,470,000	74.8%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	3,300,000	100.0%	123,000	3.7%	123,000	3.7%	1	\$7.00	0.10	0.037	\$0.26	0.10%	181,347	\$2,433,276	\$0.74	1.9%
Green Cloverworm	3,300,000	100.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	10,000	0.3%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Cornstalk Borer	20,000	0.6%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	3,000,000	90.9%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	2,463,000	74.6%	11,000	0.3%	10,000	0.3%	1	\$8.00	0.00	0.003	\$0.02	0.00%	0	\$80,000	\$0.02	0.1%
Soybean Aphid	57,000	1.7%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	2,469,000	74.8%	201,998	6.1%	275,000	8.3%	1	\$12.00	0.25	0.083	\$1.00	0.19%	339,201	\$6,240,871	\$1.89	5.0%
Spider Mites	350,000	10.6%	453	0.0%	453	0.0%	1	\$8.00	0.00	0.000	\$0.00	0.00%	0	\$3,624	\$0.00	0.0%
Spotted Cucumber Beetle	3,300,000	100.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	3,300,000	100.0%	800,000	24.2%	1,500,000	45.5%	1	\$7.00	0.50	0.455	\$3.18	0.50%	906,733	\$18,361,379	\$5.56	14.6%
Threecornered Alfalfa Hopper	3,300,000	100.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	3,300,000	100.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	750,000	22.7%	147,000	4.5%	147,000	4.5%	1	\$6.00	0.10	0.045	\$0.27	0.02%	41,215	\$1,239,335	\$0.38	1.0%
Other	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
										<b>1.496</b>	<b>\$12.60</b>	<b>5.37%</b>	<b>9,746,698</b>	<b>\$126,074,497</b>	<b>\$38.20</b>	<b>100.0%</b>

SUMMARY DATA

Data Input	
State	AR
Year	2015
Total Acres	3,300,000
Yield/acre	52
Price/Bushel	\$8.67
% Acres Scouted	82
Scouting Fee/scouted acre	\$8.00
% Acres Insect Seed Trt.	65
Seed Trt Cost/treated ac	\$12.00

Yield & Management Results	
Total Bushels Harvested	171,600,000
Total Bushels Lost to Insects	9,746,698
Percent Yield Loss	5.37%
Yield w/o Insects	54.95
Ave. # Spray Applications	1.496
Seed Treated Acres	2,145,000
Scouted Acres	2,706,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$41,570,624	\$12.60
Seed Treatment Costs	\$25,740,000	\$7.80
Scouting costs	\$21,648,000	\$6.56
Total Costs	\$88,958,624	\$26.96
Yield Lost to insects	\$84,503,873	\$25.61
Total Losses + Costs	\$173,462,497	\$52.56

Stink Bug Composition	
Species	% of SB
Brown	25
Brown Marmorated	0
Green	70
Redbanded	0
Redshouldered	2
Southern Green	3
Total	100





Appendix 5. Mississippi soybean insect losses, 2015.

Pest	Acres Infested	% Acres Infested	Acres above ET	% Acres above ET	Acres Treated	% Acres Treated	# of apps/acres treated	Cost of 1 Insecticide	% loss per acre infested	# of apps per total soy acres	cost/acre	Overall % reduction	bushel lost per pest	Loss + Cost	Loss + Cost Cost/acre	% Total Loss + Cost
Armyworm complex	300,000	13.0%	100,000	4.3%	90,000	3.9%	1	\$9.00	0.40	0.039	\$0.35	0.05%	57,354	\$1,380,672	\$0.60	1.5%
Banded Cucumber Beetle	500,000	21.7%	0	0.0%	0	0.0%	1	\$9.00	0.01	0.000	\$0.00	0.00%	2,390	\$23,778	\$0.01	0.0%
Bean Leaf Beetle	1,750,000	76.1%	600,000	26.1%	700,000	30.4%	1.2	\$11.00	0.20	0.365	\$4.02	0.15%	167,283	\$10,904,461	\$4.74	11.8%
Blister Beetle	10,000	0.4%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	5	\$48	\$0.00	0.0%
Corn Earworm	300,000	13.0%	240,000	10.4%	275,000	12.0%	1	\$16.50	3.50	0.120	\$1.97	0.46%	501,848	\$9,530,884	\$4.14	10.3%
Cutworms	190,000	8.3%	50,000	2.2%	10,000	0.4%	1	\$9.00	0.10	0.004	\$0.04	0.01%	9,081	\$180,356	\$0.08	0.2%
Dectes Stem Borer	1,500,000	65.2%	0	0.0%	0	0.0%	0	\$0.00	0.20	0.000	\$0.00	0.13%	143,385	\$1,426,681	\$0.62	1.5%
Garden Webworms	110,000	4.8%	0	0.0%	0	0.0%	0	\$0.00	0.15	0.000	\$0.00	0.01%	7,886	\$78,467	\$0.03	0.1%
Grape Colaspis	350,000	15.2%	0	0.0%	7,500	0.3%	1	\$9.00	0.10	0.003	\$0.03	0.02%	16,728	\$233,946	\$0.10	0.3%
Grasshopper	750,000	32.6%	4,500	0.2%	10,500	0.5%	1	\$8.00	0.10	0.005	\$0.04	0.03%	35,846	\$440,670	\$0.19	0.5%
Green Cloverworm	1,600,000	69.6%	750,000	32.6%	220,000	9.6%	1	\$9.00	0.70	0.096	\$0.86	0.49%	535,304	\$7,306,277	\$3.18	7.9%
Kudzu Bug	500,000	21.7%	40,000	1.7%	22,000	1.0%	0	\$9.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Cornstalk Borer	10,000	0.4%	7,500	0.3%	0	0.0%	0	\$0.00	5.00	0.000	\$0.00	0.02%	23,898	\$237,780	\$0.10	0.3%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	250,000	10.9%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	600,000	26.1%	85,000	3.7%	40,000	1.7%	1	\$13.00	0.50	0.017	\$0.23	0.13%	143,385	\$1,946,681	\$0.85	2.1%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	1,600,000	69.6%	800,000	34.8%	950,000	41.3%	1	\$16.00	1.50	0.413	\$6.61	1.04%	1,147,080	\$26,613,450	\$11.57	28.7%
Spider Mites	75,000	3.3%	2,500	0.1%	1,000	0.0%	1	\$10.00	0.00	0.000	\$0.00	0.00%	0	\$10,000	\$0.00	0.0%
Spotted Cucumber Beetle	1,900,000	82.6%	0	0.0%	0	0.0%	1	\$9.00	0.10	0.000	\$0.00	0.08%	90,811	\$903,565	\$0.39	1.0%
Stink Bugs (see box below)	1,950,000	84.8%	1,200,000	52.2%	1,300,000	56.5%	1.2	\$9.50	0.75	0.678	\$6.44	0.64%	699,002	\$21,775,071	\$9.47	23.5%
Threecornered Alfalfa Hopper	2,000,000	87.0%	10,000	0.4%	15,000	0.7%	1	\$8.50	0.01	0.007	\$0.06	0.01%	9,559	\$222,612	\$0.10	0.2%
Thrips	2,000,000	87.0%	0	0.0%	0	0.0%	1	\$8.50	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	750,000	32.6%	400,000	17.4%	350,000	15.2%	1	\$12.00	1.50	0.152	\$1.83	0.49%	537,694	\$9,550,055	\$4.15	10.3%
Other	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
										<b>1.900</b>	<b>\$22.47</b>	<b>3.76%</b>	<b>4,128,538</b>	<b>\$92,765,456</b>	<b>\$40.33</b>	<b>100.0%</b>

SUMMARY DATA

Data Input	
State	MS
Year	2015
Total Acres	2,300,000
Yield/acre	46
Price/Bushel	\$9.95
% Acres Scouted	90
Scouting Fee/scouted acre	\$6.00
% Acres Insect Seed Trt.	90
Seed Trt Cost/treated ac	\$12.00

Yield & Management Results	
Total Bushels Harvested	105,800,000
Total Bushels Lost to Insects	4,128,538
Percent Yield Loss	3.76%
Yield w/o Insects	47.80
Ave. # Spray Applications	1.900
Seed Treated Acres	2,070,000
Scouted Acres	2,070,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$51,686,500	\$22.47
Seed Treatment Costs	\$24,840,000	\$10.80
Scouting costs	\$12,420,000	\$5.40
Total Costs	\$88,946,500	\$38.67
Yield Lost to insects	\$41,078,956	\$17.86
Total Losses + Costs	\$130,025,456	\$56.53

Stink Bug Composition	
Species	% of SB
Brown	40
Brown Marmorated	0
Green	45
Redbanded	1
Redshouldered	4
Southern Green	10
Total	100

Appendix 6. North Carolina soybean insect losses, 2015.

Pest	Acres Infested	% Acres Infested	Acres above ET	% Acres above ET	Acres Treated	% Acres Treated	# of apps/acres treated	Cost of 1 Insecticide	% loss per acre infested	# of apps per total soy acres	cost/acre	Overall % reduction	bushel lost per pest	Loss + Cost	Loss + Cost Cost/acre	% Total Loss + Cost
Armyworm complex	139,483	7.7%	53,391	2.9%	50,310	2.8%	1	\$9.00	0.50	0.028	\$0.25	0.04%	24,459	\$659,470	\$0.36	2.7%
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	643,024	35.5%	130,540	7.2%	48,557	2.7%	1.39	\$8.00	0.50	0.037	\$0.30	0.18%	112,758	\$1,492,762	\$0.82	6.1%
Blister Beetle	345,037	19.1%	13,348	0.7%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Corn Earworm	556,965	30.8%	386,749	21.4%	242,928	13.4%	1.02	\$10.00	5.00	0.137	\$1.37	1.54%	976,673	\$10,730,756	\$5.93	43.6%
Cutworms	2,102	0.1%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Dectes Stem Borer	47,076	2.6%	2,000	0.1%	0	0.0%	0	\$0.00	0.01	0.000	\$0.00	0.00%	165	\$1,395	\$0.00	0.0%
Garden Webworms	2,002	0.1%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	135,838	7.5%	13,348	0.7%	7,187	0.4%	1	\$8.00	0.00	0.004	\$0.03	0.00%	0	\$57,496	\$0.03	0.2%
Grasshopper	232,683	12.9%	20,088	1.1%	11,931	0.7%	1	\$8.00	0.10	0.007	\$0.05	0.01%	8,160	\$164,404	\$0.09	0.7%
Green Cloverworm	687,438	38.0%	79,059	4.4%	83,372	4.6%	1	\$8.00	0.10	0.046	\$0.37	0.04%	24,109	\$870,700	\$0.48	3.5%
Kudzu Bug	65,080	3.6%	3,000	0.2%	1,000	0.1%	1	\$8.00	0.10	0.001	\$0.00	0.00%	2,282	\$27,287	\$0.02	0.1%
Lesser Cornstalk Borer	8,676	0.5%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	33,061	1.8%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	77,817	4.3%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	77,981	4.3%	0	0.0%	0	0.0%	0	\$8.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	838,935	46.4%	167,180	9.2%	177,201	9.8%	1.08	\$12.00	2.00	0.106	\$1.27	0.93%	588,450	\$7,268,930	\$4.02	29.6%
Spider Mites	22,024	1.2%	2,670	0.1%	2,156	0.1%	1	\$8.00	0.50	0.001	\$0.01	0.01%	3,862	\$49,882	\$0.03	0.2%
Spotted Cucumber Beetle	497,534	27.5%	0	0.0%	0	0.0%	0	\$0.00	0.10	0.000	\$0.00	0.03%	17,449	\$147,445	\$0.08	0.6%
Stink Bugs (see box below)	695,414	38.4%	254,427	14.1%	174,728	9.7%	1.08	\$8.00	0.50	0.104	\$0.83	0.19%	121,945	\$2,540,087	\$1.40	10.3%
Threecornered Alfalfa Hopper	218,994	12.1%	9,343	0.5%	10,350	0.6%	1	\$8.00	0.50	0.006	\$0.05	0.06%	38,402	\$407,297	\$0.23	1.7%
Thrips	298,988	16.5%	0	0.0%	0	0.0%	0	\$8.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	115,624	6.4%	26,695	1.5%	0	0.0%	1	\$8.00	0.50	0.000	\$0.00	0.03%	20,275	\$171,327	\$0.09	0.7%
Other	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
										<b>0.476</b>	<b>\$4.53</b>	<b>3.05%</b>	<b>1,938,992</b>	<b>\$24,589,238</b>	<b>\$13.59</b>	<b>100.0%</b>

SUMMARY DATA

Data Input		Yield & Management Results		Economic Results		Stink Bug Composition	
State	NC	Total Bushels Harvested	61,540,000	Total	Per Acre	Species	% of SB
Year	2015	Total Bushels Lost to Insects	1,938,992	Foliar Insecticides Costs	\$8,204,752	Brown	57
Total Acres	1,810,000	Percent Yield Loss	3.05%	Seed Treatment Costs	\$3,620,000	Brown Marmorated	1
Yield/acre	34	Yield w/o Insects	35.07	Scouting costs	\$1,764,750	Green	38
Price/Bushel	\$8.45	Ave. # Spray Applications	0.476	Total Costs	\$13,589,502	Redbanded	0
% Acres Scouted	15	Seed Treated Acres	362,000	Yield Lost to insects	\$16,384,486	Redshouldered	1
Scouting Fee/scouted acre	\$6.50	Scouted Acres	271,500	Total Losses + Costs	\$29,973,988	Southern Green	3
% Acres Insect Seed Trt.	20					Total	100
Seed Trt Cost/treated ac	\$10.00						

Appendix 7. Tennessee soybean insect losses, 2015.

Pest	Acres Infested	% Acres Infested	Acres above ET	% Acres above ET	Acres Treated	% Acres Treated	# of apps/acres treated	Cost of 1 Insecticide	% loss per acre infested	# of apps per total soy acres	Overall % reduction	bushel lost per pest	Loss + Cost	Loss + Cost Cost/acre	% Total Loss + Cost	
Armyworm complex	100,000	6.0%	20,000	1.2%	20,000	1.2%	1	\$9.00	0.40	0.012	\$0.11	0.02%	17,112	\$329,728	\$0.20	1.8%
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	1,500,000	90.4%	40,000	2.4%	55,000	3.3%	1	\$7.75	0.10	0.033	\$0.26	0.09%	64,169	\$987,728	\$0.60	5.4%
Blister Beetle	15,000	0.9%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Corn Earworm	35,000	2.1%	5,000	0.3%	7,000	0.4%	1	\$11.00	3.00	0.004	\$0.05	0.06%	44,918	\$470,035	\$0.28	2.6%
Cutworms	90,000	5.4%	30,000	1.8%	55,000	3.3%	1	\$7.25	0.02	0.033	\$0.24	0.00%	770	\$405,488	\$0.24	2.2%
Dectes Stem Borer	1,300,000	78.3%	0	0.0%	6,500	0.4%	1	\$7.75	0.30	0.004	\$0.03	0.23%	166,839	\$1,510,218	\$0.91	8.2%
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	13,000	0.8%	0	0.0%	0	0.0%	0	\$0.00	0.05	0.000	\$0.00	0.00%	278	\$2,433	\$0.00	0.0%
Grasshopper	80,000	4.8%	200	0.0%	0	0.0%	0	\$0.00	0.05	0.000	\$0.00	0.00%	1,711	\$14,973	\$0.01	0.1%
Green Cloverworm	1,450,000	87.3%	30,000	1.8%	40,000	2.4%	1	\$7.75	0.30	0.024	\$0.19	0.26%	186,090	\$1,938,287	\$1.17	10.5%
Kudzu Bug	95,000	5.7%	5,500	0.3%	6,000	0.4%	1	\$7.75	1.00	0.004	\$0.03	0.06%	40,640	\$402,103	\$0.24	2.2%
Lesser Cornstalk Borer	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	4,500	0.3%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	33,000	2.0%	4,000	0.2%	4,000	0.2%	1	\$7.75	0.10	0.002	\$0.02	0.00%	1,412	\$43,353	\$0.03	0.2%
Soybean Looper	75,000	4.5%	12,000	0.7%	12,000	0.7%	1	\$14.00	0.20	0.007	\$0.10	0.01%	6,417	\$224,148	\$0.14	1.2%
Spider Mites	20,000	1.2%	0	0.0%	0	0.0%	0	\$0.00	0.05	0.000	\$0.00	0.00%	428	\$3,743	\$0.00	0.0%
Spotted Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	1,450,000	87.3%	190,000	11.4%	290,000	17.5%	1	\$7.75	1.10	0.175	\$1.35	0.96%	682,330	\$8,217,885	\$4.95	44.7%
Threecornered Alfalfa Hopper	111,000	6.7%	32,000	1.9%	30,000	1.8%	1	\$7.75	0.20	0.018	\$0.14	0.01%	9,497	\$315,599	\$0.19	1.7%
Thrips	1,660,000	100.0%	0	0.0%	32,000	1.9%	1	\$7.25	0.10	0.019	\$0.14	0.10%	71,014	\$853,369	\$0.51	4.6%
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.30	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	900	0.1%	0	0.0%	0	0.0%	0	\$7.25	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Other	0	0.0%	0	0.0%	890,000	53.6%	1	\$3.00	0.00	0.536	\$1.61	0.00%	0	\$2,670,000	\$1.61	14.5%
							<b>0.872</b>	<b>\$4.26</b>	<b>1.82%</b>	<b>1,293,624</b>	<b>\$18,389,088</b>	<b>\$11.08</b>	<b>100.0%</b>			

SUMMARY DATA

Data Input		Yield & Management Results		Economic Results		Stink Bug Composition		
State	TN	Total Bushels Harvested	69,720,000	Foliar Insecticides Costs	Total \$7,069,875	Per Acre \$4.26	Species	% of SB
Year	2015	Total Bushels Lost to Insects	1,293,624	Seed Treatment Costs	\$5,810,000	\$3.50	Brown	10
Total Acres	1,660,000	Percent Yield Loss	1.82%	Scouting costs	\$4,531,800	\$2.73	Brown Marmorated	3
Yield/acre	42	Yield w/o Insects	42.78	Total Costs	\$17,411,675	\$10.49	Green	87
Price/Bushel	\$8.75	Ave. # Spray Applications	0.872	Yield Lost to insects	\$11,319,213	\$6.82	Redbanded	0
% Acres Scouted	42	Seed Treated Acres	830,000	Total Losses + Costs	\$28,730,888	\$17.31	Redshouldered	0
Scouting Fee/scouted acre	\$6.50	Scouted Acres	697,200				Southern Green	0
% Acres Insect Seed Trt.	50						Total	100
Seed Trt Cost/treated ac	\$7.00							

Appendix 8. Virginia soybean insect losses, 2015.

Pest	Acres Infested	% Acres Infested	Acres above ET	% Acres above ET	Acres Treated	% Acres Treated	# of apps/acres treated	Cost of 1 Insecticide	% loss per acre infested	# of apps per total soy acres	cost/acre	Overall % reduction	bushel lost per pest	Loss + Cost	Loss + Cost Cost/acre	% Total Loss + Cost		
Armyworm complex	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Bean Leaf Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Blister Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Corn Earworm	50,000	7.7%	0	0.0%	25,000	3.8%	1	\$10.00	0.00	0.038	\$0.38	0.00%	0	\$250,000	\$0.38	17.5%		
Cutworms	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Dectes Stem Borer	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Grasshopper	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Green Cloverworm	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Lesser Cornstalk Borer	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Potato Leafhopper	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Soybean Aphid	2,000	0.3%	500	0.1%	500	0.1%	1	\$4.00	0.00	0.001	\$0.00	0.00%	0	\$2,000	\$0.00	0.1%		
Soybean Looper	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Spider Mites	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Spotted Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Stink Bugs (see box below)	200,000	30.8%	25,000	3.8%	20,000	3.1%	1	\$4.50	2.00	0.031	\$0.14	0.62%	120,743	\$1,176,687	\$1.81	82.4%		
Threecornered Alfalfa Hopper	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Thrips	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
Other	0	0.0%	0	0.0%	0	0.0%	0	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%		
												<b>0.07%</b>	<b>\$0.53</b>	<b>0.62%</b>	<b>120,743</b>	<b>\$1,428,687</b>	<b>\$2.20</b>	<b>100.0%</b>

SUMMARY DATA

Data Input		Yield & Management Results		Economic Results		Stink Bug Composition	
State	VA	Total Bushels Harvested	19,500,000	Foliar Insecticides Costs	Total \$342,000 Per Acre \$0.53	Species	% of SB
Year	2015	Total Bushels Lost to Insects	120,743	Seed Treatment Costs	\$780,000 \$1.20	Brown	11
Total Acres	650,000	Percent Yield Loss	0.62%	Scouting costs	\$585,000 \$0.90	Brown Marmorated	1
Yield/acre	30	Yield w/o Insects	30.19	Total Costs	\$1,707,000 \$2.63	Green	88
Price/Bushel	\$9.00	Ave. # Spray Applications	0.070	Yield Lost to insects	\$1,086,687 \$1.67	Redbanded	0
% Acres Scouted	20	Seed Treated Acres	65,000	Total Losses + Costs	\$2,793,687 \$4.30	Redshouldered	0
Scouting Fee/scouted acre	\$4.50	Scouted Acres	130,000			Southern Green	0
% Acres Insect Seed Trt.	10					Total	100
Seed Trt Cost/treated ac	\$12.00						