

Report

2020 Soybean Insect Losses in the United States

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Abstract Estimated insect management costs and losses due to insects in soybean during the 2020 growing season were collected and compiled from 18 states to provide a record of insect pressure and management practices for the year. These annual estimates provide a historical record of pest pressure and insect management and have been compiled in some states since 2004. Participating states represented 48% of soybean acreage grown in the United States, with near 100% participation in southern states. Overall, the stink bug complex was the costliest insect pest in soybean followed by corn earworm. Total insect management costs were \$15.80 per acre, with estimated crop losses to insects at \$13.85 per acre, making the 2020 total costs plus losses \$29.65 per acre. State estimates varied widely, with insect management costs in five states averaging less than \$10/ac, while averaging more than \$40/ac in two states. Similarly, the estimated yield losses from insects ranged from less than \$10/ac in four states to more than \$50/ac in two states.

Key Words: soybean, yield loss, pest management

Introduction

Numerous insects cause injury to soybeans every year, often reducing yield and quality. To obtain an estimate of the impact of these insects at a state and national scale, the opinions of entomologists from each state regarding pest pressure and management strategy adoption are collected annually. Soybean insect loss estimates have been compiled annually since 2004 in Mississippi (Musser and Catchot 2008), with 16 other states beginning to make estimates between 2008 and 2018. This 2020 report includes Minnesota estimates for the first time. These estimates are “best guesses” by university personnel, primarily entomologists, who have been involved in state-wide monitoring of soybean throughout the year. While the costs and losses estimated for an insect pest in any given year are somewhat subjective, these losses provide a historical record of pest pressure and management practices and 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 insect pests and management practices.

Materials and Methods

Statewide estimates were made based on informal communication of an author from each state with university faculty, Extension personnel, private crop consultants and/or industry professionals who were actively engaged in soybean production in that state (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 reporting states was 39.6 million acres (1 acre= 0.405 hectare), which represents 48% of the 82.3 million acres of soybean harvested in the United States during 2020 (USDA NASS). Nearly all southern soybean-producing states participated, while participation in the midwestern and northern states was less than 50%. As a result, the overall averages of insect costs and losses in this report are likely greater than the true national averages because insect management costs and losses in the southern states are typically greater than in the northern states. Average combined management costs and yield losses attributed to insects were estimated at \$29.65/ac for 2020, but this varied widely among states, ranging from \$7.60/ac in Illinois to \$102.01/ac in Kentucky. Average yield losses from insects were estimated at 2.6% (1.4 bu/ac or 96 kg/ha), but this also varied from 0.1% in Illinois to 11.8% in Texas. The adoption of insect management strategies also varied among states (Table 1).

As in most preceding years, the seed-feeding complex of stink bugs (Hemiptera: Pentatomidae) was the costliest insect pest of soybean overall during 2020 in terms of lost yield (1.0%) and management costs (\$3.04/ac), comprising 37% of all combined insect costs + losses. This complex was considered the most economically damaging pest in 10 of the 18 reporting states. Across the nation, the primary species in the complex during 2020 were brown (*Euschistus* spp.) and green (*Chinavia hilaris*) stink bugs. However green, brown, southern green (*Nezara viridula*), redbanded (*Piezodorus guildinii*), and brown marmorated (*Halyomorpha halys*) stink bugs were each the primary stink bug species in at least one state.

Corn earworm, *Helicoverpa zea* (Lepidoptera: Noctuidae), was the second most damaging pest during 2020. Similar to previous years, corn earworm was considered the costliest insect pest in Arkansas, Delaware, North Carolina, and Virginia. Overall, it was responsible for 19.4% of all insect costs and losses.

No other insect accounted for 10% of insect costs plus losses. Soybean looper, *Chrysodeixis includens* (Lepidoptera: Noctuidae), was the third most damaging insect, contributing 8.9% of total costs + losses. It was not the most expensive insect in any state but was second or third most costly in most southern states. Other insects contributing at least 1% to overall insect control costs + yield losses were bean leaf beetle, *Ceratoma trifurcata* (Coleoptera: Chrysomelidae) (8.3%), twospotted spider mite, *Tetranychus urticae* (Acari: Tetranychidae) (3.5%), green cloverworm, *Hypena scabra* (Lepidoptera: Erebidae) (3.4%), velvetbean caterpillar, *Anticarsia gemmatilis* (Lepidoptera: Noctuidae) (3.3%), threecornered alfalfa hopper, *Spissistilus festinus* (Hemiptera: Membracidae) (2.7%), soybean aphid, *Aphis glycines* (Hemiptera: Aphididae) (1.9%), decates stem borer, *Dectes texanus* (Coleoptera: Cerambycidae) (1.6%), kudzu bug, *Megacopta cribraria* (Hemiptera: Plataspidae) (1.4%), and Japanese beetle, *Popillia japonica* (Coleoptera: Scarabaeidae) (1.4%).

State Highlights

Alabama. Overall insect costs + losses increased from \$32.08/ac in 2019 (Musser et al. 2020) to \$45.70/ac in 2020. Similar to 2019, the stink bug complex, primarily southern green stink bug, was the

primary pest, accounting for 65% of insecticide applications. Velvetbean caterpillar was the second most costly insect during 2020, totaling \$9.92/ac in costs + losses, up sharply from \$2.38/ac in 2019.

Arkansas. As has been true in previous years, corn earworm and stink bugs were the primary pests during 2020, combined accounting for 74% of all insect losses + costs. Overall losses + costs, insecticide applications, and individual pest contributions to these losses were similar to 2019 (Musser et al. 2020).

Delaware. Corn earworm was still the primary pest in 2020, as it was in previous years, but losses due to stink bugs and slugs were much higher than previously, more than doubling total insect costs + losses from \$25.46/ac in 2019 (Musser et al. 2020) to \$56.21/ac in 2020.

Georgia. Stink bugs, velvetbean caterpillar, and soybean looper were the primary pests during 2020, each responsible for between \$5/ac and \$7/ac in management costs + losses.

Illinois. Insecticide seed treatments and automatic insecticide applications continued to be the largest insect-related expenses in 2020, together accounting for 76% of all insect-related costs + losses. Bean leaf beetle was the costliest insect pest, accounting for 11% of the total insect costs + losses of \$7.59/ac. The "Other" category is for red-headed flea beetle, *Systema frontalis* (Coleoptera: Chrysomelidae), a minor defoliating insect.

Kentucky. While the primary pests continued to be stink bugs and bean leaf beetles, insect-related costs and yield losses were both up sharply in 2020. The number of foliar insecticide applications rose from 1.4 in 2019 (Musser et al. 2020) to 3.1 in 2020, and estimated yield losses rose from 4.9 to 11.4%. As a result, total insect costs + losses rose from \$42.93/ac to \$102.01/ac.

Louisiana. Consistent with previous years, stink bugs and soybean looper were the primary pests, together responsible for 64% of the total costs + losses of \$76.37/ac.

Michigan. No insects caused economic yield losses during 2020. Insect-related costs totaled \$6.68/ac and were all preventative (seed treatments, automatic foliar applications, and crop scouting). Sub-threshold yield losses to insects totaled \$2.29/ac.

Minnesota. Spider mites was the costliest insect pest due to yield loss, but soybean aphid and automatic foliar applications were the most common reason for foliar applications. Overall insect-related costs + losses were \$9.71/ac.

Mississippi. As in previous years, stink bug was the primary pest followed by soybean looper and corn earworm. Overall, the number of foliar insecticide applications and yield losses were similar to 2019 (Musser et al. 2020), totaling 2.2 insecticide applications and \$77.08/ac in total costs + losses.

North Carolina. The number of foliar applications applied rose from 1.3 in 2019 (Musser et al. 2020) to 2.3 in 2020. Most of the increase in applications were made to control corn earworm, stink bugs, green cloverworm, and bean leaf beetle. Corn earworm remained the primary pest, accounting for 51% of insect costs + losses, followed by stink bugs.

Ohio. As reported for 2019 (Musser et al. 2020), the stink bug complex, dominated by brown marmorated stink bug, accounted for 73% of insect costs + losses in 2020. Compared with 2019, spider mites were a bigger problem in 2020, while bean leaf beetle was a smaller problem. Overall, estimated costs + losses from insects increased from \$16.85/ac in 2019 (Musser et al. 2020) to \$21.24 in 2020, largely due to larger estimated yield losses.

Oklahoma. While stink bugs remained the primary pest, the costs + losses due to stink bugs decreased in 2020 compared with 2019, but green cloverworm emerged as a pest in 2020 after being largely absent in 2019 (Musser et al. 2020). Overall insect related costs + losses were similar in 2019 (\$9.83/ac) and 2020 (\$11/56/ac).

South Carolina. As reported in 2019 (Musser et al. 2020), stink bugs and kudzu bug were the primary pests during 2020. Seed treatments, foliar applications, and yield losses all increased from 2019 to 2020, so overall insect-related costs + losses increased from \$43.01/ac in 2019 to \$70.45/ac in 2020.

Tennessee. Stink bugs and corn earworm continued to be the primary pests in 2020 followed by bean leaf beetle. Total insect-related costs and losses both increased slightly from 2019 (Musser et al. 2020) to 2020, resulting in total insect-related costs + losses of \$30.16 in 2020.

Texas. Stink bugs, mainly redbanded stink bug, continued to be the primary insect pest, accounting for 65% (\$57.96/ac) of total insect-related costs + losses of \$89.52/ac.

Virginia. Corn earworm replaced stink bug as the primary pest in 2020, accounting for \$26.95/ac in costs + losses compared with \$23.31/ac for stink bug. Threecornered alfalfa hopper emerged as the third most costly insect in 2020, causing growers to lose \$18.95/ac in costs + losses. Overall, insect-related costs + losses rose dramatically from \$18.81/ac in 2019 (Musser et al. 2020) to \$91.00 in 2020.

Wisconsin. Soybean aphid and Japanese beetle were the primary insect pests in 2020. Overall insect-related costs + losses rose sharply from \$5.67/ac in 2019 (Musser et al. 2020) to \$19.57/ac in 2020.

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

Table 1. Soybean insect management practices by state, 2020.

State	Soybean Acres ¹ (x1000)	% soybean acres ¹		Average Number of Foliar Applications	Insect Impacts (\$/acre)	
		Scouted	Insecticide Seed Treatment		Management Costs	Yield Losses
Alabama	267	55	35	1.44	17.85	27.85
Arkansas	2,950	80	75	2.15	36.08	30.34
Delaware	148	67	20	1.47	18.79	37.41
Georgia	93	40	20	0.91	10.80	14.46
Illinois	10,250	10	50	0.52	7.06	0.54
Kentucky	1,840	58	85	3.07	32.79	69.23
Louisiana	1,000	90	90	2.72	50.15	26.23
Michigan	2,190	5	75	0.05	6.68	2.29
Minnesota	7,330	75	50	0.12	7.59	2.12
Mississippi	2,090	94	80	2.18	40.68	36.40
North Carolina	1,600	25	33	2.31	27.94	29.27
Ohio	4,780	20	80	0.16	10.00	11.24
Oklahoma	530	20	25	0.10	5.41	6.14
South Carolina	300	25	50	2.25	31.45	39.00
Tennessee	1,650	40	65	1.22	16.88	13.28
Texas	60	20	80	1.45	39.70	49.82
Virginia	600	10	10	1.32	18.85	72.15
Wisconsin	1,980	50	40	0.17	7.03	12.54
Average (weighted by acres)		42	59	0.88	15.80	13.85

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/>.



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Appendix 1. Overall soybean insect losses from 18 reporting states, 2020.

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	4,312,928	10.9%	464,580	1.2%	597,770	1.5%	0.96	\$10.25	0.092	0.015	\$0.15	0.01%	213,006	\$7,960,720	\$0.20	0.9%
Banded Cucumber Beetle	3,010,564	7.6%	41,800	0.1%	2,090	0.0%	0.00	\$9.00	0.004	0.000	\$0.00	0.00%	6,761	\$65,534	\$0.00	0.0%
Bean Leaf Beetle	25,028,914	63.1%	1,313,980	3.3%	2,142,950	5.4%	1.21	\$8.74	0.384	0.065	\$0.57	0.24%	5,179,836	\$72,780,538	\$1.84	8.3%
Bliester Beetle	1,874,395	4.7%	118,000	0.3%	120,950	0.3%	1.00	\$10.50	0.000	0.003	\$0.03	0.00%	488	\$1,274,702	\$0.03	0.1%
Corn Earworm	6,588,801	16.6%	3,261,100	8.2%	3,732,560	9.4%	1.12	\$12.25	3.481	0.106	\$1.29	0.58%	12,366,740	\$171,125,936	\$4.32	19.4%
Cutworms	1,137,048	2.9%	156,890	0.4%	261,550	0.7%	1.00	\$8.87	0.057	0.007	\$0.06	0.00%	35,026	\$2,658,740	\$0.07	0.3%
Dectes Stem Borer	9,617,757	24.3%	276,000	0.7%	514,753	1.3%	1.00	\$7.84	0.195	0.013	\$0.10	0.05%	1,012,542	\$13,849,364	\$0.35	1.6%
Garden Webworms	1,902,450	4.8%	0	0.0%	0	0.0%	0.00	\$0.00	0.002	0.000	\$0.00	0.00%	1,690	\$16,383	\$0.00	0.0%
Grape Colaspis	5,402,500	13.6%	0	0.0%	0	0.0%	0.00	\$0.00	0.008	0.000	\$0.00	0.00%	22,538	\$218,446	\$0.01	0.0%
Grasshopper	22,045,785	55.6%	181,854	0.5%	148,900	0.4%	1.00	\$9.42	0.026	0.004	\$0.04	0.01%	309,308	\$4,399,996	\$0.11	0.5%
Green Cloverworm	29,063,374	73.3%	1,251,293	3.2%	1,710,236	4.3%	0.88	\$9.32	0.107	0.038	\$0.35	0.08%	1,669,134	\$30,162,437	\$0.76	3.4%
Japanese Beetle	16,739,768	42.2%	185,630	0.5%	130,530	0.3%	1.00	\$10.74	0.127	0.003	\$0.04	0.05%	1,147,980	\$12,528,173	\$0.32	1.4%
Kudzu Bug	3,824,414	9.6%	700,023	1.8%	640,841	1.6%	1.01	\$9.11	0.345	0.016	\$0.15	0.03%	711,152	\$12,773,150	\$0.32	1.4%
Lesser Cornstalk Borer	194,788	0.5%	15,000	0.0%	37,950	0.1%	1.00	\$11.69	0.254	0.001	\$0.01	0.00%	26,717	\$702,447	\$0.02	0.1%
Mexican Bean Beetle	275,348	0.7%	0	0.0%	0	0.0%	0.00	\$0.00	0.407	0.000	\$0.00	0.00%	60,389	\$585,310	\$0.01	0.1%
Potato Leafhopper	16,100,584	40.6%	19,800	0.0%	19,800	0.0%	1.00	\$15.00	0.000	0.000	\$0.01	0.00%	563	\$302,461	\$0.01	0.0%
Saltmarsh Caterpillar	7,447,368	18.8%	20,900	0.1%	48,090	0.1%	1.00	\$9.83	0.040	0.001	\$0.01	0.01%	162,121	\$2,044,083	\$0.05	0.2%
Seedcorn Maggot	3,735,850	9.4%	128,080	0.3%	36,800	0.1%	1.00	\$7.20	0.270	0.001	\$0.01	0.03%	544,318	\$5,540,643	\$0.14	0.6%
Slugs	4,416,230	11.1%	150,340	0.4%	69,749	0.2%	1.00	\$24.72	0.249	0.002	\$0.04	0.03%	591,985	\$7,463,148	\$0.19	0.8%
Soybean Aphid	11,924,828	30.1%	470,625	1.2%	491,750	1.2%	1.00	\$13.11	0.172	0.012	\$0.16	0.05%	1,104,122	\$17,150,718	\$0.43	1.9%
Soybean Looper	9,645,626	24.3%	2,967,126	7.5%	2,726,145	6.9%	0.98	\$15.92	0.719	0.067	\$1.07	0.17%	3,739,750	\$78,807,815	\$1.99	8.9%
Spider Mites	7,386,758	18.6%	368,600	0.9%	411,200	1.0%	1.04	\$14.85	0.632	0.011	\$0.16	0.12%	2,516,441	\$30,739,069	\$0.78	3.5%
Spotted Cucumber Beetle	13,442,045	33.9%	112,000	0.3%	112,000	0.3%	1.50	\$8.00	0.015	0.004	\$0.03	0.01%	110,345	\$2,413,498	\$0.06	0.3%
Stink Bugs (see box below)	26,508,174	66.8%	7,403,120	18.7%	7,721,999	19.5%	1.54	\$10.16	1.493	0.299	\$3.04	1.00%	21,339,634	\$327,319,769	\$8.25	37.1%
Thistle Caterpillar	9,761,600	24.6%	73,300	0.2%	74,325	0.2%	1.00	\$8.97	0.006	0.002	\$0.02	0.00%	29,642	\$954,173	\$0.02	0.1%
Threecornered Alfalfa Hopper	10,971,530	27.7%	1,913,595	4.8%	453,425	1.1%	0.99	\$8.28	0.355	0.011	\$0.09	0.10%	2,101,513	\$24,077,370	\$0.61	2.7%
Thrips	20,273,318	51.1%	0	0.0%	1,650	0.0%	1.00	\$7.75	0.001	0.000	\$0.00	0.00%	8,897	\$99,016	\$0.00	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	5,541,573	14.0%	1,932,877	4.9%	1,665,586	4.2%	0.81	\$9.55	0.550	0.034	\$0.32	0.08%	1,643,104	\$28,803,159	\$0.73	3.3%
Other	3,520,800	8.9%	18,400	0.0%	19,425	0.0%	1.00	\$8.42	0.005	0.000	\$0.00	0.00%	9,921	\$259,733	\$0.01	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	6,271,092	15.8%	1.01	\$3.83	0.000	0.160	\$0.61	0.00%	0	\$24,291,285	\$0.61	2.8%
										0.876	\$8.38	2.65%	56,665,665	\$881,367,816	\$22.22	100.0%

SUMMARY DATA

Data Input	
State	Combined
Year	2020
Total Acres	39,657,818
Yield/acre	52.49
Price/Bushel	\$9.69
% Acres Scouted	42
Scouting Fee/scouted acre	\$6.64
% Acres Insect Seed Trt.	59
Seed Trt Cost/treated ac	\$7.87

Yield & Management Results	
Total Bushels Harvested	2,081,644,084
Total Bushels Lost to Insects	56,665,665
Percent Yield Loss	2.65%
Yield w/o Insects	53.92
Ave. # Spray Applications	0.876
Seed Treated Acres	23,537,290
Scouted Acres	16,465,910

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$332,147,960	\$8.38
Seed Treatment Costs	\$185,231,254	\$4.67
Scouting costs	\$109,322,139	\$2.76
Total Costs	\$626,701,353	\$15.80
Yield Lost to insects	\$549,219,856	\$13.85
Total Losses + Costs	\$1,175,921,209	\$29.65

Stink Bug Composition	
Species	% of SB
Brown	46.5
Brown Marmorated	6.8
Green	29.2
Redbanded	5.8
Redshouldered	2.0
Southern Green	9.6
Total	100.0

Appendix 2. Alabama soybean insect losses, 2020.

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	2,668	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Cucumber Beetle	53,364	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	26,682	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Blister Beetle	13,341	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Corn Earworm	13,341	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	2,668	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Dectes Stem Borer	13,341	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	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%
Grape Colaspis	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%
Grasshopper	253,477	95.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Green Cloverworm	266,818	100.0%	2,668	1.0%	5,336	2.0%	1.00	\$7.00	0.000	0.020	\$0.14	0.00%	0	\$37,355	\$0.14	0.4%
Japanese Beetle	2,668	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	200,114	75.0%	40,023	15.0%	13,341	5.0%	1.00	\$7.00	0.500	0.050	\$0.35	0.38%	40,676	\$520,481	\$1.95	5.0%
Lesser Cornstalk Borer	2,668	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	2,668	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	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%
Saltmarsh Caterpillar	2,668	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcorn maggot	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%
Slugs	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%
Soybean Aphid	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%
Soybean Looper	26,682	10.0%	26,682	10.0%	21,345	8.0%	1.00	\$12.00	3.000	0.080	\$0.96	0.30%	32,541	\$597,821	\$2.24	5.7%
Spider Mites	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%
Spotted Cucumber Beetle	80,045	30.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	266,818	100.0%	226,795	85.0%	200,114	75.0%	1.25	\$8.00	4.000	0.938	\$7.50	4.00%	433,874	\$6,556,808	\$24.57	62.6%
Thistle Caterpillar	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%
Threecornered Alfalfa Hopper	266,818	100.0%	21,345	8.0%	0	0.0%	0.00	\$0.00	0.100	0.000	\$0.00	0.10%	10,847	\$113,892	\$0.43	1.1%
Thrips	266,818	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
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	186,773	70.0%	106,727	40.0%	93,386	35.0%	1.00	\$7.00	2.500	0.350	\$2.45	1.75%	189,820	\$2,646,811	\$9.92	25.3%
Other	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%
Automatic (no insects)	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%
TOTAL										1.438	\$11.40	6.53%	707,756	\$10,473,167	\$39.25	100.0%

SUMMARY DATA

Data Input	
State	AL
Year	2020
Total Acres	266,818
Yield/acre	38
Price/Bushel	\$10.50
% Acres Scouted	55
Scouting Fee/scouted acre	\$6.00
% Acres Insect Seed Trt.	35
Seed Trt Cost/treated ac	\$9.00

Yield & Management Results	
Total Bushels Harvested	10,139,084
Total Bushels Lost to Insects	707,756
Percent Yield Loss	6.53%
Yield w/o Insects	40.6526
Ave. # Spray Applications	1.438
Seed Treated Acres	93,386
Scouted Acres	146,750

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$3,041,725	\$11.40
Seed Treatment Costs	\$840,477	\$3.15
Scouting costs	\$880,499	\$3.30
Total Costs	\$4,762,701	\$17.85
Yield Lost to insects	\$7,431,441	\$27.85
Total Losses + Costs	\$12,194,143	\$45.70

Stink Bug Composition	
Species	% of SB
Brown	20
Brown Marmorated	5
Green	5
Redbanded	10
Redshouldered	0
Southern Green	60
Total (make it 100%)	100

Appendix 3. Arkansas soybean insect losses, 2020.

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	1,475,000	50.0%	265,500	9.0%	265,500	9.0%	1.00	\$12.00	0.050	0.090	\$1.08	0.03%	39,248	\$3,556,105	\$1.21	2.2%
Banded Cucumber Beetle	295,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	2,950,000	100.0%	236,000	8.0%	265,500	9.0%	1.00	\$12.00	0.050	0.090	\$1.08	0.05%	78,495	\$3,926,211	\$1.33	2.5%
Blister Beetle	236,000	8.0%	118,000	4.0%	120,950	4.1%	1.00	\$10.50	0.000	0.041	\$0.43	0.00%	0	\$1,269,975	\$0.43	0.8%
Corn Earworm	2,566,500	87.0%	885,000	30.0%	1,180,000	40.0%	1.25	\$12.00	4.000	0.500	\$6.00	3.48%	5,463,274	\$69,218,674	\$23.46	43.8%
Cutworms	383,500	13.0%	118,000	4.0%	132,750	4.5%	1.00	\$10.00	0.020	0.045	\$0.45	0.00%	4,082	\$1,365,991	\$0.46	0.9%
Dectes Stem Borer	2,094,500	71.0%	0	0.0%	29,500	1.0%	1.00	\$10.00	0.000	0.010	\$0.10	0.00%	0	\$295,000	\$0.10	0.2%
Garden Webworms	147,500	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	2,950,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	2,950,000	100.0%	59,000	2.0%	44,250	1.5%	1.00	\$12.00	0.050	0.015	\$0.18	0.05%	78,495	\$1,271,211	\$0.43	0.8%
Green Cloverworm	2,950,000	100.0%	103,250	3.5%	177,000	6.0%	1.00	\$10.00	0.000	0.060	\$0.60	0.00%	0	\$1,770,000	\$0.60	1.1%
Japanese Beetle	88,500	3.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	914,500	31.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Cornstalk Borer	14,750	0.5%	0	0.0%	2,950	0.1%	1.00	\$10.00	0.000	0.001	\$0.01	0.00%	0	\$29,500	\$0.01	0.0%
Mexican Bean Beetle	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%
Potato Leafhopper	2,950,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	2,802,500	95.0%	0	0.0%	29,500	1.0%	1.00	\$10.00	0.070	0.010	\$0.10	0.07%	104,399	\$1,279,480	\$0.43	0.8%
Seedcorn maggot	212,400	7.2%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Slugs	516,250	17.5%	59,000	2.0%	35,400	1.2%	1.00	\$28.00	0.010	0.012	\$0.34	0.00%	2,747	\$1,017,107	\$0.34	0.6%
Soybean Aphid	236,000	8.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	1,917,500	65.0%	590,000	20.0%	590,000	20.0%	1.00	\$17.50	0.500	0.200	\$3.50	0.33%	510,220	\$15,136,370	\$5.13	9.6%
Spider Mites	73,750	2.5%	14,750	0.5%	38,350	1.3%	1.00	\$10.00	0.000	0.013	\$0.13	0.00%	0	\$383,500	\$0.13	0.2%
Spotted Cucumber Beetle	2,950,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	2,950,000	100.0%	1,327,500	45.0%	1,475,000	50.0%	1.20	\$10.50	2.000	0.600	\$6.30	2.00%	3,139,813	\$48,193,433	\$16.34	30.5%
Thistle Caterpillar	1,593,000	54.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	2,950,000	100.0%	0	0.0%	44,250	1.5%	1.00	\$10.00	0.000	0.015	\$0.15	0.00%	0	\$442,500	\$0.15	0.3%
Thrips	2,950,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
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	2,625,500	89.0%	477,900	16.2%	531,000	18.0%	1.00	\$10.50	0.050	0.180	\$1.89	0.04%	69,861	\$6,234,288	\$2.11	3.9%
Other	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%
Automatic (no insects)	0	0.0%	0	0.0%	796,500	27.0%	1.00	\$3.50	0.000	0.270	\$0.95	0.00%	0	\$2,787,750	\$0.95	1.8%
TOTAL							2.152	\$23.28	6.05%	9,490,633	\$158,177,097	\$53.62	100.0%			

SUMMARY DATA

Data Input	
State	AR
Year	2020
Total Acres	2,950,000
Yield/acre	50
Price/Bushel	\$9.43
% Acres Scouted	80
Scouting Fee/scouted acre	\$8.50
% Acres Insect Seed Trt.	75
Seed Trt Cost/treated ac	\$8.00

Yield & Management Results	
Total Bushels Harvested	147,500,000
Total Bushels Lost to Insects	9,490,633
Percent Yield Loss	6.05%
Yield w/o Insects	53.2172
Ave. # Spray Applications	2.152
Seed Treated Acres	2,212,500
Scouted Acres	2,360,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$68,680,425	\$23.28
Seed Treatment Costs	\$17,700,000	\$6.00
Scouting costs	\$20,060,000	\$6.80
Total Costs	\$106,440,425	\$36.08
Yield Lost to insects	\$89,496,672	\$30.34
Total Losses + Costs	\$195,937,097	\$66.42

Stink Bug Composition	
Species	% of SB
Brown	32
Brown Marmorated	1
Green	32
Redbanded	2
Redshouldered	7
Southern Green	26
Total (make it 100%)	100

Appendix 4. Delaware soybean insect losses, 2020.

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/acre	% Total Loss + Cost			
Armyworm complex	36,260	24.5%	1,480	1.0%	370	0.3%	1.00	\$0.00	0.030	0.003	\$0.00	543	\$7,018	\$0.05	0.1%			
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Bean Leaf Beetle	90,132	60.9%	8,880	6.0%	14,800	10.0%	1.00	\$8.50	0.750	0.100	\$0.85	33,728	\$561,897	\$3.80	7.6%			
Blister Beetle	66,600	45.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Corn Earworm	91,760	62.0%	22,200	15.0%	32,560	22.0%	1.00	\$15.00	2.600	0.220	\$3.30	119,034	\$2,027,509	\$13.70	27.4%			
Cutworms	5,180	3.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Dectes Stem Borer	46,916	31.7%	0	0.0%	1,628	1.1%	1.00	\$8.50	0.650	0.011	\$0.09	15,215	\$210,571	\$1.42	2.8%			
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Grape Colaspis	14,800	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Grasshopper	91,908	62.1%	13,024	8.8%	14,800	10.0%	1.00	\$8.50	0.500	0.100	\$0.85	22,928	\$422,260	\$2.85	5.7%			
Green Cloverworm	110,556	74.7%	14,800	10.0%	22,200	15.0%	1.15	\$8.50	0.600	0.173	\$1.47	33,096	\$644,939	\$4.36	8.7%			
Japanese Beetle	59,200	40.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Lesser Cornstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Mexican Bean Beetle	1,628	1.1%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Potato Leafhopper	81,400	55.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Saltmarsh Caterpillar	22,200	15.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Seedcorn maggot	7,400	5.0%	1,480	1.0%	0	0.0%	0.00	\$0.00	0.150	0.000	\$0.00	554	\$7,161	\$0.05	0.1%			
Slugs	34,780	23.5%	11,840	8.0%	9,324	6.3%	1.01	\$20.00	4.553	0.063	\$1.27	79,008	\$1,208,987	\$8.17	16.3%			
Soybean Aphid	23,828	16.1%	0	0.0%	0	0.0%	0.00	\$0.00	0.050	0.000	\$0.00	594	\$7,686	\$0.05	0.1%			
Soybean Looper	55,944	37.8%	4,144	2.8%	14,800	10.0%	1.00	\$13.50	1.400	0.100	\$1.35	39,077	\$705,071	\$4.76	9.5%			
Spider Mites	25,308	17.1%	7,400	5.0%	22,200	15.0%	1.00	\$10.00	0.250	0.150	\$1.50	3,157	\$262,817	\$1.78	3.6%			
Spotted Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Stink Bugs (see box below)	125,356	84.7%	14,800	10.0%	17,760	12.0%	1.10	\$8.75	1.300	0.132	\$1.16	81,308	\$1,222,251	\$8.26	16.5%			
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Threecornered Alfalfa Hopper	10,212	6.9%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Thrips	148,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Automatic (no insects)	0	0.0%	0	0.0%	56,092	37.9%	1.10	\$1.75	0.000	0.417	\$0.73	0	\$107,977	\$0.73	1.5%			
TOTAL												1,468	\$12.56	5.80%	428,242	\$7,396,143	\$49.97	100.0%

SUMMARY DATA

Data Input	
State	DE
Year	2020
Total Acres	148,000
Yield/acre	47
Price/Bushel	\$12.93
% Acres Scouted	67
Scouting Fee/scouted acre	\$7.75
% Acres Insect Seed Trt.	19.8
Seed Trt Cost/treated ac	\$5.25

Yield & Management Results	
Total Bushels Harvested	6,956,000
Total Bushels Lost to Insects	428,242
Percent Yield Loss	5.80%
Yield w/o Insects	49.8935
Ave. # Spray Applications	1.468
Seed Treated Acres	29,304
Scouted Acres	99,160

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$1,858,973	\$12.56
Seed Treatment Costs	\$153,846	\$1.04
Scouting costs	\$768,490	\$5.19
Total Costs	\$2,781,309	\$18.79
Yield Lost to insects	\$5,537,170	\$37.41
Total Losses + Costs	\$8,318,479	\$56.21

Stink Bug Composition	
Species	% of SB
Brown	49
Brown Marmorated	9
Green	42
Redbanded	0
Redshouldered	0
Southern Green	0
Total (make it 100%)	100

Appendix 5. Georgia soybean insect losses, 2020.

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	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Banded Cucumber Beetle	5,000	5.4%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Blister Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Corn Earworm	2,500	2.7%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Dectes Stem Borer	3,000	3.2%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	10,000	10.8%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Green Cloverworm	15,000	16.1%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Japanese Beetle	2,500	2.7%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	60,000	64.5%	5,000	5.4%	4,000	4.3%	1.00	\$6.00	1.000	0.043	0.26%	26,667	\$290,674	\$3.13	14.7%
Lesser Cornstalk Borer	2,000	2.2%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Seedcorn maggot	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Slugs	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	60,000	64.5%	15,000	16.1%	13,000	14.0%	1.20	\$14.00	1.000	0.168	0.23%	26,667	\$485,074	\$5.22	24.5%
Spider Mites	1,000	1.1%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Spotted Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	75,000	80.6%	25,000	26.9%	20,000	21.5%	1.00	\$6.00	1.500	0.215	1.21%	50,001	\$620,014	\$6.67	31.4%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	3,000	3.2%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Thrips	50,000	53.8%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	70,000	75.3%	10,000	10.8%	45,000	48.4%	1.00	\$6.00	1.000	0.484	0.75%	31,112	\$581,120	\$6.25	29.4%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	0.00%	0	\$0	\$0.00	0.0%
TOTAL										0.910	3.25%	134,448	\$1,976,882	\$21.26	100.0%

SUMMARY DATA

State	GA
Year	2020
Total Acres	93,000
Yield/acre	43
Price/Bushel	\$10.00
% Acres Scouted	40
Scouting Fee/scouted acre	\$6.00
% Acres Insect Seed Trt.	20
Seed Trt Cost/treated ac	\$8.00

Total Bushels Harvested	3,999,000
Total Bushels Lost to Insects	134,448
Percent Yield Loss	3.25%
Yield w/o Insects	44.4457
Ave. # Spray Applications	0.910
Seed Treated Acres	18,600
Scouted Acres	37,200

	Total	Per Acre
Foliar Insecticides Costs	\$632,400	\$6.80
Seed Treatment Costs	\$148,800	\$1.60
Scouting costs	\$223,200	\$2.40
Total Costs	\$1,004,400	\$10.80
Yield Lost to insects	\$1,344,482	\$14.46
Total Losses + Costs	\$2,348,882	\$25.26

Species	% of SB
Brown	15
Brown Marmorated	1
Green	5
Redbanded	2
Redshouldered	0
Southern Green	77
Total (make it 100%)	100

Appendix 6. Illinois soybean insect losses, 2020.

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/acre	% Total Loss + Cost	
Armyworm complex	1,025,000	10.0%	0	0.0%	102,500	1.0%	1.00	\$7.00	0.000	0.010	\$0.07	0	\$717,500	\$0.07	2.4%	
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Bean Leaf Beetle	9,225,000	90.0%	102,500	1.0%	512,500	5.0%	1.00	\$7.00	0.100	0.050	\$0.35	535,600	\$8,407,900	\$0.82	28.3%	
Blister Beetle	717,500	7.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Corn Earworm	102,500	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Cutworms	205,000	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Dectes Stem Borer	2,050,000	20.0%	0	0.0%	1,025	0.0%	1.00	\$7.00	0.010	0.000	\$0.00	11,902	\$114,295	\$0.01	0.4%	
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Grape Colaspis	10,250	0.1%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Grasshopper	7,687,500	75.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Green Cloverworm	10,147,500	99.0%	1,025	0.0%	51,250	0.5%	1.00	\$7.00	0.000	0.005	\$0.04	1,178	\$369,355	\$0.04	1.2%	
Japanese Beetle	8,712,500	85.0%	0	0.0%	10,250	0.1%	1.00	\$7.00	0.000	0.001	\$0.01	0	\$71,750	\$0.01	0.2%	
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Lesser Cornstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Potato Leafhopper	1,537,500	15.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Saltmarsh Caterpillar	1,025,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Seedcorn maggot	51,250	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Slugs	512,500	5.0%	0	0.0%	1,025	0.0%	1.00	\$65.00	0.000	0.000	\$0.01	0	\$66,625	\$0.01	0.2%	
Soybean Aphid	820,000	8.0%	5,125	0.1%	10,250	0.1%	1.00	\$7.00	0.020	0.001	\$0.01	9,522	\$157,446	\$0.02	0.5%	
Soybean Looper	205,000	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Spider Mites	410,000	4.0%	20,500	0.2%	51,250	0.5%	1.25	\$12.00	0.200	0.006	\$0.08	47,609	\$1,197,230	\$0.12	4.0%	
Spotted Cucumber Beetle	6,150,000	60.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Stink Bugs (see box below)	6,150,000	60.0%	1,025	0.0%	5,125	0.1%	1.00	\$7.00	0.002	0.001	\$0.00	5,356	\$84,079	\$0.01	0.3%	
Thistle Caterpillar	2,050,000	20.0%	0	0.0%	1,025	0.0%	1.00	\$7.00	0.000	0.000	\$0.00	0	\$7,175	\$0.00	0.0%	
Threecornered Alfalfa Hopper	205,000	2.0%	0	0.0%	1,025	0.0%	1.00	\$7.00	0.000	0.000	\$0.00	0	\$7,175	\$0.00	0.0%	
Thrips	1,025,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%	
Other	2,050,000	20.0%	0	0.0%	1,025	0.0%	1.00	\$7.00	0.000	0.000	\$0.00	0	\$7,175	\$0.00	0.0%	
Automatic (no insects)	0	0.0%	0	0.0%	4,612,500	45.0%	1.00	\$4.00	0.000	0.450	\$1.80	0	\$18,450,000	\$1.80	62.2%	
TOTAL										0.524	\$2.36	0.10%	611,167	\$29,657,705	\$2.89	100.0%

SUMMARY DATA

State	IL
Year	2020
Total Acres	10,250,000
Yield/acre	58
Price/Bushel	\$9.00
% Acres Scouted	10
Scouting Fee/scouted acre	\$7.00
% Acres Insect Seed Trt.	50
Seed Trt Cost/treated ac	\$8.00

Total Bushels Harvested	594,500,000
Total Bushels Lost to Insects	611,167
Percent Yield Loss	0.10%
Yield w/o Insects	58.0596
Ave. # Spray Applications	0.524
Seed Treated Acres	5,125,000
Scouted Acres	1,025,000

	Total	Per Acre
Foliar Insecticides Costs	\$24,157,200	\$2.36
Seed Treatment Costs	\$41,000,000	\$4.00
Scouting costs	\$7,175,000	\$0.70
Total Costs	\$72,332,200	\$7.06
Yield Lost to insects	\$5,500,505	\$0.54
Total Losses + Costs	\$77,832,705	\$7.59

Species	% of SB
Brown	46
Brown Marmorated	7
Green	46
Redbanded	0
Redshouldered	1
Southern Green	0
Total (make it 100%)	100

Appendix 7. Kentucky soybean insect losses, 2020.

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	36,800	2.0%	36,800	2.0%	73,600	4.0%	1.00	\$7.70	1.000	0.040	\$0.31	0.02%	22,839	\$790,547	\$0.43	0.5%			
Banded Cucumber Beetle	55,200	3.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Bean Leaf Beetle	1,748,000	95.0%	184,000	10.0%	460,000	25.0%	1.75	\$7.70	3.000	0.438	\$3.37	2.85%	3,254,625	\$38,093,827	\$20.70	22.3%			
Blister Beetle	4	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%			
Corn Earworm	55,200	3.0%	18,400	1.0%	92,000	5.0%	1.00	\$7.20	1.000	0.050	\$0.36	0.03%	34,259	\$998,140	\$0.54	0.6%			
Cutworms	55,200	3.0%	36,800	2.0%	128,800	7.0%	1.00	\$7.70	1.000	0.070	\$0.54	0.03%	34,259	\$1,327,500	\$0.72	0.8%			
Dectes Stem Borer	644,000	35.0%	276,000	15.0%	460,000	25.0%	1.00	\$7.70	2.000	0.250	\$1.93	0.70%	799,382	\$11,375,940	\$6.18	6.7%			
Garden Webworms	18,400	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Grape Colaspis	36,800	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Grasshopper	64,400	3.5%	36,800	2.0%	36,800	2.0%	1.00	\$7.70	0.900	0.020	\$0.15	0.03%	35,972	\$635,887	\$0.35	0.4%			
Green Cloverworm	920,000	50.0%	110,400	6.0%	276,000	15.0%	0.50	\$8.25	1.000	0.075	\$0.62	0.50%	570,987	\$6,734,171	\$3.66	3.9%			
Japanese Beetle	644,000	35.0%	128,800	7.0%	55,200	3.0%	1.00	\$8.25	0.500	0.030	\$0.25	0.18%	199,845	\$2,413,885	\$1.31	1.4%			
Kudzu Bug	36,800	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Lesser Cornstalk Borer	3,680	0.2%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Mexican Bean Beetle	552	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%			
Potato Leafhopper	184	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%			
Saltmarsh Caterpillar	92,000	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Seedcorn maggot	36,800	2.0%	27,600	1.5%	36,800	2.0%	1.00	\$7.20	0.500	0.020	\$0.14	0.01%	11,420	\$376,873	\$0.20	0.2%			
Slugs	36,800	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Soybean Aphid	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%			
Soybean Looper	276,000	15.0%	128,800	7.0%	184,000	10.0%	0.70	\$8.25	0.500	0.070	\$0.58	0.08%	85,648	\$1,901,951	\$1.03	1.1%			
Spider Mites	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%			
Spotted Cucumber Beetle	368,000	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Stink Bugs (see box below)	1,840,000	100.0%	1,380,000	75.0%	1,380,000	75.0%	2.50	\$7.70	6.000	1.875	\$14.44	6.00%	6,851,842	\$93,713,056	\$50.93	54.9%			
Thistle Caterpillar	73,600	4.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Threecornered Alfalfa Hopper	1,748,000	95.0%	1,380,000	75.0%	184,000	10.0%	1.20	\$7.20	1.000	0.120	\$0.86	0.95%	1,084,875	\$12,221,536	\$6.64	7.2%			
Thrips	1,656,000	90.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
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	18,400	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Other	36,800	2.0%	18,400	1.0%	18,400	1.0%	1.00	\$8.50	0.500	0.010	\$0.09	0.01%	11,420	\$268,313	\$0.15	0.2%			
Automatic (no insects)	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%			
TOTAL													3,068	\$23.63	11.38%	12,997,374	\$170,851,627	\$92.85	100.0%

SUMMARY DATA

Data Input	
State	KY
Year	2020
Total Acres	1,840,000
Yield/acre	55
Price/Bushel	\$9.80
% Acres Scouted	58
Scouting Fee/scouted acre	\$7.00
% Acres Insect Seed Trt.	85
Seed Trt Cost/treated ac	\$6.00

Yield & Management Results	
Total Bushels Harvested	101,200,000
Total Bushels Lost to Insects	12,997,374
Percent Yield Loss	11.38%
Yield w/o Insects	62.0638
Ave. # Spray Applications	3.068
Seed Treated Acres	1,564,000
Scouted Acres	1,067,200

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$43,477,360	\$23.63
Seed Treatment Costs	\$9,384,000	\$5.10
Scouting costs	\$7,470,400	\$4.06
Total Costs	\$60,331,760	\$32.79
Yield Lost to insects	\$127,374,267	\$69.23
Total Losses + Costs	\$187,706,027	\$102.01

Stink Bug Composition	
Species	% of SB
Brown	19
Brown Marmorated	10
Green	67
Redbanded	0
Redshouldered	2
Southern Green	2
Total (make it 100%)	100

Appendix 8. Louisiana soybean insect losses, 2020.

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	400,000	40.0%	50,000	5.0%	45,000	4.5%	0.50	\$8.00	0.200	0.023	\$0.18	0.08%	48,389	\$690,502	\$0.69	1.1%			
Banded Cucumber Beetle	1,000,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Bean Leaf Beetle	10,000	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Blister Beetle	5,000	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Corn Earworm	400,000	40.0%	250,000	25.0%	250,000	25.0%	0.50	\$13.00	0.400	0.125	\$1.63	0.16%	96,778	\$2,646,003	\$2.65	4.4%			
Cutworms	8,000	0.8%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Dectes Stem Borer	600,000	60.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Garden Webworms	4,000	0.4%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Grape Colaspis	1,000,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Grasshopper	300,000	30.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Green Cloverworm	850,000	85.0%	150,000	15.0%	150,000	15.0%	0.50	\$8.00	0.200	0.075	\$0.60	0.17%	102,826	\$1,684,816	\$1.68	2.8%			
Japanese Beetle	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%			
Kudzu Bug	60,000	6.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Lesser Cornstalk Borer	3,000	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%			
Mexican Bean Beetle	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%			
Potato Leafhopper	1,000,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Saltmarsh Caterpillar	100,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Seedcorn maggot	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%			
Slugs	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%			
Soybean Aphid	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%			
Soybean Looper	1,000,000	100.0%	800,000	80.0%	800,000	80.0%	1.00	\$18.00	1.250	0.800	\$14.40	1.25%	756,075	\$22,376,588	\$22.38	36.9%			
Spider Mites	2,000	0.2%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Spotted Cucumber Beetle	1,000,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Stink Bugs (see box below)	1,000,000	100.0%	950,000	95.0%	900,000	90.0%	1.50	\$11.00	1.850	1.350	\$14.85	1.85%	1,118,991	\$26,655,350	\$26.66	44.0%			
Thistle Caterpillar	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%			
Threecornered Alfalfa Hopper	1,000,000	100.0%	150,000	15.0%	85,000	8.5%	0.50	\$8.00	0.100	0.043	\$0.34	0.10%	60,486	\$978,127	\$0.98	1.6%			
Thrips	1,000,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
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	1,000,000	100.0%	800,000	80.0%	600,000	60.0%	0.50	\$8.00	0.500	0.300	\$2.40	0.50%	302,430	\$5,590,635	\$5.59	9.2%			
Other	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%			
Automatic (no insects)	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%			
TOTAL													2,715	\$34.40	4.11%	2,485,974	\$60,622,021	\$60.62	100.0%

SUMMARY DATA

Data Input	
State	LA
Year	2020
Total Acres	1,000,000
Yield/acre	58
Price/Bushel	\$10.55
% Acres Scouted	90
Scouting Fee/scouted acre	\$9.00
% Acres Insect Seed Trt.	90
Seed Trt Cost/treated ac	\$8.50

Yield & Management Results	
Total Bushels Harvested	58,000,000
Total Bushels Lost to Insects	2,485,974
Percent Yield Loss	4.11%
Yield w/o Insects	60.4860
Ave. # Spray Applications	2.715
Seed Treated Acres	900,000
Scouted Acres	900,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$34,395,000	\$34.40
Seed Treatment Costs	\$7,650,000	\$7.65
Scouting costs	\$8,100,000	\$8.10
Total Costs	\$50,145,000	\$50.15
Yield Lost to insects	\$26,227,021	\$26.23
Total Losses + Costs	\$76,372,021	\$76.37

Stink Bug Composition	
Species	% of SB
Brown	5
Brown Marmorated	0
Green	12
Redbanded	65
Redshouldered	0
Southern Green	18
Total (make it 100%)	100

Appendix 9. Michigan soybean insect losses, 2020.

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	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Bean Leaf Beetle	1,642,500	75.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.200	0.000	\$0.00	158,433	\$1,584,326	\$0.72	26.5%		
Blister Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Corn Earworm	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Cutworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Dectes Stem Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Grasshopper	1,642,500	75.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Green Cloverworm	547,500	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Japanese Beetle	1,095,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.200	0.000	\$0.00	105,622	\$1,056,217	\$0.48	17.7%		
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Lesser Cornstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Potato Leafhopper	1,095,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Seedcorn maggot	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Slugs	219,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Soybean Aphid	1,642,500	75.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.100	0.000	\$0.00	79,216	\$792,163	\$0.36	13.3%		
Soybean Looper	547,500	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Spider Mites	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Spotted Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Stink Bugs (see box below)	1,642,500	75.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.200	0.000	\$0.00	158,433	\$1,584,326	\$0.72	26.5%		
Thistle Caterpillar	547,500	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Threecornered Alfalfa Hopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Thrips	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Automatic (no insects)	0	0.0%	0	0.0%	109,500	5.0%	1.00	\$8.75	0.000	0.050	\$0.44	0	\$958,125	\$0.44	16.0%		
TOTAL											0.050	\$0.44	0.48%	501,703	\$5,975,156	\$2.73	100.0%

SUMMARY DATA

State	MI
Year	2020
Total Acres	2,190,000
Yield/acre	48
Price/Bushel	\$10.00
% Acres Scouted	5
Scouting Fee/scouted acre	\$4.93
% Acres Insect Seed Trt.	75
Seed Trt Cost/treated ac	\$8.00

Total Bushels Harvested	105,120,000
Total Bushels Lost to Insects	501,703
Percent Yield Loss	0.48%
Yield w/o Insects	48.2291
Ave. # Spray Applications	0.050
Seed Treated Acres	1,642,500
Scouted Acres	109,500

	Total	Per Acre
Foliar Insecticides Costs	\$958,125	\$0.44
Seed Treatment Costs	\$13,140,000	\$6.00
Scouting costs	\$539,835	\$0.25
Total Costs	\$14,637,960	\$6.68
Yield Lost to insects	\$5,017,031	\$2.29
Total Losses + Costs	\$19,654,991	\$8.97

Species	% of SB
Brown	9
Brown Marmorated	90
Green	1
Redbanded	0
Redshouldered	0
Southern Green	0
Total (make it 100%)	100

Appendix 10. Minnesota soybean insect losses, 2020.

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	366,500	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Bean Leaf Beetle	3,665,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Blister Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Corn Earworm	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Cutworms	73,300	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Dectes Stem Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Garden Webworms	36,650	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Grape Colaspis	36,650	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Grasshopper	5,864,000	80.0%	7,330	0.1%	7,330	0.1%	1.00	\$9.00	0.010	0.001	\$0.01	28,852	\$368,914	\$0.05	1.6%			
Green Cloverworm	6,597,000	90.0%	36,650	0.5%	36,650	0.5%	1.00	\$9.00	0.010	0.005	\$0.05	32,458	\$670,662	\$0.09	3.0%			
Japanese Beetle	366,500	5.0%	7,330	0.1%	7,330	0.1%	1.00	\$9.00	0.010	0.001	\$0.01	1,803	\$84,904	\$0.01	0.4%			
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Lesser Cornstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Potato Leafhopper	7,330,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Saltmarsh Caterpillar	1,832,500	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Seedcorn maggot	2,199,000	30.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Slugs	366,500	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Soybean Aphid	7,110,100	97.0%	366,500	5.0%	366,500	5.0%	1.00	\$13.00	0.010	0.050	\$0.65	34,983	\$5,131,820	\$0.70	22.7%			
Soybean Looper	1,832,500	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Spider Mites	5,497,500	75.0%	36,650	0.5%	36,650	0.5%	1.10	\$12.00	0.500	0.006	\$0.07	1,352,428	\$14,684,278	\$2.00	64.9%			
Spotted Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Stink Bugs (see box below)	5,131,000	70.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Thistle Caterpillar	5,497,500	75.0%	73,300	1.0%	73,300	1.0%	1.00	\$9.00	0.010	0.010	\$0.09	27,049	\$943,710	\$0.13	4.2%			
Threecornered Alfalfa Hopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Thrips	7,330,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%			
Automatic (no insects)	0	0.0%	0	0.0%	366,500	5.0%	1.00	\$2.00	0.000	0.050	\$0.10	0	\$733,000	\$0.10	3.2%			
TOTAL												0.123	\$0.97	0.41%	1,477,573	\$22,617,288	\$3.09	100.0%

SUMMARY DATA

State	MN
Year	2020
Total Acres	7,330,000
Yield/acre	49
Price/Bushel	\$10.50
% Acres Scouted	75
Scouting Fee/scouted acre	\$3.50
% Acres Insect Seed Trt.	50
Seed Trt Cost/treated ac	\$8.00

Total Bushels Harvested	359,170,000
Total Bushels Lost to Insects	1,477,573
Percent Yield Loss	0.41%
Yield w/o Insects	49.2016
Ave. # Spray Applications	0.123
Seed Treated Acres	3,665,000
Scouted Acres	5,497,500

	Total	Per Acre
Foliar Insecticides Costs	\$7,102,770	\$0.97
Seed Treatment Costs	\$29,320,000	\$4.00
Scouting costs	\$19,241,250	\$2.63
Total Costs	\$55,664,020	\$7.59
Yield Lost to insects	\$15,514,518	\$2.12
Total Losses + Costs	\$71,178,538	\$9.71

Species	% of SB
Brown	93
Brown Marmorated	0
Green	5
Redbanded	0
Redshouldered	2
Southern Green	0
Total (make it 100%)	100

Appendix 11. Mississippi soybean insect losses, 2020.

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	62,700	3.0%	20,900	1.0%	20,900	1.0%	1.00	\$9.00	0.300	0.010	\$0.09	0.01%	10,856	\$294,489	\$0.14	0.2%
Banded Cucumber Beetle	1,254,000	60.0%	41,800	2.0%	2,090	0.1%	0.00	\$9.00	0.010	0.000	\$0.00	0.01%	7,237	\$70,926	\$0.03	0.1%
Bean Leaf Beetle	1,463,000	70.0%	104,500	5.0%	52,250	2.5%	1.00	\$11.00	0.200	0.025	\$0.28	0.14%	168,872	\$2,229,697	\$1.07	1.7%
Blister Beetle	10,450	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.010	0.000	\$0.00	0.00%	60	\$591	\$0.00	0.0%
Corn Earworm	836,000	40.0%	522,500	25.0%	418,000	20.0%	1.10	\$12.00	3.500	0.220	\$2.64	1.40%	1,688,722	\$22,067,075	\$10.56	16.6%
Cutworms	20,900	1.0%	2,090	0.1%	0	0.0%	0.00	\$0.00	0.100	0.000	\$0.00	0.00%	1,206	\$11,821	\$0.01	0.0%
Decays Stem Borer	1,149,500	55.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.200	0.000	\$0.00	0.11%	132,685	\$1,300,316	\$0.62	1.0%
Garden Webworms	20,900	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.150	0.000	\$0.00	0.00%	1,809	\$17,732	\$0.01	0.0%
Grape Colaspis	418,000	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.100	0.000	\$0.00	0.02%	24,125	\$236,421	\$0.11	0.2%
Grasshopper	836,000	40.0%	10,450	0.5%	6,270	0.3%	1.00	\$8.00	0.100	0.003	\$0.02	0.04%	48,249	\$523,002	\$0.25	0.4%
Green Cloverworm	1,881,000	90.0%	418,000	20.0%	355,300	17.0%	1.00	\$12.00	0.500	0.170	\$2.04	0.45%	542,803	\$9,583,074	\$4.59	7.2%
Japanese Beetle	41,800	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.010	0.000	\$0.00	0.00%	241	\$2,364	\$0.00	0.0%
Kudzu Bug	627,000	30.0%	313,500	15.0%	418,000	20.0%	1.00	\$9.00	0.010	0.200	\$1.80	0.00%	3,619	\$3,797,463	\$1.82	2.8%
Lesser Cornstalk Borer	2,090	0.1%	0	0.0%	0	0.0%	0.00	\$0.00	5.000	0.000	\$0.00	0.01%	6,031	\$59,105	\$0.03	0.0%
Mexican Bean Beetle	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%
Potato Leafhopper	104,500	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.010	0.000	\$0.00	0.00%	603	\$5,911	\$0.00	0.0%
Saltmarsh Caterpillar	209,000	10.0%	20,900	1.0%	2,090	0.1%	1.00	\$14.00	0.500	0.001	\$0.01	0.05%	60,311	\$620,313	\$0.30	0.5%
Seedcorn maggot	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%
Slugs	209,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	1.000	0.000	\$0.00	0.10%	120,623	\$1,182,105	\$0.57	0.9%
Soybean Aphid	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%
Soybean Looper	1,358,500	65.0%	836,000	40.0%	731,500	35.0%	1.00	\$16.00	1.500	0.350	\$5.60	0.98%	1,176,074	\$23,229,527	\$11.11	17.4%
Spider Mites	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.100	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spotted Cucumber Beetle	1,358,500	65.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.100	0.000	\$0.00	0.07%	78,405	\$768,368	\$0.37	0.6%
Stink Bugs (see box below)	1,985,500	95.0%	1,149,500	55.0%	1,358,500	65.0%	1.60	\$12.50	2.500	1.040	\$13.00	2.38%	2,864,796	\$55,245,002	\$26.43	41.5%
Thistle Caterpillar	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%
Threecornered Alfalfa Hopper	1,985,500	95.0%	10,450	0.5%	20,900	1.0%	1.00	\$8.50	0.010	0.010	\$0.09	0.01%	11,459	\$289,950	\$0.14	0.2%
Thrips	1,985,500	95.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
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	940,500	45.0%	418,000	20.0%	313,500	15.0%	1.00	\$12.00	1.500	0.150	\$1.80	0.68%	814,205	\$11,741,211	\$5.62	8.8%
Other	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%
Automatic (no insects)	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%
							TOTAL			2.179	\$27.37	6.44%	7,762,994	\$133,276,465	\$63.77	100.0%

SUMMARY DATA

Data Input	
State	MS
Year	2020
Total Acres	2,090,000
Yield/acre	54
Price/Bushel	\$9.80
% Acres Scouted	94
Scouting Fee/scouted acre	\$6.50
% Acres Insect Seed Trt.	80
Seed Trt Cost/treated ac	\$9.00

Yield & Management Results	
Total Bushels Harvested	112,860,000
Total Bushels Lost to Insects	7,762,994
Percent Yield Loss	6.44%
Yield w/o Insects	57.7144
Ave. # Spray Applications	2.179
Seed Treated Acres	1,672,000
Scouted Acres	1,964,600

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$57,199,120	\$27.37
Seed Treatment Costs	\$15,048,000	\$7.20
Scouting costs	\$12,769,900	\$6.11
Total Costs	\$85,017,020	\$40.68
Yield Lost to insects	\$76,077,345	\$36.40
Total Losses + Costs	\$161,094,365	\$77.08

Stink Bug Composition	
Species	% of SB
Brown	20
Brown Marmorated	1
Green	20
Redbanded	35
Redshouldered	1
Southern Green	23
Total (make it 100%)	100

Appendix 12. North Carolina soybean insect losses, 2020.

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	368,000	23.0%	80,000	5.0%	80,000	5.0%	1.00	\$12.00	0.500	0.050	\$0.60	0.12%	77,119	\$1,735,042	\$1.08	2.1%			
Banded Cucumber Beetle	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%			
Bean Leaf Beetle	1,168,000	73.0%	368,000	23.0%	480,000	30.0%	1.20	\$8.00	0.500	0.360	\$2.88	0.37%	244,768	\$7,067,915	\$4.42	8.5%			
Blister Beetle	480,000	30.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Corn Earworm	1,216,000	76.0%	1,104,000	69.0%	1,200,000	75.0%	1.20	\$12.00	5.000	0.900	\$10.80	3.80%	2,548,266	\$42,890,076	\$26.81	51.3%			
Cutworms	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%			
Dectes Stem Borer	1,200,000	75.0%	0	0.0%	16,000	1.0%	1.00	\$8.00	0.010	0.010	\$0.08	0.01%	5,029	\$178,546	\$0.11	0.2%			
Garden Webworms	1,600,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Grape Colaspis	576,000	36.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Grasshopper	320,000	20.0%	16,000	1.0%	16,000	1.0%	1.00	\$8.00	0.100	0.010	\$0.08	0.02%	13,412	\$262,790	\$0.16	0.3%			
Green Cloverworm	848,000	53.0%	96,000	6.0%	368,000	23.0%	1.00	\$8.00	0.100	0.230	\$1.84	0.05%	35,542	\$3,301,193	\$2.06	4.0%			
Japanese Beetle	448,000	28.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Kudzu Bug	576,000	36.0%	16,000	1.0%	0	0.0%	0.00	\$0.00	0.100	0.000	\$0.00	0.04%	24,141	\$242,622	\$0.15	0.3%			
Lesser Cornstalk Borer	16,000	1.0%	0	0.0%	32,000	2.0%	1.00	\$12.00	0.100	0.020	\$0.24	0.00%	671	\$390,739	\$0.24	0.5%			
Mexican Bean Beetle	224,000	14.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.500	0.000	\$0.00	0.07%	46,942	\$471,765	\$0.29	0.6%			
Potato Leafhopper	160,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Saltmarsh Caterpillar	192,000	12.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Seedcorn maggot	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%			
Slugs	1,600,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
Soybean Aphid	128,000	8.0%	0	0.0%	16,000	1.0%	1.00	\$8.00	0.100	0.010	\$0.08	0.01%	5,365	\$181,916	\$0.11	0.2%			
Soybean Looper	992,000	62.0%	320,000	20.0%	240,000	15.0%	1.00	\$12.00	1.000	0.150	\$1.80	0.62%	415,770	\$7,058,486	\$4.41	8.4%			
Spider Mites	16,000	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.500	0.000	\$0.00	0.01%	3,353	\$33,697	\$0.02	0.0%			
Spotted Cucumber Beetle	688,000	43.0%	112,000	7.0%	112,000	7.0%	1.50	\$8.00	0.100	0.105	\$0.84	0.04%	28,836	\$1,633,798	\$1.02	2.0%			
Stink Bugs (see box below)	1,264,000	79.0%	400,000	25.0%	560,000	35.0%	1.30	\$8.00	2.000	0.455	\$3.64	1.58%	1,059,542	\$16,472,400	\$10.30	19.7%			
Thistle Caterpillar	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%			
Threecornered Alfalfa Hopper	496,000	31.0%	128,000	8.0%	16,000	1.0%	1.00	\$8.00	0.500	0.010	\$0.08	0.16%	103,942	\$1,172,622	\$0.73	1.4%			
Thrips	1,600,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%			
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	224,000	14.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.500	0.000	\$0.00	0.07%	46,942	\$471,765	\$0.29	0.6%			
Other	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%			
Automatic (no insects)	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%			
TOTAL													2.310	\$22.96	6.95%	4,659,639	\$83,565,372	\$52.23	100.0%

SUMMARY DATA

Data Input	
State	NC
Year	2020
Total Acres	1,600,000
Yield/acre	39
Price/Bushel	\$10.05
% Acres Scouted	25
Scouting Fee/scouted acre	\$6.50
% Acres Insect Seed Trt.	33.5
Seed Trt Cost/treated ac	\$10.00

Yield & Management Results	
Total Bushels Harvested	62,400,000
Total Bushels Lost to Insects	4,659,639
Percent Yield Loss	6.95%
Yield w/o Insects	41.9123
Ave. # Spray Applications	2.310
Seed Treated Acres	536,000
Scouted Acres	400,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$36,736,000	\$22.96
Seed Treatment Costs	\$5,360,000	\$3.35
Scouting costs	\$2,600,000	\$1.63
Total Costs	\$44,696,000	\$27.94
Yield Lost to insects	\$46,829,372	\$29.27
Total Losses + Costs	\$91,525,372	\$57.20

Stink Bug Composition	
Species	% of SB
Brown	48
Brown Marmorated	1
Green	10
Redbanded	0
Redshouldered	1
Southern Green	40
Total (make it 100%)	100

Appendix 13. Ohio soybean insect losses, 2020.

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	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Bean Leaf Beetle	1,195,000	25.0%	95,600	2.0%	143,400	3.0%	1.00	\$15.00	1.000	0.030	\$0.45	707,245	\$8,869,827	\$1.86	13.6%		
Blister Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Corn Earworm	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Cutworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Dectes Stem Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Grasshopper	956,000	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Green Cloverworm	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Japanese Beetle	2,390,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Lesser Cornstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Potato Leafhopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Saltmarsh Caterpillar	478,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Seedcorn maggot	239,000	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Slugs	478,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Soybean Aphid	143,400	3.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Soybean Looper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Spider Mites	239,000	5.0%	143,400	3.0%	143,400	3.0%	1.00	\$15.00	5.000	0.030	\$0.45	707,245	\$8,869,827	\$1.86	13.6%		
Spotted Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Stink Bugs (see box below)	1,434,000	30.0%	956,000	20.0%	478,000	10.0%	1.00	\$15.00	5.000	0.100	\$1.50	4,243,469	\$47,482,959	\$9.93	72.8%		
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Threecornered Alfalfa Hopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Thrips	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Other	1,434,000	30.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
Automatic (no insects)	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%		
TOTAL											0.160	\$2.40	2.00%	5,657,959	\$65,222,612	\$13.64	100.0%

SUMMARY DATA

State	OH
Year	2020
Total Acres	4,780,000
Yield/acre	58
Price/Bushel	\$9.50
% Acres Scouted	20
Scouting Fee/scouted acre	\$10.00
% Acres Insect Seed Trt.	80
Seed Trt Cost/treated ac	\$7.00

Total Bushels Harvested	277,240,000
Total Bushels Lost to Insects	5,657,959
Percent Yield Loss	2.00%
Yield w/o Insects	59.1837
Ave. # Spray Applications	0.160
Seed Treated Acres	3,824,000
Scouted Acres	956,000

	Total	Per Acre
Foliar Insecticides Costs	\$11,472,000	\$2.40
Seed Treatment Costs	\$26,768,000	\$5.60
Scouting costs	\$9,560,000	\$2.00
Total Costs	\$47,800,000	\$10.00
Yield Lost to insects	\$53,750,612	\$11.24
Total Losses + Costs	\$101,550,612	\$21.24

Species	% of SB
Brown	20
Brown Marmorated	50
Green	25
Redbanded	0
Redshouldered	5
Southern Green	0
Total (make it 100%)	100

Appendix 14. Oklahoma soybean insect losses, 2020.

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%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Bean Leaf Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Blister Beetle	2,000	0.4%	0	0.0%	0	0.0%	0.00	\$0.00	0.400	0.000	\$0.00	0.00%	238	\$2,044	\$0.00	0.1%	
Corn Earw orm	6,000	1.1%	3,000	0.6%	2,000	0.4%	1.00	\$9.00	3.000	0.004	\$0.03	0.03%	5,349	\$63,998	\$0.12	1.7%	
Cutw orms	200	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%	
Dectes Stem Borer	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%	
Garden Webw orms	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%	
Grape Colaspis	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%	
Grasshopper	20,000	3.8%	1,000	0.2%	200	0.0%	1.00	\$9.00	2.000	0.000	\$0.00	0.08%	11,886	\$104,017	\$0.20	2.8%	
Green Cloverw orm	60,000	11.3%	20,000	3.8%	15,000	2.8%	1.00	\$9.00	8.000	0.028	\$0.25	0.91%	142,628	\$1,361,605	\$2.57	36.6%	
Japanese Beetle	100	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%	
Kudzu Bug	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%	
Lesser Cornstalk Borer	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%	
Mexican Bean Beetle	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%	
Potato Leafhopper	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%	
Saltmarsh Caterpillar	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%	
Seedcorn maggot	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%	
Slugs	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%	
Soybean Aphid	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%	
Soybean Looper	12,000	2.3%	2,000	0.4%	4,000	0.8%	1.00	\$9.00	6.000	0.008	\$0.07	0.14%	21,394	\$219,991	\$0.42	5.9%	
Spider Mites	2,000	0.4%	400	0.1%	100	0.0%	1.00	\$9.00	0.000	0.000	\$0.00	0.00%	0	\$900	\$0.00	0.0%	
Spotted Cucumber Beetle	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%	
Stink Bugs (see box below)	130,000	24.5%	50,000	9.4%	30,000	5.7%	1.00	\$9.00	5.000	0.057	\$0.51	1.23%	193,143	\$1,931,027	\$3.64	51.9%	
Thistle Caterpillar	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%	
Threecornered Alfalfa Hopper	3,000	0.6%	300	0.1%	250	0.0%	1.00	\$9.00	2.000	0.000	\$0.00	0.01%	1,783	\$17,583	\$0.03	0.5%	
Thrips	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%	
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	2,400	0.5%	250	0.0%	200	0.0%	1.00	\$9.00	3.000	0.000	\$0.00	0.01%	2,139	\$20,199	\$0.04	0.5%	
Other	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%	
Automatic (no insects)	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%	
TOTAL											0.098	\$0.88	2.40%	378,560	\$3,721,364	\$7.02	100.0%

SUMMARY DATA

State	OK
Year	2020
Total Acres	530,000
Yield/acre	29
Price/Bushel	\$8.60
% Acres Scouted	20
Scouting Fee/scouted acre	\$3.92
% Acres Insect Seed Trt.	25
Seed Trt Cost/treated ac	\$15.00

Total Bushels Harvested	15,370,000
Total Bushels Lost to Insects	378,560
Percent Yield Loss	2.40%
Yield w/o Insects	29.7143
Ave. # Spray Applications	0.098
Seed Treated Acres	132,500
Scouted Acres	106,000

	Total	Per Acre
Foliar Insecticides Costs	\$465,750	\$0.88
Seed Treatment Costs	\$1,987,500	\$3.75
Scouting costs	\$415,520	\$0.78
Total Costs	\$2,868,770	\$5.41
Yield Lost to insects	\$3,255,614	\$6.14
Total Losses + Costs	\$6,124,384	\$11.56

Species	% of SB
Brown	15
Brown Marmorated	0
Green	10
Redbanded	0
Redshouldered	0
Southern Green	75
Total (make it 100%)	100

Appendix 15. South Carolina soybean insect losses, 2020.

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	300,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Banded Cucumber Beetle	300,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	75,000	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Blister Beetle	75,000	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Corn Earworm	300,000	100.0%	75,000	25.0%	30,000	10.0%	1.00	\$10.00	1.000	0.100	\$1.00	118,001	\$1,680,606	\$5.60	8.9%
Cutworms	300,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Dectes Stem Borer	300,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Garden Webworms	75,000	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Grape Colaspis	30,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Grasshopper	300,000	100.0%	30,000	10.0%	15,000	5.0%	1.00	\$10.00	0.250	0.050	\$0.50	29,500	\$495,152	\$1.65	2.6%
Green Cloverworm	300,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Japanese Beetle	30,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Kudzu Bug	300,000	100.0%	270,000	90.0%	150,000	50.0%	1.00	\$10.00	2.000	0.500	\$5.00	236,001	\$4,261,213	\$14.20	22.7%
Lesser Cornstalk Borer	150,000	50.0%	15,000	5.0%	3,000	1.0%	1.00	\$10.00	0.250	0.010	\$0.10	14,750	\$202,576	\$0.68	1.1%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Potato Leafhopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	75,000	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Seedcorn maggot	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Slugs	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Soybean Looper	300,000	100.0%	150,000	50.0%	75,000	25.0%	1.00	\$15.00	1.000	0.250	\$3.75	118,001	\$2,505,606	\$8.35	13.3%
Spider Mites	300,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Spotted Cucumber Beetle	300,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	300,000	100.0%	270,000	90.0%	225,000	75.0%	1.50	\$10.00	3.000	1.125	\$11.25	354,002	\$7,516,819	\$25.06	40.0%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	300,000	100.0%	30,000	10.0%	3,000	1.0%	1.00	\$10.00	0.100	0.010	\$0.10	11,800	\$168,061	\$0.56	0.9%
Thrips	300,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Trochanter Mealybug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	300,000	100.0%	120,000	40.0%	60,000	20.0%	1.00	\$10.00	1.000	0.200	\$2.00	118,001	\$1,980,606	\$6.60	10.5%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0	\$0	\$0.00	0.0%
TOTAL							2.245	\$23.70			8.48%	1,000,055	\$18,810,639	\$62.70	100.0%

SUMMARY DATA

Data Input	
State	SC
Year	2020
Total Acres	300,000
Yield/acre	36
Price/Bushel	\$11.70
% Acres Scouted	25
Scouting Fee/scouted acre	\$7.00
% Acres Insect Seed Trt.	50
Seed Trt Cost/treated ac	\$12.00

Yield & Management Results	
Total Bushels Harvested	10,800,000
Total Bushels Lost to Insects	1,000,055
Percent Yield Loss	8.48%
Yield w/o Insects	39.3335
Ave. # Spray Applications	2.245
Seed Treated Acres	150,000
Scouted Acres	75,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$7,110,000	\$23.70
Seed Treatment Costs	\$1,800,000	\$6.00
Scouting costs	\$525,000	\$1.75
Total Costs	\$9,435,000	\$31.45
Yield Lost to insects	\$11,700,639	\$39.00
Total Losses + Costs	\$21,135,639	\$70.45

Stink Bug Composition	
Species	% of SB
Brown	10
Brown Marmorated	1
Green	5
Redbanded	23
Redshouldered	1
Southern Green	60
Total (make it 100%)	100

Appendix 16. Tennessee soybean insect losses, 2020.

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	49,500	3.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Cucumber Beetle	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%
Bean Leaf Beetle	1,650,000	100.0%	214,500	13.0%	214,500	13.0%	1.00	\$8.00	0.500	0.130	\$1.04	0.50%	415,784	\$5,665,947	\$3.43	15.5%
Blister Beetle	148,500	9.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Corn Earworm	693,000	42.0%	198,000	12.0%	165,000	10.0%	1.00	\$12.00	2.000	0.100	\$1.20	0.84%	698,517	\$8,615,910	\$5.22	23.5%
Cutworms	82,500	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Dectes Stem Borer	1,485,000	90.0%	0	0.0%	6,600	0.4%	1.00	\$7.50	0.200	0.004	\$0.03	0.18%	149,682	\$1,471,481	\$0.89	4.0%
Garden Webworms	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%
Grape Colaspis	330,000	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	660,000	40.0%	8,250	0.5%	8,250	0.5%	1.00	\$8.00	0.050	0.005	\$0.04	0.02%	16,631	\$223,998	\$0.14	0.6%
Green Cloverworm	1,650,000	100.0%	231,000	14.0%	198,000	12.0%	1.00	\$8.00	0.200	0.120	\$0.96	0.20%	166,314	\$3,163,979	\$1.92	8.6%
Japanese Beetle	1,155,000	70.0%	0	0.0%	8,250	0.5%	1.00	\$8.00	0.000	0.005	\$0.04	0.00%	0	\$66,000	\$0.04	0.2%
Kudzu Bug	990,000	60.0%	49,500	3.0%	49,500	3.0%	1.10	\$8.00	0.500	0.033	\$0.26	0.30%	249,470	\$2,805,568	\$1.70	7.7%
Lesser Cornstalk Borer	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%
Mexican Bean Beetle	16,500	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	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%
Saltmarsh Caterpillar	412,500	25.0%	0	0.0%	16,500	1.0%	1.00	\$9.00	0.000	0.010	\$0.09	0.00%	0	\$148,500	\$0.09	0.4%
Seedcorn maggot	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%
Slugs	313,500	19.0%	49,500	3.0%	0	0.0%	0.00	\$0.00	0.400	0.000	\$0.00	0.08%	63,199	\$600,392	\$0.36	1.6%
Soybean Aphid	33,000	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	330,000	20.0%	16,500	1.0%	16,500	1.0%	1.00	\$13.00	0.100	0.010	\$0.13	0.02%	16,631	\$372,498	\$0.23	1.0%
Spider Mites	165,000	10.0%	16,500	1.0%	8,250	0.5%	1.00	\$8.75	0.200	0.005	\$0.04	0.02%	16,631	\$230,185	\$0.14	0.6%
Spotted Cucumber Beetle	247,500	15.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	1,650,000	100.0%	412,500	25.0%	742,500	45.0%	1.20	\$7.75	0.500	0.540	\$4.19	0.50%	415,784	\$10,855,197	\$6.58	29.7%
Thistle Caterpillar	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%
Threecornered Alfalfa Hopper	1,650,000	100.0%	49,500	3.0%	33,000	2.0%	1.00	\$7.75	0.100	0.020	\$0.16	0.10%	83,157	\$1,045,739	\$0.63	2.9%
Thrips	1,650,000	100.0%	0	0.0%	1,650	0.1%	1.00	\$7.75	0.010	0.001	\$0.01	0.01%	8,316	\$91,786	\$0.06	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	132,000	8.0%	0	0.0%	16,500	1.0%	0.00	\$7.75	0.100	0.000	\$0.00	0.01%	6,653	\$63,199	\$0.04	0.2%
Other	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%
Automatic (no insects)	0	0.0%	0	0.0%	330,000	20.0%	1.20	\$3.00	0.000	0.240	\$0.72	0.00%	0	\$1,188,000	\$0.72	3.2%
TOTAL							1.223	\$8.91	2.77%	2,306,769	\$36,608,378	\$22.19	100.0%			

SUMMARY DATA

State	TN
Year	2020
Total Acres	1,650,000
Yield/acre	49
Price/Bushel	\$9.50
% Acres Scouted	40
Scouting Fee/scouted acre	\$7.50
% Acres Insect Seed Trt.	65
Seed Trt Cost/treated ac	\$7.65

Total Bushels Harvested	80,850,000
Total Bushels Lost to Insects	2,306,769
Percent Yield Loss	2.77%
Yield w/o Insects	50.3980
Ave. # Spray Applications	1.223
Seed Treated Acres	1,072,500
Scouted Acres	660,000

	Total	Per Acre
Foliar Insecticides Costs	\$14,694,075	\$8.91
Seed Treatment Costs	\$8,204,625	\$4.97
Scouting costs	\$4,950,000	\$3.00
Total Costs	\$27,848,700	\$16.88
Yield Lost to insects	\$21,914,303	\$13.28
Total Losses + Costs	\$49,763,003	\$30.16

Species	% of SB
Brown	16
Brown Marmorated	10
Green	72
Redbanded	0
Redshouldered	1
Southern Green	1
Total (make it 100%)	100

Appendix 17. Texas soybean insect losses, 2020.

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	600	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	1.000	0.000	\$0.00	0.01%	272	\$2,531	\$0.04	0.1%
Banded Cucumber Beetle	48,000	80.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	600	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Blister Beetle	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%
Corn Earworm	6,000	10.0%	3,000	5.0%	3,000	5.0%	1.00	\$18.00	1.000	0.050	\$0.90	0.10%	2,721	\$79,309	\$1.32	1.7%
Cutworms	600	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Dectes Stem Borer	1,500	2.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	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%
Grape Colaspis	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%
Grasshopper	30,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Green Cloverworm	36,000	60.0%	18,000	30.0%	6,000	10.0%	1.00	\$18.00	1.000	0.100	\$1.80	0.60%	16,328	\$259,854	\$4.33	5.6%
Japanese Beetle	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%
Kudzu Bug	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%
Lesser Cornstalk Borer	600	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	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%
Potato Leafhopper	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%
Saltmarsh Caterpillar	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%
Seedcorn Maggot	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%
Slugs	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%
Soybean Aphid	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%
Soybean Looper	36,000	60.0%	18,000	30.0%	6,000	10.0%	1.00	\$18.00	1.000	0.100	\$1.80	0.60%	16,328	\$259,854	\$4.33	5.6%
Spider Mites	1,200	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spotted Cucumber Beetle	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%
Stink Bugs (see box below)	54,000	90.0%	42,000	70.0%	30,000	50.0%	2.00	\$20.00	10.000	1.000	\$20.00	9.00%	244,926	\$3,477,809	\$57.96	74.4%
Thistle Caterpillar	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%
Threecornered Alfalfa Hopper	54,000	90.0%	24,000	40.0%	6,000	10.0%	1.00	\$18.00	1.000	0.100	\$1.80	0.90%	24,493	\$335,781	\$5.60	7.2%
Thrips	12,000	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
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	36,000	60.0%	0	0.0%	6,000	10.0%	1.00	\$18.00	1.000	0.100	\$1.80	0.60%	16,328	\$259,854	\$4.33	5.6%
Other	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%
Automatic (no insects)	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%
TOTAL									1.450		\$28.10	11.81%	321,397	\$4,674,992	\$77.92	100.0%

SUMMARY DATA

Data Input		Yield & Management Results		Economic Results			Stink Bug Composition	
State	TX	Total Bushels Harvested	2,400,000	Foliar Insecticides Costs	Total \$1,686,000	Per Acre \$28.10	Species	% of SB
Year	2020	Total Bushels Lost to Insects	321,397	Seed Treatment Costs	\$576,000	\$9.60	Brown	10
Total Acres	60,000	Percent Yield Loss	11.81%	Scouting costs	\$120,000	\$2.00	Brown Marmorated	0
Yield/acre	40	Yield w/o Insects	45.3566	Total Costs	\$2,382,000	\$39.70	Green	10
Price/Bushel	\$9.30	Ave. # Spray Applications	1.450	Yield Lost to insects	\$2,988,992	\$49.82	Redbanded	70
% Acres Scouted	20	Seed Treated Acres	48,000	Total Losses + Costs	\$5,370,992	\$89.52	Redshouldered	0
Scouting Fee/scouted acre	\$10.00	Scouted Acres	12,000				Southern Green	10
% Acres Insect Seed Trt.	80						Total (make it 100%)	100
Seed Trt Cost/treated ac	\$12.00							

Appendix 18. Virginia soybean insect losses, 2020.

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	180,000	30.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Cucumber Beetle	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%
Bean Leaf Beetle	120,000	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Blister Beetle	120,000	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Corn Earworm	300,000	50.0%	180,000	30.0%	360,000	60.0%	1.00	\$15.00	5.000	0.600	\$9.00	2.50%	783,769	\$16,168,983	\$26.95	30.2%
Cutworms	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%
Dectes Stem Borer	30,000	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	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%
Grape Colaspis	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%
Grasshopper	60,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Green Cloverworm	300,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Japanese Beetle	120,000	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	60,000	10.0%	6,000	1.0%	6,000	1.0%	1.00	\$10.00	0.000	0.010	\$0.10	0.00%	0	\$60,000	\$0.10	0.1%
Lesser Cornstalk Borer	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%
Mexican Bean Beetle	30,000	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	60,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	6,000	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcorn maggot	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%
Slugs	120,000	20.0%	30,000	5.0%	24,000	4.0%	1.00	\$20.00	5.000	0.040	\$0.80	1.00%	313,508	\$4,787,593	\$7.98	8.9%
Soybean Aphid	6,000	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	300,000	50.0%	60,000	10.0%	30,000	5.0%	1.00	\$15.00	3.000	0.050	\$0.75	1.50%	470,261	\$6,911,390	\$11.52	12.9%
Spider Mites	60,000	10.0%	30,000	5.0%	12,000	2.0%	1.00	\$20.00	0.000	0.020	\$0.40	0.00%	0	\$240,000	\$0.40	0.4%
Spotted Cucumber Beetle	300,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	510,000	85.0%	198,000	33.0%	300,000	50.0%	1.00	\$10.00	3.000	0.500	\$5.00	2.55%	799,444	\$13,984,362	\$23.31	26.1%
Thistle Caterpillar	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%
Threecornered Alfalfa Hopper	300,000	50.0%	120,000	20.0%	60,000	10.0%	1.00	\$10.00	5.000	0.100	\$1.00	2.50%	783,769	\$11,368,983	\$18.95	21.2%
Thrips	300,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
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	6,000	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Other	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%
Automatic (no insects)	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%
TOTAL							1.320	\$17.05	10.05%	3,150,750	\$53,521,311	\$89.20	100.0%			

SUMMARY DATA

Data Input	
State	VA
Year	2020
Total Acres	600,000
Yield/acre	47
Price/Bushel	\$13.74
% Acres Scouted	10
Scouting Fee/scouted acre	\$10.00
% Acres Insect Seed Trt.	10
Seed Trt Cost/treated ac	\$8.00

Yield & Management Results	
Total Bushels Harvested	28,200,000
Total Bushels Lost to Insects	3,150,750
Percent Yield Loss	10.05%
Yield w/o Insects	52.2513
Ave. # Spray Applications	1.320
Seed Treated Acres	60,000
Scouted Acres	60,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$10,230,000	\$17.05
Seed Treatment Costs	\$480,000	\$0.80
Scouting costs	\$600,000	\$1.00
Total Costs	\$11,310,000	\$18.85
Yield Lost to insects	\$43,291,311	\$72.15
Total Losses + Costs	\$54,601,311	\$91.00

Stink Bug Composition	
Species	% of SB
Brown	35
Brown Marmorated	15
Green	35
Redbanded	0
Redshouldered	0
Southern Green	15
Total (make it 100%)	100

Appendix 19. Wisconsin soybean insect losses, 2020.

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	9,900	0.5%	9,900	0.5%	9,900	0.5%	1.00	\$15.00	0.000	0.005	\$0.08	0.00%	0	\$148,500	\$0.08	0.5%
Banded Cucumber Beetle	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%
Bean Leaf Beetle	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%
Blister Beetle	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%
Corn Earworm	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%
Cutworms	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%
Dectes Stem Borer	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%
Garden Webworms	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%
Grape Colaspis	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%
Grasshopper	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%
Green Cloverworm	1,584,000	80.0%	49,500	2.5%	49,500	2.5%	1.00	\$15.00	0.000	0.025	\$0.38	0.00%	0	\$742,500	\$0.38	2.5%
Japanese Beetle	1,584,000	80.0%	49,500	2.5%	49,500	2.5%	1.00	\$15.00	1.000	0.025	\$0.38	0.80%	861,046	\$8,689,956	\$4.39	28.7%
Kudzu Bug	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%
Lesser Cornstalk Borer	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%
Mexican Bean Beetle	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%
Potato Leafhopper	1,782,000	90.0%	19,800	1.0%	19,800	1.0%	1.00	\$15.00	0.000	0.010	\$0.15	0.00%	0	\$297,000	\$0.15	1.0%
Saltmarsh Caterpillar	198,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcorn maggot	990,000	50.0%	99,000	5.0%	0	0.0%	0.00	\$0.00	1.000	0.000	\$0.00	0.50%	538,154	\$4,967,160	\$2.51	16.4%
Slugs	9,900	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	1,782,000	90.0%	99,000	5.0%	99,000	5.0%	1.00	\$15.00	1.000	0.050	\$0.75	0.90%	968,677	\$10,425,888	\$5.27	34.5%
Soybean Looper	396,000	20.0%	0	0.0%	0	0.0%	1.00	\$15.00	0.000	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	594,000	30.0%	99,000	5.0%	99,000	5.0%	1.00	\$20.00	1.000	0.050	\$1.00	0.30%	322,892	\$4,960,296	\$2.51	16.4%
Spotted Cucumber Beetle	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%
Stink Bugs (see box below)	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%
Thistle Caterpillar	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%
Threecornered Alfalfa Hopper	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%
Thrips	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%
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	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%
Other	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%
Automatic (no insects)	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%
TOTAL										0.165	\$2.73	2.50%	2,690,769	\$30,231,300	\$15.27	100.0%

SUMMARY DATA

Data Input	
State	WI
Year	2020
Total Acres	1,980,000
Yield/acre	53
Price/Bushel	\$9.23
% Acres Scouted	50
Scouting Fee/scouted acre	\$5.00
% Acres Insect Seed Trt.	40
Seed Trt Cost/treated ac	\$4.50

Yield & Management Results	
Total Bushels Harvested	104,940,000
Total Bushels Lost to Insects	2,690,769
Percent Yield Loss	2.50%
Yield w/o Insects	54.3590
Ave. # Spray Applications	0.165
Seed Treated Acres	792,000
Scouted Acres	990,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$5,395,500	\$2.73
Seed Treatment Costs	\$3,564,000	\$1.80
Scouting costs	\$4,950,000	\$2.50
Total Costs	\$13,909,500	\$7.03
Yield Lost to insects	\$24,835,800	\$12.54
Total Losses + Costs	\$38,745,300	\$19.57

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