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Report

2017 Soybean Insect Losses in the United States

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Abstract Estimated soybean insect costs and losses experienced during 2017 were collected and compiled from 16 states following the 2017 growing season to provide a record of insect pressure and management practices for the year. The estimates have been made annually in some states for up to 14 years, but nine states participated for the first time in 2017. Participating states represented 36% of United States soybean acreage, with near 100% participation in southern states. Overall, the stink bug complex was the most expensive insect pest in soybean followed by corn earworm and soybean looper. Total insect management costs were $19.54 per acre, with estimated crop losses to insects at $13.04 per acre, making the total costs plus losses for 2017 total $32.58 per acre. State averages varied widely, with insect management plus losses in some northern states averaging less than $10/ac while averaging more than $75/ac in some southern states. Similarly, the average number of insecticide applications per crop ranged from 0.02 in Wisconsin to 3.6 in Louisiana.

Key Words: soybean, yield loss, pest management

Introduction

Soybean losses have been compiled annually since 2004 in Mississippi (Musser and Catchot 2008), 2008 in Tennessee (Musser et al. 2009), 2009 in Arkansas (Musser et al. 2010), and 2011 in Alabama, Louisiana, North Carolina and Virginia (Musser et al. 2012). The 2017 loss estimates are the first year for Delaware, Georgia, Illinois, Michigan, Ohio, Oklahoma, South Carolina, Texas and Wisconsin. These estimated 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 record of shifts in pest spectrums and grower management.

Materials and Methods

Statewide estimates were made based on informal communication of an author from each state with a number of university faculty, extension personnel, private crop consultants and/or industry professionals who were actively engaged in soybean production in that state to complete a table (see appendices for submitted data from each state). 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 a spreadsheet to make the various calculations. Actual formulas used in the spreadsheet were published by Musser and Catchot (2008). Additional columns were added for the 2013 losses and these are defined in Musser et al (2014).

Results and Discussion

Harvested acreage in the surveyed states was 32.6 million acres (1 acre= 0.405 hectare), which represents 36% of the 89.5 million acres of soybean harvested in the United States during 2017. Nearly all Southern soybean producing states participated, while participation in the Midwestern states was less than 50%. As a result, the national averages of insect costs and losses in this report are likely greater than the true national averages since insect management costs and losses in the southern states are believed to be greater than in the northern states. On average for 2017, combined management costs and yield losses attributed to insects was estimated at $32.58/ac, but this varied widely among states, ranging from $6.43/ac in Michigan to $106.03/ac in Texas. Average yield loss from insects was estimated at 2.6% (1.4 bu/ac or 91 kg/ha), but this also varied from 0.0% in Michigan to 14.0% in Texas. The adoption of insect management strategies also varied among states as shown in Table 1.

The seed-feeding complex of stink bugs (Hemiptera: Pentatomidae) was the most expensive insect pest of soybean overall during 2017 in terms of lost yield and control costs, comprising 38% of all insect costs + losses. The primary species in the complex were green (*Chinavia hilaris*), brown (*Euschistus* spp.) and redbanded (*Piezodorus guildinii*). Green and brown stink bugs were reported from every state with stink bugs, while redbanded stink bug was found primarily in Texas and the southern Mississippi River region where it was the dominant stink bug species. Twenty percent of acreage was sprayed for stink bugs overall, but this ranged from 0% in several states to 90% in Texas and Louisiana. Corn earworm, *Helicoverpa zea* (Lepidoptera: Noctuidae), was the second most damaging pest, responsible for 20% of all costs + losses. Corn earworm was particularly damaging in the Carolina-Virginia region. Soybean looper, *Chrysodeixis includens* (Lepidoptera, Noctuidae) was the third most damaging pest, responsible for 12% of all costs + losses. For control of corn earworm and soybean looper, 10% of soybean acreage was sprayed for each pest. Even though many more states made insect loss estimates in 2017, these same three pests continued to be the primary insect pests of soybeans as has been reported for most years of insect soybean loss estimates (Musser et al 2008-2017).

The practice of making foliar insecticide applications without knowing if any insects are present was common across much of the soybean production area (Table 1). In some cases, the application may have controlled some insects, but in most cases an insecticide was added to a planned fungicide or herbicide application as insurance against the risk of having insect damage. In 2017, a similar number of applications were made automatically for unknown insects (0.38 applications/crop) as for stink bugs (0.37 applications/crop), which was the leading insect target.

State Highlights

Alabama. Soybean looper and stink bugs were the primary pests, costing growers $9.23/acre. Losses from both pests were much higher than in 2016.

Arkansas. Stink bugs, especially the redbanded stink bug emerged as a major pest in 2017. Stink bug cost + loss estimates increased from $6.14/ac in 2016 to $32.57/ac in 2017. Other 2017 pest levels were comparable to 2016 levels.

Delaware. Green and brown stink bugs along with corn earworm were the primary pests, together responsible for 55% of insect costs and losses.

Georgia. Stink bugs, mainly southern green stink bug, and velvetbean caterpillar were the primary pests, jointly costing growers $17.49/ac.

Illinois. 97% of all insecticide applications were automatic applications. Japanese beetle was the most damaging insect, but it only contributed $0.15/ac to total insect costs + losses of $8.89/ac.

Louisiana. Both stink bugs (mainly redbanded stink bug) and soybean looper were treated on >70% of acreage, and stink bugs often required multiple applications. However, overall insect damage was just slighter higher than in 2016.

Michigan. No insects were reported to be over an economic threshold and minimal insecticides were applied. The primary insect cost was for insecticide seed treatments, which were used on 50% of acreage.

Mississippi. Similar to Arkansas, insect pressure was primarily from redbanded stink bug, with stink bug costs + losses increasing from $7.95/ac in 2016 to $33.77/ac in 2017. Most other pest levels were similar to or lower than in 2016.

North Carolina. As in previous years, corn earworm was the primary pest, accounting for 64% of insect costs + losses. Overall losses in 2017 were comparable to 2016.

Ohio. The stink bug complex, a mixture of brown marmorated, brown and green species, was the dominant pest, accounting for 69% of insect costs + losses. The only other targets for foliar sprays were bean leaf beetle and automatic applications.

Oklahoma. The armyworm complex was the primary pest in the state with low overall insect costs plus losses of $7.13/ac.

South Carolina. Stink bugs and soybean looper were the primary pests, with both being targeted with a foliar application on 50% or more of the acres.

Tennessee. Similar to previous years, the primary use of insecticides (67%) was an automatic application. Slugs were the primary pest (listed under “other”), causing numerous acres to be replanted.

Texas. Stink bug, mainly redbanded stink bug, was the primary pest ($62.63/ac) in the state with the greatest estimated total insect costs + losses of $106.03/ac. Soybean looper, velvetbean caterpillar and green cloverworm also were substantial contributors to insect costs.

Virginia. A sharp increase in insect losses was reported in 2017 compared to 2016, although the state was still below the national average for insect losses. Corn earworm was the primary pest and the target of a foliar application on 30% of the acreage.

Wisconsin. Soybean aphid and Japanese beetle were the primary pests in a light insect pressure state. Total costs plus losses were $9.32/ac, including $5.20/ac for insecticide seed treatments.

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

Table 1. Soybean insect management practices in surveyed states, 2017.

State	% soybean acres[1]			Total Foliar Applications/crop
	Scouted	Insecticide Seed Treatment	Foliar Insecticide w/o known target (automatic)	
Alabama	70	35	0	0.42
Arkansas	75	75	30	2.89
Delaware	70	40	32	1.05
Georgia	40	20	0	1.51
Illinois	5	60	70	0.72
Louisiana	90	95	0	3.64
Michigan	5	50	0	0.15
Mississippi	90	80	0	3.00
North Carolina	15	21	33	1.67
Ohio	30	70	50	0.57
Oklahoma	20	30	0	0.03
South Carolina	30	50	0	2.63
Tennessee	42	48	41	0.62
Texas	50	90	0	1.89
Virginia	10	10	0	0.33
Wisconsin	15	40	0	0.02
Average (weighted by acreage)	30	59	38	1.16

[1] 1 acre = 0.405 ha

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USDA NASS. United States Department of Agriculture National Agricultural Statistics Service, Data and Statistics, https://quickstats.nass.usda.gov/.

List of Appendices

Appendix 1. Overall soybean insect losses from 16 surveyed states, 2017.

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
Armyw orm complex	5,476,755	16.8%	926,246	2.8%	1,004,646	3.1%	1.01	$10.75	0.746	0.031	$0.33	0.13%	2,136,284	$31,301,170	$0.96	3.8%
Banded Cucumber Beetle	2,458,000	7.5%	1,600	0.0%	0	0.0%	0.00	$0.00	0.002	0.000	$0.00	0.00%	2,353	$22,490	$0.00	0.0%
Bean Leaf Beetle	15,167,756	46.5%	1,261,381	3.9%	1,283,846	3.9%	1.02	$11.37	0.428	0.040	$0.46	0.20%	3,391,640	$47,366,403	$1.45	5.7%
Blister Beetle	1,788,840	5.5%	100,000	0.3%	105,000	0.3%	1.00	$10.50	0.010	0.003	$0.03	0.00%	9,162	$1,190,061	$0.04	0.1%
Corn Earw orm	6,601,581	20.2%	3,199,774	9.8%	3,299,460	10.1%	1.11	$14.93	3.267	0.112	$1.67	0.66%	11,278,474	$162,222,376	$4.97	19.6%
Cutw orms	1,464,100	4.5%	250,000	0.8%	355,000	1.1%	1.10	$9.96	0.240	0.012	$0.12	0.01%	184,074	$5,632,778	$0.17	0.7%
Dectes Stem Borer	7,132,916	21.9%	3,500	0.0%	60,500	0.2%	1.00	$9.63	0.098	0.002	$0.02	0.02%	364,520	$4,066,251	$0.12	0.5%
Garden Webw orms	303,800	0.9%	0	0.0%	0	0.0%	0.00	$0.00	0.037	0.000	$0.00	0.00%	5,883	$56,225	$0.00	0.0%
Grape Colaspis	13,585,688	41.6%	0	0.0%	2,000	0.0%	1.00	$7.00	0.004	0.000	$0.00	0.00%	31,376	$313,866	$0.01	0.0%
Grasshopper	17,655,189	54.1%	98,100	0.3%	96,000	0.3%	1.03	$8.44	0.036	0.003	$0.03	0.02%	332,845	$4,012,636	$0.12	0.5%
Green Cloverw orm	21,132,391	64.8%	1,300,021	4.0%	1,010,603	3.1%	0.92	$9.86	0.115	0.029	$0.28	0.07%	1,267,126	$21,286,377	$0.65	2.6%
Japanese Beetle	12,524,500	38.4%	75,750	0.2%	240,000	0.7%	1.10	$12.47	0.038	0.008	$0.10	0.01%	250,694	$5,700,400	$0.17	0.7%
Kudzu Bug	3,656,723	11.2%	202,200	0.6%	105,500	0.3%	1.05	$8.18	0.127	0.003	$0.03	0.01%	243,732	$3,237,625	$0.10	0.4%
Lesser Cornstalk Borer	147,100	0.5%	20,000	0.1%	0	0.0%	0.00	$0.00	0.863	0.000	$0.00	0.00%	66,413	$634,717	$0.02	0.1%
Mexican Bean Beetle	173,692	0.5%	52,986	0.2%	39,890	0.1%	1.01	$8.10	0.421	0.001	$0.01	0.00%	38,199	$691,377	$0.02	0.1%
Potato Leafhopper	7,538,446	23.1%	154,700	0.5%	78,300	0.2%	0.52	$8.03	0.012	0.001	$0.01	0.00%	49,156	$797,285	$0.02	0.1%
Saltmarsh Caterpillar	4,947,766	15.2%	88,300	0.3%	50,300	0.2%	1.00	$12.97	0.094	0.002	$0.02	0.01%	242,120	$2,966,367	$0.09	0.4%
Soybean Aphid	3,891,600	11.9%	28,400	0.1%	251,000	0.8%	1.00	$14.50	0.209	0.008	$0.11	0.02%	424,595	$7,697,889	$0.24	0.9%
Soybean Looper	6,899,300	21.1%	3,382,900	10.4%	3,385,000	10.4%	0.97	$17.09	1.148	0.101	$1.72	0.24%	4,142,900	$95,716,220	$2.93	11.6%
Spider Mites	1,850,406	5.7%	54,000	0.2%	42,700	0.1%	1.12	$10.06	0.081	0.001	$0.01	0.00%	78,071	$1,226,036	$0.04	0.1%
Spotted Cucumber Beetle	10,161,145	31.1%	50,386	0.2%	37,790	0.1%	1.00	$8.00	0.026	0.001	$0.01	0.01%	136,181	$1,603,812	$0.05	0.2%
Stink Bugs (see box below)	17,575,149	53.9%	6,669,600	20.4%	6,707,722	20.6%	1.79	$12.33	1.899	0.367	$4.53	1.02%	17,455,123	$314,557,108	$9.64	38.1%
Threecornered Alfalfa Hopper	10,026,363	30.7%	417,954	1.3%	258,554	0.8%	0.71	$7.98	0.081	0.006	$0.04	0.02%	424,721	$5,524,191	$0.17	0.7%
Thrips	11,213,407	34.4%	200	0.0%	15,000	0.0%	1.00	$5.00	0.004	0.000	$0.00	0.00%	22,696	$291,903	$0.01	0.0%
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	5,701,615	17.5%	2,119,000	6.5%	1,934,000	5.9%	0.95	$10.36	0.351	0.056	$0.58	0.06%	1,047,972	$28,983,139	$0.89	3.5%
Other	1,066,886	3.3%	49,900	0.2%	11,400	0.0%	1.00	$4.65	1.572	0.000	$0.00	0.05%	877,229	$8,436,758	$0.26	1.0%
Automatic (no insects)	0	0.0%	0	0.0%	12,251,000	37.6%	1.00	$5.75	0.000	0.376	$2.16	0.00%	0	$70,458,000	$2.16	8.5%
										1.164	**$12.28**	**2.61%**	**44,503,538**	**$825,993,458**	**$25.32**	**100.0%**

SUMMARY DATA

Data Input

State	Combined
Year	2017
Total Acres	32,623,000
Yield/acre	50.93
Price/Bushel	$9.56
% Acres Scouted	30
Scouting Fee/scouted acre	$7.13
% Acres Insect Seed Trt.	59
Seed Trt Cost/treated ac	$8.62

Yield & Management Results

Total Bushels Harvested	1,661,478,000
Total Bushels Lost to Insects	44,503,538
Percent Yield Loss	2.61%
Yield w/o Insects	52.29
Ave. # Spray Applications	1.164
Seed Treated Acres	19,314,800
Scouted Acres	9,865,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$400,669,064	$12.28
Seed Treatment Costs	$166,568,022	$5.11
Scouting costs	$70,357,381	$2.16
Total Costs	$637,594,466	$19.54
Yield Lost to insects	$425,324,394	$13.04
Total Losses + Costs	$1,062,918,861	$32.58

Stink Bug Composition

Species	% of SB
Brown	25.0
Brown Marmorated	6.2
Green	39.0
Redbanded	20.0
Redshouldered	1.6
Southern Green	8.2
Total	100

Appendix 2. Alabama soybean insect losses, 2017.

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	20,000	5.7%	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	120,000	34.3%	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	80,000	22.9%	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	80,000	22.9%	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	125,000	35.7%	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	7.1%	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	80,000	22.9%	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	140,000	40.0%	1,000	0.3%	500	0.1%	1	$7.00	0.05	0.001	$0.01	0.02%	3,266	$36,157	$0.10	1.0%
Green Cloverworm	140,000	40.0%	2,500	0.7%	1,000	0.3%	1	$7.00	0.05	0.003	$0.02	0.02%	3,266	$39,657	$0.11	1.1%
Japanese Beetle	25,000	7.1%	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	175,000	50.0%	2,000	0.6%	1,000	0.3%	1	$6.00	0.10	0.003	$0.02	0.05%	8,164	$87,644	$0.25	2.3%
Lesser Cornstalk Borer	10,000	2.9%	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	10,000	2.9%	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	235,000	67.1%	115,000	32.9%	100,000	28.6%	1	$11.00	0.75	0.286	$3.14	0.50%	82,227	$1,922,268	$5.49	51.1%
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	120,000	34.3%	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)	235,000	67.1%	50,000	14.3%	25,000	7.1%	1	$8.50	1.00	0.071	$0.61	0.67%	109,636	$1,308,857	$3.74	34.8%
Threecornered Alfalfa Hopper	235,000	67.1%	0	0.0%	1,000	0.3%	1	$7.00	0.10	0.003	$0.02	0.07%	10,964	$116,636	$0.33	3.1%
Thrips	315,000	90.0%	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	120,000	34.3%	25,000	7.1%	20,000	5.7%	1	$7.00	0.20	0.057	$0.40	0.07%	11,197	$251,968	$0.72	6.7%
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%
Automatic (no insects)	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%
										0.424	**$4.22**	**1.40%**	**228,719**	**$3,763,187**	**$10.75**	**100.0%**

SUMMARY DATA

Data Input

State	AL
Year	2017
Total Acres	350,000
Yield/acre	46
Price/Bushel	$10.00
% Acres Scouted	70
Scouting Fee/scouted acre	$6.00
% Acres Insect Seed Trt.	35
Seed Trt Cost/treated ac	$10.00

Yield & Management Results

Total Bushels Harvested	16,100,000
Total Bushels Lost to Insects	228,719
Percent Yield Loss	1.40%
Yield w/o Insects	46.65
Ave. # Spray Applications	0.424
Seed Treated Acres	122,500
Scouted Acres	245,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$1,476,000	$4.22
Seed Treatment Costs	$1,225,000	$3.50
Scouting costs	$1,470,000	$4.20
Total Costs	$4,171,000	$11.92
Yield Lost to insects	$2,287,187	$6.53
Total Losses + Costs	$6,458,187	$18.45

Stink Bug Composition

Species	% of SB
Brown	10
Brown Marmorated	1
Green	15
Redbanded	10
Redshouldered	1
Southern Green	63
Total	100

Appendix 3. Arkansas soybean insect losses, 2017.

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
Armyw orm complex	3,120,000	89.1%	550,000	15.7%	630,000	18.0%	1	$12.00	1.00	0.180	$2.16	0.89%	1,744,423	$23,957,572	$6.85	7.9%
Banded Cucumber Beetle	125,000	3.6%	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	3,500,000	100.0%	450,000	12.9%	525,000	15.0%	1	$12.00	1.00	0.150	$1.80	1.00%	1,956,884	$24,694,713	$7.06	8.2%
Blister Beetle	350,000	10.0%	100,000	2.9%	105,000	3.0%	1	$10.50	0.05	0.030	$0.32	0.01%	9,784	$1,194,474	$0.34	0.4%
Corn Earw orm	2,900,000	82.9%	975,000	27.9%	1,100,000	31.4%	1.2	$17.50	3.50	0.377	$6.60	2.90%	5,674,965	$76,444,667	$21.84	25.2%
Cutw orms	650,000	18.6%	225,000	6.4%	340,000	9.7%	1.1	$10.00	0.50	0.107	$1.07	0.09%	181,711	$5,448,080	$1.56	1.8%
Dectes Stem Borer	2,200,000	62.9%	0	0.0%	50,000	1.4%	1	$10.00	0.00	0.014	$0.14	0.00%	0	$500,000	$0.14	0.2%
Garden Webw orms	100,000	2.9%	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	3,500,000	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%
Grasshopper	3,500,000	100.0%	0	0.0%	20,000	0.6%	1	$12.00	0.10	0.006	$0.07	0.10%	195,688	$2,079,471	$0.59	0.7%
Green Cloverw orm	3,500,000	100.0%	0	0.0%	20,000	0.6%	1	$10.00	0.00	0.006	$0.06	0.00%	0	$200,000	$0.06	0.1%
Japanese 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%
Kudzu Bug	1,200,000	34.3%	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	1,100	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	3,500,000	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%
Saltmarsh Caterpillar	3,000,000	85.7%	38,000	1.1%	0	0.0%	0	$0.00	0.10	0.000	$0.00	0.09%	167,733	$1,576,690	$0.45	0.5%
Soybean Aphid	220,000	6.3%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Soybean Looper	2,350,000	67.1%	930,000	26.6%	985,000	28.1%	1	$17.50	1.00	0.281	$4.93	0.67%	1,313,908	$29,588,236	$8.45	9.8%
Spider Mites	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%
Spotted Cucumber Beetle	3,500,000	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)	3,500,000	100.0%	2,100,000	60.0%	2,400,000	68.6%	1.75	$14.00	3.00	1.200	$16.80	3.00%	5,870,653	$113,984,138	$32.57	37.6%
Threecornered Alfalfa Hopper	3,500,000	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	3,500,000	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	2,600,000	74.3%	825,000	23.6%	825,000	23.6%	1	$10.00	0.05	0.236	$2.36	0.04%	72,684	$8,933,232	$2.55	3.0%
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%
Automatic (no insects)	0	0.0%	0	0.0%	1,050,000	30.0%	1	$13.50	0.00	0.300	$4.05	0.00%	0	$14,175,000	$4.05	4.7%
										2.887	**$40.34**	**8.78%**	**17,188,433**	**$302,776,273**	**$86.51**	**100.0%**

SUMMARY DATA

Data Input

State	AR
Year	2017
Total Acres	3,500,000
Yield/acre	51
Price/Bushel	$9.40
% Acres Scouted	75
Scouting Fee/scouted acre	$7.00
% Acres Insect Seed Trt.	75
Seed Trt Cost/treated ac	$8.50

Yield & Management Results

Total Bushels Harvested	178,500,000
Total Bushels Lost to Insects	17,188,433
Percent Yield Loss	8.78%
Yield w/o Insects	55.91
Ave. # Spray Applications	2.887
Seed Treated Acres	2,625,000
Scouted Acres	2,625,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$141,205,000	$40.34
Seed Treatment Costs	$22,312,500	$6.38
Scouting costs	$18,375,000	$5.25
Total Costs	$181,892,500	$51.97
Yield Lost to insects	$161,571,273	$46.16
Total Losses + Costs	$343,463,773	$98.13

Stink Bug Composition

Species	% of SB
Brown	25
Brown Marmorated	0
Green	25
Redbanded	35
Redshouldered	5
Southern Green	10
Total	100

Appendix 4. Delaware soybean insect losses, 2017.

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
Armyw orm complex	35,000	22.2%	3,100	2.0%	500	0.3%	1	$8.00	0.10	0.003	$0.03	0.02%	1,899	$22,515	$0.14	0.4%
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	67,000	42.4%	31,600	20.0%	13,400	8.5%	1.2	$10.00	0.75	0.102	$1.02	0.32%	27,264	$426,620	$2.70	6.7%
Blister Beetle	49,300	31.2%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Corn Earw orm	61,400	38.9%	11,800	7.5%	13,000	8.2%	1	$11.00	4.50	0.082	$0.91	1.75%	149,909	$1,604,611	$10.16	25.2%
Cutw orms	4,100	2.6%	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	24,800	15.7%	3,500	2.2%	1,500	0.9%	1	$10.00	4.00	0.009	$0.09	0.63%	53,822	$539,762	$3.42	8.5%
Garden Webw orms	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	102,700	65.0%	30,000	19.0%	20,000	12.7%	1.2	$8.00	0.15	0.152	$1.22	0.10%	8,358	$273,492	$1.73	4.3%
Green Cloverw orm	100,200	63.4%	11,900	7.5%	8,000	5.1%	1	$10.00	0.10	0.051	$0.51	0.06%	5,436	$133,005	$0.84	2.1%
Japanese 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%
Kudzu Bug	300	0.2%	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	20,400	12.9%	2,500	1.6%	2,000	1.3%	1.2	$10.00	0.15	0.015	$0.15	0.02%	1,660	$40,187	$0.25	0.6%
Potato Leafhopper	35,800	22.7%	700	0.4%	700	0.4%	1	$10.00	0.00	0.004	$0.04	0.00%	0	$7,000	$0.04	0.1%
Saltmarsh Caterpillar	18,100	11.5%	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	1,500	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%
Soybean Looper	73,300	46.4%	11,600	7.3%	9,000	5.7%	1.1	$10.50	0.10	0.063	$0.66	0.05%	3,977	$142,725	$0.90	2.2%
Spider Mites	61,000	38.6%	15,000	9.5%	13,700	8.7%	1	$8.00	0.15	0.087	$0.69	0.06%	4,964	$158,003	$1.00	2.5%
Spotted Cucumber Beetle	79,000	50.0%	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)	137,300	86.9%	32,400	20.5%	26,000	16.5%	1	$11.00	2.25	0.165	$1.81	1.96%	167,610	$1,920,196	$12.15	30.1%
Threecornered Alfalfa Hopper	15,000	9.5%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Thrips	125,500	79.4%	200	0.1%	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	9,100	5.8%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Other	16,500	10.4%	3,900	2.5%	400	0.3%	1	$20.00	10.00	0.003	$0.05	1.04%	89,522	$880,841	$5.57	13.8%
Automatic (no insects)	0	0.0%	0	0.0%	50,000	31.6%	1	$4.50	0.00	0.316	$1.42	0.00%	0	$225,000	$1.42	3.5%
									TOTAL	**1.052**	**$8.60**	**6.00%**	**514,421**	**$6,373,957**	**$40.34**	**100.0%**

SUMMARY DATA

Data Input

State	DE
Year	2017
Total Acres	158,000
Yield/acre	51
Price/Bushel	$9.75
% Acres Scouted	70
Scouting Fee/scouted acre	$6.00
% Acres Insect Seed Trt.	40
Seed Trt Cost/treated ac	$12.00

Yield & Management Results

Total Bushels Harvested	8,058,000
Total Bushels Lost to Insects	514,421
Percent Yield Loss	6.00%
Yield w/o Insects	54.26
Ave. # Spray Applications	1.052
Seed Treated Acres	63,200
Scouted Acres	110,600

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$1,358,350	$8.60
Seed Treatment Costs	$758,400	$4.80
Scouting costs	$663,600	$4.20
Total Costs	$2,780,350	$17.60
Yield Lost to insects	$5,015,607	$31.74
Total Losses + Costs	$7,795,957	$49.34

Stink Bug Composition

Species	% of SB
Brown	46
Brown Marmorated	8
Green	46
Redbanded	0
Redshouldered	0
Southern Green	0
Total (make it 100%)	100

Appendix 5. Georgia soybean insect losses, 2017.

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
Armyw orm 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	5,000	3.4%	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 Earw orm	2,500	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%
Cutw orms	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	10,000	6.9%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Garden Webw orms	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 Cloverw orm	40,000	27.6%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Japanese 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%
Kudzu Bug	70,000	48.3%	5,000	3.4%	4,500	3.1%	1	$8.00	1.00	0.031	$0.25	0.48%	30,175	$307,575	$2.12	9.2%
Lesser Cornstalk Borer	1,000	0.7%	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	6,000	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%
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	80,000	55.2%	20,000	13.8%	25,000	17.2%	1	$14.00	0.50	0.172	$2.41	0.28%	17,243	$505,186	$3.48	15.1%
Spider Mites	2,000	1.4%	0	0.0%	0	0.0%	0	$0.00	0.20	0.000	$0.00	0.00%	172	$1,552	$0.01	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)	125,000	86.2%	75,000	51.7%	90,000	62.1%	1	$8.00	2.00	0.621	$4.97	1.72%	107,768	$1,689,910	$11.65	50.4%
Threecornered Alfalfa Hopper	35,000	24.1%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Thrips	75,000	51.7%	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	120,000	82.8%	25,000	17.2%	100,000	69.0%	1	$8.00	0.10	0.690	$5.52	0.08%	5,173	$846,556	$5.84	25.3%
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%
Automatic (no insects)	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%
									TOTAL	**1.514**	**$13.14**	**2.57%**	**160,531**	**$3,350,778**	**$23.11**	**100.0%**

SUMMARY DATA

Data Input

State	GA
Year	2017
Total Acres	145,000
Yield/acre	42
Price/Bushel	$9.00
% Acres Scouted	40
Scouting Fee/scouted acre	$6.00
% Acres Insect Seed Trt.	20
Seed Trt Cost/treated ac	$10.00

Yield & Management Results

Total Bushels Harvested	6,090,000
Total Bushels Lost to Insects	160,531
Percent Yield Loss	2.57%
Yield w/o Insects	43.11
Ave. # Spray Applications	1.514
Seed Treated Acres	29,000
Scouted Acres	58,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$1,906,000	$13.14
Seed Treatment Costs	$290,000	$2.00
Scouting costs	$348,000	$2.40
Total Costs	$2,544,000	$17.54
Yield Lost to insects	$1,444,778	$9.96
Total Losses + Costs	$3,988,778	$27.51

Stink Bug Composition

Species	% of SB
Brown	15
Brown Marmorated	0
Green	0
Redbanded	0
Redshouldered	15
Southern Green	70
Total (make it 100%)	100

Appendix 6. Illinois soybean insect losses, 2017.

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
Armyw orm complex	527,000	5.0%	3,000	0.0%	500	0.0%	1	$7.00	0.00	0.000	$0.00	0.00%	306	$6,465	$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	2,108,000	20.0%	5,000	0.0%	2,000	0.0%	1	$7.00	0.00	0.000	$0.00	0.00%	1,223	$25,861	$0.00	0.1%
Blister Beetle	527,000	5.0%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Corn Earw orm	300,000	2.8%	1,000	0.0%	2,000	0.0%	1	$7.00	0.00	0.000	$0.00	0.00%	174	$15,688	$0.00	0.0%
Cutw orms	100,000	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%
Dectes Stem Borer	400,000	3.8%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Garden Webw orms	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	7,378,000	70.0%	0	0.0%	2,000	0.0%	1	$7.00	0.00	0.000	$0.00	0.00%	0	$14,000	$0.00	0.0%
Grasshopper	9,486,000	90.0%	10,000	0.1%	500	0.0%	1	$7.00	0.00	0.000	$0.00	0.00%	5,503	$56,875	$0.01	0.1%
Green Cloverw orm	9,486,000	90.0%	0	0.0%	10,000	0.1%	1	$7.00	0.00	0.001	$0.01	0.00%	0	$70,000	$0.01	0.2%
Japanese Beetle	8,432,000	80.0%	50,000	0.5%	100,000	0.9%	1.25	$9.00	0.01	0.012	$0.11	0.01%	48,911	$1,599,441	$0.15	4.1%
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	527,000	5.0%	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	210,000	2.0%	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	1,054,000	10.0%	20,000	0.2%	15,000	0.1%	1	$7.00	0.01	0.001	$0.01	0.00%	6,114	$164,305	$0.02	0.4%
Soybean Looper	527,000	5.0%	5,000	0.0%	5,000	0.0%	1	$7.00	0.01	0.000	$0.00	0.00%	3,057	$64,653	$0.01	0.2%
Spider Mites	1,054,000	10.0%	30,000	0.3%	20,000	0.2%	1.25	$7.00	0.01	0.002	$0.02	0.00%	6,114	$234,305	$0.02	0.6%
Spotted Cucumber Beetle	2,108,000	20.0%	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)	3,162,000	30.0%	5,000	0.0%	18,000	0.2%	1	$7.00	0.00	0.002	$0.01	0.00%	1,834	$143,792	$0.01	0.4%
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	527,000	5.0%	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	527,000	5.0%	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%
Automatic (no insects)	0	0.0%	0	0.0%	7,400,000	70.2%	1	$5.00	0.00	0.702	$3.51	0.00%	0	$37,000,000	$3.51	93.9%
									TOTAL	**0.722**	**$3.67**	**0.01%**	**73,236**	**$39,395,384**	**$3.74**	**100.0%**

SUMMARY DATA

Data Input

State	IL
Year	2017
Total Acres	10,540,000
Yield/acre	58
Price/Bushel	$9.70
% Acres Scouted	5
Scouting Fee/scouted acre	$7.00
% Acres Insect Seed Trt.	60
Seed Trt Cost/treated ac	$8.00

Yield & Management Results

Total Bushels Harvested	611,320,000
Total Bushels Lost to Insects	73,236
Percent Yield Loss	0.01%
Yield w/o Insects	58.01
Ave. # Spray Applications	0.722
Seed Treated Acres	6,324,000
Scouted Acres	527,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$38,685,000	$3.67
Seed Treatment Costs	$50,592,000	$4.80
Scouting costs	$3,689,000	$0.35
Total Costs	$92,966,000	$8.82
Yield Lost to insects	$710,384	$0.07
Total Losses + Costs	$93,676,384	$8.89

Stink Bug Composition

Species	% of SB
Brown	45
Brown Marmorated	5
Green	50
Redbanded	0
Redshouldered	0
Southern Green	0
Total (make it 100%)	100

Appendix 7. Louisiana soybean insect losses, 2017.

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
Armyw orm complex	500,000	40.7%	150,000	12.2%	150,000	12.2%	1	$8.00	0.25	0.122	$0.98	0.10%	70,583	$1,900,889	$1.55	2.3%
Banded Cucumber Beetle	1,230,000	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%
Bean Leaf Beetle	10,000	0.8%	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	5,000	0.4%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Corn Earw orm	500,000	40.7%	250,000	20.3%	200,000	16.3%	1	$14.00	0.50	0.163	$2.28	0.20%	141,166	$4,201,778	$3.42	5.1%
Cutw orms	10,000	0.8%	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	1,000,000	81.3%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Garden Webw orms	6,000	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%
Grape Colaspis	1,230,000	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%
Grasshopper	700,000	56.9%	2,000	0.2%	2,000	0.2%	0.25	$8.00	0.01	0.000	$0.00	0.01%	3,953	$43,250	$0.04	0.1%
Green Cloverw orm	1,230,000	100.0%	600,000	48.8%	400,000	32.5%	1	$8.00	0.50	0.325	$2.60	0.50%	347,268	$6,648,374	$5.41	8.0%
Japanese 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%
Kudzu Bug	100,000	8.1%	10,000	0.8%	10,000	0.8%	1	$8.00	0.01	0.008	$0.07	0.00%	565	$85,607	$0.07	0.1%
Lesser Cornstalk Borer	5,000	0.4%	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	1,230,000	100.0%	150,000	12.2%	75,000	6.1%	0.5	$8.00	0.05	0.030	$0.24	0.05%	34,727	$644,837	$0.52	0.8%
Saltmarsh Caterpillar	250,000	20.3%	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	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	1,230,000	100.0%	1,000,000	81.3%	900,000	73.2%	1	$18.00	1.25	0.732	$13.17	1.25%	868,171	$24,820,935	$20.18	30.0%
Spider Mites	1,000	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%
Spotted Cucumber Beetle	1,230,000	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)	1,230,000	100.0%	1,230,000	100.0%	1,100,000	89.4%	2	$11.00	1.75	1.789	$19.67	1.75%	1,215,439	$36,269,309	$29.49	43.9%
Threecornered Alfalfa Hopper	1,230,000	100.0%	250,000	20.3%	150,000	12.2%	0.5	$8.00	0.10	0.061	$0.49	0.10%	69,454	$1,289,675	$1.05	1.6%
Thrips	1,230,000	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	1,000,000	81.3%	750,000	61.0%	500,000	40.7%	1	$8.00	0.50	0.407	$3.25	0.41%	282,332	$6,803,556	$5.53	8.2%
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%
Automatic (no insects)	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%
										3.637	**$42.75**	**4.37%**	**3,033,657**	**$82,708,211**	**$67.24**	**100.0%**

SUMMARY DATA

Data Input

State	LA
Year	2017
Total Acres	1,230,000
Yield/acre	54
Price/Bushel	$9.93
% Acres Scouted	90
Scouting Fee/scouted acre	$10.00
% Acres Insect Seed Trt.	95
Seed Trt Cost/treated ac	$12.00

Yield & Management Results

Total Bushels Harvested	66,420,000
Total Bushels Lost to Insects	3,033,657
Percent Yield Loss	4.37%
Yield w/o Insects	56.47
Ave. # Spray Applications	3.637
Seed Treated Acres	1,168,500
Scouted Acres	1,107,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$52,584,000	$42.75
Seed Treatment Costs	$14,022,000	$11.40
Scouting costs	$11,070,000	$9.00
Total Costs	$77,676,000	$63.15
Yield Lost to insects	$30,124,211	$24.49
Total Losses + Costs	$107,800,211	$87.64

Stink Bug Composition

Species	% of SB
Brown	9
Brown Marmorated	0
Green	10
Redbanded	65
Redshouldered	1
Southern Green	15
Total	100

Appendix 8. Michigan soybean insect losses, 2017.

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
Armyw orm 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	1,140,000	50.0%	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 Earw orm	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%
Cutw orms	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 Webw orms	22,800	1.0%	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	1,710,000	75.0%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Green Cloverw orm	1,140,000	50.0%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Japanese Beetle	1,710,000	75.0%	0	0.0%	114,000	5.0%	1	$15.00	0.00	0.050	$0.75	0.00%	0	$1,710,000	$0.75	33.3%
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	1,710,000	75.0%	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	114,000	5.0%	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	1,710,000	75.0%	0	0.0%	228,000	10.0%	1	$15.00	0.00	0.100	$1.50	0.00%	0	$3,420,000	$1.50	66.7%
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	114,000	5.0%	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)	1,710,000	75.0%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
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%
Automatic (no insects)	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%
									TOTAL	**0.150**	**$2.25**	**0.00%**	**0**	**$5,130,000**	**$2.25**	**100.0%**

SUMMARY DATA

Data Input

State	MI
Year	2017
Total Acres	2,280,000
Yield/acre	42.5
Price/Bushel	$9.22
% Acres Scouted	5
Scouting Fee/scouted acre	$3.50
% Acres Insect Seed Trt.	50
Seed Trt Cost/treated ac	$8.00

Yield & Management Results

Total Bushels Harvested	96,900,000
Total Bushels Lost to Insects	0
Percent Yield Loss	0.00%
Yield w/o Insects	42.50
Ave. # Spray Applications	0.150
Seed Treated Acres	1,140,000
Scouted Acres	114,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$5,130,000	$2.25
Seed Treatment Costs	$9,120,000	$4.00
Scouting costs	$399,000	$0.18
Total Costs	$14,649,000	$6.43
Yield Lost to insects	$0	$0.00
Total Losses + Costs	$14,649,000	$6.43

Stink Bug Composition

Species	% of SB
Brow n	10
Brow n Marmorated	10
Green	80
Redbanded	0
Redshouldered	0
Southern Green	0
Total (make it 100%)	100

Appendix 9. Mississippi soybean insect losses, 2017.

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	300,000	13.7%	150,000	6.8%	200,000	9.1%	1	$9.00	0.30	0.091	$0.82	0.04%	50,271	$2,290,141	$1.05	1.6%
Banded Cucumber Beetle	450,000	20.5%	0	0.0%	0	0.0%	0	$9.00	0.01	0.000	$0.00	0.00%	2,514	$24,507	$0.01	0.0%
Bean Leaf Beetle	1,600,000	73.1%	475,000	21.7%	500,000	22.8%	1	$11.00	0.20	0.228	$2.51	0.15%	178,741	$7,242,724	$3.31	5.0%
Blister Beetle	20,000	0.9%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	11	$109	$0.00	0.0%
Corn Earworm	450,000	20.5%	300,000	13.7%	350,000	16.0%	1	$16.50	3.50	0.160	$2.64	0.72%	879,741	$14,352,472	$6.55	9.9%
Cutworms	250,000	11.4%	25,000	1.1%	15,000	0.7%	1	$9.00	0.10	0.007	$0.06	0.01%	13,964	$271,150	$0.12	0.2%
Dectes Stem Borer	1,300,000	59.4%	0	0.0%	0	0.0%	0	$0.00	0.20	0.000	$0.00	0.12%	145,227	$1,415,964	$0.65	1.0%
Garden Webworms	75,000	3.4%	0	0.0%	0	0.0%	0	$0.00	0.15	0.000	$0.00	0.01%	6,284	$61,268	$0.03	0.0%
Grape Colaspis	600,000	27.4%	0	0.0%	0	0.0%	0	$9.00	0.10	0.000	$0.00	0.03%	33,514	$326,761	$0.15	0.2%
Grasshopper	800,000	36.5%	7,500	0.3%	8,500	0.4%	1	$8.00	0.10	0.004	$0.03	0.04%	44,685	$503,681	$0.23	0.3%
Green Cloverworm	1,850,000	84.5%	300,000	13.7%	310,000	14.2%	1	$9.00	0.50	0.142	$1.27	0.42%	516,673	$7,827,563	$3.57	5.4%
Japanese Beetle	7,500	0.3%	0	0.0%	0	0.0%	0	$0.00	0.01	0.000	$0.00	0.00%	42	$408	$0.00	0.0%
Kudzu Bug	700,000	32.0%	75,000	3.4%	35,000	1.6%	1	$9.00	0.01	0.016	$0.14	0.00%	3,910	$353,122	$0.16	0.2%
Lesser Cornstalk Borer	25,000	1.1%	0	0.0%	0	0.0%	0	$0.00	5.00	0.000	$0.00	0.06%	69,821	$680,752	$0.31	0.5%
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	450,000	20.5%	0	0.0%	2,500	0.1%	1	$8.00	0.01	0.001	$0.01	0.00%	2,514	$44,507	$0.02	0.0%
Saltmarsh Caterpillar	325,000	14.8%	50,000	2.3%	50,000	2.3%	1	$13.00	0.50	0.023	$0.30	0.07%	90,767	$1,534,977	$0.70	1.1%
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	900,000	41.1%	750,000	34.2%	950,000	43.4%	1	$16.00	1.50	0.434	$6.94	0.62%	754,063	$22,552,119	$10.30	15.6%
Spider Mites	150,000	6.8%	0	0.0%	0	0.0%	0	$10.00	0.10	0.000	$0.00	0.01%	8,378	$81,690	$0.04	0.1%
Spotted Cucumber Beetle	1,900,000	86.8%	0	0.0%	0	0.0%	0	$9.00	0.10	0.000	$0.00	0.09%	106,127	$1,034,743	$0.47	0.7%
Stink Bugs (see box below)	2,000,000	91.3%	1,750,000	79.9%	1,800,000	82.2%	2.1	$12.50	2.50	1.726	$21.58	2.28%	2,792,828	$74,480,069	$34.01	51.4%
Threecornered Alfalfa Hopper	2,000,000	91.3%	15,000	0.7%	25,000	1.1%	1	$8.50	0.01	0.011	$0.10	0.01%	11,171	$321,420	$0.15	0.2%
Thrips	2,000,000	91.3%	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	650,000	29.7%	325,000	14.8%	350,000	16.0%	1	$12.00	1.50	0.160	$1.92	0.45%	544,601	$9,509,863	$4.34	6.6%
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%
Automatic (no insects)	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%
										3.003	**$38.32**	**5.11%**	**6,255,847**	**$144,910,010**	**$66.17**	**100.0%**

SUMMARY DATA

Data Input

State	MS
Year	2017
Total Acres	2,190,000
Yield/acre	53
Price/Bushel	$9.75
% Acres Scouted	90
Scouting Fee/scouted acre	$6.46
% Acres Insect Seed Trt.	80
Seed Trt Cost/treated ac	$9.00

Yield & Management Results

Total Bushels Harvested	116,070,000
Total Bushels Lost to Insects	6,255,847
Percent Yield Loss	5.11%
Yield w/o Insects	55.86
Ave. # Spray Applications	3.003
Seed Treated Acres	1,752,000
Scouted Acres	1,971,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$83,915,500	$38.32
Seed Treatment Costs	$15,768,000	$7.20
Scouting costs	$12,732,660	$5.81
Total Costs	$112,416,160	$51.33
Yield Lost to insects	$60,994,510	$27.85
Total Losses + Costs	$173,410,670	$79.18

Stink Bug Composition

Species	% of SB
Brown	5
Brown Marmorated	0
Green	10
Redbanded	65
Redshouldered	1
Southern Green	19
Total	100

Appendix 10. North Carolina soybean insect losses, 2017.

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	343,255	20.2%	51,646	3.0%	15,746	0.9%	1.5	$12.00	0.50	0.014	$0.17	0.10%	73,316	$985,791	$0.58	1.3%
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	1,142,756	67.2%	119,781	7.0%	123,446	7.3%	1.2	$8.00	0.50	0.087	$0.70	0.34%	244,080	$3,523,372	$2.07	4.7%
Blister Beetle	543,540	32.0%	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	1,426,681	83.9%	1,301,974	76.6%	1,275,460	75.0%	1.1	$13.50	5.00	0.825	$11.14	4.20%	3,047,238	$48,133,117	$28.31	64.1%
Cutworms	1,000	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	586,116	34.5%	0	0.0%	0	0.0%	0	$0.00	0.01	0.000	$0.00	0.00%	2,504	$23,986	$0.01	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	807,688	47.5%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Grasshopper	618,489	36.4%	1,000	0.1%	1,000	0.1%	1	$8.00	0.10	0.001	$0.00	0.04%	26,421	$261,109	$0.15	0.3%
Green Cloverworm	1,300,691	76.5%	211,621	12.4%	111,353	6.6%	1.2	$8.00	0.10	0.079	$0.63	0.08%	55,563	$1,601,280	$0.94	2.1%
Japanese Beetle	500,000	29.4%	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	105,823	6.2%	200	0.0%	0	0.0%	1	$8.00	0.10	0.000	$0.00	0.01%	4,521	$43,307	$0.03	0.1%
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	139,192	8.2%	50,386	3.0%	37,790	2.2%	1	$8.00	0.50	0.022	$0.18	0.04%	29,730	$587,133	$0.35	0.8%
Potato Leafhopper	51,646	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%
Saltmarsh Caterpillar	70,666	4.2%	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	500,000	29.4%	75,000	4.4%	50,000	2.9%	1	$14.00	2.00	0.029	$0.41	0.59%	427,179	$4,792,370	$2.82	6.4%
Spider Mites	20,406	1.2%	0	0.0%	0	0.0%	0	$0.00	0.50	0.000	$0.00	0.01%	4,359	$41,754	$0.02	0.1%
Spotted Cucumber Beetle	704,145	41.4%	50,386	3.0%	37,790	2.2%	1	$8.00	0.10	0.022	$0.18	0.04%	30,080	$590,482	$0.35	0.8%
Stink Bugs (see box below)	1,122,349	66.0%	350,000	20.6%	428,722	25.2%	1	$8.00	1.00	0.252	$2.02	0.66%	479,443	$8,022,844	$4.72	10.7%
Threecornered Alfalfa Hopper	784,763	46.2%	20,154	1.2%	20,154	1.2%	1	$8.00	0.50	0.012	$0.09	0.23%	167,617	$1,767,002	$1.04	2.4%
Thrips	770,907	45.3%	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	132,515	7.8%	1,000	0.1%	1,000	0.1%	1	$8.00	0.50	0.001	$0.00	0.04%	28,304	$279,150	$0.16	0.4%
Other	50,386	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%
Automatic (no insects)	0	0.0%	0	0.0%	561,000	33.0%	1	$8.00	0.00	0.330	$2.64	0.00%	0	$4,488,000	$2.64	6.0%
										1.674	**$18.16**	**6.36%**	**4,620,352**	**$75,140,697**	**$44.20**	**100.0%**

SUMMARY DATA

Data Input

State	NC
Year	2017
Total Acres	1,700,000
Yield/acre	40
Price/Bushel	$9.58
% Acres Scouted	15
Scouting Fee/scouted acre	$6.50
% Acres Insect Seed Trt.	21
Seed Trt Cost/treated ac	$10.00

Yield & Management Results

Total Bushels Harvested	68,000,000
Total Bushels Lost to Insects	4,620,352
Percent Yield Loss	6.36%
Yield w/o Insects	42.72
Ave. # Spray Applications	1.674
Seed Treated Acres	357,000
Scouted Acres	255,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$30,877,727	$18.16
Seed Treatment Costs	$3,570,000	$2.10
Scouting costs	$1,657,500	$0.98
Total Costs	$36,105,227	$21.24
Yield Lost to insects	$44,262,970	$26.04
Total Losses + Costs	$80,368,197	$47.28

Stink Bug Composition

Species	% of SB
Brown	53
Brown Marmorated	1
Green	40
Redbanded	0
Redshouldered	1
Southern Green	5
Total	100

Appendix 11. Ohio soybean insect losses, 2017.

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
Armyw orm 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	3,750,000	75.0%	150,000	3.0%	100,000	2.0%	1	$15.00	0.50	0.020	$0.30	0.38%	950,704	$10,341,549	$2.07	14.0%
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 Earw orm	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%
Cutw orms	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 Webw orms	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 Cloverw orm	50,000	1.0%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Japanese Beetle	500,000	10.0%	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	750,000	15.0%	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	500,000	10.0%	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	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)	2,000,000	40.0%	500,000	10.0%	250,000	5.0%	1	$15.00	5.00	0.050	$0.75	2.00%	5,070,423	$50,904,930	$10.18	69.0%
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%
Automatic (no insects)	0	0.0%	0	0.0%	2,500,000	50.0%	1	$5.00	0.00	0.500	$2.50	0.00%	0	$12,500,000	$2.50	16.9%
									TOTAL	**0.570**	**$3.55**	**2.38%**	**6,021,127**	**$73,746,479**	**$14.75**	**100.0%**

SUMMARY DATA

Data Input

State	OH
Year	2017
Total Acres	5,000,000
Yield/acre	49.5
Price/Bushel	$9.30
% Acres Scouted	30
Scouting Fee/scouted acre	$10.00
% Acres Insect Seed Trt.	70
Seed Trt Cost/treated ac	$7.00

Yield & Management Results

Total Bushels Harvested	247,500,000
Total Bushels Lost to Insects	6,021,127
Percent Yield Loss	2.38%
Yield w/o Insects	50.70
Ave. # Spray Applications	0.570
Seed Treated Acres	3,500,000
Scouted Acres	1,500,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$17,750,000	$3.55
Seed Treatment Costs	$24,500,000	$4.90
Scouting costs	$15,000,000	$3.00
Total Costs	$57,250,000	$11.45
Yield Lost to insects	$55,996,479	$11.20
Total Losses + Costs	$113,246,479	$22.65

Stink Bug Composition

Species	% of SB
Brow n	33
Brow n Marmorated	34
Green	33
Redbanded	0
Redshouldered	0
Southern Green	0
Total (make it 100%)	100

Appendix 12. Oklahoma soybean insect losses, 2017.

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
Armyw orm complex	55,000	8.6%	13,500	2.1%	6,500	1.0%	1	$4.00	10.00	0.010	$0.04	0.86%	162,367	$1,552,248	$2.43	48.2%
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 Earw orm	7,000	1.1%	3,000	0.5%	3,000	0.5%	1	$4.00	10.00	0.005	$0.02	0.11%	20,665	$206,250	$0.32	6.4%
Cutw orms	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 Webw orms	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	7,000	1.1%	0	0.0%	500	0.1%	1	$4.00	5.00	0.001	$0.00	0.05%	10,332	$99,125	$0.15	3.1%
Green Cloverw orm	13,500	2.1%	0	0.0%	0	0.0%	0	$4.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Japanese 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%
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	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	20,000	3.1%	13,500	2.1%	10,000	1.6%	1	$4.00	10.00	0.016	$0.06	0.31%	59,042	$594,999	$0.93	18.5%
Spider Mites	1,000	0.2%	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)	27,500	4.3%	0	0.0%	0	0.0%	0	$0.00	10.00	0.000	$0.00	0.43%	81,183	$763,124	$1.19	23.7%
Threecornered Alfalfa Hopper	7,000	1.1%	0	0.0%	1,000	0.2%	1	$4.00	0.00	0.002	$0.01	0.00%	0	$4,000	$0.01	0.1%
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%
Automatic (no insects)	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%
									TOTAL	**0.033**	**$0.13**	**1.77%**	**333,590**	**$3,219,746**	**$5.03**	**100.0%**

SUMMARY DATA

Data Input

State	OK
Year	2017
Total Acres	640,000
Yield/acre	29
Price/Bushel	$9.40
% Acres Scouted	20
Scouting Fee/scouted acre	$0.00
% Acres Insect Seed Trt.	30
Seed Trt Cost/treated ac	$7.00

Yield & Management Results

Total Bushels Harvested	18,560,000
Total Bushels Lost to Insects	333,590
Percent Yield Loss	1.77%
Yield w/o Insects	29.52
Ave. # Spray Applications	0.033
Seed Treated Acres	192,000
Scouted Acres	128,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$84,000	$0.13
Seed Treatment Costs	$1,344,000	$2.10
Scouting costs	$0	$0.00
Total Costs	$1,428,000	$2.23
Yield Lost to insects	$3,135,746	$4.90
Total Losses + Costs	$4,563,746	$7.13

Stink Bug Composition

Species	% of SB
Brown	50
Brown Marmorated	0
Green	50
Redbanded	0
Redshouldered	0
Southern Green	0
Total (make it 100%)	100

Appendix 13. South Carolina soybean insect losses, 2017.

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
Armyw orm complex	400,000	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%
Banded Cucumber Beetle	400,000	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%
Bean Leaf Beetle	100,000	25.0%	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	200,000	50.0%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Corn Earw orm	400,000	100.0%	200,000	50.0%	150,000	37.5%	1	$7.00	1.50	0.375	$2.63	1.50%	243,070	$3,383,475	$8.46	17.3%
Cutw orms	400,000	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%
Dectes Stem Borer	400,000	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%
Garden Webw orms	100,000	25.0%	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	50,000	12.5%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Grasshopper	400,000	100.0%	40,000	10.0%	40,000	10.0%	1	$7.00	0.10	0.100	$0.70	0.10%	16,205	$435,565	$1.09	2.2%
Green Cloverw orm	400,000	100.0%	20,000	5.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Japanese Beetle	100,000	25.0%	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	400,000	100.0%	40,000	10.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Lesser Cornstalk Borer	100,000	25.0%	20,000	5.0%	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	200,000	50.0%	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	400,000	100.0%	300,000	75.0%	200,000	50.0%	1	$20.00	1.50	0.500	$10.00	1.50%	243,070	$6,333,475	$15.83	32.3%
Spider Mites	400,000	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%
Spotted Cucumber Beetle	400,000	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)	400,000	100.0%	350,000	87.5%	325,000	81.3%	2	$7.00	3.00	1.625	$11.38	3.00%	486,141	$9,216,951	$23.04	47.0%
Threecornered Alfalfa Hopper	400,000	100.0%	40,000	10.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Thrips	400,000	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	400,000	100.0%	40,000	10.0%	10,000	2.5%	1	$7.00	0.10	0.025	$0.18	0.10%	16,205	$225,565	$0.56	1.2%
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%
Automatic (no insects)	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%
									TOTAL	**2.625**	**$24.88**	**6.20%**	**1,004,691**	**$19,595,032**	**$48.99**	**100.0%**

SUMMARY DATA

Data Input

State	SC
Year	2017
Total Acres	400,000
Yield/acre	38
Price/Bushel	$9.60
% Acres Scouted	30
Scouting Fee/scouted acre	$7.00
% Acres Insect Seed Trt.	50
Seed Trt Cost/treated ac	$9.00

Yield & Management Results

Total Bushels Harvested	15,200,000
Total Bushels Lost to Insects	1,004,691
Percent Yield Loss	6.20%
Yield w /o Insects	40.51
Ave. # Spray Applications	2.625
Seed Treated Acres	200,000
Scouted Acres	120,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$9,950,000	$24.88
Seed Treatment Costs	$1,800,000	$4.50
Scouting costs	$840,000	$2.10
Total Costs	$12,590,000	$31.48
Yield Lost to insects	$9,645,032	$24.11
Total Losses + Costs	$22,235,032	$55.59

Stink Bug Composition

Species	% of SB
Brow n	28
Brow n Marmorated	1
Green	15
Redbanded	10
Redshouldered	1
Southern Green	45
Total (make it 100%)	100

Appendix 14. Tennessee soybean insect losses, 2017.

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	120,000	7.2%	4,500	0.3%	900	0.1%	1	$8.25	0.20	0.001	$0.00	0.01%	12,317	$126,282	$0.08	0.5%
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	1,670,000	100.0%	30,000	1.8%	20,000	1.2%	1.2	$8.00	0.10	0.014	$0.11	0.10%	85,704	$1,019,044	$0.61	3.9%
Blister Beetle	14,000	0.8%	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	200,000	12.0%	40,000	2.4%	33,000	2.0%	1	$11.00	1.90	0.020	$0.22	0.23%	195,015	$2,244,897	$1.34	8.6%
Cutworms	20,000	1.2%	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	1,100,000	65.9%	0	0.0%	9,000	0.5%	1	$7.50	0.30	0.005	$0.04	0.20%	169,355	$1,701,779	$1.02	6.5%
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	20,000	1.2%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Grasshopper	55,000	3.3%	1,000	0.1%	200	0.0%	1	$7.50	0.05	0.000	$0.00	0.00%	1,411	$15,119	$0.01	0.1%
Green Cloverworm	1,500,000	89.8%	22,000	1.3%	22,000	1.3%	1	$7.50	0.30	0.013	$0.10	0.27%	230,939	$2,393,563	$1.43	9.1%
Japanese Beetle	900,000	53.9%	750	0.0%	1,000	0.1%	1	$7.75	0.05	0.001	$0.00	0.03%	23,094	$230,606	$0.14	0.9%
Kudzu Bug	900,000	53.9%	70,000	4.2%	55,000	3.3%	1.1	$7.75	0.40	0.036	$0.28	0.22%	184,751	$2,251,725	$1.35	8.6%
Lesser Cornstalk Borer	1,000	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%
Mexican Bean Beetle	1,300	0.1%	100	0.0%	100	0.0%	1	$7.50	0.30	0.000	$0.00	0.00%	200	$2,681	$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	10,000	0.6%	300	0.0%	300	0.0%	1	$8.00	0.05	0.000	$0.00	0.00%	257	$4,876	$0.00	0.0%
Soybean Aphid	3,300	0.2%	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	400,000	24.0%	32,000	1.9%	20,000	1.2%	1	$14.00	0.30	0.012	$0.17	0.07%	61,584	$874,283	$0.52	3.3%
Spider Mites	3,000	0.2%	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	40,000	2.4%	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)	1,670,000	100.0%	72,000	4.3%	90,000	5.4%	1	$7.75	0.40	0.054	$0.42	0.40%	342,816	$4,005,677	$2.40	15.3%
Threecornered Alfalfa Hopper	1,670,000	100.0%	90,000	5.4%	60,000	3.6%	1	$7.75	0.15	0.036	$0.28	0.15%	128,556	$1,705,567	$1.02	6.5%
Thrips	1,670,000	100.0%	0	0.0%	15,000	0.9%	1	$5.00	0.02	0.009	$0.04	0.02%	17,141	$240,409	$0.14	0.9%
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	15,000	0.9%	0	0.0%	0	0.0%	0	$0.00	0.05	0.000	$0.00	0.00%	385	$3,714	$0.00	0.0%
Other	950,000	56.9%	45,000	2.7%	10,000	0.6%	1	$3.00	1.54	0.006	$0.02	0.88%	750,552	$7,272,829	$4.35	27.8%
Automatic (no insects)	0	0.0%	0	0.0%	690,000	41.3%	1	$3.00	0.00	0.413	$1.24	0.00%	0	$2,070,000	$1.24	7.9%
										0.620	**$2.93**	**2.57%**	**2,204,078**	**$26,163,052**	**$15.67**	**100.0%**

SUMMARY DATA

Data Input

State	TN
Year	2017
Total Acres	1,670,000
Yield/acre	50
Price/Bushel	$9.65
% Acres Scouted	42
Scouting Fee/scouted acre	$6.75
% Acres Insect Seed Trt.	48
Seed Trt Cost/treated ac	$7.00

Yield & Management Results

Total Bushels Harvested	83,500,000
Total Bushels Lost to Insects	2,204,078
Percent Yield Loss	2.57%
Yield w/o Insects	51.32
Ave. # Spray Applications	0.620
Seed Treated Acres	801,600
Scouted Acres	701,400

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$4,893,700	$2.93
Seed Treatment Costs	$5,611,200	$3.36
Scouting costs	$4,734,450	$2.84
Total Costs	$15,239,350	$9.13
Yield Lost to insects	$21,269,352	$12.74
Total Losses + Costs	$36,508,702	$21.86

Stink Bug Composition

Species	% of SB
Brown	12
Brown Marmorated	3
Green	79
Redbanded	2
Redshouldered	2
Southern Green	2
Total	100

Appendix 15. Texas soybean insect losses, 2017.

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
Armyw orm complex	500	0.3%	500	0.3%	500	0.3%	1	$20.00	1.00	0.003	$0.06	0.00%	215	$11,979	$0.07	0.1%
Banded Cucumber Beetle	128,000	80.0%	1,600	1.0%	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 Earw orm	5,000	3.1%	5,000	3.1%	5,000	3.1%	1	$20.00	2.50	0.031	$0.63	0.08%	5,378	$149,480	$0.93	1.0%
Cutw orms	4,000	2.5%	0	0.0%	0	0.0%	0	$0.00	0.50	0.000	$0.00	0.01%	861	$7,917	$0.05	0.1%
Dectes Stem Borer	4,000	2.5%	0	0.0%	0	0.0%	0	$0.00	0.50	0.000	$0.00	0.01%	861	$7,917	$0.05	0.1%
Garden Webw orms	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	80,000	50.0%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Green Cloverw orm	128,000	80.0%	128,000	80.0%	128,000	80.0%	0.2	$20.00	2.00	0.160	$3.20	1.60%	110,148	$1,525,357	$9.53	10.2%
Japanese 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%
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	4,000	2.5%	0	0.0%	0	0.0%	0	$0.00	0.50	0.000	$0.00	0.01%	861	$7,917	$0.05	0.1%
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	128,000	80.0%	128,000	80.0%	128,000	80.0%	0.2	$20.00	2.00	0.160	$3.20	1.60%	110,148	$1,525,357	$9.53	10.2%
Spider Mites	4,000	2.5%	4,000	2.5%	4,000	2.5%	1	$20.00	1.00	0.025	$0.50	0.03%	1,721	$95,834	$0.60	0.6%
Spotted Cucumber Beetle	80,000	50.0%	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)	144,000	90.0%	144,000	90.0%	144,000	90.0%	1.5	$20.00	10.00	1.350	$27.00	9.00%	619,580	$10,020,135	$62.63	67.2%
Threecornered Alfalfa Hopper	144,000	90.0%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Thrips	40,000	25.0%	0	0.0%	0	0.0%	0	$0.00	0.25	0.000	$0.00	0.06%	4,303	$39,584	$0.25	0.3%
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	128,000	80.0%	128,000	80.0%	128,000	80.0%	0.2	$20.00	2.00	0.160	$3.20	1.60%	110,148	$1,525,357	$9.53	10.2%
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%
Automatic (no insects)	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%
									TOTAL	**1.889**	**$37.79**	**14.01%**	**964,221**	**$14,916,835**	**$93.23**	**100.0%**

SUMMARY DATA

Data Input

State	TX
Year	2017
Total Acres	160,000
Yield/acre	37
Price/Bushel	$9.20
% Acres Scouted	20
Scouting Fee/scouted acre	$10.00
% Acres Insect Seed Trt.	90
Seed Trt Cost/treated ac	$12.00

Yield & Management Results

Total Bushels Harvested	5,920,000
Total Bushels Lost to Insects	964,221
Percent Yield Loss	14.01%
Yield w/o Insects	43.03
Ave. # Spray Applications	1.889
Seed Treated Acres	144,000
Scouted Acres	32,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$6,046,000	$37.79
Seed Treatment Costs	$1,728,000	$10.80
Scouting costs	$320,000	$2.00
Total Costs	$8,094,000	$50.59
Yield Lost to insects	$8,870,835	$55.44
Total Losses + Costs	$16,964,835	$106.03

Stink Bug Composition

Species	% of SB
Brow n	10
Brow n Marmorated	0
Green	10
Redbanded	70
Redshouldered	0
Southern Green	10
Total (make it 100%)	100

Appendix 16. Virginia soybean insect losses, 2017.

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	56,000	10.0%	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	224,000	40.0%	112,000	20.0%	168,000	30.0%	1	$15.00	5.00	0.300	$4.50	2.00%	507,819	$7,344,278	$13.11	74.4%
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	28,000	5.0%	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	56,000	10.0%	5,600	1.0%	2,800	0.5%	1	$10.00	0.50	0.005	$0.05	0.05%	12,695	$148,607	$0.27	1.5%
Green Cloverworm	224,000	40.0%	0	0.0%	0	0.0%	0	$0.00	0.00	0.000	$0.00	0.00%	0	$0	$0.00	0.0%
Japanese 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%
Kudzu Bug	5,600	1.0%	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	2,800	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%
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	2,800	0.5%	1,400	0.3%	1,000	0.2%	1	$10.00	0.50	0.002	$0.02	0.00%	635	$16,030	$0.03	0.2%
Soybean Looper	56,000	10.0%	2,800	0.5%	3,000	0.5%	1	$20.00	5.00	0.005	$0.11	0.50%	126,955	$1,266,070	$2.26	12.8%
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)	112,000	20.0%	11,200	2.0%	11,000	2.0%	1	$10.00	2.00	0.020	$0.20	0.40%	101,564	$1,074,856	$1.92	10.9%
Threecornered Alfalfa Hopper	5,600	1.0%	2,800	0.5%	1,400	0.3%	1	$10.00	0.50	0.003	$0.03	0.01%	1,270	$26,061	$0.05	0.3%
Thrips	560,000	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	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%
Automatic (no insects)	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%
										0.334	**$4.90**	**2.96%**	**750,937**	**$9,875,901**	**$17.64**	**100.0%**

SUMMARY DATA

Data Input

State	VA
Year	2017
Total Acres	560,000
Yield/acre	44
Price/Bushel	$9.50
% Acres Scouted	10
Scouting Fee/scouted acre	$12.00
% Acres Insect Seed Trt.	10
Seed Trt Cost/treated ac	$12.00

Yield & Management Results

Total Bushels Harvested	24,640,000
Total Bushels Lost to Insects	750,937
Percent Yield Loss	2.96%
Yield w/o Insects	45.34
Ave. # Spray Applications	0.334
Seed Treated Acres	56,000
Scouted Acres	56,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$2,742,000	$4.90
Seed Treatment Costs	$672,000	$1.20
Scouting costs	$672,000	$1.20
Total Costs	$4,086,000	$7.30
Yield Lost to insects	$7,133,901	$12.74
Total Losses + Costs	$11,219,901	$20.04

Stink Bug Composition

Species	% of SB
Brown	14
Brown Marmorated	1
Green	85
Redbanded	0
Redshouldered	0
Southern Green	0
Total	100

Appendix 17. Wisconsin soybean insect losses, 2017.

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
Armyw orm 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 Earw orm	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%
Cutw orms	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 Webw orms	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 Cloverw orm	30,000	1.4%	4,000	0.2%	250	0.0%	1	$15.00	1.00	0.000	$0.00	0.01%	14,192	$139,991	$0.07	2.1%
Japanese Beetle	350,000	16.7%	25,000	1.2%	25,000	1.2%	1	$15.00	1.00	0.012	$0.18	0.17%	165,571	$1,964,479	$0.94	29.0%
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	28,000	1.3%	4,000	0.2%	100	0.0%	1	$15.00	1.00	0.000	$0.00	0.01%	13,246	$128,658	$0.06	1.9%
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	400,000	19.0%	7,000	0.3%	7,000	0.3%	1	$15.00	2.00	0.003	$0.05	0.38%	378,447	$3,738,094	$1.78	55.2%
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	20,000	1.0%	5,000	0.2%	5,000	0.2%	1	$20.00	5.00	0.002	$0.05	0.05%	47,306	$554,137	$0.26	8.2%
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)	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%
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	50,000	2.4%	1,000	0.0%	1,000	0.0%	1	$15.00	1.00	0.000	$0.01	0.02%	23,653	$242,068	$0.12	3.6%
Automatic (no insects)	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%
									TOTAL	**0.018**	**$0.29**	**0.65%**	**642,414**	**$6,767,427**	**$3.22**	**100.0%**

SUMMARY DATA

Data Input

State	WI
Year	2017
Total Acres	2,100,000
Yield/acre	47
Price/Bushel	$9.60
% Acres Scouted	15
Scouting Fee/scouted acre	$6.00
% Acres Insect Seed Trt.	40
Seed Trt Cost/treated ac	$13.00

Yield & Management Results

Total Bushels Harvested	98,700,000
Total Bushels Lost to Insects	642,414
Percent Yield Loss	0.65%
Yield w/o Insects	47.31
Ave. # Spray Applications	0.018
Seed Treated Acres	840,000
Scouted Acres	315,000

Economic Results

	Total	Per Acre
Foliar Insecticides Costs	$600,250	$0.29
Seed Treatment Costs	$10,920,000	$5.20
Scouting costs	$1,890,000	$0.90
Total Costs	$13,410,250	$6.39
Yield Lost to insects	$6,167,177	$2.94
Total Losses + Costs	$19,577,427	$9.32

Stink Bug Composition

Species	% of SB
Brown	0
Brown Marmorated	0
Green	0
Redbanded	0
Redshouldered	0
Southern Green	0
Total (make it 100%)	0