



2021 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 2021 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 47% 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 \$18.53 per acre, with estimated crop losses to insects at \$17.83 per acre, making the 2021 total costs plus losses \$36.37 per acre. State estimates varied widely, with insect management costs in three states averaging less than \$10/ac, while averaging more than \$40/ac in four states. Similarly, the estimated yield losses from insects ranged from less than \$10/ac in four states to more than \$40/ac in six 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 17 other states beginning to make estimates between 2008 and 2020. 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. However, readers should be careful about making comparisons between individual states as these differences may be more of a function of the people making the estimates than biological differences in soybeans.

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 40.8 million acres (1 acre= 0.405 hectare), which represents 47% of the 86.3 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 \$36.37/ac for 2021, but this varied widely among states, ranging from \$8.51/ac in Michigan to \$100.21/ac in Texas. Average yield losses from insects were estimated at 2.62% (1.45 bu/ac or 97 kg/ha), but this also varied from 0.2% in Illinois to 12.2% in Virginia. The adoption levels 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 2021 in terms of lost yield (0.8%) and management costs (\$2.48/ac), comprising 28% of all combined insect costs + losses. This complex was considered the most economically damaging pest in 12 of the 18 reporting states. Across the nation, the primary species in the complex during 2021 were brown (*Euschistus* spp.) and green (*Chinavia hilaris*) stink bugs. However brown, green, 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 2021 which is consistent with previous years. Corn earworm was considered the costliest insect pest in Arkansas and North Carolina. Overall, it was responsible for 16% 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 next most damaging insect, responsible for 8% of total costs + losses. Other “insects” responsible for at least 1.5% of overall insect control costs + yield losses were twospotted spider mite, *Tetranychus urticae* (Acari: Tetranychidae) (6.2%); bean leaf beetle, *Ceratoma trifurcata* (Coleoptera: Chrysomelidae) (5.3%); the armyworm complex, primarily fall armyworm, *Spodoptera frugiperda* (Lepidoptera: Noctuidae) (5.0%); Japanese beetle, *Popillia japonica* (Coleoptera: Scarabaeidae) (4.8%); slugs (Gastropoda: Pulmonata) (3.7%); seedcorn maggot, *Delia platura* (Diptera: Anthomyiidae) (3.3%); velvetbean caterpillar, *Anticarsia gemmatilis* (Lepidoptera: Noctuidae) (2.2%); green cloverworm, *Hypena scabra* (Lepidoptera: Erebidae) (1.9%); and threecornered alfalfa hopper, *Spissistilus festinus* (Hemiptera: Membracidae) (1.9%).

This is the first year that soybean gall midge, *Resseliella maxima* (Diptera: Cecidomyiidae) was included in the insect loss estimates, being reported on just over 500,000 acres in 2021. This acreage is underreported since the current primary infestation areas of Nebraska and Iowa (McMechan et al. 2021) did not submit estimates for 2021.

State Highlights

Alabama. Overall insect costs + losses were similar to 2020 (Musser et al. 2021) at \$44.75/ac. The stink bug complex, primarily southern green stink bug, was the primary pest, accounting for 58% of insecticide applications and 84% of insect costs + losses. Velvetbean caterpillar was still the second costliest pest in

2021, but it was less abundant than in 2020, with management costs + losses dropping from \$9.92/ac in 2020 to \$1.99/ac in 2021, similar to its level in 2019 (Musser et al. 2020, 2021).

Arkansas. As has been true in previous years, corn earworm and stink bugs were the primary pests during 2021, combined accounting for 72% of all insect losses + costs. Overall losses + costs, and the number of insecticide applications increased slightly from 2020 to 2021 (Musser et al. 2021).

Delaware. Losses + costs for stink bugs and slugs were up sharply in 2021 compared to 2020 while corn earworm losses + costs decreased by more than 50% (Musser et al. 2021). This was the second consecutive year of sharp increases in damage due to stink bugs and slugs. However, these increases were offset by decreases in other insects, especially corn earworm, resulting in similar overall costs + losses to insects in 2020 and 2021 (Musser et al. 2021).

Georgia. As in 2020, stink bugs, soybean looper, and velvetbean caterpillar were the primary pests during 2021 (Musser et al. 2021). However, the total costs + losses attributed to these insects increased from \$18.13/ac in 2020 to \$28.08/ac in 2021.

Illinois. Insecticide seed treatments and automatic insecticide applications continued to be the largest insect-related expenses in 2021, together accounting for 65% of all insect-related costs + losses. Seedcorn maggot was the costliest insect pest, accounting for 15.6% of the total insect costs + losses. Most of this cost was due to replanting costs and reduced yield from either reduced plant population or lower yield potential for replanted soybeans. The “Other” category is for red-headed flea beetle, *Systema frontalis* (Coleoptera: Chrysomelidae), a minor defoliating insect which did not cause any damage in 2021.

Kentucky. Stink bugs and bean leaf beetles were the major pests as in previous years. Dectes stem borer also caused notable yield losses during 2021.

Louisiana. Consistent with previous years, stink bugs and soybean looper were the primary

pests, together responsible for 74% of the total costs + losses. Overall costs + losses of \$73.06/ac in 2021 were similar to 2020 at \$76.37/ac (Musser et al. 2021).

Michigan. Seedcorn maggot, which previously was not reported as an economic pest in Michigan, became the costliest pest in 2021, accounting for 68% of insect costs + losses. However, this increase was offset by decreases in other insect costs and losses, resulting in overall costs + losses being similar at \$8.51/ac in 2021 compared to \$8.97/ac in 2020 (Musser et al. 2021).

Minnesota. Spider mites was the costliest insect pest in 2021 as was the case in 2020 (Musser et al. 2021). Soybean aphid and grasshoppers were other notable pests during 2021.

Mississippi. As in previous years, the main three pests were stink bug, corn earworm and soybean looper. Saltmarsh caterpillar and fall armyworm both were more damaging in 2021 than in 2020 (Musser et al. 2021). Overall, the number of foliar insecticide applications and yield losses increased slightly from 2020 to 2021, totaling 2.5 insecticide applications and

\$93.87/ac in total costs + losses during 2021.

North Carolina. The number of foliar applications dropped back down to 2019 levels of 1.4 after rising to 2.3 in 2020 (Musser et al. 2020, 2021). However, this reduction in management costs was offset by an increase in estimated yield losses, resulting in \$60.06/ac in total costs + losses, similar to \$57.20/ac in 2020 (Musser et al. 2021). Corn earworm remained the primary pest, accounting for 53% of insect costs + losses, followed by stink bugs.

Ohio. Total costs + losses increased from \$21.24/ac in 2020 to \$38.81/ac in 2021 (Musser et al. 2021). Much of this increase was due to slugs, armyworms, and Japanese beetles, three pests that caused no losses in 2020, but together cost growers \$15.75/ac in management costs and yield losses in 2021.

Oklahoma. Stink bugs remained the primary pest, and damage by this pest was similar to 2020 (Musser et al. 2021), but grasshoppers emerged during 2021 as a substantial pest, increasing overall costs + losses from \$11.56/ac in 2020 to \$14.03/ac in 2021.

South Carolina. Stink bugs remained the costliest pest, accounting for 39% of all costs

Table 1. Soybean insect management practices by state, 2021.

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	296	55	35	1.29	16.39	28.36
Arkansas	3,040	80	75	2.29	40.39	39.13
Delaware	153	67	33	0.91	14.01	44.90
Georgia	130	40	20	0.94	10.20	24.90
Illinois	10,550	15	50	0.66	8.38	1.23
Kentucky	1,840	65	87	1.74	25.56	34.50
Louisiana	1,050	90	90	2.64	47.65	25.41
Michigan	2,140	17	75	0.02	6.80	1.71
Minnesota	7,650	75	50	0.47	11.12	3.84
Mississippi	2,230	94	80	2.49	43.29	50.58
North Carolina	1,630	25	31	1.40	18.67	41.99
Ohio	4,900	20	80	1.08	24.75	14.06
Oklahoma	550	19	30	0.08	6.00	8.04
South Carolina	390	25	50	2.60	37.50	40.76
Tennessee	1,470	40	65	1.28	17.19	23.03
Texas	102	50	90	1.86	43.79	56.42
Virginia	560	15	20	1.69	22.00	76.62
Wisconsin	2,070	50	40	0.52	11.30	36.87
Average (weighted by acres)		44	60	1.04	18.53	17.83

¹ 1 acre = 0.405 ha

+ losses. Corn earworm and soybean looper had higher costs + losses in 2021 (\$24.32/ac) than in 2020 (\$13.95/ac), while kudzu bug costs + losses decreased from \$14.20/ac in 2020 to \$10.23/ac in 2021 (Musser et al. 2021).

Tennessee. Stink bugs continued to be the primary pest with minimal change from 2020, but cost + losses for corn earworm decreased by 50% in 2021, while fall armyworm costs + losses increased from \$0.00/ac in 2020 to \$6.98/ac in 2021 (Musser et al. 2021).

Texas. Stink bugs, continued to be the primary insect pest, accounting for 70% of costs + losses. Soybean looper was the only other substantial insect pest during 2021.

Virginia. The top three insect pests remained corn earworm, stink bug and threecornered alfalfa hopper in 2021. However stink bug moved from 2nd costliest to costliest, while corn earworm fell from costliest to third most costly. Together, these three pests comprised 78% of all insect costs + losses. The number of insecticide applications continued to rise, going from 1.32 in 2020 to 1.69 in 2021 (Musser et al. 2021).

Wisconsin. Japanese beetle became the costliest pest in 2021, replacing soybean aphid. Losses + costs for Japanese beetle rose from \$4.39/ac in 2020 to \$16.55/ac in 2021. Seedcorn maggot also emerged as an expensive pest in 2021, costing growers \$13.74/ac in costs and losses. Overall costs + losses were up sharply from \$19.57/ac in 2020 to \$48.17/ac in 2021 (Musser et al. 2021).

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

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Appendix 1: Overall soybean insect losses from 18 reporting states, 2021.

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
Amyworm complex	9,028,700	22.1%	2,031,430	5.0%	1,979,355	4.9%	1.00	\$11.87	0.56	0.049	\$0.58	0.12%	2,788,883	\$57,965,412	\$1.42	5.0%
Banded Cucumber Beetle	3,528,650	8.6%	21,800	0.1%	2,180	0.0%	1.00	\$9.00	0.00	0.000	\$0.00	0.00%	9,626	\$138,248	\$0.00	0.0%
Bean Leaf Beetle	23,687,479	58.1%	1,784,205	4.4%	2,383,570	5.8%	0.97	\$10.00	0.24	0.057	\$0.57	0.14%	3,169,278	\$62,162,648	\$1.52	5.3%
Blister Beetle	1,688,950	4.1%	30,706	0.1%	30,706	0.1%	1.00	\$10.48	0.00	0.001	\$0.01	0.00%	60	\$322,389	\$0.01	0.0%
Com Earworm	6,610,370	16.2%	2,593,109	6.4%	3,048,814	7.5%	1.05	\$14.77	3.17	0.078	\$1.16	0.51%	11,573,586	\$189,927,912	\$4.65	16.3%
Cutworms	1,536,815	3.8%	229,030	0.6%	351,400	0.9%	0.79	\$8.93	0.05	0.007	\$0.06	0.00%	38,537	\$2,956,614	\$0.07	0.3%
Decates Stem Borer	9,618,699	23.6%	192,415	0.5%	420,790	1.0%	0.65	\$7.93	0.15	0.007	\$0.05	0.04%	804,123	\$12,079,202	\$0.30	1.0%
Garden Webwoms	368,240	0.9%	0	0.0%	0	0.0%	0.00	\$0.00	0.04	0.000	\$0.00	0.00%	8,423	\$103,800	\$0.00	0.0%
Grape Colaspis	5,666,375	13.9%	0	0.0%	0	0.0%	0.00	\$0.00	0.01	0.000	\$0.00	0.00%	36,099	\$444,856	\$0.01	0.0%
Grasshopper	23,969,250	58.7%	1,064,596	2.6%	767,407	1.9%	0.98	\$9.18	0.06	0.018	\$0.17	0.04%	799,960	\$16,771,430	\$0.41	1.4%
Green Cloverworm	25,876,005	63.4%	1,149,457	2.8%	1,310,407	3.2%	0.82	\$9.30	0.07	0.026	\$0.25	0.04%	986,573	\$22,166,100	\$0.54	1.9%
Japanese Beetle	15,168,306	37.2%	354,495	0.9%	1,729,822	4.2%	0.98	\$14.39	0.31	0.041	\$0.60	0.12%	2,602,345	\$56,440,230	\$1.38	4.8%
Kudzu Bug	3,848,383	9.4%	1,078,100	2.6%	701,500	1.7%	1.02	\$9.05	0.33	0.018	\$0.16	0.03%	711,408	\$15,237,744	\$0.37	1.3%
Lesser Comstalk Borer	232,930	0.6%	3,900	0.0%	0	0.0%	0.00	\$0.00	0.14	0.000	\$0.00	0.00%	17,679	\$217,871	\$0.01	0.0%
Mexican Bean Beetle	470,105	1.2%	3,290	0.0%	2,995	0.0%	1.00	\$8.73	0.41	0.000	\$0.00	0.00%	105,536	\$1,326,709	\$0.03	0.1%
Potato Leafhopper	15,595,950	38.2%	36,800	0.1%	3,040	0.0%	1.00	\$10.00	0.00	0.000	\$0.00	0.00%	802	\$37,814	\$0.00	0.0%
Saltmarsh Caterpillar	6,807,590	16.7%	749,760	1.8%	678,760	1.7%	1.00	\$13.57	0.16	0.017	\$0.23	0.03%	610,639	\$16,735,948	\$0.41	1.4%
Seedcorn Maggot	2,285,510	5.6%	269,660	0.7%	936,103	2.3%	1.00	\$11.20	1.81	0.023	\$0.26	0.10%	2,282,890	\$38,621,474	\$0.95	3.3%
Slugs	4,473,751	11.0%	809,125	1.5%	289,952	0.7%	1.00	\$25.55	1.16	0.007	\$0.18	0.13%	2,864,179	\$42,705,565	\$1.05	3.7%
Soybean Aphid	8,225,850	20.2%	42,100	0.1%	801,675	2.0%	1.00	\$9.14	0.08	0.020	\$0.18	0.02%	340,976	\$11,528,039	\$0.28	1.0%
Soybean Gall Midge	535,500	1.3%	459	0.0%	0	0.0%	0.00	\$0.00	0.50	0.000	\$0.00	0.01%	147,789	\$1,821,258	\$0.04	0.2%
Soybean Looper	9,068,989	22.2%	3,145,643	7.7%	3,127,296	7.7%	0.98	\$15.52	0.75	0.075	\$1.16	0.17%	3,767,693	\$93,850,041	\$2.30	8.0%
Spider Mites	8,738,370	21.4%	1,412,223	3.5%	1,712,801	4.2%	1.09	\$12.77	0.81	0.046	\$0.58	0.17%	3,888,973	\$71,760,201	\$1.76	6.2%
Spotted Cucumber Beetle	15,836,300	38.8%	38,100	0.1%	16,300	0.0%	1.00	\$8.00	0.04	0.000	\$0.00	0.01%	334,684	\$4,254,845	\$0.10	0.4%
Stink Bugs (see box below)	27,056,100	66.3%	7,041,770	17.3%	7,783,950	19.1%	1.27	\$10.23	1.21	0.242	\$2.48	0.80%	18,096,777	\$324,247,277	\$7.95	27.8%
Thistle Caterpillar	4,395,800	10.8%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	12,165,307	29.8%	675,450	1.7%	388,650	1.0%	0.98	\$8.97	0.23	0.009	\$0.08	0.07%	1,565,759	\$22,717,472	\$0.56	1.9%
Thrips	19,562,000	47.9%	14,750	0.0%	1,520	0.0%	1.00	\$7.75	0.00	0.000	\$0.00	0.00%	35,061	\$443,848	\$0.01	0.0%
Velvetbean Caterpillar	4,953,800	12.1%	1,140,155	2.8%	1,125,650	2.8%	0.76	\$9.16	0.54	0.021	\$0.19	0.07%	1,465,669	\$25,946,159	\$0.64	2.2%
Other	1,462,600	3.6%	8,354	0.0%	16,810	0.0%	1.00	\$8.18	0.00	0.000	\$0.00	0.00%	0	\$137,540	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	11,215,750	27.5%	1.01	\$6.49	0.00	0.277	\$1.80	0.00%	0	\$73,368,970	\$1.80	6.3%
										1.040	\$10.75	2.62%	59,053,806	\$1,166,437,616	\$28.59	100.0%

SUMMARY DATA

Data Input		Yield & Management Results		Economic Results		Stink Bug Composition	
State	Combined	Total Bushels Harvested	2,193,239,000	Total		Species	% of SB
Year	2021	Total Bushels Lost to Insects	59,053,806	Foliar Insecticides Costs	\$438,693,784	Brown	44.7
Total Acres	40,805,000	Percent Yield Loss	2.62%	Seed Treatment Costs	\$198,798,328	Brown Marmorated	10.8
Yield/acre	53.75	Yield w/o Insects	55.20	Scouting costs	\$118,702,833	Green	31.9
Price/Bushel	\$12.32	Ave. # Spray Applications	1.040	Total Costs	\$756,194,945	Redbanded	3.2
% Acres Scouted	44	Seed Treated Acres	24,279,599	Yield Lost to insects	\$727,743,831	Redshouldered	1.3
Scouting Fee/scouted acre	\$6.59	Scouted Acres	18,011,260	Total Losses + Costs	\$1,483,938,776	Southern Green	8.0
% Acres Insect Seed Trt.	60					Total	100.0
Seed Trt Cost/treated ac	\$8.19						

2021 SOYBEAN LOSSES

Appendix 2. Alabama soybean insect losses, 2021.

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
Amyworm complex	15,250	5.0%	3,050	1.0%	9,150	3.0%	1.00	\$12.00	0.00	0.030	\$0.36	0.00%	0	\$109,800	\$0.36	0.9%
Banded Cucumber Beetle	30,500	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	76,250	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Blister Beetle	9,150	3.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Corn Earworm	6,100	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	6,100	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Dectes Stem Borer	9,150	3.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	289,750	95.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Green Cloverworm	228,750	75.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Japanese Beetle	3,050	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	106,750	35.0%	45,750	15.0%	18,300	6.0%	1.00	\$8.00	0.50	0.060	\$0.48	0.18%	25,674	\$492,996	\$1.62	4.2%
Lesser Comstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	3,050	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	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	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gail Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	21,350	7.0%	18,300	6.0%	30,500	10.0%	1.00	\$10.00	0.25	0.100	\$1.00	0.02%	2,567	\$339,660	\$1.11	2.9%
Spider Mites	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spotted Cucumber Beetle	106,750	35.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	305,000	100.0%	259,250	85.0%	228,750	75.0%	1.00	\$8.00	4.00	0.750	\$6.00	4.00%	586,830	\$9,752,202	\$31.97	83.5%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	305,000	100.0%	24,400	8.0%	0	0.0%	0.00	\$0.00	0.10	0.000	\$0.00	0.10%	14,671	\$198,055	\$0.65	1.7%
Thrips	305,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	91,500	30.0%	30,500	10.0%	45,750	15.0%	1.00	\$10.00	0.25	0.150	\$1.50	0.08%	11,003	\$606,041	\$1.99	5.2%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	61,000	20.0%	1.00	\$3.00	0.00	0.200	\$0.60	0.00%	0	\$183,000	\$0.60	1.6%
TOTAL										1.290	\$9.94	4.37%	640,745	\$11,681,755	\$38.30	100.0%

SUMMARY DATA

Data Input	
State	AL
Year	2021
Total Acres	305,000
Yield/acre	46
Price/Bushel	\$13.50
% 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	14,030,000
Total Bushels Lost to Insects	640,745
Percent Yield Loss	4.37%
Yield w/o Insects	48.10
Ave. # Spray Applications	1.290
Seed Treated Acres	106,750
Scouted Acres	167,750

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$3,031,700	\$9.94
Seed Treatment Costs	\$960,750	\$3.15
Scouting costs	\$1,006,500	\$3.30
Total Costs	\$4,998,950	\$16.39
Yield Lost to insects	\$8,650,055	\$28.36
Total Losses + Costs	\$13,649,005	\$44.75

Stink Bug Composition	
Species	% of SB
Brown	20
Brown Marmorated	5
Green	7
Redbanded	3
Redshouldered	0
Southern Green	65
Total (make it 100%)	100

Appendix 3. Arkansas soybean insect losses, 2021.

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
Amyworm complex	2,979,200	98.0%	395,200	13.0%	486,400	16.0%	1.10	\$12.00	0.20	0.176	\$2.11	0.20%	323,149	\$10,330,584	\$3.40	5.1%
Banded Cucumber Beetle	152,000	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	3,040,000	100.0%	273,600	9.0%	304,000	10.0%	1.00	\$12.00	0.10	0.100	\$1.20	0.10%	164,872	\$5,642,951	\$1.86	2.8%
Blistar Beetle	152,000	5.0%	30,400	1.0%	30,400	1.0%	1.00	\$10.50	0.00	0.010	\$0.11	0.00%	0	\$319,200	\$0.11	0.2%
Corn Earworm	2,432,000	80.0%	820,800	27.0%	1,216,000	40.0%	1.10	\$16.00	3.50	0.440	\$7.04	2.80%	4,616,415	\$77,260,225	\$25.41	38.1%
Cutworms	395,200	13.0%	182,400	6.0%	182,400	6.0%	1.00	\$10.00	0.02	0.060	\$0.60	0.00%	4,287	\$1,875,869	\$0.62	0.9%
Decies Stem Borer	2,067,200	68.0%	0	0.0%	30,400	1.0%	1.00	\$10.00	0.01	0.010	\$0.10	0.01%	11,211	\$439,657	\$0.14	0.2%
Garden Webworms	30,400	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	3,040,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	3,040,000	100.0%	76,000	2.5%	82,080	2.7%	1.00	\$12.00	0.05	0.027	\$0.32	0.05%	82,436	\$1,982,435	\$0.65	1.0%
Green Cloverworm	3,040,000	100.0%	45,600	1.5%	152,000	5.0%	1.00	\$10.00	0.01	0.050	\$0.50	0.01%	16,487	\$1,719,495	\$0.57	0.8%
Japanese Beetle	212,800	7.0%	15,200	0.5%	15,200	0.5%	1.00	\$13.50	0.01	0.005	\$0.07	0.00%	1,154	\$219,165	\$0.07	0.1%
Kudzu Bug	401,280	13.2%	0	0.0%	0	0.0%	0.00	\$10.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Comstalk Borer	15,200	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	3,040,000	100.0%	0	0.0%	3,040	0.1%	1.00	\$10.00	0.00	0.001	\$0.01	0.00%	0	\$30,400	\$0.01	0.0%
Saltmarsh Caterpillar	2,888,000	95.0%	91,200	3.0%	121,600	4.0%	1.00	\$12.00	0.10	0.040	\$0.48	0.10%	156,628	\$3,354,403	\$1.10	1.7%
Seedcorn Maggot	182,400	6.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Slugs	638,400	21.0%	167,200	5.5%	15,200	0.5%	1.00	\$32.00	0.01	0.005	\$0.16	0.00%	3,462	\$528,294	\$0.17	0.3%
Soybean Aphid	152,000	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	2,280,000	75.0%	699,200	23.0%	760,000	25.0%	1.10	\$17.50	0.50	0.275	\$4.81	0.38%	618,270	\$22,111,066	\$7.27	10.9%
Spider Mites	121,600	4.0%	1,520	0.1%	6,080	0.2%	1.00	\$10.00	0.01	0.002	\$0.02	0.00%	659	\$68,780	\$0.02	0.0%
Spotted Cucumber Beetle	3,040,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	3,040,000	100.0%	1,428,800	47.0%	1,672,000	55.0%	1.20	\$11.50	2.30	0.660	\$7.59	2.30%	3,792,055	\$68,957,471	\$22.68	34.0%
Thistle Caterpillar	790,400	26.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	3,040,000	100.0%	30,400	1.0%	91,200	3.0%	1.00	\$10.00	0.01	0.030	\$0.30	0.01%	16,487	\$1,111,495	\$0.37	0.5%
Thrips	3,040,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	2,249,600	74.0%	273,600	9.0%	334,400	11.0%	1.00	\$10.50	0.02	0.110	\$1.16	0.01%	24,401	\$3,806,453	\$1.25	1.9%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	881,600	29.0%	1.00	\$3.50	0.00	0.290	\$1.02	0.00%	0	\$3,085,600	\$1.02	1.5%
TOTAL							2.291	\$27.59	5.96%	9,831,975	\$202,843,542	\$66.72	100.0%			

SUMMARY DATA

Data Input		Yield & Management Results		Economic Results		Stink Bug Composition	
State	AR	Total Bushels Harvested	155,040,000	Total Insecticides Costs	\$83,876,640	Species	% of SB
Year	2021	Total Bushels Lost to Insects	9,831,975	Seed Treatment Costs	\$18,240,000	Brown	40
Total Acres	3,040,000	Percent Yield Loss	5.96%	Scouting costs	\$20,672,000	Brown Marmorated	2
Yield/acre	51	Yield w/o Insects	54.23	Total Costs	\$122,788,640	Green	53
Price/Bushel	\$12.10	Ave. # Spray Applications	2.291	Yield Lost to insects	\$118,966,902	Redbanded	0
% Acres Scouted	80	Seed Treated Acres	2,280,000	Total Losses + Costs	\$241,755,542	Redshouldered	5
Scouting Fee/scouted acre	\$8.50	Scouted Acres	2,432,000			Southern Green	0
% Acres Insect Seed Trt.	75					Total (make it 100%)	100
Seed Trt Cost/treated ac	\$8.00						

2021 SOYBEAN LOSSES

Appendix 4. Delaware soybean insect losses, 2021.

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
Amyworm complex	22,950	15.0%	1,530	1.0%	1,530	1.0%	1.00	\$8.50	0.03	0.010	\$0.09	0.00%	375	\$17,854	\$0.12	0.2%
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	87,689	57.3%	5,355	3.5%	6,120	4.0%	1.00	\$8.50	1.10	0.040	\$0.34	0.63%	52,531	\$731,246	\$4.78	9.2%
Blister Beetle	68,850	45.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	47,430	31.0%	11,934	7.8%	5,814	3.8%	1.00	\$14.00	2.15	0.038	\$0.53	0.67%	55,548	\$799,632	\$5.23	10.1%
Cutworms	2,295	1.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.05	0.000	\$0.00	0.00%	63	\$808	\$0.01	0.0%
Decates Stem Borer	54,009	35.3%	8,415	5.5%	1,530	1.0%	1.00	\$8.50	1.75	0.010	\$0.09	0.62%	51,485	\$678,707	\$4.44	8.6%
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	11,475	7.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	114,750	75.0%	7,956	5.2%	15,912	10.4%	1.00	\$8.50	0.30	0.104	\$0.88	0.23%	18,752	\$377,717	\$2.47	4.8%
Green Cloverworm	104,805	68.5%	6,732	4.4%	6,732	4.4%	1.00	\$8.50	0.60	0.044	\$0.37	0.41%	34,254	\$500,125	\$3.27	6.3%
Japanese Beetle	69,156	45.2%	18,360	12.0%	28,917	18.9%	1.00	\$8.50	0.25	0.189	\$1.61	0.11%	9,418	\$367,566	\$2.40	4.6%
Kudzu Bug	153	0.1%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Cornstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	5,355	3.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	84,150	55.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	22,950	15.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcorn maggot	10,710	7.0%	3,060	2.0%	153	0.1%	1.00	\$52.00	0.75	0.001	\$0.05	0.05%	4,375	\$64,531	\$0.42	0.8%
Slugs	40,851	26.7%	19,125	12.5%	5,202	3.4%	1.00	\$42.00	6.00	0.034	\$1.43	1.60%	133,515	\$1,944,836	\$12.71	24.5%
Soybean Aphid	38,250	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	32,589	21.3%	3,213	2.1%	3,366	2.2%	1.00	\$13.50	0.30	0.022	\$0.30	0.06%	5,326	\$114,301	\$0.75	1.4%
Spider Mites	38,250	25.0%	3,978	2.6%	2,601	1.7%	1.00	\$10.00	0.45	0.017	\$0.17	0.11%	9,376	\$147,243	\$0.96	1.9%
Spotted Cucumber Beetle	15,300	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	114,750	75.0%	21,420	14.0%	7,650	5.0%	1.00	\$8.75	2.50	0.050	\$0.44	1.88%	156,268	\$2,087,481	\$13.84	26.3%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecomered Alfalfa Hopper	10,557	6.9%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	153,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	53,550	35.0%	1.00	\$1.75	0.00	0.350	\$0.61	0.00%	0	\$93,713	\$0.61	1.2%
TOTAL									0.909		\$6.90	6.37%	531,286	\$7,925,760	\$51.80	100.0%

SUMMARY DATA

Data Input	
State	DE
Year	2021
Total Acres	153,000
Yield/acre	51
Price/Bushel	\$12.93
% Acres Scouted	67
Scouting Fee/scouted acre	\$8.00
% Acres Insect Seed Trt.	33.3
Seed Trt Cost/treated ac	\$5.25

Yield & Management Results	
Total Bushels Harvested	7,803,000
Total Bushels Lost to Insects	531,286
Percent Yield Loss	6.37%
Yield w/o Insects	54.47
Ave. # Spray Applications	0.909
Seed Treated Acres	50,949
Scouted Acres	102,510

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$1,056,236	\$6.90
Seed Treatment Costs	\$267,482	\$1.75
Scouting costs	\$820,080	\$5.36
Total Costs	\$2,143,798	\$14.01
Yield Lost to insects	\$6,869,524	\$44.90
Total Losses + Costs	\$9,013,322	\$58.91

Stink Bug Composition	
Species	% of SB
Brown	44
Brown Marmorated	15
Green	41
Redbanded	0
Redshouldered	0
Southern Green	0
Total (make it 100%)	100

Appendix 5. Georgia soybean insect losses, 2021.

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
Amyworm complex	6,750	5.0%	1,350	1.0%	1,350	1.0%	1.00	\$6.00	0.01	0.010	\$0.06	0.00%	32	\$8,505	\$0.06	0.2%
Banded Cucumber Beetle	33,750	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Blister Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	2,700	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Dectes Stem Borer	2,700	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	12,150	9.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Green Cloverworm	13,500	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Japanese Beetle	1,350	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	67,500	50.0%	8,775	6.5%	8,100	6.0%	1.00	\$6.00	1.00	0.060	\$0.36	0.50%	32,395	\$453,532	\$3.36	10.7%
Lesser Comstalk Borer	1,350	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	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	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	108,000	80.0%	20,250	15.0%	16,200	12.0%	1.00	\$14.00	1.50	0.120	\$1.68	1.20%	77,747	\$1,198,636	\$8.88	28.2%
Spider Mites	1,350	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spotted Cucumber Beetle	1,350	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	114,750	85.0%	37,800	28.0%	33,750	25.0%	1.00	\$6.00	2.00	0.250	\$1.50	1.70%	110,141	\$1,579,268	\$11.70	37.1%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	9,450	7.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	67,500	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	101,250	75.0%	9,450	7.0%	67,500	50.0%	1.00	\$6.00	1.00	0.500	\$3.00	0.75%	48,592	\$1,012,398	\$7.50	23.8%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL							0.940	\$6.60	4.15%	268,907	\$4,252,338	\$31.50	100.0%			

SUMMARY DATA

Data Input	
State	GA
Year	2021
Total Acres	135,000
Yield/acre	46
Price/Bushel	\$12.50
% Acres Scouted	40
Scouting Fee/scouted acre	\$6.00
% Acres Insect Seed Trt.	20
Seed Trt Cost/treated ac	\$6.00

Yield & Management Results	
Total Bushels Harvested	6,210,000
Total Bushels Lost to Insects	268,907
Percent Yield Loss	4.15%
Yield w/o Insects	47.99
Ave. # Spray Applications	0.940
Seed Treated Acres	27,000
Scouted Acres	54,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$891,000	\$6.60
Seed Treatment Costs	\$162,000	\$1.20
Scouting costs	\$324,000	\$2.40
Total Costs	\$1,377,000	\$10.20
Yield Lost to insects	\$3,361,338	\$24.90
Total Losses + Costs	\$4,738,338	\$35.10

Stink Bug Composition	
Species	% of SB
Brown	8
Brown Marmorated	5
Green	1
Redbanded	5
Redshouldered	1
Southern Green	80
Total (make it 100%)	100

2021 SOYBEAN LOSSES

Appendix 6. Illinois soybean insect losses, 2021.

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
Amyworm complex	2,110,000	20.0%	0	0.0%	211,000	2.0%	1.00	\$7.00	0.00	0.020	\$0.14	0.00%	0	\$1,477,000	\$0.14	3.1%
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	8,967,500	85.0%	52,750	0.5%	316,500	3.0%	1.00	\$7.00	0.05	0.030	\$0.21	0.04%	287,417	\$5,693,246	\$0.54	11.8%
Blister Beetle	738,500	7.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	105,500	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	211,000	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Decies Stem Borer	2,637,500	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.04	0.000	\$0.00	0.01%	67,628	\$818,293	\$0.08	1.7%
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	105,500	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	8,440,000	80.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Green Cloverworm	10,444,500	99.0%	0	0.0%	105,500	1.0%	1.00	\$7.00	0.00	0.010	\$0.07	0.00%	0	\$738,500	\$0.07	1.5%
Japanese Beetle	8,440,000	80.0%	0	0.0%	52,750	0.5%	1.00	\$7.00	0.00	0.005	\$0.04	0.00%	0	\$369,250	\$0.04	0.8%
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Comstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	1,582,500	15.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	1,582,500	15.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcom Maggot	1,055,000	10.0%	52,750	0.5%	52,750	0.5%	1.00	\$65.00	0.50	0.005	\$0.33	0.05%	338,138	\$7,520,215	\$0.71	15.6%
Slugs	527,500	5.0%	10,550	0.1%	10,550	0.1%	1.00	\$65.00	0.50	0.001	\$0.07	0.03%	169,069	\$2,731,483	\$0.26	5.7%
Soybean Aphid	527,500	5.0%	0	0.0%	5,275	0.1%	1.00	\$7.00	0.00	0.001	\$0.00	0.00%	0	\$36,925	\$0.00	0.1%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	527,500	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	527,500	5.0%	52,750	0.5%	52,750	0.5%	1.00	\$12.00	0.50	0.005	\$0.06	0.03%	169,069	\$2,678,733	\$0.25	5.6%
Spotted Cucumber Beetle	6,330,000	60.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	6,857,500	65.0%	105,500	1.0%	316,500	3.0%	1.00	\$7.00	0.01	0.030	\$0.21	0.01%	43,958	\$2,747,391	\$0.26	5.7%
Thistle Caterpillar	1,582,500	15.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	527,500	5.0%	0	0.0%	10,550	0.1%	1.00	\$7.00	0.00	0.001	\$0.01	0.00%	0	\$73,850	\$0.01	0.2%
Thrips	1,055,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Other	1,055,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	5,802,500	55.0%	1.00	\$4.00	0.00	0.550	\$2.20	0.00%	0	\$23,210,000	\$2.20	48.3%
TOTAL									0.658		\$3.33	0.16%	1,075,278	\$48,094,885	\$4.56	100.0%

SUMMARY DATA

Data Input	
State	IL
Year	2021
Total Acres	10,550,000
Yield/acre	64
Price/Bushel	\$12.10
% Acres Scouted	15
Scouting Fee/scouted acre	\$7.00
% Acres Insect Seed Trt.	50
Seed Trt Cost/treated ac	\$8.00

Yield & Management Results	
Total Bushels Harvested	675,200,000
Total Bushels Lost to Insects	1,075,278
Percent Yield Loss	0.16%
Yield w/o Insects	64.10
Ave. # Spray Applications	0.658
Seed Treated Acres	5,275,000
Scouted Acres	1,582,500

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$35,084,025	\$3.33
Seed Treatment Costs	\$42,200,000	\$4.00
Scouting costs	\$11,077,500	\$1.05
Total Costs	\$88,361,525	\$8.38
Yield Lost to insects	\$13,010,860	\$1.23
Total Losses + Costs	\$101,372,385	\$9.61

Stink Bug Composition	
Species	% of SB
Brown	44
Brown Marmorated	10
Green	44
Redbanded	0
Redshouldered	1
Southern Green	1
Total (make it 100%)	100

Appendix 7. Kentucky soybean insect losses. 2021.

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
Amyworm complex	184,000	10.0%	184,000	10.0%	147,200	8.0%	0.50	\$12.00	1.00	0.040	\$0.48	0.10%	108,331	\$2,183,167	\$1.19	2.4%
Banded Cucumber Beetle	36,800	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	1,840,000	100.0%	552,000	30.0%	368,000	20.0%	0.80	\$7.75	1.20	0.160	\$1.24	1.20%	1,299,967	\$17,881,206	\$9.72	20.0%
Blister Beetle	18,400	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	55,200	3.0%	0	0.0%	0	0.0%	0.80	\$7.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	55,200	3.0%	36,800	2.0%	147,200	8.0%	0.50	\$7.75	0.25	0.040	\$0.31	0.01%	8,125	\$667,898	\$0.36	0.7%
Decies Stem Borer	828,000	45.0%	184,000	10.0%	368,000	20.0%	0.60	\$7.75	1.00	0.120	\$0.93	0.45%	487,488	\$7,561,052	\$4.11	8.4%
Garden Webworms	36,800	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	92,000	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	92,000	5.0%	55,200	3.0%	36,800	2.0%	0.60	\$7.75	0.03	0.012	\$0.09	0.00%	1,354	\$187,370	\$0.10	0.2%
Green Cloverworm	920,000	50.0%	110,400	6.0%	147,200	8.0%	0.60	\$7.75	0.01	0.048	\$0.37	0.01%	5,417	\$749,478	\$0.41	0.8%
Japanese Beetle	736,000	40.0%	92,000	5.0%	36,800	2.0%	0.00	\$8.00	0.01	0.000	\$0.00	0.00%	4,333	\$51,999	\$0.03	0.1%
Kudzu Bug	36,800	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Comstalk Borer	1,840	0.1%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	9,200	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	18,400	1.0%	36,800	2.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcorn Maggot	73,600	4.0%	92,000	5.0%	55,200	3.0%	1.00	\$7.75	0.50	0.030	\$0.23	0.02%	21,666	\$687,793	\$0.37	0.8%
Slugs	147,200	8.0%	147,200	8.0%	73,600	4.0%	1.00	\$20.00	0.35	0.040	\$0.80	0.03%	30,333	\$1,835,991	\$1.00	2.1%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	368,000	20.0%	0	0.0%	368,000	20.0%	0.60	\$7.75	0.25	0.120	\$0.93	0.05%	54,165	\$2,361,184	\$1.28	2.6%
Spider Mites	27,600	1.5%	27,600	1.5%	920	0.1%	1.00	\$15.00	0.00	0.001	\$0.01	0.00%	0	\$13,800	\$0.01	0.0%
Spotted Cucumber Beetle	368,000	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	1,840,000	100.0%	1,472,000	80.0%	1,380,000	75.0%	1.50	\$7.75	3.00	1.125	\$8.72	3.00%	3,249,918	\$55,041,514	\$29.91	61.5%
Thistle Caterpillar	110,400	6.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	1,656,000	90.0%	184,000	10.0%	18,400	1.0%	0.60	\$7.75	0.00	0.006	\$0.05	0.00%	0	\$85,560	\$0.05	0.1%
Thrips	1,656,000	90.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.02	0.000	\$0.00	0.02%	19,500	\$233,994	\$0.13	0.3%
Velvetbean Caterpillar	36,800	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL										1.742	\$14.16	4.88%	5,290,595	\$89,542,005	\$48.66	100.0%

SUMMARY DATA

Data Input	
State	KY
Year	2021
Total Acres	1,840,000
Yield/acre	56
Price/Bushel	\$12.00
% Acres Scouted	65
Scouting Fee/scouted acre	\$7.50
% Acres Insect Seed Trt.	87
Seed Trt Cost/treated ac	\$7.50

Yield & Management Results	
Total Bushels Harvested	103,040,000
Total Bushels Lost to Insects	5,290,595
Percent Yield Loss	4.88%
Yield w/o Insects	58.88
Ave. # Spray Applications	1.742
Seed Treated Acres	1,600,800
Scouted Acres	1,198,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$26,054,860	\$14.16
Seed Treatment Costs	\$12,006,000	\$6.53
Scouting costs	\$8,970,000	\$4.88
Total Costs	\$47,030,860	\$25.56
Yield Lost to insects	\$63,487,145	\$34.50
Total Losses + Costs	\$110,518,005	\$60.06

Stink Bug Composition	
Species	% of SB
Brown	12
Brown Marmorated	35
Green	50
Redbanded	0
Redshouldered	1
Southern Green	2
Total (make it 100%)	100

2021 SOYBEAN LOSSES

Appendix 8. Louisiana soybean insect losses, 2021.

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
Amyworm complex	636,000	60.0%	265,000	25.0%	265,000	25.0%	1.00	\$8.00	0.20	0.250	\$2.00	0.12%	68,650	\$3,005,581	\$2.84	4.9%
Banded Cucumber Beetle	1,060,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	10,600	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Blister Beetle	5,300	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	424,000	40.0%	212,000	20.0%	212,000	20.0%	1.00	\$15.00	0.40	0.200	\$3.00	0.16%	91,533	\$4,360,775	\$4.11	7.2%
Cutworms	10,600	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Decles Stem Borer	530,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	4,240	0.4%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	1,060,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	318,000	30.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Green Cloverworm	530,000	50.0%	349,800	33.0%	349,800	33.0%	0.50	\$8.00	0.20	0.165	\$1.32	0.10%	57,208	\$2,137,184	\$2.02	3.5%
Japanese Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	106,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Comstalk Borer	1,060	0.1%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	1,060,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	106,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcom Maggot	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	1,007,000	95.0%	795,000	75.0%	636,000	60.0%	1.00	\$18.00	1.10	0.600	\$10.80	1.05%	597,825	\$19,159,937	\$18.08	31.5%
Spider Mites	1,060	0.1%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spotted Cucumber Beetle	1,060,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	1,060,000	100.0%	901,000	85.0%	795,000	75.0%	1.50	\$11.00	1.75	1.125	\$12.38	1.75%	1,001,142	\$26,032,228	\$24.56	42.9%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	1,060,000	100.0%	159,000	15.0%	53,000	5.0%	1.00	\$8.00	0.10	0.050	\$0.40	0.10%	57,208	\$1,161,984	\$1.10	1.9%
Thrips	1,060,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	795,000	75.0%	530,000	50.0%	530,000	50.0%	0.50	\$8.00	0.50	0.250	\$2.00	0.38%	214,530	\$4,887,442	\$4.61	8.0%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL							2.640	\$31.90	3.65%	2,088,095	\$60,745,132	\$57.31	100.0%			

SUMMARY DATA

Data Input	
State	LA
Year	2021
Total Acres	1,060,000
Yield/acre	52
Price/Bushel	\$12.90
% 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	55,120,000
Total Bushels Lost to Insects	2,088,095
Percent Yield Loss	3.65%
Yield w/o Insects	53.97
Ave. # Spray Applications	2.640
Seed Treated Acres	954,000
Scouted Acres	954,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$33,808,700	\$31.90
Seed Treatment Costs	\$8,109,000	\$7.65
Scouting costs	\$8,586,000	\$8.10
Total Costs	\$50,503,700	\$47.65
Yield Lost to insects	\$26,936,432	\$25.41
Total Losses + Costs	\$77,440,132	\$73.06

Stink Bug Composition	
Species	% of SB
Brown	25
Brown Marmorated	0
Green	10
Redbanded	45
Redshouldered	0
Southern Green	20
Total (make it 100%)	100

Appendix 9. Michigan soybean insect losses, 2021.

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
Amyworm complex	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	1,605,000	75.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.01	0.000	\$0.00	0.01%	8,207	\$102,593	\$0.05	2.5%
Blister Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Decles Stem Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	1,070,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Green Cloverworm	535,000	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Japanese Beetle	1,070,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Comstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	1,605,000	75.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	2,140	0.1%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcom Maggot	42,800	2.0%	10,700	0.5%	0	0.0%	0.00	\$0.00	10.00	0.000	\$0.00	0.20%	218,865	\$2,735,818	\$1.28	67.8%
Slugs	107,000	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	1,605,000	75.0%	21,400	1.0%	10,700	0.5%	1.00	\$8.75	0.07	0.005	\$0.04	0.05%	57,452	\$811,777	\$0.38	20.1%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	535,000	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spotted Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	1,605,000	75.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.01	0.000	\$0.00	0.01%	8,207	\$102,593	\$0.05	2.5%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	32,100	1.5%	1.00	\$8.75	0.00	0.015	\$0.13	0.00%	0	\$280,875	\$0.13	7.0%
TOTAL									0.020		\$0.18	0.27%	292,733	\$4,033,657	\$1.88	100.0%

SUMMARY DATA

Data Input	
State	MI
Year	2021
Total Acres	2,140,000
Yield/acre	51
Price/Bushel	\$12.50
% Acres Scouted	17
Scouting Fee/scouted acre	\$3.70
% Acres Insect Seed Trt.	75
Seed Trt Cost/treated ac	\$8.00

Yield & Management Results	
Total Bushels Harvested	109,140,000
Total Bushels Lost to Insects	292,733
Percent Yield Loss	0.27%
Yield w/o Insects	51.14
Ave. # Spray Applications	0.020
Seed Treated Acres	1,605,000
Scouted Acres	363,800

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$374,500	\$0.18
Seed Treatment Costs	\$12,840,000	\$6.00
Scouting costs	\$1,346,060	\$0.63
Total Costs	\$14,560,560	\$6.80
Yield Lost to insects	\$3,659,157	\$1.71
Total Losses + Costs	\$18,219,717	\$8.51

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

2021 SOYBEAN LOSSES

Appendix 10. Minnesota soybean insect losses, 2021.

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
Amyworm complex	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	2,295,000	30.0%	114,750	1.5%	191,250	2.5%	1.00	\$9.00	0.10	0.025	\$0.23	0.03%	108,599	\$3,024,440	\$0.40	4.7%
Blister Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	76,500	1.0%	7,650	0.1%	0	0.0%	1.00	\$0.00	0.20	0.000	\$0.00	0.00%	7,240	\$86,879	\$0.01	0.1%
Decates Stem Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	6,885,000	90.0%	535,500	7.0%	535,500	7.0%	1.00	\$9.00	0.10	0.070	\$0.83	0.09%	325,797	\$8,729,069	\$1.14	13.7%
Green Cloverworm	3,825,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Japanese Beetle	382,500	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Comstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	6,885,000	90.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcorn Maggot	153,000	2.0%	7,650	0.1%	0	0.0%	0.00	\$0.00	0.20	0.000	\$0.00	0.00%	14,480	\$173,759	\$0.02	0.3%
Slugs	76,500	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	4,972,500	65.0%	0	0.0%	765,000	10.0%	1.00	\$9.00	0.10	0.100	\$0.90	0.07%	235,298	\$9,708,577	\$1.27	15.2%
Soybean Gall Midge	535,500	7.0%	459	0.0%	0	0.0%	0.00	\$0.00	0.50	0.000	\$0.00	0.04%	126,699	\$1,520,388	\$0.20	2.4%
Soybean Looper	229,500	3.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	6,885,000	90.0%	1,147,500	15.0%	1,530,000	20.0%	1.10	\$12.00	0.50	0.220	\$2.84	0.45%	1,628,987	\$39,743,843	\$5.20	62.3%
Spotted Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	3,825,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thistle Caterpillar	1,912,500	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	6,885,000	90.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	382,500	5.0%	1.00	\$2.00	0.00	0.050	\$0.10	0.00%	0	\$765,000	\$0.10	1.2%
TOTAL							0.465	\$4.50	0.68%	2,447,100	\$63,751,955	\$8.33	100.0%			

SUMMARY DATA

Data Input	
State	MN
Year	2021
Total Acres	7,650,000
Yield/acre	47
Price/Bushel	\$12.00
% Acres Scouted	75
Scouting Fee/scouted acre	\$3.50
% Acres Insect Seed Trt.	50
Seed Trt Cost/treated ac	\$8.00

Yield & Management Results	
Total Bushels Harvested	359,550,000
Total Bushels Lost to Insects	2,447,100
Percent Yield Loss	0.68%
Yield w/o Insects	47.32
Ave. # Spray Applications	0.465
Seed Treated Acres	3,825,000
Scouted Acres	5,737,500

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$34,386,750	\$4.50
Seed Treatment Costs	\$30,600,000	\$4.00
Scouting costs	\$20,081,250	\$2.63
Total Costs	\$85,068,000	\$11.12
Yield Lost to insects	\$29,365,205	\$3.84
Total Losses + Costs	\$114,433,205	\$14.96

Stink Bug Composition	
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, 2021.

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
Amyworm complex	783,000	35.0%	436,000	20.0%	436,000	20.0%	1.00	\$12.00	0.25	0.200	\$2.40	0.09%	111,044	\$6,564,532	\$3.01	3.7%
Banded Cucumber Beetle	1,744,000	80.0%	21,800	1.0%	2,180	0.1%	1.00	\$9.00	0.01	0.001	\$0.01	0.01%	10,153	\$141,451	\$0.06	0.1%
Bean Leaf Beetle	1,635,000	75.0%	109,000	5.0%	109,000	5.0%	1.00	\$11.00	0.20	0.050	\$0.55	0.15%	190,362	\$3,483,341	\$1.60	2.0%
Blister Beetle	10,900	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.01	0.000	\$0.00	0.00%	63	\$761	\$0.00	0.0%
Com Earworm	1,090,000	50.0%	654,000	30.0%	327,000	15.0%	1.10	\$19.00	3.50	0.165	\$3.14	1.75%	2,220,887	\$33,484,940	\$15.36	19.0%
Cutworms	327,000	15.0%	2,180	0.1%	21,800	1.0%	1.00	\$8.00	0.10	0.010	\$0.08	0.02%	19,036	\$402,834	\$0.18	0.2%
Decies Stem Borer	1,308,000	60.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.10	0.000	\$0.00	0.06%	76,145	\$913,736	\$0.42	0.5%
Garden Webworms	152,600	7.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.10	0.000	\$0.00	0.01%	8,884	\$106,603	\$0.05	0.1%
Grape Colaspis	654,000	30.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.10	0.000	\$0.00	0.03%	38,072	\$456,868	\$0.21	0.3%
Grasshopper	1,308,000	60.0%	327,000	15.0%	54,500	2.5%	1.00	\$8.00	0.10	0.025	\$0.20	0.06%	76,145	\$1,349,736	\$0.62	0.8%
Green Cloverworm	1,982,000	90.0%	436,000	20.0%	370,600	17.0%	1.00	\$12.00	0.25	0.100	\$2.04	0.23%	285,543	\$7,873,711	\$3.61	4.5%
Japanese Beetle	43,600	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.01	0.000	\$0.00	0.00%	254	\$3,046	\$0.00	0.0%
Kudzu Bug	1,090,000	50.0%	545,000	25.0%	327,000	15.0%	1.00	\$9.00	0.01	0.150	\$1.35	0.01%	6,345	\$3,019,145	\$1.38	1.7%
Lesser Comstalk Borer	2,180	0.1%	0	0.0%	0	0.0%	0.00	\$0.00	5.00	0.000	\$0.00	0.01%	6,345	\$76,145	\$0.03	0.0%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	109,000	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.01	0.000	\$0.00	0.00%	635	\$7,614	\$0.00	0.0%
Saltmarsh Caterpillar	1,090,000	50.0%	654,000	30.0%	545,000	25.0%	1.00	\$14.00	0.75	0.250	\$3.50	0.38%	475,904	\$13,340,851	\$6.12	7.6%
Seedcom Maggot	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Slugs	261,600	12.0%	21,800	1.0%	0	0.0%	0.00	\$0.00	1.00	0.000	\$0.00	0.12%	152,289	\$1,827,472	\$0.84	1.0%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	1,635,000	75.0%	1,090,000	50.0%	872,000	40.0%	1.00	\$16.00	1.50	0.400	\$6.40	1.13%	1,427,713	\$31,084,554	\$14.26	17.6%
Spider Mites	43,600	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.10	0.000	\$0.00	0.00%	2,538	\$30,458	\$0.01	0.0%
Spotted Cucumber Beetle	1,744,000	80.0%	21,800	1.0%	0	0.0%	0.00	\$0.00	0.10	0.000	\$0.00	0.08%	101,526	\$1,218,315	\$0.56	0.7%
Stink Bugs (see box below)	2,071,000	95.0%	872,000	40.0%	1,090,000	50.0%	1.40	\$12.50	2.50	0.700	\$8.75	2.38%	3,014,060	\$55,243,725	\$25.34	31.3%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	2,071,000	95.0%	21,800	1.0%	43,600	2.0%	1.00	\$8.50	0.01	0.020	\$0.17	0.01%	12,056	\$515,275	\$0.24	0.3%
Thrips	2,071,000	95.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	1,090,000	50.0%	218,000	10.0%	109,000	5.0%	1.00	\$12.00	1.50	0.050	\$0.60	0.75%	951,809	\$12,729,703	\$5.84	7.2%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	654,000	30.0%	1.00	\$4.00	0.00	0.300	\$1.20	0.00%	0	\$2,616,000	\$1.20	1.5%
TOTAL							2.491	\$30.38	7.24%	9,187,808	\$176,490,816	\$80.96	100.0%			

SUMMARY DATA

Data Input	
State	MS
Year	2021
Total Acres	2,180,000
Yield/acre	54
Price/Bushel	\$12.00
% Acres Scouted	94
Scouting Fee/scouted acre	\$6.50
% Acres Insect Seed Trt.	80
Seed Trt Cost/treated ac	\$8.50

Yield & Management Results	
Total Bushels Harvested	117,720,000
Total Bushels Lost to Insects	9,187,808
Percent Yield Loss	7.24%
Yield w/o Insects	58.21
Ave. # Spray Applications	2.491
Seed Treated Acres	1,744,000
Scouted Acres	2,049,200

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$66,237,120	\$30.38
Seed Treatment Costs	\$14,824,000	\$6.80
Scouting costs	\$13,319,800	\$6.11
Total Costs	\$94,380,920	\$43.29
Yield Lost to insects	\$110,253,696	\$50.58
Total Losses + Costs	\$204,634,616	\$93.87

Stink Bug Composition	
Species	% of SB
Brown	35
Brown Marmorated	1
Green	28
Redbanded	15
Redshouldered	1
Southern Green	20
Total (make it 100%)	100

2021 SOYBEAN LOSSES

Appendix 12. North Carolina soybean insect losses, 2021.

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
Amyworm complex	391,200	24.0%	16,300	1.0%	8,150	0.5%	1.00	\$12.00	0.50	0.005	\$0.06	0.12%	84,397	\$1,223,656	\$0.75	1.3%
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	1,352,900	83.0%	423,800	26.0%	537,900	33.0%	1.00	\$8.00	0.50	0.330	\$2.64	0.42%	291,873	\$8,196,786	\$5.03	9.0%
Blister Beetle	358,600	22.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	1,271,400	78.0%	652,000	40.0%	978,000	60.0%	1.00	\$12.00	5.00	0.600	\$7.20	3.90%	2,742,903	\$48,326,326	\$29.65	53.0%
Cutworms	16,300	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Decates Stem Borer	374,900	23.0%	0	0.0%	16,300	1.0%	1.00	\$8.00	0.01	0.010	\$0.08	0.00%	1,618	\$151,979	\$0.09	0.2%
Garden Webworms	16,300	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	358,600	22.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	505,300	31.0%	16,300	1.0%	16,300	1.0%	1.00	\$8.00	0.10	0.010	\$0.08	0.03%	21,803	\$421,246	\$0.26	0.5%
Green Cloverworm	1,141,000	70.0%	16,300	1.0%	16,300	1.0%	1.00	\$8.00	0.10	0.010	\$0.08	0.07%	49,232	\$787,149	\$0.48	0.9%
Japanese Beetle	277,100	17.0%	16,300	1.0%	16,300	1.0%	1.00	\$8.00	0.00	0.010	\$0.08	0.00%	0	\$130,400	\$0.08	0.1%
Kudzu Bug	374,900	23.0%	32,600	2.0%	16,300	1.0%	1.00	\$8.00	0.10	0.010	\$0.08	0.02%	16,176	\$346,189	\$0.21	0.4%
Lesser Comstalk Borer	16,300	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.10	0.000	\$0.00	0.00%	703	\$9,382	\$0.01	0.0%
Mexican Bean Beetle	260,800	16.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.50	0.000	\$0.00	0.08%	56,265	\$750,571	\$0.46	0.8%
Potato Leafhopper	815,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	260,800	16.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Slugs	1,222,500	75.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	81,500	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.10	0.000	\$0.00	0.01%	3,517	\$46,911	\$0.03	0.1%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	1,222,500	75.0%	211,900	13.0%	148,700	9.0%	1.00	\$12.00	0.50	0.090	\$1.08	0.38%	263,741	\$5,278,701	\$3.24	5.8%
Spider Mites	179,300	11.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.50	0.000	\$0.00	0.06%	38,682	\$516,017	\$0.32	0.6%
Spotted Cucumber Beetle	863,900	53.0%	16,300	1.0%	16,300	1.0%	1.00	\$8.00	0.50	0.010	\$0.08	0.27%	186,377	\$2,616,666	\$1.61	2.9%
Stink Bugs (see box below)	1,515,900	93.0%	309,700	19.0%	456,400	28.0%	1.00	\$8.00	2.00	0.280	\$2.24	1.86%	1,308,154	\$21,101,971	\$12.95	23.1%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	1,026,900	63.0%	81,500	5.0%	32,600	2.0%	1.00	\$8.00	0.10	0.020	\$0.16	0.06%	44,308	\$851,874	\$0.52	0.9%
Thrips	815,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	97,800	6.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.50	0.000	\$0.00	0.03%	21,099	\$281,464	\$0.17	0.3%
Other	326,000	20.0%	8,150	0.5%	16,300	1.0%	1.00	\$8.00	0.00	0.010	\$0.08	0.00%	0	\$130,400	\$0.08	0.1%
Automatic (no insects)	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL							1.395	\$13.94	7.30%	5,130,846	\$91,167,689	\$55.93	100.0%			

SUMMARY DATA

Data Input	
State	NC
Year	2021
Total Acres	1,630,000
Yield/acre	40
Price/Bushel	\$13.34
% Acres Scouted	25
Scouting Fee/scouted acre	\$6.50
% Acres Insect Seed Trt.	31
Seed Trt Cost/treated ac	\$10.00

Yield & Management Results	
Total Bushels Harvested	65,200,000
Total Bushels Lost to Insects	5,130,846
Percent Yield Loss	7.30%
Yield w/o Insects	43.15
Ave. # Spray Applications	1.395
Seed Treated Acres	505,300
Scouted Acres	407,500

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$22,722,200	\$13.94
Seed Treatment Costs	\$5,053,000	\$3.10
Scouting costs	\$2,648,750	\$1.63
Total Costs	\$30,423,950	\$18.67
Yield Lost to insects	\$68,445,489	\$41.99
Total Losses + Costs	\$98,869,439	\$60.66

Stink Bug Composition	
Species	% of SB
Brown	37
Brown Marmorated	1
Green	15
Redbanded	0
Redshouldered	0
Southern Green	47
Total (make it 100%)	100

Appendix 13. Ohio soybean insect losses, 2021.

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
Amyworm complex	490,000	10.0%	490,000	10.0%	245,000	5.0%	1.00	\$20.00	5.00	0.050	\$1.00	0.50%	1,410,341	\$23,516,505	\$4.80	15.6%
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	980,000	20.0%	98,000	2.0%	490,000	10.0%	1.00	\$15.00	1.00	0.100	\$1.50	0.20%	564,137	\$14,796,602	\$3.02	9.8%
Blister Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Dectes Stem Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	245,000	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Green Cloverworm	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Japanese Beetle	1,960,000	40.0%	147,000	3.0%	1,470,000	30.0%	1.00	\$15.00	0.00	0.300	\$4.50	0.00%	0	\$22,050,000	\$4.50	14.6%
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Cornstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	147,000	3.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcom Maggot	147,000	3.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Slugs	735,000	15.0%	147,000	3.0%	147,000	3.0%	1.00	\$25.00	5.00	0.030	\$0.75	0.75%	2,115,512	\$31,599,758	\$6.45	20.9%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spotted Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	1,960,000	40.0%	490,000	10.0%	490,000	10.0%	1.00	\$15.00	1.00	0.100	\$1.50	0.40%	1,128,273	\$22,243,204	\$4.54	14.7%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	2,450,000	50.0%	1.00	\$15.00	0.00	0.500	\$7.50	0.00%	0	\$36,750,000	\$7.50	24.3%
TOTAL									1.080		\$16.75	1.85%	5,218,263	\$150,956,070	\$30.81	100.0%

SUMMARY DATA

Data Input	
State	OH
Year	2021
Total Acres	4,900,000
Yield/acre	56.5
Price/Bushel	\$13.20
% Acres Scouted	20
Scouting Fee/scouted acre	\$10.00
% Acres Insect Seed Trt.	80
Seed Trt Cost/treated ac	\$7.50

Yield & Management Results	
Total Bushels Harvested	276,850,000
Total Bushels Lost to Insects	5,218,263
Percent Yield Loss	1.85%
Yield w/o Insects	57.56
Ave. # Spray Applications	1.080
Seed Treated Acres	3,920,000
Scouted Acres	980,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$82,075,000	\$16.75
Seed Treatment Costs	\$29,400,000	\$6.00
Scouting costs	\$9,800,000	\$2.00
Total Costs	\$121,275,000	\$24.75
Yield Lost to insects	\$68,881,070	\$14.06
Total Losses + Costs	\$190,156,070	\$38.81

Stink Bug Composition	
Species	% of SB
Brown	20
Brown Marmorated	55
Green	25
Redbanded	0
Redshouldered	0
Southern Green	0
Total (make it 100%)	100

2021 SOYBEAN LOSSES

Appendix 14. Oklahoma soybean insect losses, 2021.

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
Amyworm complex	16,500	3.0%	11,000	2.0%	1,375	0.3%	1.00	\$9.10	1.00	0.003	\$0.02	0.03%	3,897	\$63,173	\$0.11	1.3%
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Blister Beetle	2,750	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	33,000	6.0%	4,675	0.9%	3,300	0.6%	1.00	\$9.10	4.00	0.006	\$0.05	0.24%	31,176	\$435,316	\$0.79	9.0%
Cutworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Decles Stem Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	137,500	25.0%	1,650	0.3%	825	0.2%	1.00	\$9.10	2.00	0.002	\$0.01	0.50%	64,950	\$851,854	\$1.55	17.6%
Green Cloverworm	61,050	11.1%	15,950	2.9%	8,800	1.6%	1.00	\$9.10	6.00	0.016	\$0.15	0.67%	86,513	\$1,204,750	\$2.19	24.9%
Japanese Beetle	2,750	0.5%	495	0.1%	275	0.1%	1.00	\$9.10	0.40	0.001	\$0.00	0.00%	260	\$5,880	\$0.01	0.1%
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Comstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcom Maggot	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	11,550	2.1%	3,300	0.6%	2,750	0.5%	1.00	\$9.10	4.00	0.005	\$0.05	0.08%	10,912	\$166,875	\$0.30	3.5%
Spider Mites	1,100	0.2%	275	0.1%	275	0.1%	1.00	\$9.10	2.00	0.001	\$0.00	0.00%	520	\$9,257	\$0.02	0.2%
Spotted Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	145,200	26.4%	44,000	8.0%	27,500	5.0%	1.00	\$9.10	4.00	0.050	\$0.46	1.06%	137,174	\$2,033,510	\$3.70	42.1%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecomered Alfalfa Hopper	4,400	0.8%	550	0.1%	0	0.0%	0.00	\$0.00	1.00	0.000	\$0.00	0.01%	1,039	\$13,510	\$0.02	0.3%
Thrips	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	4,950	0.9%	605	0.1%	0	0.0%	0.00	\$0.00	3.00	0.000	\$0.00	0.03%	3,507	\$45,595	\$0.08	0.9%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL									0.082		\$0.75	2.62%	339,947	\$4,829,720	\$8.78	100.0%

SUMMARY DATA

Data Input	
State	OK
Year	2021
Total Acres	550,000
Yield/acre	23
Price/Bushel	\$13.00
% Acres Scouted	19
Scouting Fee/scouted acre	\$3.95
% Acres Insect Seed Trt.	30
Seed Trt Cost/treated ac	\$15.00

Yield & Management Results	
Total Bushels Harvested	12,650,000
Total Bushels Lost to Insects	339,947
Percent Yield Loss	2.62%
Yield w/o Insects	23.62
Ave. # Spray Applications	0.082
Seed Treated Acres	165,000
Scouted Acres	104,500

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$410,410	\$0.75
Seed Treatment Costs	\$2,475,000	\$4.50
Scouting costs	\$412,775	\$0.75
Total Costs	\$3,298,185	\$6.00
Yield Lost to insects	\$4,419,310	\$8.04
Total Losses + Costs	\$7,717,495	\$14.03

Stink Bug Composition	
Species	% of SB
Brown	30
Brown Marmorated	0
Green	15
Redbanded	0
Redshouldered	0
Southern Green	55
Total (make it 100%)	100

Appendix 15. South Carolina soybean insect losses, 2021.

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
Amywom complex	390,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Cucumber Beetle	390,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	97,500	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Blister Beetle	39,000	10.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	390,000	100.0%	117,000	30.0%	97,500	25.0%	1.00	\$15.00	1.50	0.250	\$3.75	1.50%	241,108	\$4,519,728	\$11.59	16.4%
Cutworms	390,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Decies Stem Borer	390,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	97,500	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	390,000	100.0%	39,000	10.0%	19,500	5.0%	1.00	\$10.00	0.25	0.050	\$0.50	0.25%	40,184	\$704,538	\$1.81	2.6%
Green Cloverworm	390,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Japanese Beetle	97,500	25.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	390,000	100.0%	292,500	75.0%	195,000	50.0%	1.00	\$10.00	1.00	0.500	\$5.00	1.00%	160,738	\$3,988,152	\$10.23	14.5%
Lesser Cornstalk Borer	195,000	50.0%	3,900	1.0%	0	0.0%	0.00	\$0.00	0.10	0.000	\$0.00	0.05%	8,037	\$101,908	\$0.26	0.4%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	292,500	75.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcom Maggot	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	390,000	100.0%	195,000	50.0%	195,000	50.0%	1.00	\$15.00	1.00	0.500	\$7.50	1.00%	160,738	\$4,963,152	\$12.73	18.0%
Spider Mites	390,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spotted Cucumber Beetle	390,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	390,000	100.0%	370,500	95.0%	312,000	80.0%	1.50	\$10.00	3.00	1.200	\$12.00	3.00%	482,213	\$10,794,456	\$27.68	39.3%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	390,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	390,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	390,000	100.0%	78,000	20.0%	39,000	10.0%	1.00	\$10.00	1.00	0.100	\$1.00	1.00%	160,738	\$2,428,152	\$6.23	8.8%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL							2.600	\$29.75	7.80%	1,253,753	\$27,500,084	\$70.51	100.0%			

SUMMARY DATA

Data Input	
State	SC
Year	2021
Total Acres	390,000
Yield/acre	38
Price/Bushel	\$12.68
% 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	14,820,000
Total Bushels Lost to Insects	1,253,753
Percent Yield Loss	7.80%
Yield w/o Insects	41.21
Ave. # Spray Applications	2.600
Seed Treated Acres	195,000
Scouted Acres	97,500

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$11,602,500	\$29.75
Seed Treatment Costs	\$2,340,000	\$6.00
Scouting costs	\$682,500	\$1.75
Total Costs	\$14,625,000	\$37.50
Yield Lost to insects	\$15,897,584	\$40.76
Total Losses + Costs	\$30,522,584	\$78.26

Stink Bug Composition	
Species	% of SB
Brown	17
Brown Marmorated	5
Green	5
Redbanded	12
Redshouldered	1
Southern Green	60
Total (make it 100%)	100

2021 SOYBEAN LOSSES

Appendix 16. Tennessee soybean insect losses, 2021.

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
Amyworm complex	760,000	50.0%	228,000	15.0%	167,200	11.0%	1.20	\$11.50	1.70	0.132	\$1.52	0.85%	669,992	\$10,615,266	\$6.98	21.7%
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	1,520,000	100.0%	152,000	10.0%	60,800	4.0%	1.00	\$8.25	0.30	0.040	\$0.33	0.30%	236,468	\$3,433,802	\$2.26	7.0%
Blister Beetle	121,600	8.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	456,000	30.0%	91,200	6.0%	91,200	6.0%	1.00	\$12.00	0.90	0.060	\$0.72	0.27%	212,821	\$3,733,382	\$2.46	7.6%
Cutworms	45,600	3.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Dectes Stem Borer	1,368,000	90.0%	0	0.0%	4,560	0.3%	1.00	\$8.25	0.20	0.003	\$0.02	0.18%	141,881	\$1,796,941	\$1.18	3.7%
Garden Webworms	30,400	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	304,000	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	912,000	60.0%	3,040	0.2%	3,040	0.2%	1.00	\$8.25	0.02	0.002	\$0.02	0.01%	9,459	\$142,368	\$0.09	0.3%
Green Cloverworm	1,520,000	100.0%	167,200	11.0%	152,000	10.0%	1.00	\$8.25	0.40	0.100	\$0.83	0.40%	315,291	\$5,163,603	\$3.40	10.5%
Japanese Beetle	1,444,000	95.0%	3,040	0.2%	6,080	0.4%	1.00	\$8.25	0.02	0.004	\$0.03	0.02%	14,976	\$235,866	\$0.16	0.5%
Kudzu Bug	1,216,000	80.0%	152,000	10.0%	136,800	9.0%	1.10	\$8.25	0.60	0.099	\$0.82	0.48%	378,349	\$5,932,983	\$3.90	12.1%
Lesser Comstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	15,200	1.0%	1,520	0.1%	1,520	0.1%	1.00	\$7.50	4.00	0.001	\$0.01	0.04%	31,529	\$402,360	\$0.26	0.8%
Potato Leafhopper	45,600	3.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	380,000	25.0%	4,560	0.3%	12,160	0.8%	1.00	\$10.00	0.00	0.008	\$0.08	0.00%	0	\$121,600	\$0.08	0.2%
Seedcom Maggot	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Slugs	608,000	40.0%	60,800	4.0%	0	0.0%	0.00	\$0.00	0.40	0.000	\$0.00	0.16%	126,116	\$1,563,841	\$1.03	3.2%
Soybean Aphid	15,200	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	304,000	20.0%	13,680	0.9%	6,080	0.4%	1.00	\$13.00	0.05	0.004	\$0.05	0.01%	7,882	\$176,780	\$0.12	0.4%
Spider Mites	152,000	10.0%	45,600	3.0%	15,200	1.0%	1.00	\$11.00	0.40	0.010	\$0.11	0.04%	31,529	\$558,160	\$0.37	1.1%
Spotted Cucumber Beetle	1,520,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	1,520,000	100.0%	471,200	31.0%	608,000	40.0%	1.10	\$7.75	0.60	0.440	\$3.41	0.60%	472,936	\$11,047,604	\$7.27	22.6%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecomered Alfalfa Hopper	1,520,000	100.0%	45,600	3.0%	30,400	2.0%	1.00	\$7.75	0.20	0.020	\$0.16	0.20%	157,645	\$2,190,401	\$1.44	4.5%
Thrips	1,520,000	100.0%	0	0.0%	1,520	0.1%	1.00	\$7.75	0.02	0.001	\$0.01	0.02%	15,785	\$207,260	\$0.14	0.4%
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	456,000	30.0%	1.20	\$3.00	0.00	0.360	\$1.08	0.00%	0	\$1,641,600	\$1.08	3.4%
TOTAL							1.284	\$9.19	3.58%	2,822.639	\$48,963,820	\$32.21	100.0%			

SUMMARY DATA

Data Input		Yield & Management Results		Economic Results		Stink Bug Composition	
State	TN	Total Bushels Harvested	76,000,000	Total	\$13,963,100	Species	% of SB
Year	2021	Total Bushels Lost to Insects	2,822,639	Per Acre	\$9.19	Brown	13
Total Acres	1,520,000	Percent Yield Loss	3.58%	Seed Treatment Costs	\$7,607,600	Brown Marmorated	13
Yield/acre	50	Yield w/o Insects	51.86	Scouting costs	\$4,560,000	Green	73
Price/Bushel	\$12.40	Ave. # Spray Applications	1.284	Total Costs	\$26,130,700	Redbanded	0
% Acres Scouted	40	Seed Treated Acres	988,000	Yield Lost to insects	\$35,000,720	Redshouldered	1
Scouting Fee/scouted acre	\$7.50	Scouted Acres	608,000	Total Losses + Costs	\$61,131,420	Southern Green	0
% Acres Insect Seed Trt.	65					Total (make it 100%)	100
Seed Trt Cost/treated ac	\$7.70						

Appendix 17. Texas soybean insect losses, 2021.

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	
Amyworm complex	76,500	75.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Cucumber Beetle	81,600	80.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	3,060	3.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Blister Beetle	45,900	45.0%	306	0.3%	306	0.3%	1.00	\$8.00	0.00	0.003	\$0.02	0.00%	0	\$2,448	\$0.02	0.0%
Com Earworm	2,040	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	1,020	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Dectes Stem Borer	2,040	2.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	40,800	40.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	91,800	90.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Green Cloverworm	96,900	95.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Japanese Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Comstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Potato Leafhopper	40,800	40.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	81,200	60.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcom Maggot	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Aphid	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	102,000	100.0%	66,300	65.0%	61,200	60.0%	1.00	\$19.00	2.00	0.600	\$11.40	2.00%	86,373	\$2,285,652	\$22.41	26.5%
Spider Mites	510	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spotted Cucumber Beetle	102,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	102,000	100.0%	81,600	80.0%	71,400	70.0%	1.50	\$14.00	8.00	1.050	\$14.70	8.00%	345,493	\$5,990,809	\$58.73	69.6%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	102,000	100.0%	10,200	10.0%	20,400	20.0%	1.00	\$9.00	0.25	0.200	\$1.80	0.25%	10,797	\$323,957	\$3.18	3.8%
Thrips	102,000	100.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	96,900	95.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Fleahopper	81,600	80.0%	204	0.2%	510	0.5%	1.00	\$14.00	0.00	0.005	\$0.07	0.00%	0	\$7,140	\$0.07	0.1%
Automatic (no insects)	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL							1.858	\$27.99	10.25%	442,663	\$8,610,006	\$84.41	100.0%			

SUMMARY DATA

Data Input	
State	TX
Year	2021
Total Acres	102,000
Yield/acre	38
Price/Bushel	\$13.00
% Acres Scouted	50
Scouting Fee/scouted acre	\$10.00
% Acres Insect Seed Trt.	90
Seed Trt Cost/treated ac.	\$12.00

Yield & Management Results	
Total Bushels Harvested	3,876,000
Total Bushels Lost to Insects	442,663
Percent Yield Loss	10.25%
Yield w/o Insects	42.34
Ave. # Spray Applications	1.858
Seed Treated Acres	91,800
Scouted Acres	51,000

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$2,855,388	\$27.99
Seed Treatment Costs	\$1,101,600	\$10.80
Scouting costs	\$510,000	\$5.00
Total Costs	\$4,466,988	\$43.79
Yield Lost to insects	\$5,754,618	\$56.42
Total Losses + Costs	\$10,221,606	\$100.21

Stink Bug Composition	
Species	% of SB
Brown	40
Brown Marmorated	0
Green	15
Redbanded	15
Redshouldered	5
Southern Green	25
Total (make it 100%)	100

2021 SOYBEAN LOSSES

Appendix 18. Virginia soybean insect losses, 2021.

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	% Loss + Cost
Amyworm complex	177,000	30.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Bean Leaf Beetle	177,000	30.0%	2,950	0.5%	0	0.0%	0.00	\$10.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Blister Beetle	118,000	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Com Earworm	295,000	50.0%	29,500	5.0%	118,000	20.0%	1.00	\$15.00	3.00	0.200	\$3.00	1.50%	463,140	\$7,373,993	\$12.50	13.1%
Cutworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Dectes Stem Borer	47,200	8.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Garden Webworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grape Colaspis	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshopper	118,000	20.0%	2,950	0.5%	2,950	0.5%	1.00	\$10.00	0.00	0.005	\$0.05	0.00%	0	\$29,500	\$0.05	0.1%
Green Cloverworm	442,500	75.0%	1,475	0.3%	1,475	0.3%	1.00	\$10.00	0.00	0.003	\$0.03	0.00%	0	\$14,750	\$0.03	0.0%
Japanese Beetle	118,000	20.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kudzu Bug	59,000	10.0%	1,475	0.3%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lesser Comstalk Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Mexican Bean Beetle	29,500	5.0%	1,770	0.3%	1,475	0.3%	1.00	\$10.00	0.00	0.003	\$0.03	0.00%	0	\$14,750	\$0.03	0.0%
Potato Leafhopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	29,500	5.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Seedcom Maggot	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Slugs	88,500	15.0%	14,750	2.5%	17,700	3.0%	1.00	\$20.00	5.00	0.030	\$0.60	0.75%	231,570	\$3,155,997	\$5.35	5.6%
Soybean Aphid	5,900	1.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Soybean Looper	295,000	50.0%	29,500	5.0%	29,500	5.0%	1.00	\$15.00	2.00	0.050	\$0.75	1.00%	308,760	\$4,178,495	\$7.08	7.4%
Spider Mites	59,000	10.0%	29,500	5.0%	1,475	0.3%	1.00	\$20.00	1.00	0.003	\$0.05	0.10%	30,876	\$403,100	\$0.68	0.7%
Spotted Cucumber Beetle	295,000	50.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (see box below)	590,000	100.0%	177,000	30.0%	295,000	50.0%	1.00	\$10.00	5.00	0.500	\$5.00	5.00%	1,543,800	\$21,629,977	\$36.66	38.5%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Threecornered Alfalfa Hopper	442,500	75.0%	118,000	20.0%	88,500	15.0%	1.00	\$10.00	5.00	0.150	\$1.50	3.75%	1,157,850	\$14,894,983	\$25.25	26.5%
Thrips	442,500	75.0%	14,750	2.5%	0	0.0%	1.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Velvetbean Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Automatic (no insects)	0	0.0%	0	0.0%	442,500	75.0%	1.00	\$10.00	0.00	0.750	\$7.50	0.00%	0	\$4,425,000	\$7.50	7.9%
TOTAL							1.693	\$18.50	12.10%	3,735,995	\$56,120,545	\$95.12	100.0%			

SUMMARY DATA

Data Input	
State	VA
Year	2021
Total Acres	590,000
Yield/acre	46
Price/Bushel	\$12.10
% Acres Scouted	15
Scouting Fee/scouted acre	\$10.00
% Acres Insect Seed Trt.	20
Seed Trt Cost/treated ac	\$10.00

Yield & Management Results	
Total Bushels Harvested	27,140,000
Total Bushels Lost to Insects	3,735,995
Percent Yield Loss	12.10%
Yield w/o Insects	52.33
Ave. # Spray Applications	1.693
Seed Treated Acres	118,000
Scouted Acres	88,500

Economic Results		
	Total	Per Acre
Foliar Insecticides Costs	\$10,915,000	\$18.50
Seed Treatment Costs	\$1,180,000	\$2.00
Scouting costs	\$885,000	\$1.50
Total Costs	\$12,980,000	\$22.00
Yield Lost to insects	\$45,205,545	\$76.62
Total Losses + Costs	\$58,185,545	\$98.62

Stink Bug Composition	
Species	% of SB
Brown	40
Brown Marmorated	5
Green	40
Redbanded	0
Redshouldered	0
Southern Green	15
Total (make it 100%)	100

Appendix 19. Wisconsin soybean insect losses, 2021.

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
Amyworm complex	10,350	0.5%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	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	0.00	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	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
Com Earworm	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
Decies Stem Borer	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	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	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
Grasshopper	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
Green Cloverworm	621,000	30.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
Japanese Beetle	310,500	15.0%	62,100	3.0%	103,500	5.0%	1.00	\$15.00	15.00	0.050	\$0.75	2,703,562	\$34,265,600	\$16.55	39.0%
Kudzu Bug	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	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	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
Potato Leafhopper	310,500	15.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
Seedcorn Maggot	621,000	30.0%	103,500	5.0%	828,000	40.0%	1.00	\$8.00	5.00	0.400	\$3.20	1,802,375	\$28,432,734	\$13.74	32.3%
Slugs	20,700	1.0%	20,700	1.0%	20,700	1.0%	1.00	\$25.00	0.00	0.010	\$0.25	0	\$517,500	\$0.25	0.6%
Soybean Aphid	828,000	40.0%	20,700	1.0%	20,700	1.0%	1.00	\$15.00	0.00	0.010	\$0.15	0	\$310,500	\$0.15	0.4%
Soybean Gall Midge	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
Spider Mites	310,500	15.0%	103,500	5.0%	103,500	5.0%	1.00	\$25.00	10.00	0.050	\$1.25	1,802,375	\$24,396,234	\$11.79	27.7%
Spotted Cucumber Beetle	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	0.000	\$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	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
Thistle Caterpillar	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
Thrips	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
Other	0	0.0%	0	0.0%	0	0.0%	0.00	\$0.00	0.00	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	0.00	0.000	\$0.00	0	\$0	\$0.00	0.0%
TOTAL							0.520	\$5.60	5.25%	6,308.311	\$87,922,567	\$42.47	100.0%		

SUMMARY DATA

Data Input		Yield & Management Results		Economic Results		Stink Bug Composition	
State	WI	Total Bushels Harvested	113,850,000	Total	Per Acre	Species	% of SB
Year	2021	Total Bushels Lost to Insects	6,308,311	Foliar Insecticides Costs	\$11,592,000	Brown	0
Total Acres	2,070,000	Percent Yield Loss	5.25%	Seed Treatment Costs	\$6,624,000	Brown Marmorated	0
Yield/acre	55	Yield w/o Insects	58.05	Scouting costs	\$5,175,000	Green	0
Price/Bushel	\$12.10	Ave. # Spray Applications	0.520	Total Costs	\$23,391,000	Redbanded	0
% Acres Scouted	50	Seed Treated Acres	828,000	Yield Lost to insects	\$76,330,567	Redshouldered	0
Scouting Fee/scouted acre	\$5.00	Scouted Acres	1,035,000	Total Losses + Costs	\$99,721,567	Southern Green	0
% Acres Insect Seed Trt.	40					Total (make it 100%)	0
Seed Trt Cost/treated ac	\$8.00						