

2018 COTTON INSECT LOSSES ESTIMATES**D. R. Cook****M. Cutts****Delta Research & Extension Center****Mississippi State University****Stoneville, MS****Background**

Since 1978, estimates of losses resulting from cotton insect pests have been compiled based on surveys and observations of county agents, extension specialists, crop consultants, and research entomologists. Over the years additional information has been added to the surveys and report as situations have evolved (ex. introduction of Bt cotton, boll weevil eradication). This report is sponsored by the Cotton Foundation. I personally wish to thank all who contributed to this report.

Explanation of Tables

Data are weighted averages across a reporting unit (state, region within a state). These averages are based on the number of acres reported, the number of acres infested (with losses), and the estimated percent loss. Numbers of bales and numbers of acres are rounded to the nearest whole number, and bale weight was set at 480 lbs. The information included in this report are estimates across an area (portion of a state, state) and may not completely reflect what occurred at the local or individual farm level.

State Coordinators

Alabama – Tim Reed and Ron Smith

Arizona – Peter Ellsworth

Arkansas – Gus Lorenz, Glenn Studebaker, Ben Thrash, and Nick Bateman

California – Bob Hutmacher

Florida – Mike Donahoe and Ethan Carter

Georgia – Phillip Roberts

Kansas – Stu Duncan

Louisiana – Sebe Brown

Mississippi – Angus Catchot and Jeff Gore

Missouri – Scott Stewart and Glenn Studebaker

New Mexico – Jane Pierce

North Carolina – Dominic Reisig

Oklahoma – Jerry Goodson

South Carolina – Jeremy Greene

Tennessee – Scott Stewart

Texas – Charles Allen, David Kerns, and Suhas Vyavhare

Virginia – Sally Taylor

Table 1. Cotton insect loss estimates for South Alabama during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	254,400	80.0%	6,360	2.0%	1.0	\$7.00	0.50%	0.02	\$0.14	0.40%	3,313	\$35,616	\$0.11	0.6%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	63,600	20.0%	15,900	5.0%	1.0	\$6.00	0.20%	0.05	\$0.30	0.04%	331	\$19,080	\$0.06	0.3%
Cotton Fleahopper	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	318,000	100.0%	302,100	95.0%	1.0	\$7.00	1.50%	0.95	\$6.65	1.50%	12,422	\$2,114,700	\$6.65	38.5%
Brown Stink Bug	318,000	100.0%	302,100	95.0%	1.0	\$8.00	1.50%	0.95	\$7.60	1.50%	12,422	\$2,416,800	\$7.60	44.0%
Clouded Plant Bug	6,360	2.0%	6,360	2.0%	1.0	\$7.00	0.00%	0.02	\$0.14	0.00%	0	\$890	\$0.00	0.0%
Leaf Footed Bugs	111,300	35.0%	63,600	20.0%	1.0	\$8.00	0.00%	0.20	\$1.60	0.00%	0	\$178,080	\$0.56	3.2%
Spider Mites	47,700	15.0%	9,540	3.0%	1.0	\$8.00	0.00%	0.03	\$0.24	0.00%	0	\$11,448	\$0.04	0.2%
Thrips	318,000	100.0%	63,600	20.0%	1.0	\$7.00	0.10%	0.20	\$1.40	0.10%	828	\$445,200	\$1.40	8.1%
Aphids	127,200	40.0%	63,600	20.0%	1.0	\$5.00	0.20%	0.20	\$1.00	0.08%	663	\$127,200	\$0.40	2.3%
Grasshoppers	222,600	70.0%	31,800	10.0%	1.0	\$6.00	0.00%	0.10	\$0.60	0.00%	0	\$133,560	\$0.42	2.4%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	47,700	15.0%	3,180	1.0%	1.0	\$18.00	0.00%	0.01	\$0.18	0.00%	0	\$8,586	\$0.03	0.2%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					2.73			\$19.85	3.62%		29,979	\$5,491,160	\$17.27	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results			
State	Alabama			Total Acres	318,000			Total		Per Acre	
Region	Southeast			Total Bales Harvested	579,688	Foliar Insecticide Costs		\$6,312,300		\$19.85	
Year	2018			Total Bales Lost to Insects	29,979	Seed Treatment Costs		\$4,229,400		\$13.30	
Total Acres (Upland)	318,000	In-furrow cost/treated acre	\$12.00	Percent Yield Loss	3.6%	In-Furrow Costs		\$190,800		\$0.60	
Yield / Acre (Upland)	875	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	908	Scouting Costs		\$2,162,400		\$6.80	
Price / lb	\$0.75	Cost/acre Boll Weevil Eradication	\$2.00	Av. # Applications	2.7	Eradication Costs		\$636,000		\$2.00	
yield potential (lb/acre)	1,250	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	278,416	Bt Cotton		\$10,147,380		\$31.91	
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	33.6%	Total Costs		\$23,678,280		\$74.46	
Yield / Acre (Pima)	0	% Insect apps by air	20%	Transgenic Cotton (arthropods) (# acres)	318,000	Yield Loss to Insects		\$10,792,440		\$33.94	
% Acres Scouted	80%	No. apps by air	1.0	Boll Weevil Eradication (# acres)	318,000	Total Losses + Costs		\$34,470,720		\$108.40	
Fee / Scouted Acre	\$8.50	Cost/app by air	\$6.00	Pink Bollworm Eradication (# acres)	0						
No. times scouted/week	1.0	% insect apps by ground	80%	# Scouted Acres	254,400						
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	2.0	Seed Treatments (arthropods) (# acres)	302,100						
Cost/treated acre (Bt) Cotton	\$31.91	Cost/app by ground	\$5.00	In-Furrow Applications (# acres)	15,900						
% acres with seed treatment	95%	% Loss to weather	20.0%	Applications by Air (acres)	63,600						
Seed trt. cost/ treated acre	\$14.00	% loss to non-arthropods	5.0%	Applications by Ground (acres)	254,400						
% acres with in-furrow	5%	% loss to other (chemical injury, weeds, diseases, etc.)	5.0%	No. acres with no foliar insecticide applications	15,900						

Table 1. Cotton insect loss estimates for South Alabama during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	64.0%	203,520	\$60.00	\$35.00	5%	10,176	1.0
Bollgard III	15.0%	47,700	\$63.00	\$35.00	0%	0	0.0
WideStrike	3.0%	9,540	\$45.00	\$15.00	75%	7,155	1.0
WideStrike 3	15.0%	47,700	\$48.00	\$18.00	0%	0	0.0
TwinLink	1.0%	3,180	\$60.00	\$35.00	5%	159	1.0
TwinLink Plus	2.0%	6,360	\$60.00	\$38.00	0%	0	0.0
Total Bt	100.0%	318,000	\$58.20	\$31.91	5.5%	17,490	0.7
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	0.0%	0	\$0.00	-	0%	0	0.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	318,000	\$48.75	\$31.91	5.5%	17,490	0.7
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0.0
Other	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		318,000	\$48.75		5.5%	17,490	0.7

Table 2. Cotton insect loss estimates for North Alabama during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	183,168	100.0%	9,158	5.0%	1.0	\$13.00	0.3%	0.05	\$0.65	0.25%	1,145	\$531,259	\$2.90	9.7%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	9,158	5.0%	1,832	1.0%	1.0	\$7.50	0.0%	0.01	\$0.08	0.00%	0	\$687	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	183,168	100.0%	164,851	90.0%	1.3	\$11.00	0.5%	1.12	\$12.32	0.50%	2,290	\$3,081,030	\$16.82	56.3%
Cotton Fleahopper	18,317	10.0%	0	0.0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	183,168	100.0%	5,495	3.0%	1.0	\$8.50	0.5%	0.03	\$0.26	0.50%	2,290	\$871,108	\$4.76	15.9%
Brown Stink Bug	183,168	100.0%	1,832	1.0%	1.0	\$10.00	0.1%	0.01	\$0.10	0.10%	458	\$183,197	\$1.00	3.3%
Clouded Plant Bug	91,584	50.0%	9,158	5.0%	1.0	\$10.00	0.1%	0.05	\$0.50	0.05%	229	\$128,232	\$0.70	2.3%
Leaf Footed Bugs	9,158	5.0%	0	0.0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	183,168	100.0%	916	1.0%	1.0	\$8.00	0.0%	0.01	\$0.08	0.00%	0	\$14,653	\$0.08	0.3%
Thrips	183,168	100.0%	54,950	30.0%	1.0	\$9.00	0.1%	0.30	\$2.70	0.10%	458	\$659,434	\$3.60	12.1%
Aphids	183,168	100.0%	0	0.0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshoppers	45,792	25.0%	0	0.0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.0%	0.0	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					1.58	\$16.68			1.50%		6,870	\$5,469,600	\$29.86	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Alabama			Total Acres	183,168			Total		Per Acre
Region	Southeast			Total Bales Harvested	419,760	Foliar Insecticide Costs		\$3,055,242		\$16.68
Year	2018			Total Bales Lost to Insects	6,870	Seed Treatment Costs		\$1,795,046		\$9.80
Total Acres (Upland)	183,168	In-furrow cost/treated acre	\$12.00	Percent Yield Loss	1.5%	In-Furrow Costs		\$43,960		\$0.24
Yield / Acre (Upland)	1,100	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,117	Scouting Costs		\$1,153,958		\$6.30
Price / lb	\$0.75	Cost/acre Boll Weevil Eradication	\$3.50	Av. # Applications	1.58	Eradication Costs		\$641,088		\$3.50
yield potential (lb/acre)	1,200	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	84,715	Bt Cotton		\$3,174,307		\$17.33
Acres (Pima)	-	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	18.5%	Total Costs		\$9,863,601		\$53.85
Yield / Acre (Pima)	-	% Insect apps by air	15%	Transgenic Cotton (arthropods) (# acres)	183,168	Yield Loss to Insects		\$2,473,200		\$13.50
% Acres Scouted	90%	No. apps by air	1.0	Boll Weevil Eradication (# acres)	183,168	Total Losses + Costs		\$12,336,801		\$67.35
Fee / Scouted Acre	\$7.00	Cost/app by air	\$5.50	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1.2	% insect apps by ground	85%	# Scouted Acres	164,851					
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	2.5	Seed Treatments (arthropods) (# acres)	179,505					
Cost/treated acre (Bt) Cotton	\$17.33	Cost/app by ground	\$5.00	In-Furrow Applications (# acres)	3,663					
% acres with seed treatment	98%	% Loss to weather	10.0%	Applications by Air (acres)	27,475					
Seed trt. cost/ treated acre	\$10.00	% loss to non-arthropods	5.0%	Applications by Ground (acres)	155,693					
% acres with in-furrow	2%	% loss to other (chemical injury, weeds, diseases, etc.)	2.0%	No. acres with no foliar insecticide applications	3,663					

Table 2. Cotton insect loss estimates for North Alabama during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	80.0%	146,534	\$58.00	\$18.00	4%	5,861	1.0
Bollgard III	3.0%	5,495	\$65.00	\$25.00	0%	0	0.0
WideStrike	5.0%	9,158	\$43.00	\$13.00	5%	458	1.0
WideStrike 3	10.0%	18,317	\$48.00	\$18.50	0%	0	0.0
TwinLink	1.0%	1,832	\$50.00	\$18.00	2%	37	1.0
TwinLink Plus	1.0%	1,832	\$55.00	\$25.00	0%	0	0.0
Total Bt	100.0%	183,168	\$54.40	\$17.33	3.5%	6,356	0.9
Herbicide Traits Only	0%	0	\$0.00	-	0%	0	0.0
Conventional	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	183,168	\$54.40	\$17.33	3.5%	6,356	0.9
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0.0
Other	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		183,168	\$54.40		3.5%	6,356	0.9

Table 3. Cotton insect loss estimates for Alabama during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	437,568	87.0%	15,518	3.1%	1.0	\$9.19	0.41%	0.03	\$0.28	0.36%	4,957	\$1,909,085	\$3.81	9.0%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	9,158	2.0%	1,832	0.4%	0.4	\$2.74	0.00%	0.00	\$0.00	0.00%	1	\$368	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	246,768	49.0%	180,751	36.1%	1.1	\$7.83	0.31%	0.39	\$3.08	0.15%	2,118	\$1,522,894	\$3.04	7.2%
Cotton Fleahopper	18,317	4.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	501,168	100.0%	307,595	61.4%	1.0	\$7.55	1.13%	0.61	\$4.63	1.13%	15,763	\$7,996,501	\$15.96	37.9%
Brown Stink Bug	501,168	100.0%	303,932	60.6%	1.0	\$8.73	0.99%	0.61	\$5.29	0.99%	13,732	\$7,597,084	\$15.16	36.0%
Clouded Plant Bug	97,944	20.0%	15,518	3.1%	1.0	\$8.10	0.04%	0.03	\$0.25	0.01%	99	\$60,281	\$0.12	0.3%
Leaf Footed Bugs	120,458	24.0%	63,600	12.7%	0.6	\$5.08	0.00%	0.08	\$0.41	0.00%	0	\$49,237	\$0.10	0.2%
Spider Mites	230,868	46.0%	10,456	2.1%	1.0	\$8.00	0.00%	0.02	\$0.17	0.00%	0	\$38,533	\$0.08	0.2%
Thrips	501,168	100.0%	118,550	23.7%	1.0	\$7.73	0.10%	0.24	\$1.83	0.10%	1,389	\$1,416,695	\$2.83	6.7%
Aphids	310,368	62.0%	63,600	12.7%	0.6	\$3.17	0.13%	0.08	\$0.26	0.08%	1,092	\$472,385	\$0.94	2.2%
Grasshoppers	268,392	54.0%	31,800	6.3%	0.6	\$3.81	0.00%	0.04	\$0.15	0.00%	0	\$41,139	\$0.08	0.2%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	47,700	10.0%	3,180	0.6%	0.6	\$11.42	0.00%	0.00	\$0.05	0.00%	0	\$2,193	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					2.14			\$16.41	2.82%		39,152	\$21,106,395	\$42.11	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Alabama			Total Acres	501,168			Total		Per Acre
Region	Southeast			Total Bales Harvested	999,448	Foliar Insecticide Costs		\$8,222,537		\$16.41
Year	2018			Total Bales Lost to Insects	39,152	Seed Treatment Costs		\$6,038,393		\$12.05
Total Acres (Upland)	501,168	In-furrow cost/treated acre	\$12.00	Percent Yield Loss	2.8%	In-Furrow Costs		\$234,760		\$0.47
Yield / Acre (Upland)	957	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	985	Scouting Costs		\$3,333,792		\$6.65
Price / lb	\$0.75	Cost/acre Boll Weevil Eradication	\$2.55	Av. # Applications	2.1	Eradication Costs		\$1,277,088		\$2.55
yield potential (lb/acre)	1,331	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	131,766	Bt Cotton		\$13,628,162		\$27.19
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	28.1%	Total Costs		\$32,734,733		\$65.32
Yield / Acre (Pima)	0	% Insect apps by air	18%	Transgenic Cotton (arthropods) (# acres)	501,168	Yield Loss to Insects		\$14,094,654		\$28.12
% Acres Scouted	84%	No. apps by air	1.0	Boll Weevil Eradication (# acres)	501,168	Total Losses + Costs		\$46,829,386		\$93.44
Fee / Scouted Acre	\$7.95	Cost/app by air	\$5.82	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1.1	% insect apps by ground	82%	# Scouted Acres	419,251					
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	2.2	Seed Treatments (arthropods) (# acres)	481,605					
Cost/treated acre (Bt) Cotton	\$27.19	Cost/app by ground	\$5.00	In-Furrow Applications (# acres)	19,563					
% acres with seed treatment	96%	% Loss to weather	16.3%	Applications by Air (acres)	91,075					
Seed trt. cost/ treated acre	\$12.54	% loss to non-arthropods	5.0%	Applications by Ground (acres)	410,093					
% acres with in-furrow	4%	% loss to other (chemical injury, weeds, diseases, etc.)	3.9%	No. acres with no foliar insecticide applications	19,563					

Table 3. Cotton insect loss estimates for Alabama during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	69.8%	350,054	\$59.27	\$28.79	5%	16,223	1.0
Bollgard III	10.6%	53,195	\$63.73	\$31.35	0%	0	0.0
WideStrike	3.7%	18,698	\$44.27	\$14.27	49%	9,240	1.0
WideStrike 3	13.2%	66,017	\$48.00	\$18.18	0%	0	0.0
TwinLink	1.0%	5,012	\$56.35	\$28.79	4%	196	1.0
TwinLink Plus	1.6%	8,192	\$58.17	\$33.25	0%	0	0.0
Total Bt	100.0%	501,168	\$57.65	\$27.19	5.1%	25,659	0.7
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	0.0%	0	\$0.00	-	0%	0	0.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	501,168	\$50.89	\$27.19	5.1%	25,659	0.7
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0.0
Other	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		501,168	\$50.89		5.1%	25,659	0.7

Table 4. Cotton insect loss estimates for Arizona Pima during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	13,989	100.0%	2,647	18.9%	1.3	\$8.33	0.40%	0.24	\$2.00	0.43%	169	\$149,658	\$10.70	22.9%
Beet Armyworm	945	7.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	945	7.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	11,626	83.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	12,099	86.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	13,989	100.0%	5,180	37.0%	2.9	\$10.90	0.90%	1.07	\$11.66	0.91%	358	\$420,915	\$30.09	64.5%
Cotton Fleahopper	1,244	9.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	5,671	41.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Brown Stink Bug	2,458	18.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	567	4.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	13,989	100.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Aphids	1,550	11.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshoppers	945	7.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	10,964	78.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	3,630	26.0%	3,025	21.6%	2.3	\$12.75	0.80%	0.49	\$6.25	0.21%	83	\$82,436	\$5.89	12.6%
Darkling Beetle	1,134	8.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Pale-Striped Flea Beetle	1,134	8.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.0	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL								1.8	\$19.91	1.55%	610	\$653,009	\$46.68	

SUMMARY DATA

SUMMARY DATA							
Data Input			Yield and Management Results			Economic Results	
State	Arizona			Total Acres	13,989		
Region	West			Total Bales Harvested	32,908	Foliar Insecticide Costs	Total
Year	2018			Total Bales Lost to Insects	610	Seed Treatment Costs	Per Acre
Total Acres (Pima)	13,989	In-furrow cost/treated acre	\$15.00	Percent Yield Loss	1.6%	In-Furrow Costs	\$278,531
Yield / Acre (Pima)	1,129	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,147	Scouting Costs	\$137,207
Price / lb	\$1.50	Cost/acre Boll Weevil Eradication		Av. # Applications	1.8	Eradication Costs	\$14,178
yield potential (lb/acre)	1,349	% acres in Pink Bollworm Eradication	100%	Total Bales lost (all factors)	7,870	Bt Cotton	\$99,323
% Acres Scouted	60%	Cost/acre Pink Bollworm Eradication		Total % yield Loss	20.0%	Total Costs	\$0
Fee / Scouted Acre	\$11.83	% Insect apps by air	30%	Transgenic Cotton (arthropods) (# acres)	0	Yield Loss to Insects	\$0.00
No. times scouted/week	1.75	No. apps by air	3	Boll Weevil Eradication (# acres)	13,989	Total Losses + Costs	\$529,239
% acres Transgenic (Bt) Cotton	\$0.00	Cost/app by air	\$13.00	Pink Bollworm Eradication (# acres)	13,989		\$439,200
Cost/treated acre (Bt) Cotton	\$0.00	% insect apps by ground	40%	# Scouted Acres	8,393		\$968,439
% acres with seed treatment	51%	No. apps by ground	2	Seed Treatments (arthropods) (# acres)	7,184		\$69.23
Seed trt. cost/ treated acre	\$19.10	Cost/app by ground	\$11.00	In-Furrow Applications (# acres)	945		
% acres with in-furrow	7%	% Loss to weather	10.2%	Applications by Air (acres)	4,197		
		% loss to non-arthropods	2.0%	Applications by Ground (acres)	5,596		
		% loss to other (chemical injury, weeds, diseases, etc.)	6.3%	No. acres with no foliar insecticide applications	8,393		

Table 4. Cotton insect loss estimates for Arizona Pima during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II		0				0	
Bollgard III		0				0	
WideStrike		0				0	
WideStrike 3		0				0	
TwinLink		0				0	
TwinLink Plus		0				0	
Total Bt	0.0%	0	\$0.00	\$0.00	0.0%	0	0.0
Herbicide Traits Only		0				0	
Conventional		0				0	
Organic		0				0	
Total Upland Cotton	0.0%	0	\$0.00	\$0.00	0.0%	0	0.0
Non Upland Cotton							
Pima		0				0	
Other		0				0	
Organic		0				0	
Total (all Cotton)		0				0	

Table 5. Cotton insect loss estimates for Arizona Conventional during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	4,364	100.0%	2,880	66.0%	1.0	\$24.00	3.23%	0.68	\$16.32	3.23%	497	\$250,146	\$57.32	60.9%
Beet Armyworm	2,014	46.0%	1,091	25.0%	0.8	\$0.00	0.77%	0.20	\$0.00	0.36%	55	\$19,800	\$4.54	4.8%
Fall Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	1,779	41.0%	1,091	25.0%	0.6	\$0.00	0.38%	0.15	\$0.00	0.16%	24	\$8,640	\$1.98	2.1%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	1,679	38.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	1,679	38.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	4,364	100.0%	2,880	66.0%	3.3	\$0.00	2.38%	2.20	\$0.00	2.39%	367	\$132,120	\$30.27	32.2%
Cotton Fleahopper	4,364	100.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	1,679	38.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Brown Stink Bug	1,763	40.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	4,364	100.0%	1,964	45.0%	1.0	\$0.00	0.00%	0.45	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	4,364	100.0%	1,091	25.0%	1.0	\$0.00	0.00%	0.25	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Aphids	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshoppers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	1,679	38.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	4,364	100.0%	2,880	66.0%	2.2	\$0.00	0.00%	1.43	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Darkling Beetle	1,679	38.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL								5.36	\$16.32	6.13%	943	\$410,706	\$94.10	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Arizona			Total Acres	4,364			Total	Per Acre	
Region	West			Total Bales Harvested	11,214	Foliar Insecticide Costs		\$71,226	\$16.32	
Year	2018			Total Bales Lost to Insects	943	Seed Treatment Costs		\$0	\$0.00	
Total Acres (Upland)	4,364	In-furrow cost/treated acre	\$8.00	Percent Yield Loss	6.1%	In-Furrow Costs		\$17,582	\$4.03	
Yield / Acre (Upland)	1,233	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,314	Scouting Costs		\$27,059	\$6.20	
Price / lb	\$0.75	Cost/acre Boll Weevil Eradication	\$1.47	Av. # Applications	5.36	Eradication Costs		\$30,417	\$6.97	
yield potential (lb/acre)	1,692	% acres in Pink Bollworm Eradication	100%	Total Bales lost (all factors)	3,968	Bt Cotton		\$0	\$0.00	
Acres (Pima)	-	Cost/acre Pink Bollworm Eradication	\$5.50	Total % yield Loss	25.8%	Total Costs		\$146,284	\$33.52	
Yield / Acre (Pima)	-	% Insect apps by air	80%	Transgenic Cotton (arthropods) (# acres)	0	Yield Loss to Insects		\$339,480	\$77.78	
% Acres Scouted	60%	No. apps by air	6	Boll Weevil Eradication (# acres)	4,364	Total Losses + Costs		\$485,764	\$111.30	
Fee / Scouted Acre	\$10.33	Cost/app by air	\$21.00	Pink Bollworm Eradication (# acres)	4,364					
No. times scouted/week	2.5	% insect apps by ground	30%	# Scouted Acres	2,619					
% acres Transgenic (Bt) Cotton	0%	No. apps by ground	1	Seed Treatments (arthropods) (# acres)	0					
Cost/treated acre (Bt) Cotton	\$0.00	Cost/app by ground	\$18.00	In-Furrow Applications (# acres)	2,198					
% acres with seed treatment	0%	% Loss to weather	14.3%	Applications by Air (acres)	3,491					
Seed trt. cost/ treated acre	-	% loss to non-arthropods	5.3%	Applications by Ground (acres)	1,309					
% acres with in-furrow	50%	% loss to other (chemical injury, weeds, diseases, etc.)	0.0%	No. acres with no foliar insecticide applications	1,528					

Table 5. Cotton insect loss estimates for Arizona Conventional during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II		0				0	
Bollgard III		0				0	
WideStrike		0				0	
WideStrike 3		0				0	
TwinLink		0				0	
TwinLink Plus		0				0	
Total Bt	0.0%	0	\$0.00	\$0.00	0.0%	0	0.0
Herbicide Traits Only		0				0	
Conventional		0				0	
Organic		0				0	
Total Upland Cotton	0.0%	0	\$0.00	\$0.00	0.0%	0	0.0
Non Upland Cotton							
Pima		0				0	
Other		0				0	
Organic		0				0	
Total (all Cotton)		0				0	

Table 6. Cotton insect loss estimates for Arizona Bt during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	16,528	11.0%	380	0.2%	1.0	\$20.00	0.04%	0.00	\$0.00	0.00%	26	\$9,360	\$0.06	0.0%
Beet Armyworm	18,296	12.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	7,590	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	17,725	12.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	190	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	11,309	7.0%	380	0.2%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	146,722	96.0%	123,431	81.0%	2.1	\$25.24	4.07%	1.67	\$42.15	3.92%	25,630	\$15,411,040	\$101.15	78.0%
Cotton Fleahopper	65,541	43.0%	9,298	6.1%	0.3	\$0.00	0.04%	0.02	\$0.00	0.02%	105	\$37,800	\$0.25	0.2%
Stink Bugs (other than brown stink bug)	55,433	36.0%	3,795	2.5%	0.5	\$19.00	0.07%	0.01	\$0.19	0.02%	157	\$67,052	\$0.44	0.3%
Brown Stink Bug	59,937	39.0%	4,459	2.9%	1.7	\$19.00	0.38%	0.05	\$0.95	0.15%	974	\$407,581	\$2.68	2.1%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	569	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	57,431	38.0%	27,438	18.0%	1.0	\$15.88	0.18%	0.18	\$2.86	0.07%	444	\$323,948	\$2.13	1.6%
Thrips	152,359	100.0%	12,023	7.9%	0.9	\$17.83	0.03%	0.07	\$1.25	0.03%	170	\$251,394	\$1.65	1.3%
Aphids	8,641	6.0%	636	0.4%	1.0	\$9.67	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshoppers	1,006	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	24,725	16.0%	569	0.4%	2.0	\$30.00	0.04%	0.01	\$0.30	0.01%	46	\$23,977	\$0.16	0.1%
Silverleaf Whitefly	123,419	81.0%	63,693	41.8%	1.4	\$29.66	0.59%	0.57	\$16.91	0.48%	3,105	\$3,204,441	\$21.03	16.2%
Darkling Beetle	16,740	11.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Pale-Striped Flea Beetle	35,598	23.0%	171	0.1%	0.5	\$9.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Empoasca Leafhoppers	18,068	12.0%	0	0.0%	0.0	\$0.00	0.03%	0.00	\$0.00	0.00%	26	\$9,360	\$0.06	0.0%
Mealybugs	76	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL								2.58	\$64.60	4.69%	30,683	\$19,745,953	\$129.60	

SUMMARY DATA

Data Input			Yield and Management Results			Economic Results		
State	Arizona		Total Acres	152,359		Total	Per Acre	
Region	West		Total Bales Harvested	502,851	Foliar Insecticide Costs	\$9,842,692	\$64.60	
Year	2018		Total Bales Lost to Insects	30,683	Seed Treatment Costs	\$897,012	\$5.89	
Total Acres (Upland)	152,359	In-furrow cost/treated acre	\$14.88	Percent Yield Loss	4.7%	In-Furrow Costs	\$35,198	\$0.23
Yield / Acre (Upland)	1,584	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,662	Scouting Costs	\$1,954,780	\$12.83
Price / lb	\$0.75	Cost/acre Boll Weevil Eradication	\$1.47	Av. # Applications	2.58	Eradication Costs	\$1,061,942	\$6.97
yield potential (lb/acre)	2,059	% acres in Pink Bollworm Eradication	100%	Total Bales lost (all factors)	152,748	Bt Cotton	\$3,225,048	\$21.17
Acres (Pima)	-	Cost/acre Pink Bollworm Eradication	\$5.50	Total % yield Loss	23.4%	Total Costs	\$17,016,672	\$111.69
Yield / Acre (Pima)	-	% Insect apps by air	58%	Transgenic Cotton (arthropods) (# acres)	149,931	Yield Loss to Insects	\$11,045,880	\$72.50
% Acres Scouted	97%	No. apps by air	2.3	Boll Weevil Eradication (# acres)	152,359	Total Losses + Costs	\$28,062,552	\$184.19
Fee / Scouted Acre	\$13.27	Cost/app by air	\$12.14	Pink Bollworm Eradication (# acres)	152,359			
No. times scouted/week	1.9	% insect apps by ground	48%	# Scouted Acres	147,357			
% acres Transgenic (Bt) Cotton	98%	No. apps by ground	1.9	Seed Treatments (arthropods) (# acres)	46,964			
Cost/treated acre (Bt) Cotton	\$21.51	Cost/app by ground	\$10.76	In-Furrow Applications (# acres)	2,366			
% acres with seed treatment	31%	% Loss to weather	12.2%	Applications by Air (acres)	89,061			
Seed trt. cost/ treated acre	\$19.10	% loss to non-arthropods	2.1%	Applications by Ground (acres)	72,440			
% acres with in-furrow	2%	% loss to other (chemical injury, weeds, diseases, etc.)	4.3%	No. acres with no foliar insecticide applications	24,425			

Table 6. Cotton insect loss estimates for Arizona Bt during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	49.1%	74,753	-	\$34.83	-	0	-
Bollgard III	37.6%	57,346	-	\$34.83	-	0	-
WideStrike	4.4%	6,778	-	\$34.83	-	0	-
WideStrike 3	3.6%	5,415	-	\$34.83	-	0	-
TwinLink	1.5%	2,278	-	\$34.83	-	0	-
TwinLink Plus	2.2%	3,361	-	\$34.83	-	0	-
Total Bt	98.4%	149,931	\$0.00	\$34.83	0.0%	0	0.0
Herbicide Traits Only	1.0%	1,494	-	-	-	0	-
Conventional	0.6%	934	-	-	-	0	-
Organic	0%	0	-	-	-	0	-
Total Upland Cotton	100.0%	152,359	\$0.00	\$34.83	0.0%	0	0.0
Non Upland Cotton							
Pima	9.2%	13,989	-	-	-	0	-
Other	0%	0	-	-	-	0	-
Organic	0%	0	-	-	-	0	-
Total (all Cotton)		166,348				0	

Table 7. Cotton insect loss estimates for Arizona Upland during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	20,892	13.0%	3,260	2.1%	1.0	\$20.11	0.13%	0.02	\$0.42	0.02%	113	\$49,572	\$0.32	0.2%
Beet Armyworm	20,310	13.0%	1,091	0.7%	0.0	\$0.00	0.02%	0.00	\$0.00	0.00%	19	\$6,703	\$0.04	0.0%
Fall Armyworm	7,590	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	19,504	12.0%	1,091	0.7%	0.0	\$0.00	0.01%	0.00	\$0.00	0.00%	9	\$3,218	\$0.02	0.0%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	1,868	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	12,988	8.0%	380	0.2%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	151,086	96.0%	126,311	80.6%	2.1	\$24.54	4.03%	1.69	\$41.42	3.88%	26,026	\$15,627,100	\$99.71	77.6%
Cotton Fleahopper	69,905	45.0%	9,298	5.9%	0.2	\$0.00	0.04%	0.01	\$0.00	0.02%	105	\$37,926	\$0.24	0.2%
Stink Bugs (other than brown stink bug)	57,111	36.0%	3,795	2.4%	0.5	\$18.47	0.06%	0.01	\$0.22	0.02%	156	\$68,532	\$0.44	0.3%
Brown Stink Bug	61,700	39.0%	4,459	2.8%	1.6	\$18.47	0.37%	0.05	\$0.85	0.14%	972	\$402,611	\$2.57	2.0%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	569	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	61,795	39.0%	29,402	18.8%	1.0	\$15.43	0.17%	0.19	\$2.90	0.07%	462	\$345,255	\$2.20	1.7%
Thrips	156,723	100.0%	13,114	8.4%	0.9	\$17.34	0.02%	0.08	\$1.37	0.02%	167	\$275,280	\$1.76	1.4%
Aphids	8,641	6.0%	636	0.4%	1.0	\$9.40	0.00%	0.00	\$0.04	0.00%	0	\$320	\$0.00	0.0%
Grasshoppers	1,006	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	26,403	17.0%	569	0.4%	1.9	\$29.16	0.04%	0.01	\$0.21	0.01%	45	\$21,679	\$0.14	0.1%
Silverleaf Whitefly	127,784	82.0%	66,573	42.5%	1.4	\$28.84	0.57%	0.59	\$16.95	0.46%	3,119	\$3,288,655	\$20.98	16.3%
Darkling Beetle	18,419	12.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Pale-Striped Flea Beetle	35,598	23.0%	171	0.1%	0.5	\$8.75	0.00%	0.00	\$0.00	0.00%	0	\$165	\$0.00	0.0%
Empoasca Leafhoppers	18,068	12.0%	0	0.0%	0.0	\$0.00	0.03%	0.00	\$0.00	0.00%	22	\$8,053	\$0.05	0.0%
Mealybugs	76	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					2.65				\$64.37	4.65%	31,217	\$20,135,069	\$128.48	

SUMMARY DATA

Data Input			Yield and Management Results			Economic Results		
State	Arizona		Total Acres	170,712		Total	Per Acre	
Region	West		Total Bales Harvested	514,065	Foliar Insecticide Costs	\$10,088,232	\$64.37	
Year	2018		Total Bales Lost to Insects	31,217	Seed Treatment Costs	\$872,032	\$5.56	
Total Acres (Upland)	156,723	In-furrow cost/treated acre	\$14.68	Percent Yield Loss	4.7%	In-Furrow Costs	\$67,016	\$0.43
Yield / Acre (Upland)	1,574	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,651	Scouting Costs	\$1,977,271	\$12.62
Price / lb	\$0.75	Cost/acre Boll Weevil Eradication	\$1.47	Av. # Applications	2.6	Eradication Costs	\$1,092,360	\$6.97
yield potential (lb/acre)	2,054	% acres in Pink Bollworm Eradication	100%	Total Bales lost (all factors)	156,716	Bt Cotton	\$5,222,603	\$33.32
Acres (Pima)	13,989	Cost/acre Pink Bollworm Eradication	\$5.50	Total % yield Loss	23.4%	Total Costs	\$19,319,515	\$123.27
Yield / Acre (Pima)	1,129	% Insect apps by air	59%	Transgenic Cotton (arthropods) (# acres)	149,931	Yield Loss to Insects	\$11,237,983	\$71.71
% Acres Scouted	96%	No. apps by air	2.4	Boll Weevil Eradication (# acres)	156,723	Total Losses + Costs	\$30,557,498	\$194.98
Fee / Scouted Acre	\$13.18	Cost/app by air	\$12.39	Pink Bollworm Eradication (# acres)	156,723			
No. times scouted/week	2.0	% insect apps by ground	47%	# Scouted Acres	149,975			
% acres Transgenic (Bt) Cotton	96%	No. apps by ground	1.9	Seed Treatments (arthropods) (# acres)	46,964			
Cost/treated acre (Bt) Cotton	\$34.83	Cost/app by ground	\$10.96	In-Furrow Applications (# acres)	4,564			
% acres with seed treatment	30%	% Loss to weather	12.3%	Applications by Air (acres)	92,552			
Seed trt. cost/ treated acre	\$18.57	% loss to non-arthropods	2.2%	Applications by Ground (acres)	73,749			
% acres with in-furrow	3%	% loss to other (chemical injury, weeds, diseases, etc.)	4.2%	No. acres with no foliar insecticide applications	25,953			

Table 7. Cotton insect loss estimates for Arizona Upland during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	47.7%	74,753	\$0.00	\$34.83	0%	0	0.0
Bollgard III	36.6%	57,346	\$0.00	\$34.83	0%	0	0.0
WideStrike	4.3%	6,778	\$0.00	\$34.83	0%	0	0.0
WideStrike 3	3.5%	5,415	\$0.00	\$34.83	0%	0	0.0
TwinLink	1.5%	2,278	\$0.00	\$34.83	0%	0	0.0
TwinLink Plus	2.1%	3,361	\$0.00	\$34.83	0%	0	0.0
Total Bt	95.7%	149,931	\$0.00	\$34.83	0.0%	0	0.0
Herbicide Traits Only	1.0%	1,567	\$0.00	-	0%	0	0.0
Conventional	0.6%	934	\$0.00	-	0%	0	0.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	97.2%	152,359	\$0.00	\$34.83	0.0%	0	0.0
Non Upland Cotton							
Pima	8.9%	13,989	\$0.00	-	0%	0	0.0
Other	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		166,348	\$0.00			0	

Table 8. Cotton insect loss estimates for Southeast Arkansas during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	191,000	100.0%	181,450	95.0%	1.5	\$22.00	4.40%	1.43	\$31.46	4.40%	35,017	\$17,774,572	\$93.06	32.3%
Beet Armyworm	1,910	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	28,650	15.0%	0	0.0%	0.0	\$18.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	66,850	35.0%	9,550	5.0%	1.0	\$18.00	0.00%	0.05	\$0.90	0.00%	0	\$60,165	\$0.32	0.1%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	28,650	15.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	191,000	100.0%	191,000	100.0%	5.0	\$20.00	4.20%	5.00	\$100.00	4.20%	33,425	\$30,330,800	\$158.80	55.2%
Cotton Fleahopper	171,900	90.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	152,800	80.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Brown Stink Bug	152,800	80.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	47,750	25.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	28,650	15.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	95,500	50.0%	66,850	35.0%	1.3	\$20.00	1.80%	0.46	\$9.20	0.90%	7,163	\$3,285,368	\$17.20	6.0%
Thrips	191,000	100.0%	114,600	60.0%	1.0	\$13.00	0.50%	0.60	\$7.80	0.50%	3,979	\$2,826,744	\$14.80	5.1%
Aphids	133,700	70.0%	47,750	25.0%	1.0	\$20.00	0.00%	0.25	\$5.00	0.00%	0	\$668,500	\$3.50	1.2%
Grasshoppers	28,650	15.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	38,200	20.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					7.79				\$154.36	10.00%	79,584	\$54,946,149	\$287.68	

SUMMARY DATA

Data Input				Yield and Management Results			Economic Results		
State	SE Arkansas			Total Acres	191,000		Total		Per Acre
Region	Mid-South			Total Bales Harvested	497,396	Foliar Insecticide Costs	\$29,482,760		\$154.36
Year	2018			Total Bales Lost to Insects	79,584	Seed Treatment Costs	\$2,268,125		\$11.88
Total Acres (Upland)	191,000	In-furrow cost/treated acre	\$19.00	Percent Yield Loss	10.0%	In-Furrow Costs	\$362,900		\$1.90
Yield / Acre (Upland)	1,250	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,389	Scouting Costs	\$1,910,000		\$10.00
Price / lb	\$0.70	Cost/acre Boll Weevil Eradication	\$3.00	Av. # Applications	7.79	Eradication Costs	\$573,000		\$3.00
yield potential (lb/acre)	2,000	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	302,417	Bt Cotton	\$6,584,725		\$34.48
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	38.0%	Total Costs	\$41,181,510		\$215.61
Yield / Acre (Pima)	0	% Insect apps by air	80%	Transgenic Cotton (arthropods) (# acres)	188,135	Yield Loss to Insects	\$26,740,224		\$140.00
% Acres Scouted	100%	No. apps by air	4.5	Boll Weevil Eradication (# acres)	191,000	Total Losses + Costs	\$67,921,734		\$355.61
Fee / Scouted Acre	10.00	Cost/app by air	\$10.00	Pink Bollworm Eradication (# acres)	0				
No. times scouted/week	1.5	% insect apps by ground	100%	# Scouted Acres	191,000				
% acres Transgenic (Bt) Cotton	99%	No. apps by ground	3.5	Seed Treatments (arthropods) (# acres)	181,450				
Cost/treated acre (Bt) Cotton	35.00	Cost/app by ground	\$7.00	In-Furrow Applications (# acres)	19,100				
% acres with seed treatment	95%	% Loss to weather	18.0%	Applications by Air (acres)	152,800				
Seed trt. cost/ treated acre	12.50	% loss to non-arthropods	5.0%	Applications by Ground (acres)	191,000				
% acres with in-furrow	10%	% loss to other (chemical injury, weeds, diseases, etc.)	5.0%	No. acres with no foliar insecticide applications	0				

Table 8. Cotton insect loss estimates for Southeast Arkansas during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	92.0%	175,720	\$112.00	\$35.00	85%	149,362	1.5
Bollgard III	1.0%	1,910	\$112.00	\$35.00	0%	0	0.0
WideStrike	3.0%	5,730	\$97.00	\$35.00	100%	5,730	2.0
WideStrike 3	1.0%	1,910	\$112.00	\$35.00	2%	38	0.5
TwinLink	1.0%	1,910	\$112.00	\$35.00	85%	1,624	1.5
TwinLink Plus	0.5%	955	\$112.00	\$35.00	0%	0	0.0
Total Bt	99.0%	188,135	\$111.54	\$35.00	83.3%	156,754	1.5
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	1.5%	2,865	\$26.00	-	100%	2,865	2.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	191,000	\$109.14	\$35.00	83.6%	159,619	1.5
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		191,000	\$109.14		83.6%	159,619	1.5

Table 9. Cotton insect loss estimates for Northeast Arkansas during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	294,000	100.0%	249,900	85.0%	1.5	\$22.00	4.00%	1.28	\$28.16	4.00%	49,000	\$24,743,040	\$84.16	29.8%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	58,800	20.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	102,900	35.0%	58,800	20.0%	1.0	\$18.00	0.00%	0.20	\$3.60	0.00%	0	\$370,440	\$1.26	0.4%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	44,100	15.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	294,000	100.0%	294,000	100.0%	4.5	\$20.00	4.10%	4.50	\$90.00	4.10%	50,225	\$43,335,600	\$147.40	52.1%
Cotton Fleahopper	264,600	90.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	235,200	80.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Brown Stink Bug	235,200	80.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	147,000	50.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	44,100	15.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	235,200	80.0%	117,600	40.0%	2.0	\$20.00	1.80%	0.80	\$16.00	1.40%	17,150	\$9,525,600	\$32.40	11.5%
Thrips	294,000	100.0%	191,100	65.0%	1.0	\$13.00	0.50%	0.65	\$8.45	0.50%	6,125	\$4,542,300	\$15.45	5.5%
Aphids	294,000	100.0%	29,400	10.0%	1.0	\$20.00	0.00%	0.10	\$2.00	0.00%	0	\$588,000	\$2.00	0.7%
Grasshoppers	29,400	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	29,400	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					7.53				\$148.21	10.00%	122,500	\$83,104,980	\$282.67	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	NE Arkansas			Total Acres	294,000			Total		Per Acre
Region	Mid-South			Total Bales Harvested	765,625	Foliar Insecticide Costs		\$43,573,740		\$148.21
Year	2018			Total Bales Lost to Insects	122,500	Seed Treatment Costs		\$3,491,250		\$11.88
Total Acres (Upland)	294,000	In-furrow cost/treated acre	\$19.00	Percent Yield Loss	10.0%	In-Furrow Costs		\$1,117,200		\$3.80
Yield / Acre (Upland)	1,250	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,389	Scouting Costs		\$2,940,000		\$10.00
Price / lb	\$0.70	Cost/acre Boll Weevil Eradication	\$3.00	Av. # Applications	7.53	Eradication Costs		\$882,000		\$3.00
yield potential (lb/acre)	2,000	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	465,500	Bt Cotton		\$10,032,750		\$34.13
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	38.0%	Total Costs		\$62,036,940		\$211.01
Yield / Acre (Pima)	0	% Insect apps by air	80%	Transgenic Cotton (arthropods) (# acres)	289,590	Yield Loss to Insects		\$41,160,000		\$140.00
% Acres Scouted	100%	No. apps by air	3.5	Boll Weevil Eradication (# acres)	294,000	Total Losses + Costs		\$103,196,940		\$351.01
Fee / Scouted Acre	\$10.00	Cost/app by air	\$10.00	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1.5	% insect apps by ground	100%	# Scouted Acres	294,000					
% acres Transgenic (Bt) Cotton	99%	No. apps by ground	4	Seed Treatments (arthropods) (# acres)	279,300					
Cost/treated acre (Bt) Cotton	\$34.64	Cost/app by ground	\$7.00	In-Furrow Applications (# acres)	58,800					
% acres with seed treatment	95%	% Loss to weather	18.0%	Applications by Air (acres)	235,200					
Seed trt. cost/ treated acre	\$12.50	% loss to non-arthropods	5.0%	Applications by Ground (acres)	294,000					
% acres with in-furrow	20%	% loss to other (chemical injury, weeds, diseases, etc.)	5.0%	No. acres with no foliar insecticide applications	0					

Table 9. Cotton insect loss estimates for Northeast Arkansas during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	92.0%	270,480	\$112.00	\$35.00	85%	229,908	1.5
Bollgard III	1.0%	2,940	\$112.00	\$35.00	0%	0	0.0
WideStrike	3.0%	8,820	\$97.00	\$35.00	100%	8,820	2.0
WideStrike 3	1.0%	2,940	\$112.00	\$35.00	2%	59	0.5
TwinLink	1.0%	2,940	\$112.00	\$35.00	85%	2,499	1.5
TwinLink Plus	0.5%	1,470	\$112.00	\$35.00	0%	0	0.0
Total Bt	98.5%	289,590	\$110.41	\$34.64	83.3%	241,286	1.5
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	1.5%	4,410	\$26.00	-	100%	4,410	2.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	294,000	\$109.14	\$34.64	83.6%	245,696	1.5
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		294,000	\$109.14		83.6%	245,696	1.5

Table 10. Cotton insect loss estimates for Arkansas during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	485,000	100.0%	431,350	88.9%	1.5	\$22.00	4.16%	1.33	\$29.35	4.16%	84,699	\$42,693,452	\$88.03	30.9%
Beet Armyworm	1,910	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	87,450	18.0%	0	0.0%	0.0	\$7.09	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	169,750	35.0%	68,350	14.1%	1.0	\$18.00	0.00%	0.14	\$2.54	0.00%	0	\$430,605	\$0.89	0.3%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	72,750	15.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	485,000	100.0%	485,000	100.0%	4.7	\$20.00	4.14%	4.70	\$93.94	4.14%	84,329	\$73,894,701	\$152.36	53.4%
Cotton Fleahopper	436,500	90.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	388,000	80.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Brown Stink Bug	388,000	80.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	194,750	40.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	72,750	15.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	330,700	68.0%	184,450	38.0%	1.7	\$20.00	1.77%	0.66	\$13.12	1.21%	24,583	\$12,597,186	\$25.97	9.1%
Thrips	485,000	100.0%	305,700	63.0%	1.0	\$13.00	0.50%	0.63	\$8.19	0.50%	10,186	\$7,396,677	\$15.25	5.3%
Aphids	427,700	88.0%	77,150	15.9%	1.0	\$20.00	0.00%	0.16	\$3.18	0.00%	0	\$1,360,703	\$2.81	1.0%
Grasshoppers	58,050	12.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	67,600	14.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					7.62	\$150.32	10.00%			10.00%	203,798	\$138,373,324	\$285.31	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Arkansas			Total Acres	485,000			Total	Per Acre	
Region	Mid-South			Total Bales Harvested	1,263,021	Foliar Insecticide Costs		\$72,903,003	\$150.32	
Year	2018			Total Bales Lost to Insects	203,798	Seed Treatment Costs		\$5,759,375	\$11.88	
Total Acres (Upland)	485,000	In-furrow cost/treated acre	100%	Percent Yield Loss	10.0%	In-Furrow Costs		\$1,480,100	\$3.05	
Yield / Acre (Upland)	1,250	% acres in Boll Weevil Eradication	\$3.00	Yield w/o Insects (lb/acre)	1,389	Scouting Costs		\$4,850,000	\$10.00	
Price / lb	\$0.70	Cost/acre Boll Weevil Eradication	0%	Av. # Applications	7.62	Eradication Costs		\$1,455,000	\$3.00	
yield potential (lb/acre)	2,016	% acres in Pink Bollworm Eradication	\$0.00	Total Bales lost (all factors)	767,917	Bt Cotton		\$0	\$0.00	
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	80%	Total % yield Loss	38.0%	Total Costs		\$86,447,478	\$178.24	
Yield / Acre (Pima)	0	% Insect apps by air	3.9	Transgenic Cotton (arthropods) (# acres)	0	Yield Loss to Insects		\$68,476,046	\$141.19	
% Acres Scouted	100%	No. apps by air	\$10.00	Boll Weevil Eradication (# acres)	485,000	Total Losses + Costs		\$154,923,524	\$319.43	
Fee / Scouted Acre	\$10.00	Cost/app by air	100%	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1.5	% insect apps by ground	3.8	# Scouted Acres	485,000					
% acres Transgenic (Bt) Cotton	0%	No. apps by ground	\$7.00	Seed Treatments (arthropods) (# acres)	460,750					
Cost/treated acre (Bt) Cotton	\$0.00	Cost/app by ground	18.0%	In-Furrow Applications (# acres)	77,900					
% acres with seed treatment	95%	% Loss to weather	5.0%	Applications by Air (acres)	388,000					
Seed trt. cost/ treated acre	\$12.50	% loss to non-arthropods	5.0%	Applications by Ground (acres)	485,000					
% acres with in-furrow	16%	% loss to other (chemical injury, weeds, diseases, etc.)	5.0%	No. acres with no foliar insecticide applications	0					

Table 10. Cotton insect loss estimates for Arkansas during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	92.0%	446,200	\$112.00	\$35.00	85%	379,270	1.5
Bollgard III	1.0%	4,850	\$112.00	\$35.00	0%	0	0.0
WideStrike	3.0%	14,550	\$97.00	\$35.00	100%	14,550	2.0
WideStrike 3	1.0%	4,850	\$112.00	\$35.00	2%	97	0.5
TwinLink	1.0%	4,850	\$112.00	\$35.00	85%	4,123	1.5
TwinLink Plus	0.5%	2,425	\$112.00	\$35.00	0%	0	0.0
Total Bt	98.5%	477,725	\$111.54	\$35.00	83.3%	398,040	1.5
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	1.5%	7,275	\$26.00	-	100%	7,275	2.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	485,000	\$109.14	\$35.00	83.6%	405,315	1.5
Non Upland Cotton							
Pima	0.0%	0	\$0.00	-	0%	0	0.0
Other	0.0%	0	\$0.00	-	0%	0	0.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		485,000	\$109.14		83.6%	405,315	1.5

Table 11. Cotton insect loss estimates for California-Upland during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	1,920	4.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Beet Armyworm	3,600	7.5%	960	2.0%	1.0	\$11.00	0.50%	0.02	\$0.22	0.04%	82	\$36,216	\$0.75	0.7%
Fall Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	4,801	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	480	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	1,440	3.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	38,404	80.0%	28,803	60.0%	1.5	\$21.00	4.00%	0.90	\$18.90	3.20%	6,881	\$3,698,428	\$77.04	73.9%
Cotton Fleahopper	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	3,840	8.0%	0	0.0%	0.0	\$0.00	1.00%	0.00	\$0.00	0.08%	172	\$74,304	\$1.55	1.5%
Brown Stink Bug	2,400	5.0%	0	0.0%	0.0	\$0.00	1.50%	0.00	\$0.00	0.08%	161	\$69,552	\$1.45	1.4%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	19,202	40.0%	9,601	20.0%	1.2	\$17.00	1.00%	0.24	\$4.08	0.40%	860	\$449,864	\$9.37	9.0%
Thrips	43,205	90.0%	4,801	10.0%	1.0	\$8.00	0.00%	0.10	\$0.80	0.00%	0	\$34,564	\$0.72	0.7%
Aphids	7,201	15.0%	4,801	10.0%	1.2	\$19.00	0.75%	0.12	\$2.28	0.11%	243	\$121,394	\$2.53	2.4%
Grasshoppers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	24,003	50.0%	12,001	25.0%	2.0	\$32.00	0.30%	0.50	\$16.00	0.15%	323	\$523,576	\$10.91	10.5%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					1.88	\$42.28	4.06%				8,722	\$5,007,898	\$104.32	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	California			Total Acres	48,005			Total		Per Acre
Region	West			Total Bales Harvested	182,019	Foliar Insecticide Costs		\$2,029,651		\$42.28
Year	2018			Total Bales Lost to Insects	8,722	Seed Treatment Costs		\$285,630		\$5.95
Total Acres (Upland)	48,005	In-furrow cost/treated acre	\$21.00	Percent Yield Loss	4.1%	In-Furrow Costs		\$50,405		\$1.05
Yield / Acre (Upland)	1,820	% acres in Boll Weevil Eradication	0%	Yield w/o Insects (lb/acre)	1,897	Scouting Costs		\$570,299		\$11.88
Price / lb	\$0.90	Cost/acre Boll Weevil Eradication	\$0.00	Av. # Applications	1.9	Eradication Costs		\$331,235		\$6.90
yield potential (lb/acre)	2,150	% acres in Pink Bollworm Eradication	100%	Total Bales lost (all factors)	22,698	Bt Cotton		\$1,178,235		\$24.54
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$6.90	Total % yield Loss	10.6%	Total Costs		\$4,445,455		\$92.60
Yield / Acre (Pima)	0	% Insect apps by air	50%	Transgenic Cotton (arthropods) (# acres)	36,820	Yield Loss to Insects		\$3,767,904		\$78.49
% Acres Scouted	99%	No. apps by air	1.2	Boll Weevil Eradication (# acres)	0	Total Losses + Costs		\$8,213,359		\$171.09
Fee / Scouted Acre	\$12.00	Cost/app by air	\$16.00	Pink Bollworm Eradication (# acres)	48,005					
No. times scouted/week	1.5	% insect apps by ground	50%	# Scouted Acres	47,525					
% acres Transgenic (Bt) Cotton	77%	No. apps by ground	2	Seed Treatments (arthropods) (# acres)	40,804					
Cost/treated acre (Bt) Cotton	\$32.00	Cost/app by ground	\$13.00	In-Furrow Applications (# acres)	2,400					
% acres with seed treatment	85%	% Loss to weather	2.5%	Applications by Air (acres)	24,003					
Seed trt. cost/ treated acre	\$7.00	% loss to non-arthropods	0.0%	Applications by Ground (acres)	24,003					
% acres with in-furrow	5%	% loss to other (chemical injury, weeds, diseases, etc.)	4.0%	No. acres with no foliar insecticide applications	0					

Table 11. Cotton insect loss estimates for California-Upland during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	20.8%	9,985	-	-	-	-	-
Bollgard III	1.0%	480	-	-	-	-	-
WideStrike	44.9%	21,554	-	-	-	-	-
WideStrike 3	0.0%	0	-	-	-	-	-
TwinLink	7.8%	3,744	-	-	-	-	-
TwinLink Plus	2.2%	1,056	-	-	-	-	-
Total Bt	76.7%	36,819	-	-	-	-	-
Herbicide Traits Only	20.9%	10,033	-	-	-	-	-
Conventional	2.4%	1,152	-	-	-	-	-
Organic	-	0	-	-	-	-	-
Total Upland Cotton	100.0%	48,004	-	-	-	-	-
Non Upland Cotton							
Pima	-	-	-	-	-	-	-
Other	0%	0	-	-	-	-	-
Organic	0.2%	96	-	-	-	-	-
Total (all Cotton)		48,100					

Table 12. Cotton insect loss estimates for California-Pima during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	2,060	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Beet Armyworm	10,300	5.0%	4,120	2.0%	1.0	\$11.00	0.50%	0.02	\$0.22	0.03%	220	\$128,986	\$0.63	0.4%
Fall Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	20,600	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	2,060	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	2,060	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	175,100	85.0%	133,900	65.0%	1.7	\$21.00	5.00%	1.11	\$23.31	4.25%	37,391	\$25,618,797	\$124.36	84.7%
Cotton Fleahopper	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	2,060	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Brown Stink Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	61,800	30.0%	30,900	15.0%	1.0	\$17.00	1.00%	0.15	\$2.55	0.30%	2,639	\$1,677,654	\$8.14	5.5%
Thrips	61,800	30.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Aphids	41,200	20.0%	15,450	7.5%	1.0	\$19.00	1.00%	0.08	\$1.52	0.20%	1,760	\$1,076,384	\$5.23	3.6%
Grasshoppers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	103,000	50.0%	72,100	35.0%	1.5	\$32.00	0.00%	0.53	\$16.96	0.00%	0	\$1,746,880	\$8.48	5.8%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					1.89	\$44.56	4.78%				42,010	\$30,248,701	\$146.84	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	California			Total Acres	206,000			Total		Per Acre
Region	West			Total Bales Harvested	738,167	Foliar Insecticide Costs		\$9,179,360		\$44.56
Year	2018			Total Bales Lost to Insects	42,010	Seed Treatment Costs		\$1,225,700		\$5.95
Total Acres (Pima)	206,000	In-furrow cost/treated acre	\$21.00	Percent Yield Loss	4.8%	In-Furrow Costs		\$43,260		\$0.21
Yield / Acre (Pima)	1,720	% acres in Boll Weevil Eradication	0%	Yield w/o Insects (lb/acre)	1,806	Scouting Costs		\$2,447,280		\$11.88
Price / lb	\$1.20	Cost/acre Boll Weevil Eradication	\$0.00	Av. # Applications	1.89	Eradication Costs		\$1,421,400		\$6.90
yield potential (lb/acre)	2,050	% acres in Pink Bollworm Eradication	100%	Total Bales lost (all factors)	99,197	Bt Cotton		\$0		\$0.00
Acres (Upland)	-	Cost/acre Pink Bollworm Eradication	\$6.90	Total % yield Loss	11.3%	Total Costs		\$14,317,000		\$69.50
Yield / Acre (Upland)	-	% Insect apps by air	60%	Transgenic Cotton (arthropods) (# acres)	0	Yield Loss to Insects		\$24,197,760		\$117.46
% Acres Scouted	99%	No. apps by air	1.2	Boll Weevil Eradication (# acres)	0	Total Losses + Costs		\$38,514,760		\$186.96
Fee / Scouted Acre	\$12.00	Cost/app by air	\$16.00	Pink Bollworm Eradication (# acres)	206,000					
No. times scouted/week	1.5	% insect apps by ground	40%	# Scouted Acres	203,940					
% acres Transgenic (Bt) Cotton	0%	No. apps by ground	2	Seed Treatments (arthropods) (# acres)	175,100					
Cost/treated acre (Bt) Cotton	\$0.00	Cost/app by ground	\$13.00	In-Furrow Applications (# acres)	2,060					
% acres with seed treatment	85%	% Loss to weather	2.0%	Applications by Air (acres)	123,600					
Seed trt. cost/ treated acre	\$7.00	% loss to non-arthropods	0.0%	Applications by Ground (acres)	82,400					
% acres with in-furrow	1%	% loss to other (chemical injury, weeds, diseases, etc.)	4.5%	No. acres with no foliar insecticide applications	0					

Table 12. Cotton insect loss estimates for California-Pima during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	0.0%	0	-	-	-	-	-
Bollgard III	0.0%	0	-	-	-	-	-
WideStrike	0.0%	0	-	-	-	-	-
WideStrike 3	0.0%	0	-	-	-	-	-
TwinLink	0.0%	0	-	-	-	-	-
TwinLink Plus	0.0%	0	-	-	-	-	-
Total Bt	0.0%	0	-	-	-	-	-
Herbicide Traits Only	0.0%	0	-	-	-	-	-
Conventional	0.0%	0	-	-	-	-	-
Organic	0.0%	0	-	-	-	-	-
Total Upland Cotton	0.0%	0	-	-	-	-	-
Non Upland Cotton							
Herbicide Traits	85.1%	175,306	-	-	-	-	-
Conventional	14.9%	30,694	-	-	-	-	-
Organic	0	0	-	-	-	-	-
Total (all Cotton)		206,000					

Table 13. Cotton insect loss estimates for Florida during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	118,000	100.0%	23,600	20.0%	1.0	\$7.00	0.80%	0.20	\$1.40	0.80%	2,163	\$943,880	\$8.00	7.8%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	3,540	3.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	118,000	100.0%	118,000	100.0%	1.2	\$8.50	2.00%	1.20	\$10.20	2.00%	5,408	\$3,150,480	\$26.70	25.9%
Cotton Fleahopper	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	118,000	100.0%	106,200	90.0%	1.7	\$7.50	2.00%	1.53	\$11.48	2.00%	5,408	\$3,300,930	\$27.97	27.1%
Brown Stink Bug	118,000	100.0%	106,200	90.0%	1.7	\$8.50	1.00%	1.53	\$13.01	1.00%	2,704	\$2,508,030	\$21.25	20.6%
Clouded Plant Bug	29,500	25.0%	29,500	25.0%	1.0	\$8.50	0.80%	0.25	\$2.13	0.20%	541	\$257,448	\$2.18	2.1%
Leaf Footed Bugs	94,400	80.0%	59,000	50.0%	1.0	\$9.00	1.00%	0.50	\$4.50	0.80%	2,163	\$1,203,480	\$10.20	9.9%
Spider Mites	14,160	12.0%	11,800	10.0%	1.0	\$10.00	0.00%	0.10	\$1.00	0.00%	0	\$14,160	\$0.12	0.1%
Thrips	118,000	100.0%	82,600	70.0%	1.0	\$4.50	0.00%	0.70	\$3.15	0.00%	0	\$371,700	\$3.15	3.1%
Aphids	118,000	100.0%	59,000	50.0%	1.0	\$7.00	0.00%	0.50	\$3.50	0.00%	0	\$413,000	\$3.50	3.4%
Grasshoppers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	35,400	30.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					6.51	\$50.36	6.80%			6.80%	18,387	\$12,163,108	\$103.08	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Florida			Total Acres	118,000			Total		Per Acre
Region	Southeast			Total Bales Harvested	92,188	Foliar Insecticide Costs		\$5,941,890		\$50.36
Year	2018			Total Bales Lost to Insects	18,387	Seed Treatment Costs		\$982,350		\$8.33
Total Acres (Upland)	118,000	In-furrow cost/treated acre	\$23.00	Percent Yield Loss	6.8%	In-Furrow Costs		\$1,357,000		\$11.50
Yield / Acre (Upland)	375	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	402	Scouting Costs		\$453,120		\$3.84
Price / lb	\$0.75	Cost/acre Boll Weevil Eradication	\$2.00	Av. # Applications	6.51	Eradication Costs		\$236,000		\$2.00
yield potential (lb/acre)	1,100	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	207,680	Bt Cotton		\$4,114,896		\$34.87
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	76.8%	Total Costs		\$13,085,256		\$110.89
Yield / Acre (Pima)	0	% Insect apps by air	0%	Transgenic Cotton (arthropods) (# acres)	118,000	Yield Loss to Insects		\$6,619,320		\$56.10
% Acres Scouted	48%	No. apps by air	0	Boll Weevil Eradication (# acres)	118,000	Total Losses + Costs		\$19,704,576		\$166.99
Fee / Scouted Acre	\$8.00	Cost/app by air	\$0.00	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1	% insect apps by ground	100%	# Scouted Acres	56,640					
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	3.5	Seed Treatments (arthropods) (# acres)	53,100					
Cost/treated acre (Bt) Cotton	\$34.87	Cost/app by ground	\$3.50	In-Furrow Applications (# acres)	59,000					
% acres with seed treatment	45%	% Loss to weather	69.0%	Applications by Air (acres)	0					
Seed trt. cost/ treated acre	\$18.50	% loss to non-arthropods	0.0%	Applications by Ground (acres)	118,000					
% acres with in-furrow	50%	% loss to other (chemical injury, weeds, diseases, etc.)	1.0%	No. acres with no foliar insecticide applications	0					

Table 13. Cotton insect loss estimates for Florida during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	91.0%	107,380	\$114.00	\$35.00	20%	21,476	1.0
Bollgard III	3.0%	3,540	-	\$35.00	0%	0	0.0
WideStrike	4.0%	4,720	\$103.18	\$38.15	20%	944	1.0
WideStrike 3	1.0%	1,180	\$109.58	\$44.60	0%	0	0.0
TwinLink	1.0%	1,180	-	-	0%	0	0.0
TwinLink Plus	0.0%	0	\$0.00	\$0.00	0%	0	0.0
Total Bt	100.0%	118,000	\$108.96	\$34.87	19.0%	22,420	1.0
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	0.0%	0	\$0.00	-	0%	0	0.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	118,000	\$108.96	\$34.87	19.0%	22,420	1.0
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0.0
Other	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		118,000	\$108.96		19.0%	22,420	1.0

Table 14. Cotton insect loss estimates for Georgia during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	675,000	50.0%	48,600	4.0%	1.0	\$8.00	0.10%	0.04	\$0.32	0.05%	2,109	\$1,025,856	\$0.76	1.4%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	13,500	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	742,500	55.0%	162,000	12.0%	1.0	\$8.00	0.10%	0.12	\$0.96	0.06%	2,320	\$1,603,680	\$1.19	2.3%
Cotton Fleahopper	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	1,215,000	90.0%	1,080,000	80.0%	1.2	\$8.00	1.50%	0.96	\$7.68	1.35%	56,953	\$31,201,152	\$23.11	44.0%
Brown Stink Bug	1,215,000	90.0%	1,080,000	80.0%	1.1	\$9.00	1.50%	0.88	\$7.92	1.35%	56,953	\$31,492,752	\$23.33	44.4%
Clouded Plant Bug	270,000	20.0%	13,500	1.0%	1.0	\$8.00	0.10%	0.01	\$0.08	0.02%	844	\$345,696	\$0.26	0.5%
Leaf Footed Bugs	27,000	2.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	135,000	10.0%	13,500	1.0%	1.0	\$9.00	0.10%	0.01	\$0.09	0.01%	422	\$174,198	\$0.13	0.2%
Thrips	1,336,500	99.0%	202,500	15.0%	1.0	\$6.00	0.10%	0.15	\$0.90	0.10%	4,177	\$2,806,818	\$2.08	4.0%
Aphids	1,080,000	80.0%	270,000	20.0%	1.0	\$7.00	0.00%	0.20	\$1.40	0.00%	0	\$1,512,000	\$1.12	2.1%
Grasshoppers	135,000	10.0%	13,500	1.0%	1.0	\$0.00	0.00%	0.01	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	27,000	2.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	270,000	20.0%	27,000	2.0%	1.0	\$16.00	0.20%	0.02	\$0.32	0.04%	1,688	\$734,592	\$0.54	1.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					2.40	\$19.67	2.97%				125,466	\$70,896,744	\$52.52	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Georgia			Total Acres	1,350,000			Total		Per Acre
Region	Southeast			Total Bales Harvested	1,901,250	Foliar Insecticide Costs		\$26,554,500		\$19.67
Year	2018			Total Bales Lost to Insects	125,719	Seed Treatment Costs		\$8,019,000		\$5.94
Total Acres (Upland)	1,350,000	In-furrow cost/treated acre	\$6.00	Percent Yield Loss	3.0%	In-Furrow Costs		\$1,215,000		\$0.90
Yield / Acre (Upland)	676	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	697	Scouting Costs		\$6,615,000		\$4.90
Price / lb	\$0.80	Cost/acre Boll Weevil Eradication	\$1.06	Av. # Applications	2.4	Eradication Costs		\$1,431,000		\$1.06
yield potential (lb/acre)	1,500	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	2,319,469	Bt Cotton		\$20,356,650		\$15.08
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	55.0%	Total Costs		\$64,191,150		\$47.55
Yield / Acre (Pima)	0	% Insect apps by air	15%	Transgenic Cotton (arthropods) (# acres)	1,348,650	Yield Loss to Insects		\$48,178,944		\$35.69
% Acres Scouted	70%	No. apps by air	2	Boll Weevil Eradication (# acres)	1,350,000	Total Losses + Costs		\$112,370,094		\$83.24
Fee / Scouted Acre	\$7.00	Cost/app by air	\$7.00	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1.1	% insect apps by ground	85%	# Scouted Acres	945,000					
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	2.5	Seed Treatments (arthropods) (# acres)	1,336,500					
Cost/treated acre (Bt) Cotton	\$15.09	Cost/app by ground	\$4.00	In-Furrow Applications (# acres)	202,500					
% acres with seed treatment	99%	% Loss to weather	45.0%	Applications by Air (acres)	202,500					
Seed trt. cost/ treated acre	\$6.00	% loss to non-arthropods	5.0%	Applications by Ground (acres)	1,147,500					
% acres with in-furrow	15%	% loss to other (chemical injury, weeds, diseases, etc.)	2.0%	No. acres with no foliar insecticide applications	270,000					

Table 14. Cotton insect loss estimates for Georgia during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	75.9%	1,024,650	\$85.00	\$15.00	2%	20,493	1.0
Bollgard III	7.4%	99,900	\$90.00	\$17.00	0%	0	0.0
WideStrike	9.7%	130,950	\$82.00	\$14.00	20%	26,190	1.0
WideStrike 3	3.3%	44,550	\$83.00	\$16.00	0%	0	0.0
TwinLink	3.1%	41,850	\$85.00	\$15.00	2%	837	1.0
TwinLink Plus	0.5%	6,750	\$90.00	\$17.00	0%	0	0.0
Total Bt	100.0%	1,348,650	\$85.04	\$15.09	3.5%	47,520	0.9
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	0.1%	1,350	\$25.00	-	70%	945	2.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	1,350,000	\$78.32	\$15.09	3.6%	48,465	0.9
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		1,350,000	\$78.32		3.6%	48,465	0.9

Table 15. Cotton insect loss estimates for Kansas during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	40,000	25.0%	16,000	10.0%	1.0	\$9.50	2.00%	0.10	\$0.95	0.50%	1,833	\$583,501	\$3.65	16.1%
Bollworm/Budworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	96,000	60.0%	32,000	20.0%	1.0	\$6.00	1.00%	0.20	\$1.20	0.60%	2,200	\$769,920	\$4.81	21.3%
Lygus	136,000	85.0%	40,000	25.0%	1.0	\$4.50	2.00%	0.25	\$1.13	1.70%	6,233	\$2,007,941	\$12.55	55.5%
Cotton Fleahopper	16,000	10.0%	4,800	3.0%	0.0	\$4.50	1.00%	0.00	\$0.00	0.10%	367	\$109,219	\$0.68	3.0%
Stink Bugs (other than brown stink bug)	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Brown Stink Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	16,000	10.0%	8,000	5.0%	1.0	\$11.50	1.00%	0.05	\$0.58	0.10%	367	\$118,419	\$0.74	3.3%
Spider Mites	120,000	75.0%	8,000	5.0%	1.0	4.5	0.00%	0.05	\$0.23	0.00%	0	\$27,000	\$0.17	0.7%
Thrips	0	0.0%	0	0.0%	0.0	0.0	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Aphids	0	0.0%	0	0.0%	0.0	0.0	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshoppers	0	0.0%	0	0.0%	0.0	0.0	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					0.65	\$4.08	3.00%	11,000	\$3,616,000	\$22.60				

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Kansas			Total Acres	160,000			Total	Per Acre	
Region	Central			Total Bales Harvested	316,667		Foliar Insecticide Costs	\$652,000	\$4.08	
Year	2018			Total Bales Lost to Insects	11,000		Seed Treatment Costs	\$1,200,000	\$7.50	
Total Acres (Upland)	160,000	In-furrow cost/treated acre		\$6.50	Percent Yield Loss	3.0%	In-Furrow Costs	\$104,000	\$0.65	
Yield / Acre (Upland)	950	% acres in Boll Weevil Eradication		0%	Yield w/o Insects (lb/acre)	979	Scouting Costs	\$900,000	\$5.63	
Price / lb	\$0.62	Cost/acre Boll Weevil Eradication		\$0.00	Av. # Applications	0.65	Eradication Costs	\$0	\$0.00	
yield potential (lb/acre)	1,100	% acres in Pink Bollworm Eradication		0%	Total Bales lost (all factors)	66,000	Bt Cotton	\$1,600,000	\$10.00	
Acres (Pima)	-	Cost/acre Pink Bollworm Eradication		\$0.00	Total % yield Loss	18.0%	Total Costs	\$4,456,000	\$27.85	
Yield / Acre (Pima)	-	% Insect apps by air		70%	Transgenic Cotton (arthropods) (# acres)	160,000	Yield Loss to Insects	\$3,273,600	\$20.46	
% Acres Scouted	75%	No. apps by air		1.5	Boll Weevil Eradication (# acres)	0	Total Losses + Costs	\$7,729,600	\$48.31	
Fee / Scouted Acre	\$7.50	Cost/app by air		\$8.00	Pink Bollworm Eradication (# acres)	0				
No. times scouted/week	1.5	% insect apps by ground		30%	# Scouted Acres	120,000				
% acres Transgenic (Bt) Cotton	100%	No. apps by ground		2	Seed Treatments (arthropods) (# acres)	160,000				
Cost/treated acre (Bt) Cotton	\$10.00	Cost/app by ground		\$5.50	In-Furrow Applications (# acres)	16,000				
% acres with seed treatment	100%	% Loss to weather		8.0%	Applications by Air (acres)	112,000				
Seed trt. cost/ treated acre	\$7.50	% loss to non-arthropods		1.0%	Applications by Ground (acres)	48,000				
% acres with in-furrow	10%	% loss to other (chemical injury, weeds, diseases, etc.)		6.0%	No. acres with no foliar insecticide applications	64,000				

Table 15. Cotton insect loss estimates for Kansas 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	65.0%	104,000	\$65.00	\$10.00	10%	10,400	1.0
Bollgard III	0.0%	0	\$0.00	\$0.00	0%	0	0.0
WideStrike	0.0%	0	\$0.00	\$0.00	0%	0	0.0
WideStrike 3	35.0%	56,000	\$75.00	\$10.00	10%	5,600	1.0
TwinLink	0.0%	0	\$0.00	\$0.00	0%	0	0.0
TwinLink Plus	0.0%	0	\$0.00	\$0.00	0%	0	0.0
Total Bt	100.0%	160,000	\$68.50	\$10.00	10.0%	16,000	1.0
Herbicide Traits Only	0%	0	\$0.00	-	0%	0	0.0
Conventional	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	160,000	\$68.50	\$10.00	10.0%	16,000	1.0
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0.0
Other	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		160,000	\$68.50		10.0%	16,000	1.0

Table 16. Cotton insect loss estimates for Louisiana during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	189,000	100.0%	170,100	90.0%	1.4	\$22.00	3.50%	1.26	\$27.72	3.50%	26,460	\$14,637,672	\$77.45	38.0%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	1,890	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	1,890	1.0%	1,890	1.0%	1.0	\$7.00	0.00%	0.01	\$0.07	0.00%	0	\$132	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	189,000	100.0%	189,000	100.0%	3.5	\$12.00	4.00%	3.50	\$42.00	4.00%	30,240	\$18,679,248	\$98.83	48.5%
Cotton Fleahopper	18,900	10.0%	18,900	10.0%	1.0	\$9.00	0.00%	0.10	\$0.90	0.00%	0	\$17,010	\$0.09	0.0%
Stink Bugs (other than brown stink bug)	18,900	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Brown Stink Bug	141,750	75.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	94,500	50.0%	85,050	45.0%	1.0	\$15.00	0.50%	0.45	\$6.75	0.25%	1,890	\$1,309,203	\$6.93	3.4%
Thrips	189,000	100.0%	47,250	25.0%	1.0	\$6.25	1.00%	0.25	\$1.56	1.00%	7,560	\$2,980,625	\$15.77	7.7%
Aphids	170,100	90.0%	85,050	45.0%	1.0	\$12.00	0.00%	0.45	\$5.40	0.00%	0	\$918,540	\$4.86	2.4%
Grasshoppers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					6.02				\$84.40	8.75%	66,150	\$38,542,430	\$203.93	

SUMMARY DATA

Data Input		Yield and Management Results		Economic Results	
State	Louisiana	Total Acres	189,000	Total	Per Acre
Region	Mid-South	Total Bales Harvested	413,438	Foliar Insecticide Costs	\$15,952,073
Year	2018	Total Bales Lost to Insects	66,150	Seed Treatment Costs	\$1,890,000
Total Acres (Upland)	189,000	Percent Yield Loss	8.8%	In-Furrow Costs	\$28,350
Yield / Acre (Upland)	1,050	Yield w/o Insects (lb/acre)	1,151	Scouting Costs	\$1,512,000
Price / lb	\$0.74	Av. # Applications	6.02	Eradication Costs	\$945,000
yield potential (lb/acre)	1,920	Total Bales lost (all factors)	436,590	Bt Cotton	\$6,505,815
Acres (Pima)	0	Total % yield Loss	57.8%	Total Costs	\$26,833,238
Yield / Acre (Pima)	0	Transgenic Cotton (arthropods) (# acres)	187,110	Yield Loss to Insects	\$23,496,480
% Acres Scouted	100%	Boll Weevil Eradication (# acres)	189,000	Total Losses + Costs	\$50,329,718
Fee / Scouted Acre	\$8.00	Pink Bollworm Eradication (# acres)	0		
No. times scouted/week	1	# Scouted Acres	189,000		
% acres Transgenic (Bt) Cotton	99%	Seed Treatments (arthropods) (# acres)	189,000		
Cost/treated acre (Bt) Cotton	\$34.77	In-Furrow Applications (# acres)	3,780		
% acres with seed treatment	100%	Applications by Air (acres)	189,000		
Seed trt. cost/ treated acre	\$10.00	Applications by Ground (acres)	189,000		
% acres with in-furrow	2%	No. acres with no foliar insecticide applications	0		

Table 16. Cotton insect loss estimates for Louisiana during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	81.0%	153,090	\$85.00	\$35.00	95%	145,436	1.5
Bollgard III	2.0%	3,780	\$90.00	\$35.00	5%	189	0.2
WideStrike	3.5%	6,615	\$80.00	\$30.00	100%	6,615	2.0
WideStrike 3	11.0%	20,790	\$85.00	\$35.00	5%	1,040	0.5
TwinLink	1.0%	1,890	\$80.00	\$30.00	100%	1,890	1.5
TwinLink Plus	0.5%	945	\$85.00	\$35.00	5%	47	0.0
Total Bt	99.0%	187,110	\$84.87	\$34.77	83.0%	155,216	1.4
Herbicide Traits Only	0.3%	600	\$60.00	-	600	0.0	0
Conventional	0.7%	1,400	\$0.00	-	1,400	0.0	0
Organic	0.0%	0	\$0.00	-	0	0.0	0
Total Upland Cotton	100.0%	189,110	\$82.37	\$34.77	83.1%	157,216	1.4
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0	0	0
Other	0%	0	\$0.00	-	0	0	0
Organic	0%	0	\$0.00	-	0	0	0
Total (all Cotton)		189,110	\$82.37		83.1%	157,216	1.4

Table 17. Cotton insect loss estimates for the Hills area of Mississippi during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	198,400	80.0%	186,000	75.0%	1.5	\$20.00	1.50%	1.13	\$22.60	1.20%	9,920	\$7,912,192	\$31.90	22.6%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.10%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	49,600	20.0%	4,960	2.0%	1.0	\$11.50	1.00%	0.02	\$0.23	0.20%	1,653	\$582,685	\$2.35	1.7%
Loopers	2,480	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	37,200	15.0%	29,760	12.0%	1.0	\$6.00	0.10%	0.12	\$0.72	0.02%	124	\$69,638	\$0.28	0.2%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	248,000	100.0%	148,800	60.0%	1.5	\$11.00	4.00%	0.90	\$9.90	4.00%	33,067	\$13,883,155	\$55.98	39.7%
Cotton Fleahopper	24,800	10.0%	0	0.0%	1.0	\$0.00	0.10%	0.00	\$0.00	0.01%	83	\$28,685	\$0.12	0.1%
Stink Bugs (other than brown stink bug)	37,200	15.0%	2,480	1.0%	1.0	\$9.00	1.00%	0.01	\$0.09	0.15%	1,240	\$431,892	\$1.74	1.2%
Brown Stink Bug	99,200	40.0%	12,400	5.0%	1.0	\$9.00	1.50%	0.05	\$0.45	0.60%	4,960	\$1,758,816	\$7.09	5.0%
Clouded Plant Bug	37,200	15.0%	2,480	1.0%	1.0	\$9.00	3.00%	0.01	\$0.09	0.45%	3,720	\$1,288,980	\$5.20	3.7%
Leaf Footed Bugs	24,800	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	136,400	55.0%	99,200	40.0%	1.1	\$12.00	2.25%	0.44	\$5.28	1.24%	10,234	\$4,257,062	\$17.17	12.2%
Thrips	248,000	100.0%	37,200	15.0%	1.0	\$9.00	1.00%	0.15	\$1.35	1.00%	8,267	\$3,191,875	\$12.87	9.1%
Aphids	173,600	70.0%	74,400	30.0%	1.1	\$10.00	0.50%	0.33	\$3.30	0.35%	2,893	\$1,572,701	\$6.34	4.5%
Grasshoppers	12,400	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	12,400	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	2,480	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					3.16	\$44.01			\$9.21%		76,161	\$34,977,681	\$141.04	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Mississippi			Total Acres	248,000				Total	Per Acre
Region	Mid-South			Total Bales Harvested	581,250	Foliar Insecticide Costs		\$10,914,480		\$44.01
Year	2018			Total Bales Lost to Insects	76,161	Seed Treatment Costs		\$2,332,440		\$9.41
Total Acres (Upland)	248,000	In-furrow cost/treated acre	\$12.50	Percent Yield Loss	9.2%	In-Furrow Costs		\$31,000		\$0.13
Yield / Acre (Upland)	1,125	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,239	Scouting Costs		\$1,701,280		\$6.86
Price / lb	\$0.72	Cost/acre Boll Weevil Eradication	\$4.00	Av. # Applications	3.16	Eradication Costs		\$992,000		\$4.00
yield potential (lb/acre)	1,600	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	324,161	Bt Cotton		\$7,928,064		\$31.97
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	39.2%	Total Costs		\$23,899,264		\$96.37
Yield / Acre (Pima)	0	% Insect apps by air	20%	Transgenic Cotton (arthropods) (# acres)	247,752	Yield Loss to Insects		\$26,321,242		\$106.13
% Acres Scouted	98%	No. apps by air	1	Boll Weevil Eradication (# acres)	248,000	Total Losses + Costs		\$50,220,506		\$202.50
Fee / Scouted Acre	\$7.00	Cost/app by air	\$7.50	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1.5	% insect apps by ground	80%	# Scouted Acres	243,040					
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	2	Seed Treatments (arthropods) (# acres)	245,520					
Cost/treated acre (Bt) Cotton	\$32.00	Cost/app by ground	\$5.50	In-Furrow Applications (# acres)	2,480					
% acres with seed treatment	99%	% Loss to weather	20.0%	Applications by Air (acres)	49,600					
Seed trt. cost/ treated acre	\$9.50	% loss to non-arthropods	5.0%	Applications by Ground (acres)	198,400					
% acres with in-furrow	1%	% loss to other (chemical injury, weeds, diseases, etc.)	5.0%	No. acres with no foliar insecticide applications	248					

Table 17. Cotton insect loss estimates for the Hills area of Mississippi during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	75.0%	186,000	\$140.00	\$32.00	70%	130,200	1.5
Bollgard III	0.1%	248	\$140.00	\$32.00	0%	0	0.0
WideStrike	24.0%	59,520	\$140.00	\$32.00	95%	56,544	2.0
WideStrike 3	0.5%	1,240	\$140.00	\$32.00	5%	62	0.0
TwinLink	0.2%	496	\$140.00	\$32.00	90%	446	1.7
TwinLink Plus	0.1%	248	\$140.00	\$32.00	0%	0	0.0
Total Bt	100.0%	247,752	\$140.00	\$32.00	75.6%	187,252	1.6
Herbicide Traits Only	0.1%	248	\$108.00	-	100%	248	2.0
Conventional	0.01%	25	\$22.00	-	100%	25	2.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	248,025	\$139.82	\$32.00	75.6%	187,525	1.6
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		248,025	\$139.82		75.6%	187,525	1.6

Table 18. Cotton insect loss estimates for the Delta area of Mississippi during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	353,400	95.0%	353,400	95.0%	1.9	\$20.00	1.50%	1.81	\$36.20	1.43%	19,879	\$19,663,262	\$52.86	22.2%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	93,000	25.0%	7,440	2.0%	1.0	\$11.50	1.00%	0.02	\$0.23	0.25%	3,488	\$1,226,843	\$3.30	1.4%
Loopers	3,720	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	74,400	20.0%	74,400	20.0%	1.0	\$6.00	0.10%	0.20	\$1.20	0.02%	279	\$185,702	\$0.50	0.2%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	372,000	100.0%	334,800	90.0%	5.5	\$11.00	4.00%	4.95	\$54.45	4.00%	55,800	\$39,539,880	\$106.29	44.7%
Cotton Fleahopper	55,800	15.0%	0	0.0%	0.0	\$0.00	0.10%	0.00	\$0.00	0.02%	209	\$72,230	\$0.19	0.1%
Stink Bugs (other than brown stink bug)	55,800	15.0%	3,720	1.0%	1.0	\$9.00	1.00%	0.01	\$0.09	0.15%	2,093	\$728,363	\$1.96	0.8%
Brown Stink Bug	186,000	50.0%	37,200	10.0%	1.0	\$9.00	1.50%	0.10	\$0.90	0.75%	10,463	\$3,783,413	\$10.17	4.3%
Clouded Plant Bug	18,600	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	18,600	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	334,800	90.0%	241,800	65.0%	2.1	\$12.00	2.25%	1.37	\$16.44	2.03%	28,249	\$15,266,966	\$41.04	17.2%
Thrips	372,000	100.0%	74,400	20.0%	1.0	\$9.00	1.00%	0.20	\$1.80	1.00%	13,950	\$5,490,720	\$14.76	6.2%
Aphids	223,200	60.0%	186,000	50.0%	1.0	\$10.00	0.50%	0.50	\$5.00	0.30%	4,185	\$2,562,336	\$6.89	2.9%
Grasshoppers	18,600	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	3,720	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	372	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					9.16	\$116.31	9.94%				138,595	\$88,519,715	\$237.96	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Mississippi			Total Acres	372,000			Total		Per Acre
Region	Mid-South			Total Bales Harvested	891,250	Foliar Insecticide Costs		\$43,267,320		\$116.31
Year	2018			Total Bales Lost to Insects	138,595	Seed Treatment Costs		\$3,498,660		\$9.41
Total Acres (Upland)	372,000	In-furrow cost/treated acre	\$12.50	Percent Yield Loss	9.9%	In-Furrow Costs		\$139,500		\$0.38
Yield / Acre (Upland)	1,150	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,277	Scouting Costs		\$2,946,240		\$7.92
Price / lb	\$0.72	Cost/acre Boll Weevil Eradication	\$4.00	Av. # Applications	9.16	Eradication Costs		\$1,488,000		\$4.00
yield potential (lb/acre)	1,800	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	682,643	Bt Cotton		\$11,832,576		\$31.81
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	48.9%	Total Costs		\$63,172,296		\$169.82
Yield / Acre (Pima)	0	% Insect apps by air	80%	Transgenic Cotton (arthropods) (# acres)	371,628	Yield Loss to Insects		\$47,898,432		\$128.76
% Acres Scouted	99%	No. apps by air	6	Boll Weevil Eradication (# acres)	372,000	Total Losses + Costs		\$111,070,728		\$298.58
Fee / Scouted Acre	\$8.00	Cost/app by air	\$6.00	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1.8	% insect apps by ground	50%	# Scouted Acres	368,280					
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	3	Seed Treatments (arthropods) (# acres)	368,280					
Cost/treated acre (Bt) Cotton	\$31.84	Cost/app by ground	\$5.50	In-Furrow Applications (# acres)	11,160					
% acres with seed treatment	99%	% Loss to weather	25.0%	Applications by Air (acres)	297,600					
Seed trt. cost/ treated acre	\$9.50	% loss to non-arthropods	2.0%	Applications by Ground (acres)	186,000					
% acres with in-furrow	3%	% loss to other (chemical injury, weeds, diseases, etc.)	12.0%	No. acres with no foliar insecticide applications	0					

Table 18. Cotton insect loss estimates for the Delta area of Mississippi during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	78.0%	290,160	\$140.00	\$32.00	95%	275,652	1.8
Bollgard III	0.5%	1,860	\$140.00	\$32.00	0%	0	0.0
WideStrike	20.0%	74,400	\$140.00	\$32.00	99%	73,656	3.0
WideStrike 3	1.0%	3,720	\$140.00	\$32.00	5%	186	1.0
TwinLink	0.3%	1,116	\$140.00	\$32.00	90%	1,004	2.0
TwinLink Plus	0.1%	372	\$140.00	\$32.00	0%	0	0.0
Total Bt	99.9%	371,628	\$139.30	\$31.84	94.3%	350,498	2.0
Herbicide Traits Only	0.1%	372	\$108.00	-	100%	372	3.0
Conventional	0.01%	37	\$22.00	-	100%	37	3.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	372,037	\$139.26	\$31.84	94.3%	350,907	2.0
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		372,037	\$139.26		94.3%	350,907	2.0

Table 19. Cotton insect loss estimates for Mississippi during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	551,800	89.0%	539,400	87.0%	1.7	\$20.00	1.50%	1.51	\$30.28	1.34%	35,725	\$29,052,754	\$46.86	21.6%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.04%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	142,600	23.0%	12,400	2.0%	1.0	\$11.50	1.00%	0.02	\$0.23	0.23%	6,155	\$2,159,903	\$3.48	1.6%
Loopers	6,200	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	111,600	18.0%	104,160	16.8%	1.0	\$6.00	0.10%	0.17	\$1.01	0.02%	482	\$278,962	\$0.45	0.2%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	620,000	100.0%	483,600	78.0%	3.9	\$11.00	4.00%	3.04	\$33.46	4.00%	107,040	\$57,739,571	\$93.13	43.0%
Cotton Fleahopper	80,600	13.0%	0	0.0%	0.4	\$0.00	0.10%	0.00	\$0.00	0.01%	348	\$120,228	\$0.19	0.1%
Stink Bugs (other than brown stink bug)	93,000	15.0%	6,200	1.0%	1.0	\$9.00	1.00%	0.01	\$0.09	0.15%	4,014	\$1,395,612	\$2.25	1.0%
Brown Stink Bug	285,200	46.0%	49,600	8.0%	1.0	\$9.00	1.50%	0.08	\$0.72	0.69%	18,464	\$6,586,659	\$10.62	4.9%
Clouded Plant Bug	55,800	9.0%	2,480	0.4%	0.4	\$3.60	1.20%	0.00	\$0.01	0.11%	2,890	\$999,136	\$1.61	0.7%
Leaf Footed Bugs	43,400	7.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	471,200	76.0%	341,000	55.0%	1.7	\$12.00	2.25%	0.94	\$11.22	1.71%	45,760	\$21,101,427	\$34.03	15.7%
Thrips	620,000	100.0%	111,600	18.0%	1.0	\$9.00	1.00%	0.18	\$1.62	1.00%	26,760	\$10,252,683	\$16.54	7.6%
Aphids	396,800	64.0%	260,400	42.0%	1.0	\$10.00	0.50%	0.44	\$4.37	0.32%	8,563	\$4,692,673	\$7.57	3.5%
Grasshoppers	31,000	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	16,120	3.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	2,852	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					6.39	\$83.00				9.57%	256,201	\$134,379,607	\$216.74	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Mississippi			Total Acres	620,000			Total		Per Acre
Region	Mid-South			Total Bales Harvested	1,472,500	Foliar Insecticide Costs		\$51,459,851		\$83.00
Year	2018			Total Bales Lost to Insects	256,201	Seed Treatment Costs		\$5,831,100		\$9.41
Total Acres (Upland)	620,000	In-furrow cost/treated acre	\$12.50	Percent Yield Loss	9.6%	In-Furrow Costs		\$170,500		\$0.28
Yield / Acre (Upland)	1,140	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,261	Scouting Costs		\$4,646,032		\$7.49
Price / lb	\$0.72	Cost/acre Boll Weevil Eradication	\$4.00	Av. # Applications	6.4	Eradication Costs		\$2,480,000		\$4.00
yield potential (lb/acre)	2,072	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	1,006,804	Bt Cotton		\$19,820,160		\$31.97
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	45.0%	Total Costs		\$84,407,643		\$136.14
Yield / Acre (Pima)	0	% Insect apps by air	56%	Transgenic Cotton (arthropods) (# acres)	619,380	Yield Loss to Insects		\$88,543,058		\$142.81
% Acres Scouted	99%	No. apps by air	4.0	Boll Weevil Eradication (# acres)	620,000	Total Losses + Costs		\$172,950,701		\$278.95
Fee / Scouted Acre	\$7.60	Cost/app by air	\$6.60	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1.7	% insect apps by ground	62%	# Scouted Acres	611,320					
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	2.6	Seed Treatments (arthropods) (# acres)	613,800					
Cost/treated acre (Bt) Cotton	\$32.00	Cost/app by ground	\$5.50	In-Furrow Applications (# acres)	13,640					
% acres with seed treatment	99%	% Loss to weather	23.0%	Applications by Air (acres)	347,200					
Seed trt. cost/ treated acre	\$9.50	% loss to non-arthropods	3.2%	Applications by Ground (acres)	384,400					
% acres with in-furrow	2%	% loss to other (chemical injury, weeds, diseases, etc.)	9.2%	No. acres with no foliar insecticide applications	248					

Table 19. Cotton insect loss estimates for Mississippi during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	76.8%	476,160	\$140.00	\$32.00	85%	404,736	1.7
Bollgard III	0.3%	2,108	\$140.00	\$32.00	0%	0	0.0
WideStrike	21.6%	133,920	\$140.00	\$32.00	97%	130,438	2.6
WideStrike 3	0.8%	4,960	\$140.00	\$32.00	5%	248	0.6
TwinLink	0.3%	1,612	\$140.00	\$32.00	90%	1,451	1.9
TwinLink Plus	0.1%	620	\$140.00	\$32.00	0%	0	0.0
Total Bt	99.9%	619,380	\$140.00	\$32.00	86.7%	536,873	1.9
Herbicide Traits Only	0.1%	620	\$108.00	-	100%	620	2.6
Conventional	0.01%	62	\$22.00	-	100%	62	2.6
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	620,062	\$139.48	\$32.00	86.7%	537,555	1.9
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0.0
Other	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		620,062	\$139.48		86.7%	537,555	1.9

Table 20. Cotton insect loss estimates for Missouri during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	320,000	100.0%	224,000	70.0%	1.5	\$22.00	2.00%	1.05	\$23.10	2.00%	24,000	\$15,456,000	\$48.30	22.8%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	80,000	25.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	3,200	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	80,000	25.0%	160,000	50.0%	1.0	\$18.00	0.00%	0.50	\$9.00	0.00%	0	\$720,000	\$2.25	1.1%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	32,000	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	320,000	100.0%	320,000	100.0%	4.0	\$20.00	2.50%	4.00	\$80.00	2.50%	30,000	\$35,680,000	\$111.50	52.5%
Cotton Fleahopper	256,000	80.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	256,000	80.0%	48,000	15.0%	1.0	\$16.00	0.09%	0.15	\$2.40	0.07%	864	\$904,704	\$2.83	1.3%
Brown Stink Bug	256,000	80.0%	32,000	10.0%	1.0	\$16.00	0.05%	0.10	\$1.60	0.04%	480	\$570,880	\$1.78	0.8%
Clouded Plant Bug	160,000	50.0%	32,000	10.0%	1.0	\$20.00	0.05%	0.10	\$2.00	0.03%	300	\$420,800	\$1.32	0.6%
Leaf Footed Bugs	16,000	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	288,000	90.0%	144,000	45.0%	2.0	\$20.00	1.30%	0.90	\$18.00	1.17%	14,040	\$9,901,440	\$30.94	14.6%
Thrips	320,000	100.0%	240,000	75.0%	1.0	\$13.00	0.20%	0.75	\$9.75	0.20%	2,400	\$3,926,400	\$12.27	5.8%
Aphids	320,000	100.0%	16,000	5.0%	1.0	\$20.00	0.00%	0.05	\$1.00	0.00%	0	\$320,000	\$1.00	0.5%
Grasshoppers	32,000	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	32,000	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					7.60				\$146.85	6.01%	72,084	\$67,900,224	\$212.19	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Missouri			Total Acres	320,000			Total		Per Acre
Region	Mid-South			Total Bales Harvested	850,000	Foliar Insecticide Costs		\$46,992,000		\$146.85
Year	2018			Total Bales Lost to Insects	72,120	Seed Treatment Costs		\$3,880,000		\$12.13
Total Acres (Upland)	320,000	In-furrow cost/treated acre	\$19.00	Percent Yield Loss	6.0%	In-Furrow Costs		\$608,000		\$1.90
Yield / Acre (Upland)	1,275	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,357	Scouting Costs		\$2,816,000		\$8.80
Price / lb	\$0.70	Cost/acre Boll Weevil Eradication	\$2.00	Av. # Applications	7.6	Eradication Costs		\$640,000		\$2.00
yield potential (lb/acre)	1,800	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	348,120	Bt Cotton		\$11,088,000		\$34.65
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	29.0%	Total Costs		\$66,024,000		\$206.33
Yield / Acre (Pima)	0	% Insect apps by air	70%	Transgenic Cotton (arthropods) (# acres)	316,800	Yield Loss to Insects		\$24,220,224		\$75.69
% Acres Scouted	80%	No. apps by air	3	Boll Weevil Eradication (# acres)	320,000	Total Losses + Costs		\$90,244,224		\$282.01
Fee / Scouted Acre	\$11.00	Cost/app by air	\$10.00	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1.5	% insect apps by ground	100%	# Scouted Acres	256,000					
% acres Transgenic (Bt) Cotton	99%	No. apps by ground	4	Seed Treatments (arthropods) (# acres)	310,400					
Cost/treated acre (Bt) Cotton	\$35.00	Cost/app by ground	\$7.00	In-Furrow Applications (# acres)	32,000					
% acres with seed treatment	97%	% Loss to weather	17.0%	Applications by Air (acres)	224,000					
Seed trt. cost/ treated acre	\$12.50	% loss to non-arthropods	3.0%	Applications by Ground (acres)	320,000					
% acres with in-furrow	10%	% loss to other (chemical injury, weeds, diseases, etc.)	3.0%	No. acres with no foliar insecticide applications	0					

Table 20. Cotton insect loss estimates for Missouri during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	92.0%	294,400	\$112.00	\$35.00	83%	244,352	1.5
Bollgard III	1.0%	3,200	\$112.00	\$35.00	0%	0	0.0
WideStrike	3.0%	9,600	\$97.00	\$35.00	100%	9,600	2.0
WideStrike 3	1.0%	3,200	\$112.00	\$35.00	2%	64	1.0
TwinLink	1.0%	3,200	\$112.00	\$35.00	83%	2,656	1.5
TwinLink Plus	1.0%	3,200	\$112.00	\$35.00	0%	0	0.0
Total Bt	99.0%	316,800	\$111.55	\$35.00	81.0%	256,672	1.5
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	1.0%	3,200	\$26.00	-	100%	3200	2.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	320,000	\$109.57	\$35.00	81.2%	259,872	1.5
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0.0
Other	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		320,000	\$109.57		81.2%	259,872	1.5

Table 21. Cotton insect loss estimates for New Mexico during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	28,486	82.0%	4,863	14.0%	1.0	\$10.89	4.30%	0.14	\$1.52	3.53%	3,271	\$1,205,289	\$34.70	62.7%
Beet Armyworm	347	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	695	2.0%	347	1.0%	1.0	\$0.00	1.00%	0.01	\$0.00	0.02%	19	\$6,749	\$0.19	0.4%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	174	1.0%	0	0.0%	0.0	\$0.00	0.50%	0.00	\$0.00	0.00%	3	\$1,066	\$0.03	0.1%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	174	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	13,548	39.0%	2,779	8.0%	1.0	\$12.46	1.80%	0.08	\$1.00	0.70%	651	\$244,740	\$7.05	12.7%
Cotton Fleahopper	10,769	31.0%	695	2.0%	1.0	\$10.91	0.70%	0.02	\$0.22	0.22%	201	\$73,745	\$2.12	3.8%
Stink Bugs (other than brown stink bug)	4,863	14.0%	347	1.0%	1.0	\$0.00	0.40%	0.01	\$0.00	0.06%	52	\$18,470	\$0.53	1.0%
Brown Stink Bug	347	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	347	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	347	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	347	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	30,223	87.0%	4,863	14.0%	1.0	\$6.94	1.20%	0.14	\$0.97	1.04%	969	\$373,553	\$10.75	19.4%
Aphids	695	2.0%	174	0.5%	1.0	\$10.56	0.00%	0.01	\$0.11	0.00%	0	\$73	\$0.00	0.0%
Grasshoppers	695	2.0%	0	0.0%	0.0	\$10.78	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	347	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					0.41	\$3.82	5.57%				5,166	\$1,923,685	\$55.38	

SUMMARY DATA

Data Input				Yield and Management Results			Economic Results		
State	New Mexico			Total Acres	34,739		Total	Per Acre	
Region	West			Total Bales Harvested	85,111	Foliar Insecticide Costs	\$132,592	\$3.82	
Year	2018			Total Bales Lost to Insects	5,168	Seed Treatment Costs	\$253,706	\$7.30	
Total Acres (Upland)	34,739	In-furrow cost/treated acre	\$1.96	Percent Yield Loss	5.6%	In-Furrow Costs	\$4,085	\$0.12	
Yield / Acre (Upland)	1,176	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,245	Scouting Costs	\$186,139	\$5.36	
Price / lb	\$0.74	Cost/acre Boll Weevil Eradication	\$5.95	Av. # Applications	0.41	Eradication Costs	\$300,856	\$8.66	
yield potential (lb/acre)	1,282	% acres in Pink Bollworm Eradication	39%	Total Bales lost (all factors)	15,838	Bt Cotton	\$397,254	\$11.44	
Acres (Pima)	-	Cost/acre Pink Bollworm Eradication	\$6.95	Total % yield Loss	17.1%	Total Costs	\$1,274,632	\$36.69	
Yield / Acre (Pima)	-	% Insect apps by air	38%	Transgenic Cotton (arthropods) (# acres)	26,749	Yield Loss to Insects	\$1,834,963	\$52.82	
% Acres Scouted	73%	No. apps by air	1.1	Boll Weevil Eradication (# acres)	34,739	Total Losses + Costs	\$3,109,595	\$89.51	
Fee / Scouted Acre	\$7.34	Cost/app by air	\$6.78	Pink Bollworm Eradication (# acres)	13,548				
No. times scouted/week	1	% insect apps by ground	21%	# Scouted Acres	25,359				
% acres Transgenic (Bt) Cotton	77%	No. apps by ground	1	Seed Treatments (arthropods) (# acres)	23,623				
Cost/treated acre (Bt) Cotton	\$14.85	Cost/app by ground	\$4.89	In-Furrow Applications (# acres)	2,084				
% acres with seed treatment	68%	% Loss to weather	7.1%	Applications by Air (acres)	13,201				
Seed trt. cost/ treated acre	\$10.74	% loss to non-arthropods	2.4%	Applications by Ground (acres)	7,295				
% acres with in-furrow	6%	% loss to other (chemical injury, weeds, diseases, etc.)	2.0%	No. acres with no foliar insecticide applications	16,327				

Table 21. Cotton insect loss estimates New Mexico during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	25.0%	8,685	\$40.25	\$14.24	6%	521	1.0
Bollgard III	28.0%	9,727	\$42.10	\$16.22	2%	146	0.0
WideStrike	10.0%	3,474	\$35.03	\$12.11	9%	313	1.0
WideStrike 3	11.0%	3,821	\$37.24	\$14.21	0%	0	0.0
TwinLink	1.0%	347	\$55.22	\$17.51	8%	28	1.0
TwinLink Plus	2.0%	695	\$58.31	\$19.23	0%	0	0.0
Total Bt	77.0%	26,749	\$40.48	\$14.85	3.8%	1,007	0.5
Herbicide Traits Only	14.0%	4,863	\$26.31	-	43%	2,091	1.0
Conventional	8.0%	2,779	\$12.10	-	28%	778	1.0
Organic	1.0%	347	\$12.10	-	0%	0	0.0
Total Upland Cotton	100.0%	34,738	\$24.15	\$14.85	11.2%	3,876	0.7
Non Upland Cotton							
Pima	10%	3,474	\$38.31	-	16%	556	1.0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		38,212	\$25.44		11.6%	4,432	0.7

Table 22. Cotton insect loss estimates for North Carolina during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	396,000	90.0%	158,400	36.0%	1.1	\$22.00	7.00%	0.40	\$8.80	6.30%	51,975	\$23,443,200	\$53.28	49.9%
Beet Armyworm	4,400	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	4,400	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	4,400	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	4,400	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	4,400	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	396,000	90.0%	286,000	65.0%	1.8	\$15.00	0.20%	1.17	\$17.55	0.18%	1,485	\$7,520,040	\$17.09	16.0%
Cotton Fleahopper	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	220,000	50.0%	70,400	16.0%	1.0	\$12.00	1.90%	0.16	\$1.92	0.95%	7,838	\$3,432,192	\$7.80	7.3%
Brown Stink Bug	272,800	62.0%	105,600	24.0%	1.0	\$12.00	1.90%	0.24	\$2.88	1.18%	9,719	\$4,517,760	\$10.27	9.6%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	4,400	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	440,000	100.0%	4,400	1.0%	1.0	\$18.00	0.04%	0.01	\$0.18	0.04%	330	\$205,920	\$0.47	0.4%
Thrips	440,000	100.0%	281,600	64.0%	1.0	\$15.00	1.00%	0.64	\$9.60	1.00%	8,250	\$7,392,000	\$16.80	15.7%
Aphids	440,000	100.0%	30,800	7.0%	1.0	\$16.00	0.00%	0.07	\$1.12	0.00%	0	\$492,800	\$1.12	1.0%
Grasshoppers	22,000	5.0%	4,400	1.0%	1.0	\$12.00	0.00%	0.01	\$0.12	0.00%	0	\$2,640	\$0.01	0.0%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					2.70	\$42.17				9.65%	79,597	\$47,006,552	\$106.83	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	North Carolina			Total Acres	440,000			Total	Per Acre	
Region	Southeast			Total Bales Harvested	759,000		Foliar Insecticide Costs	\$18,554,800	\$42.17	
Year	2018			Total Bales Lost to Insects	79,597		Seed Treatment Costs	\$6,243,600	\$14.19	
Total Acres (Upland)	440,000			Percent Yield Loss	9.6%		In-Furrow Costs	\$4,576,000	\$10.40	
Yield / Acre (Upland)	828			Yield w/o Insects (lb/acre)	916		Scouting Costs	\$2,112,000	\$4.80	
Price / lb	\$0.80			Av. # Applications	2.7		Eradication Costs	\$330,000	\$0.75	
yield potential (lb/acre)	900			Total Bales lost (all factors)	162,096		Bt Cotton	\$13,660,416	\$31.05	
Acres (Pima)	0			Total % yield Loss	19.6%		Total Costs	\$45,476,816	\$103.36	
Yield / Acre (Pima)	0			Transgenic Cotton (arthropods) (# acres)	431,200		Yield Loss to Insects	\$30,565,248	\$69.47	
% Acres Scouted	60%			Boll Weevil Eradication (# acres)	440,000		Total Losses + Costs	\$76,042,064	\$172.82	
Fee / Scouted Acre	\$8.00			Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1			# Scouted Acres	264,000					
% acres Transgenic (Bt) Cotton	98%			Seed Treatments (arthropods) (# acres)	378,400					
Cost/treated acre (Bt) Cotton	\$31.68			In-Furrow Applications (# acres)	352,000					
% acres with seed treatment	86%			Applications by Air (acres)	88,000					
Seed trt. cost/ treated acre	\$16.50			Applications by Ground (acres)	352,000					
% acres with in-furrow	80%			No. acres with no foliar insecticide applications	22,000					

Table 22. Cotton insect loss estimates for North Carolina during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	55.0%	242,000	\$90.00	\$30.00	52%	125,840	1.1
Bollgard III	12.0%	52,800	\$100.00	\$35.00	1%	528	1.0
WideStrike	5.0%	22,000	\$85.00	\$30.00	75%	16,500	1.3
WideStrike 3	20.0%	88,000	\$100.00	\$35.00	1%	880	1.0
TwinLink	5.0%	22,000	\$90.00	\$30.00	60%	13,200	1.1
TwinLink Plus	1.0%	4,400	\$100.00	\$35.00	1%	44	1.0
Total Bt	98.0%	431,200	\$93.11	\$31.68	36.4%	156,992	1.1
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0
Conventional	1.0%	4,400	\$25.00	-	100%	4,400	2.0
Organic	1.0%	4,400	\$25.00	-	100%	4,400	3.0
Total Upland Cotton	100.0%	440,000	\$79.75	\$31.68	37.7%	165,792	1.1
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		440,000	\$79.75		37.7%	165,792	1.1

Table 23. Cotton insect loss estimates for Oklahoma during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	85,500	15.0%	39,900	7.0%	1.0	\$18.00	0.70%	0.07	\$1.26	0.11%	1,060	\$474,066	\$0.83	2.8%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	5,700	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Fleahopper	484,500	85.0%	399,000	70.0%	2.0	\$12.00	2.00%	1.40	\$16.80	1.70%	17,159	\$14,069,750	\$24.68	84.5%
Stink Bugs (other than brown stink bug)	85,500	15.0%	39,900	7.0%	2.0	\$8.50	1.00%	0.14	\$1.19	0.15%	1,514	\$624,983	\$1.10	3.8%
Brown Stink Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	42,750	8.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	28,500	5.0%	5,700	1.0%	1.0	\$12.50	0.10%	0.01	\$0.13	0.01%	50	\$20,843	\$0.04	0.1%
Thrips	171,000	30.0%	142,500	25.0%	1.0	\$8.50	0.50%	0.25	\$2.13	0.15%	1,514	\$886,613	\$1.56	5.3%
Aphids	85,500	15.0%	85,500	15.0%	1.0	\$14.00	0.75%	0.15	\$2.10	0.11%	1,141	\$573,880	\$1.01	3.4%
Grasshoppers	39,900	7.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					2.02	\$23.60			2.22%		22,438	\$16,650,135	\$29.21	

SUMMARY DATA

Data Input			Yield and Management Results			Economic Results	
State	Oklahoma		Total Acres	570,000		Total	Per Acre
Region	Central		Total Bales Harvested	929,813	Foliar Insecticide Costs	\$13,452,000	\$23.60
Year	2018		Total Bales Lost to Insects	22,438	Seed Treatment Costs	\$570,000	\$1.00
Total Acres (Upland)	570,000	In-furrow cost/treated acre	Percent Yield Loss	2.2%	In-Furrow Costs	\$0	\$0.00
Yield / Acre (Upland)	783	% acres in Boll Weevil Eradication	Yield w/o Insects (lb/acre)	801	Scouting Costs	\$2,137,500	\$3.75
Price / lb	\$0.72	Cost/acre Boll Weevil Eradication	Av. # Applications	2.02	Eradication Costs	\$1,425,000	\$2.50
yield potential (lb/acre)	850	% acres in Pink Bollworm Eradication	Total Bales lost (all factors)	188,985	Bt Cotton	\$10,284,593	\$18.04
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	Total % yield Loss	18.7%	Total Costs	\$27,869,093	\$48.89
Yield / Acre (Pima)	0	% Insect apps by air	Transgenic Cotton (arthropods) (# acres)	569,367	Yield Loss to Insects	\$7,754,573	\$13.60
% Acres Scouted	50%	No. apps by air	Boll Weevil Eradication (# acres)	570,000	Total Losses + Costs	\$35,623,666	\$62.50
Fee / Scouted Acre	\$7.50	Cost/app by air	Pink Bollworm Eradication (# acres)	0			
No. times scouted/week	1	% insect apps by ground	# Scouted Acres	285,000			
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	Seed Treatments (arthropods) (# acres)	57,000			
Cost/treated acre (Bt) Cotton	\$18.06	Cost/app by ground	In-Furrow Applications (# acres)	0			
% acres with seed treatment	10%	% Loss to weather	Applications by Air (acres)	114,000			
Seed trt. cost/ treated acre	\$10.00	% loss to non-arthropods	Applications by Ground (acres)	456,000			
% acres with in-furrow	0%	% loss to other (chemical injury, weeds, diseases, etc.)	No. acres with no foliar insecticide applications	85,500			

Table 23. Cotton insect loss estimates for Oklahoma during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	84.7%	482,790	\$68.00	\$18.00	8%	38,671	1.0
Bollgard III	1.6%	9,291	\$68.42	\$18.42	0%	0	0.0
WideStrike	0.1%	570	\$68.00	\$18.00	0%	0	0.0
WideStrike 3	13.4%	76,380	\$68.00	\$18.42	0%	0	0.0
TwinLink	0.1%	336	\$68.00	\$18.00	0%	0	0.0
TwinLink Plus	0.0%	0	\$0.00	\$0.00	0%	0	0.0
Total Bt	99.9%	569,367	\$68.01	\$18.06	6.8%	38,671	0.8
Herbicide Traits Only	0.15%	855	\$50.97	-	0%	0	0.0
Conventional	0.00%	0	\$0.00	-	0%	0	0.0
Organic	0.00%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	570,222	\$66.87	\$18.06	6.8%	38,671	0.8
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		570,222	\$66.87		6.8%	38,671	0.8

Table 24. Cotton insect loss estimates for South Carolina during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	300,000	100.0%	90,000	30.0%	1.0	\$10.00	1.30%	0.30	\$3.00	1.25%	9,375	\$4,455,000	\$14.85	20.8%
Beet Armyworm	1,500	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	15,000	5.0%	3,000	1.0%	1.0	\$10.00	0.10%	0.01	\$0.10	0.01%	38	\$15,910	\$0.05	0.1%
Loopers	1,500	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	15,000	5.0%	15,000	5.0%	1.0	\$6.00	0.10%	0.05	\$0.30	0.01%	38	\$18,910	\$0.06	0.1%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	300,000	100.0%	30,000	10.0%	1.0	\$8.00	0.20%	0.10	\$0.80	0.20%	1,500	\$808,800	\$2.70	3.8%
Cotton Fleahopper	225,000	75.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	300,000	100.0%	270,000	90.0%	1.5	\$9.00	2.00%	1.35	\$12.15	2.00%	15,000	\$9,333,000	\$31.11	43.6%
Brown Stink Bug	300,000	100.0%	150,000	50.0%	1.0	\$9.00	0.30%	0.50	\$4.50	0.25%	1,875	\$2,061,000	\$6.87	9.6%
Clouded Plant Bug	1,500	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	225,000	75.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	300,000	100.0%	45,000	15.0%	1.0	\$12.00	0.10%	0.15	\$1.80	0.10%	750	\$824,400	\$2.75	3.9%
Thrips	300,000	100.0%	240,000	80.0%	1.0	\$6.00	0.50%	0.80	\$4.80	0.50%	3,750	\$2,862,000	\$9.54	13.4%
Aphids	300,000	100.0%	30,000	10.0%	1.0	\$9.00	0.10%	0.10	\$0.90	0.10%	750	\$554,400	\$1.85	2.6%
Grasshoppers	300,000	100.0%	3,000	1.0%	1.0	\$9.00	0.10%	0.01	\$0.09	0.10%	750	\$311,400	\$1.04	1.5%
Banded Winged Whitefly	150,000	50.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	150,000	50.0%	1,500	1.0%	1.0	\$15.00	0.10%	0.01	\$0.15	0.05%	375	\$164,700	\$0.55	0.8%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					3.38	\$28.59	4.56%				34,201	\$21,409,520	\$71.37	

SUMMARY DATA

Data Input				Yield and Management Results			Economic Results	
State	South Carolina			Total Acres	300,000		Total	Per Acre
Region	Southeast			Total Bales Harvested	481,875	Foliar Insecticide Costs	\$8,577,000	\$28.59
Year	2018			Total Bales Lost to Insects	34,201	Seed Treatment Costs	\$3,510,000	\$11.70
Total Acres (Upland)	300,000	In-furrow cost/treated acre	\$18.00	Percent Yield Loss	4.6%	In-Furrow Costs	\$1,080,000	\$3.60
Yield / Acre (Upland)	771	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	808	Scouting Costs	\$1,575,000	\$5.25
Price / lb	\$0.79	Cost/acre Boll Weevil Eradication	\$1.25	Av. # Applications	3.38	Eradication Costs	\$375,000	\$1.25
yield potential (lb/acre)	1,200	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	266,700	Bt Cotton	\$8,769,000	\$29.23
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	35.6%	Total Costs	\$23,886,000	\$79.62
Yield / Acre (Pima)	0	% Insect apps by air	5%	Transgenic Cotton (arthropods) (# acres)	300,000	Yield Loss to Insects	\$12,969,019	\$43.23
% Acres Scouted	75%	No. apps by air	1	Boll Weevil Eradication (# acres)	300,000	Total Losses + Costs	\$36,855,019	\$122.85
Fee / Scouted Acre	\$7.00	Cost/app by air	\$10.00	Pink Bollworm Eradication (# acres)	0			
No. times scouted/week	1	% insect apps by ground	95%	# Scouted Acres	225,000			
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	3	Seed Treatments (arthropods) (# acres)	270,000			
Cost/treated acre (Bt) Cotton	\$29.23	Cost/app by ground	\$6.50	In-Furrow Applications (# acres)	60,000			
% acres with seed treatment	90%	% Loss to weather	20.0%	Applications by Air (acres)	15,000			
Seed trt. cost/ treated acre	\$13.00	% loss to non-arthropods	1.0%	Applications by Ground (acres)	285,000			
% acres with in-furrow	20%	% loss to other (chemical injury, weeds, diseases, etc.)	10.0%	No. acres with no foliar insecticide applications	1,500			

Table 24. Cotton insect loss estimates for South Carolina during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	84.4%	253,200	\$108.00	\$30.00	50%	126,600	1.0
Bollgard III	9.0%	27,000	\$106.00	\$30.00	5%	1,350	1.0
WideStrike	0.1%	300	\$92.00	\$10.00	100%	300	1.0
WideStrike 3	3.0%	9,000	\$105.00	\$10.00	5%	450	1.0
TwinLink	3.0%	9,000	\$99.00	\$25.00	50%	4,500	1.0
TwinLink Plus	0.5%	1,500	\$102.00	\$30.00	5%	75	1.0
Total Bt	100.0%	300,000	\$107.41	\$29.23	44.4%	133,275	1.0
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	0.0%	0	\$0.00	-	0%	0	0.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	300,000	\$97.87	\$29.23	44.4%	133,275	1.0
Non Upland Cotton							
Pima	0.0%	0	\$0.00	-	0%	0	0.0
Other	0.0%	0	\$0.00	-	0%	0	0.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		300,000	\$97.87		44.4%	133,275	1.0

Table 25. Cotton insect loss estimates for Tennessee during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	319,500	90.0%	235,010	66.2%	1.5	\$19.00	2.30%	0.99	\$18.81	2.07%	19,596	\$13,252,477	\$37.33	27.7%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	106,500	30.0%	17,750	5.0%	1.0	\$13.50	0.20%	0.05	\$0.68	0.06%	568	\$281,820	\$0.79	0.6%
Loopers	3,550	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	35,500	10.0%	213,000	60.0%	1.0	\$4.00	0.00%	0.60	\$2.40	0.00%	0	\$85,200	\$0.24	0.2%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	28,400	8.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	355,000	100.0%	355,000	100.0%	3.4	\$13.00	2.50%	3.40	\$44.20	2.50%	23,667	\$24,438,323	\$68.84	51.2%
Cotton Fleahopper	10,650	3.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	355,000	100.0%	106,500	30.0%	1.0	\$10.75	0.40%	0.30	\$3.23	0.40%	3,787	\$2,544,550	\$7.17	5.3%
Brown Stink Bug	355,000	100.0%	35,500	10.0%	1.0	\$11.00	0.10%	0.10	\$1.10	0.10%	947	\$740,511	\$2.09	1.6%
Clouded Plant Bug	319,500	90.0%	35,500	10.0%	1.0	\$9.00	0.05%	0.10	\$0.90	0.05%	426	\$445,000	\$1.25	0.9%
Leaf Footed Bugs	7,100	2.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	319,500	90.0%	134,900	38.0%	1.1	\$11.00	0.20%	0.42	\$4.62	0.18%	1,704	\$2,105,888	\$5.93	4.4%
Thrips	355,000	100.0%	319,500	90.0%	1.1	\$7.00	0.30%	0.99	\$6.93	0.30%	2,840	\$3,509,814	\$9.89	7.3%
Aphids	355,000	100.0%	14,200	4.0%	1.0	\$13.00	0.05%	0.04	\$0.52	0.05%	473	\$359,421	\$1.01	0.8%
Grasshoppers	10,650	3.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	28,400	8.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					6.99	\$83.38	5.71%			5.71%	54,008	\$47,763,004	\$134.54	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Tennessee			Total Acres	355,000			Total		Per Acre
Region	Mid-South			Total Bales Harvested	764,729	Foliar Insecticide Costs		\$29,599,900		\$83.38
Year	2018			Total Bales Lost to Insects	54,008	Seed Treatment Costs		\$3,727,500		\$10.50
Total Acres (Upland)	355,000	In-furrow cost/treated acre	\$0.00	Percent Yield Loss	5.7%	In-Furrow Costs		\$0		\$0.00
Yield / Acre (Upland)	1,034	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,097	Scouting Costs		\$3,195,000		\$9.00
Price / lb	\$0.77	Cost/acre Boll Weevil Eradication	\$1.50	Av. # Applications	6.99	Eradication Costs		\$532,500		\$1.50
yield potential (lb/acre)	1,280	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	186,541	Bt Cotton		\$8,354,570		\$23.53
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	19.7%	Total Costs		\$45,409,470		\$127.91
Yield / Acre (Pima)	0	% Insect apps by air	25%	Transgenic Cotton (arthropods) (# acres)	353,225	Yield Loss to Insects		\$19,961,357		\$56.23
% Acres Scouted	80%	No. apps by air	1.7	Boll Weevil Eradication (# acres)	355,000	Total Losses + Costs		\$65,370,827		\$184.14
Fee / Scouted Acre	\$11.25	Cost/app by air	\$9.00	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1.5	% insect apps by ground	75%	# Scouted Acres	284,000					
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	5.2	Seed Treatments (arthropods) (# acres)	355,000					
Cost/treated acre (Bt) Cotton	\$23.65	Cost/app by ground	\$5.00	In-Furrow Applications (# acres)	0					
% acres with seed treatment	100%	% Loss to weather	8.0%	Applications by Air (acres)	88,750					
Seed trt. cost/ treated acre	\$10.50	% loss to non-arthropods	2.0%	Applications by Ground (acres)	266,250					
% acres with in-furrow	0%	% loss to other (chemical injury, weeds, diseases, etc.)	4.0%	No. acres with no foliar insecticide applications	0					

Table 25. Cotton insect loss estimates for Tennessee during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	75.0%	266,250	\$110.00	\$24.00	80%	213,000	1.2
Bollgard III	5.5%	19,525	\$112.00	\$26.00	0%	0	0.0
WideStrike	5.7%	20,235	\$82.00	\$16.00	100%	20,235	1.5
WideStrike 3	12.8%	45,440	\$110.00	\$24.00	0%	0	0.0
TwinLink	0.0%	0	\$82.00	\$16.00	0	0	0
TwinLink Plus	0.5%	1,775	\$110.00	\$24.00	0%	0	0.0
Total Bt	100.0%	353,225	\$108.51	\$23.65	66.0%	233,235	1.0
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0
Conventional	0.5%	1,775	\$22.00	-	100%	1,775	1.8
Organic	0.0%	0	\$0.00	-	0%	0	0
Total Upland Cotton	100.0%	355,000	\$101.91	\$23.65	66.2%	235,010	1.0
Non Upland Cotton							
Pima	0.0%	0	\$0.00	-	0%	0	0
Other	0.0%	0	\$0.00	-	0%	0	0
Organic	0.0%	0	\$0.0	-	0%	0	0
Total (all Cotton)		355,000	\$101.91		66.2%	235,010	1.0

Table 26. Cotton insect loss estimates for South Texas during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	462,356	50.0%	277,414	30.0%	1.1	\$24.00	3.00%	0.33	\$7.92	1.50%	57,795	\$25,022,892	\$27.06	17.0%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	9,247	1.0%	9,247	1.0%	1.0	\$24.00	0.50%	0.01	\$0.24	0.01%	193	\$73,552	\$0.08	0.1%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	184,942	20.0%	184,942	20.0%	1.0	\$15.00	0.00%	0.20	\$3.00	0.00%	0	\$554,827	\$0.60	0.4%
Cotton Fleahopper	924,712	100.0%	878,476	95.0%	2.0	\$11.00	2.00%	1.90	\$20.90	2.00%	77,059	\$47,807,487	\$51.70	32.5%
Stink Bugs (other than brown stink bug)	647,298	70.0%	554,827	60.0%	1.0	\$11.00	3.00%	0.60	\$6.60	2.10%	80,912	\$34,177,245	\$36.96	23.2%
Brown Stink Bug	138,707	15.0%	138,707	15.0%	1.0	\$11.00	0.50%	0.15	\$1.65	0.08%	2,890	\$1,297,010	\$1.40	0.9%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	92,471	10.0%	92,471	10.0%	1.0	\$0.00	0.00%	0.10	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	92,471	10.0%	27,741	3.0%	1.0	\$14.00	2.50%	0.03	\$0.42	0.25%	9,632	\$3,598,825	\$3.89	2.4%
Thrips	924,712	100.0%	924,712	100.0%	1.0	\$11.00	1.00%	1.00	\$11.00	1.00%	38,530	\$24,412,520	\$26.40	16.6%
Aphids	924,712	100.0%	184,942	20.0%	1.0	\$16.00	0.50%	0.20	\$3.20	0.50%	19,265	\$10,079,422	\$10.90	6.9%
Grasshoppers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	490,097	53.0%	138,707	15.0%	1.0	\$0.00	0.00%	0.15	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	277,414	30.0%	277,414	30.0%	2.0	\$0.00	0.00%	0.60	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					5.27	\$54.93				7.43%	286,276	\$147,023,780	\$158.99	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results			
State	Texas			Total Acres	924,712			Total		Per Acre	
Region	Central			Total Bales Harvested	1,637,511	Foliar Insecticide Costs	\$50,794,430		\$54.93		
Year	2018			Total Bales Lost to Insects	286,660	Seed Treatment Costs	\$9,247,120		\$10.00		
Total Acres (Upland)	924,712	In-furrow cost/treated acre	\$11.00	Percent Yield Loss	7.4%	In-Furrow Costs	\$203,437		\$0.22		
Yield / Acre (Upland)	850	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	918	Scouting Costs	\$5,548,272		\$6.00		
Price / lb	\$0.77	Cost/acre Boll Weevil Eradication	\$6.00	Av. # Applications	5.27	Eradication Costs	\$5,548,272		\$6.00		
yield potential (lb/acre)	2,000	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	2,976,031	Bt Cotton	\$9,645,671		\$10.43		
Acres (Pima)	-	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	77.2%	Total Costs	\$80,987,202		\$87.58		
Yield / Acre (Pima)	-	% Insect apps by air	30%	Transgenic Cotton (arthropods) (# acres)	878,476	Yield Loss to Insects	\$105,807,610		\$114.42		
% Acres Scouted	60%	No. apps by air		Boll Weevil Eradication (# acres)	924,712	Total Losses + Costs	\$186,794,812		\$202.00		
Fee / Scouted Acre	\$10.00	Cost/app by air	\$7.00	Pink Bollworm Eradication (# acres)	0						
No. times scouted/week	1.3	% insect apps by ground	70%	# Scouted Acres	554,827						
% acres Transgenic (Bt) Cotton	95%	No. apps by ground		Seed Treatments (arthropods) (# acres)	924,712						
Cost/treated acre (Bt) Cotton	\$10.98	Cost/app by ground	\$4.00	In-Furrow Applications (# acres)	18,494						
% acres with seed treatment	100%	% Loss to weather	59.8%	Applications by Air (acres)	277,414						
Seed trt. cost/ treated acre	\$10.00	% loss to non-arthropods	5.0%	Applications by Ground (acres)	647,298						
% acres with in-furrow	2%	% loss to other (chemical injury, weeds, diseases, etc.)	5.0%	No. acres with no foliar insecticide applications	18,494						

Table 26. Cotton insect loss estimates for South Texas during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	49.0%	453,109	\$80.00	\$12.00	25%	113,277	1.0
Bollgard III	5.0%	46,236	\$90.00	\$20.00	0%	0	0.0
WideStrike	25.0%	231,178	\$60.00	\$5.00	60%	138,707	1.5
WideStrike 3	10.0%	92,471	\$90.00	\$15.00	0%	0	0.0
TwinLink	5.0%	46,236	\$80.00	\$12.00	25%	11,559	1.0
TwinLink Plus	1.0%	9,247	\$90.00	\$20.00	0%	0	0.0
Total Bt	95.0%	878,777	\$76.42	\$10.98	30.0%	263,543	1.0
Herbicide Traits Only	1.0%	9,247	\$65.00	-	80%	7,398	2.0
Conventional	3.0%	27,741	\$25.00	-	80%	22,193	2.0
Organic	1.0%	9,247	\$25.00	-	0%	0	0.0
Total Upland Cotton	100.0%	924,712	\$69.75	\$10.98	31.7%	293,134	1.1
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		924,712	\$69.75		31.7%	293,134	1.1

Table 27. Cotton insect loss estimates for Texas Blacklands-Winter Garden during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	364,784	100.0%	145,914	40.0%	1.2	\$24.00	3.00%	0.48	\$11.52	3.00%	45,598	\$21,055,332	\$57.72	25.9%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	54,718	15.0%	18,239	5.0%	1.0	\$24.00	0.50%	0.05	\$1.20	0.08%	1,140	\$487,005	\$1.34	0.6%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	7,296	2.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	91,196	25.0%	3,648	1.0%	1.0	\$15.00	0.00%	0.01	\$0.15	0.00%	0	\$13,679	\$0.04	0.0%
Cotton Fleahopper	364,784	100.0%	346,545	95.0%	2.3	\$11.00	2.00%	2.19	\$24.09	2.00%	30,399	\$20,023,117	\$54.89	24.6%
Stink Bugs (other than brown stink bug)	364,784	100.0%	72,957	20.0%	1.0	\$11.00	3.00%	0.20	\$2.20	3.00%	45,598	\$17,655,546	\$48.40	21.7%
Brown Stink Bug	291,827	80.0%	18,239	5.0%	1.0	\$11.00	0.50%	0.05	\$0.55	0.40%	6,080	\$2,407,673	\$6.60	3.0%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	91,196	25.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	237,110	65.0%	54,718	15.0%	1.0	\$14.00	2.50%	0.15	\$2.10	1.63%	24,699	\$9,626,681	\$26.39	11.8%
Thrips	364,784	100.0%	91,196	25.0%	1.0	\$11.00	1.00%	0.25	\$2.75	1.00%	15,199	\$6,620,706	\$18.15	8.1%
Aphids	364,784	100.0%	36,478	10.0%	1.0	\$16.00	0.50%	0.10	\$1.60	0.50%	7,600	\$3,392,614	\$9.30	4.2%
Grasshoppers	218,870	60.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					3.48	\$46.16			11.60%		176,313	\$81,282,353	\$222.82	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Texas			Total Acres	364,784			Total		Per Acre
Region	Central			Total Bales Harvested	664,971	Foliar Insecticide Costs		\$16,838,429		\$46.16
Year	2018			Total Bales Lost to Insects	176,465	Seed Treatment Costs		\$3,647,840		\$10.00
Total Acres (Upland)	364,784	In-furrow cost/treated acre	\$11.00	Percent Yield Loss	11.6%	In-Furrow Costs		\$40,126		\$0.11
Yield / Acre (Upland)	875	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	990	Scouting Costs		\$2,918,272		\$8.00
Price / lb	\$0.77	Cost/acre Boll Weevil Eradication	\$7.19	Av. # Applications	3.48	Eradication Costs		\$2,622,797		\$7.19
yield potential (lb/acre)	2,000	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	1,086,904	Bt Cotton		\$4,399,295		\$12.06
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	71.5%	Total Costs		\$30,466,759		\$83.52
Yield / Acre (Pima)	0	% Insect apps by air	60%	Transgenic Cotton (arthropods) (# acres)	364,784	Yield Loss to Insects		\$65,165,285		\$178.64
% Acres Scouted	80%	No. apps by air	2	Boll Weevil Eradication (# acres)	364,784	Total Losses + Costs		\$95,632,044		\$262.16
Fee / Scouted Acre	\$10.00	Cost/app by air	\$7.00	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1.25	% insect apps by ground	40%	# Scouted Acres	291,827					
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	2	Seed Treatments (arthropods) (# acres)	364,784					
Cost/treated acre (Bt) Cotton	\$12.06	Cost/app by ground	\$5.50	In-Furrow Applications (# acres)	3,648					
% acres with seed treatment	100%	% Loss to weather	55.9%	Applications by Air (acres)	218,870					
Seed trt. cost/ treated acre	\$10.00	% loss to non-arthropods	2.0%	Applications by Ground (acres)	145,914					
% acres with in-furrow	1%	% loss to other (chemical injury, weeds, diseases, etc.)	2.0%	No. acres with no foliar insecticide applications	10,944					

Table 27. Cotton insect loss estimates for Texas Blackland-Winter Garden during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	70.0%	255,349	\$80.00	\$12.00	40%	102,140	1.2
Bollgard III	2.0%	7,296	\$90.00	\$20.00	0%	0	0.0
WideStrike	8.0%	29,183	\$60.00	\$5.00	80%	23,346	1.5
WideStrike 3	10.0%	36,478	\$90.00	\$15.00	3%	1,094	1.0
TwinLink	8.0%	29,183	\$80.00	\$12.00	40%	11,673	1.2
TwinLink Plus	2.0%	7,296	\$90.00	\$20.00	0%	0	0.0
Total Bt	100.0%	364,785	\$79.80	\$12.06	37.9%	138,254	1.2
Herbicide Traits Only	0%	0	\$0.00	-	0%	0	0.0
Conventional	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	364,785	\$78.00	\$12.06	37.9%	138,254	1.2
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		364,785	\$78.00	-	37.9%	138,254	1.2

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	972,728	60.0%	64,849	4.0%	1.0	\$17.00	2.00%	0.04	\$0.68	1.20%	81,061	\$30,621,601	\$18.89	72.0%
Beet Armyworm	16,212	1.0%	0	0.0%	1.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	64,849	4.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Fleahopper	1,134,849	70.0%	162,121	10.0%	1.2	\$11.00	0.50%	0.12	\$1.32	0.35%	23,643	\$10,236,454	\$6.31	24.1%
Stink Bugs (other than brown stink bug)	97,273	6.0%	16,212	1.0%	1.0	\$12.00	0.20%	0.01	\$0.12	0.01%	811	\$311,418	\$0.19	0.7%
Brown Stink Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	0	0.0%	0	0.0%	1.0	\$16.00	15.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	1,296,970	80.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Aphids	810,607	50.0%	16,212	1.0%	1.0	\$16.00	0.10%	0.01	\$0.16	0.05%	3,378	\$1,378,206	\$0.85	3.2%
Grasshoppers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Whitefly														
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL								0.18	\$2.28	1.61%	108,893	\$42,547,679	\$26.24	

Data Input				Yield and Management Results		Economic Results	
State	Texas			Total Acres	1,637,618	Total	Per Acre
Region	Central			Total Bales Harvested	1,249,685	Foliar Insecticide Costs	\$3,696,366
Year	2018			Total Bales Lost to Insects	108,758	Seed Treatment Costs	\$15,401,524
Total Acres (Upland)	1,621,213	In-furrow cost/treated acre	\$20.00	Percent Yield Loss	1.6%	In-Furrow Costs	\$0
Yield / Acre (Upland)	370	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	376	Scouting Costs	\$1,556,364
Price / lb	\$0.77	Cost/acre Boll Weevil Eradication	\$0.72	Av. # Applications	0.18	Eradication Costs	\$1,167,273
yield potential (lb/acre)	2,000	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	6,093,734	Bt Cotton	\$20,919,808
Acres (Pima)	16,405	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	90.2%	Total Costs	\$42,741,335
Yield / Acre (Pima)	750	% Insect apps by air	8%	Transgenic Cotton (arthropods) (# acres)	1,475,304	Yield Loss to Insects	\$40,246,853
% Acres Scouted	10%	No. apps by air	0.016	Boll Weevil Eradication (# acres)	1,621,213	Total Losses + Costs	\$82,988,188
Fee / Scouted Acre	\$9.60	Cost/app by air	\$7.20	Pink Bollworm Eradication (# acres)	0		
No. times scouted/week	1	% insect apps by ground	92%	# Scouted Acres	162,121		
% acres Transgenic (Bt) Cotton	91%	No. apps by ground	0.184	Seed Treatments (arthropods) (# acres)	1,540,152		
Cost/treated acre (Bt) Cotton	\$14.18	Cost/app by ground	\$3.00	In-Furrow Applications (# acres)	0		
% acres with seed treatment	95%	% Loss to weather	82.6%	Applications by Air (acres)	129,697		
Seed trt. cost/ treated acre	\$10.00	% loss to non-arthropods	4.0%	Applications by Ground (acres)	1,491,516		
% acres with in-furrow	0%	% loss to other (chemical injury, weeds, diseases, etc.)	2.0%	No. acres with no foliar insecticide applications	1,378,031		

Table 28. Cotton insect loss estimates for Texas Rolling Plains-Trans Pecos during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	38.0%	616,061	\$80.00	\$12.00	1%	6,161	1.0
Bollgard III	2.0%	32,424	\$90.00	\$20.00	0%	0	0.0
WideStrike	5.0%	81,061	\$60.00	\$5.00	2%	1,621	1.0
WideStrike 3	11.0%	178,333	\$90.00	\$15.00	0%	0	0.0
TwinLink	7.0%	113,485	\$80.00	\$12.00	1%	1,135	1.0
TwinLink Plus	28.0%	453,940	\$90.00	\$20.00	0%	0	0.0
Total Bt	91.0%	1,475,304	\$81.43	\$14.18	.06%	8,917	0.5
Herbicide Traits Only	8.0%	129,697	\$65.00	-	50%	64,849	2.0
Conventional	1.0%	16,212	\$25.00	-	50%	8,106	2.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	1,621,213	\$79.55	\$14.18	5.0%	81,872	0.7
Non Upland Cotton							
Pima	1.1%	17,833	\$60.00	-	0%	0	0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		1,639,046	\$79.34		5.0%	81,872	0.7

Table 29. Cotton insect loss estimates for Texas High Plains during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	2,586,419	55.0%	564,310	12.0%	1.0	\$20.00	1.00%	0.12	\$2.40	0.55%	107,767	\$46,038,089	\$9.79	92.0%
Beet Armyworm	470,258	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	282,155	6.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	470,258	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	940,516	20.0%	47,026	1.0%	1.0	\$15.00	0.00%	0.01	\$0.15	0.00%	0	\$141,077	\$0.03	0.3%
Cotton Fleahopper	940,516	20.0%	47,026	1.0%	1.0	\$11.00	0.00%	0.01	\$0.11	0.00%	0	\$103,457	\$0.02	0.2%
Stink Bugs (other than brown stink bug)	470,258	10.0%	47,026	1.0%	1.0	\$12.00	0.10%	0.01	\$0.12	0.01%	1,959	\$780,477	\$0.17	1.6%
Brown Stink Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	47,026	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	3,291,806	70.0%	470,258	10.0%	1.0	\$9.00	0.00%	0.10	\$0.90	0.00%	0	\$2,962,625	\$0.63	5.9%
Aphids	1,175,645	25.0%	0	0.0%	1.0	\$18.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshoppers	47,026	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	94,052	2.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kurtoma Thrips	235,129	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Wireworms	235,129	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL								0.25	\$3.68	0.56%	109,726	\$50,025,725	\$10.64	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Texas			Total Acres	4,702,580			Total		Per Acre
Region	Central			Total Bales Harvested	4,751,565	Foliar Insecticide Costs		\$17,305,494		\$3.68
Year	2018			Total Bales Lost to Insects	109,726	Seed Treatment Costs		\$37,620,640		\$8.00
Total Acres (Upland)	4,702,580	In-furrow cost/treated acre	\$18.00	Percent Yield Loss	0.6%	In-Furrow Costs		\$2,539,393		\$0.54
Yield / Acre (Upland)	485	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	488	Scouting Costs		\$21,161,610		\$4.50
Price / lb	\$0.77	Cost/acre Boll Weevil Eradication	\$1.50	Av. # Applications	0.25	Eradication Costs		\$7,053,870		\$1.50
yield potential (lb/acre)	2,000	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	18,645,730	Bt Cotton		\$39,919,261		\$8.49
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	95.2%	Total Costs		\$125,600,268		\$26.71
Yield / Acre (Pima)	0	% Insect apps by air	55%	Transgenic Cotton (arthropods) (# acres)	3,385,858	Yield Loss to Insects		\$40,554,730		\$8.62
% Acres Scouted	50%	No. apps by air	0.25	Boll Weevil Eradication (# acres)	4,702,580	Total Losses + Costs		\$166,154,998		\$35.33
Fee / Scouted Acre	\$9.00	Cost/app by air	\$7.00	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1	% insect apps by ground	45%	# Scouted Acres	2,351,290					
% acres Transgenic (Bt) Cotton	72%	No. apps by ground	0.75	Seed Treatments (arthropods) (# acres)	3,762,064					
Cost/treated acre (Bt) Cotton	\$11.79	Cost/app by ground	\$5.50	In-Furrow Applications (# acres)	141,077					
% acres with seed treatment	80%	% Loss to weather	85.6%	Applications by Air (acres)	2,586,419					
Seed trt. cost/ treated acre	\$10.00	% loss to non-arthropods	2.0%	Applications by Ground (acres)	2,116,161					
% acres with in-furrow	3%	% loss to other (chemical injury, weeds, diseases, etc.)	7.0%	No. acres with no foliar insecticide applications	3,668,012					

Table 29. Cotton insect loss estimates for Texas High Plains during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	32.0%	1,504,826	\$80.00	\$12.00	2%	30,097	1.0
Bollgard III	1.0%	47,026	\$90.00	\$20.00	0%	0	0.0
WideStrike	5.0%	235,129	\$60.00	\$5.00	5%	11,756	1.0
WideStrike 3	8.0%	376,206	\$90.00	\$15.00	0%	0	0.0
TwinLink	25.0%	1,175,645	\$80.00	\$12.00	2%	23,513	1.0
TwinLink Plus	1.0%	47,026	\$90.00	\$20.00	0%	0	0.0
Total Bt	72.0%	3,385,858	\$78.75	\$11.79	1.9%	65,366	0.9
Herbicide Traits Only	20.0%	940,516	\$65.00	-	75%	705,387	1.0
Conventional	7.0%	329,181	\$25.00	-	75%	246,886	1.0
Organic	1.0%	47,026	\$25.00	-	0%	0	0.0
Total Upland Cotton	100.0%	4,702,581	\$71.70	\$11.79	21.6%	1,017,639	0.9
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		4,702,581	\$71.70		21.6%	1,017,639	0.9

Table 30. Cotton insect loss estimates for Texas during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	4,386,287	58.0%	1,052,485	13.8%	1.0	\$20.04	1.60%	0.14	\$2.83	0.89%	283,591	\$117,230,040	\$15.40	54.0%
Beet Armyworm	486,470	6.0%	0	0.0%	0.2	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	346,120	5.0%	27,486	0.4%	0.2	\$4.06	0.10%	0.00	\$0.00	0.00%	1,221	\$452,263	\$0.06	0.2%
Loopers	470,258	6.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	7,296	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	235	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	1,281,503	17.0%	235,616	3.1%	0.8	\$11.81	0.00%	0.02	\$0.29	0.00%	0	\$368,513	\$0.05	0.2%
Cotton Fleahopper	3,364,861	44.0%	1,434,168	18.8%	1.2	\$11.00	0.40%	0.23	\$2.54	0.20%	62,421	\$31,621,483	\$4.15	14.6%
Stink Bugs (other than brown stink bug)	1,579,613	21.0%	691,022	9.1%	1.0	\$11.83	0.60%	0.09	\$1.07	0.12%	39,499	\$16,294,908	\$2.14	7.5%
Brown Stink Bug	430,534	6.0%	156,946	2.1%	0.2	\$1.86	0.10%	0.00	\$0.01	0.00%	1,519	\$564,296	\$0.07	0.3%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	183,667	2.0%	92,471	1.2%	0.1	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	378,228	5.0%	83,270	1.1%	0.4	\$5.78	3.60%	0.00	\$0.02	0.18%	57,012	\$21,080,681	\$2.77	9.7%
Thrips	5,878,272	77.0%	1,486,166	19.5%	0.8	\$7.42	0.20%	0.15	\$1.14	0.14%	42,846	\$22,539,164	\$2.96	10.4%
Aphids	3,275,748	43.0%	237,774	3.1%	1.0	\$17.24	0.10%	0.03	\$0.54	0.05%	14,465	\$7,109,693	\$0.93	3.3%
Grasshoppers	265,896	3.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	94,052	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	490,097	6.0%	138,707	1.8%	0.1	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kurtoma Thrips	235,129	3.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Wireworms	235,129	3.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	61	\$22,366	\$0.00	0.0%
Boll Weevil	277,414	4.0%	277,414	3.6%	0.2	\$0.00	0.00%	0.01	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					0.69	\$8.44	1.58%				502,635	\$217,283,409	\$28.54	

SUMMARY DATA

Data Input				Yield and Management Results			Economic Results		
State	Texas	Total Acres		7,629,694		Total	Per Acre		
Region	Central	Total Bales Harvested		8,303,732	Foliar Insecticide Costs	\$64,291,997	\$8.44		
Year	2018	Total Bales Lost to Insects		502,635	Seed Treatment Costs	\$65,917,124	\$8.66		
Total Acres (Upland)	7,613,289	In-furrow cost/treated acre	\$17.24	Percent Yield Loss	1.6%	In-Furrow Costs	\$2,813,948	\$0.37	
Yield / Acre (Upland)	524	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	532	Scouting Costs	\$31,239,006	\$4.10	
Price / lb	\$0.77	Cost/acre Boll Weevil Eradication	\$2.15	Av. # Applications	0.7	Eradication Costs	\$16,392,212	\$2.15	
yield potential (lb/acre)	2,000	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	28,802,399	Bt Cotton	\$76,471,594	\$10.04	
Acres (Pima)	16,405	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	90.2%	Total Costs	\$257,125,881	\$33.77	
Yield / Acre (Pima)	750	% Insect apps by air	42%	Transgenic Cotton (arthropods) (# acres)	6,104,422	Yield Loss to Insects	\$185,773,788	\$24.40	
% Acres Scouted	44%	No. apps by air	0.3	Boll Weevil Eradication (# acres)	7,613,289	Total Losses + Costs	\$442,899,669	\$58.17	
Fee / Scouted Acre	\$9.30	Cost/app by air	\$7.04	Pink Bollworm Eradication (# acres)	0				
No. times scouted/week	1.05	% insect apps by ground	58%	# Scouted Acres	3,360,066				
% acres Transgenic (Bt) Cotton	80%	No. apps by ground	0.6	Seed Treatments (arthropods) (# acres)	6,591,712				
Cost/treated acre (Bt) Cotton	\$12.53	Cost/app by ground	\$4.79	In-Furrow Applications (# acres)	163,219				
% acres with seed treatment	87%	% Loss to weather	80.4%	Applications by Air (acres)	3,212,400				
Seed trt. cost/ treated acre	\$10.00	% loss to non-arthropods	2.8%	Applications by Ground (acres)	4,400,889				
% acres with in-furrow	2%	% loss to other (chemical injury, weeds, diseases, etc.)	5.5%	No. acres with no foliar insecticide applications	5,075,481				

Table 30. Cotton insect loss estimates for Texas during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	37.2%	2,829,344	\$80.00	\$12.00	6%	181,117	1.0
Bollgard III	1.7%	132,981	\$90.00	\$20.00	0%	0	0.0
WideStrike	7.6%	576,550	\$60.00	\$5.00	15%	84,378	1.0
WideStrike 3	9.0%	683,489	\$90.00	\$15.00	0%	982	0.0
TwinLink	17.9%	1,364,548	\$80.00	\$12.00	6%	87,350	1.0
TwinLink Plus	6.8%	517,508	\$90.00	\$20.00	0%	0	0.0
Total Bt	80.2%	6,104,422	\$80.30	\$12.53	5.8%	353,828	0.8
Herbicide Traits Only	14.2%	1,079,460	\$65.00	-	66.7%	719,893	1.3
Conventional	4.9%	373,134	\$25.00	-	66.7%	248,844	1.3
Organic	0.7%	56,273	\$25.00	-	0.0%	0	0.0
Total Upland Cotton	100.0%	7,613,289	\$73.44	\$12.53	17.4%	1,322,564	0.9
Non Upland Cotton							
Pima	0.2%	17,833	\$12.78	-	0%	0	0.0
Other	0.0%	0	\$0.00	-	0%	0	0.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		7,631,122	\$73.29		17.3%	1,322,564	0.9

Table 31. Cotton insect loss estimates for Virginia during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	29,100	30.0%	48,500	50.0%	1.0	\$18.00	3.00%	0.50	\$9.00	0.90%	2,183	\$1,037,302	\$10.69	10.8%
Beet Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	97,000	100.0%	92,150	95.0%	2.0	\$10.00	5.00%	1.90	\$19.00	5.00%	12,125	\$6,149,800	\$63.40	63.7%
Cotton Fleahopper	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	9,700	10.0%	9,700	10.0%	1.0	\$10.00	3.00%	0.10	\$1.00	0.30%	728	\$268,286	\$2.77	2.8%
Brown Stink Bug	19,400	20.0%	19,400	20.0%	1.0	\$10.00	3.00%	0.20	\$2.00	0.60%	1,455	\$555,616	\$5.73	5.8%
Clouded Plant Bug	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	97,000	100.0%	97,000	100.0%	1.0	\$8.00	1.00%	1.00	\$8.00	1.00%	2,425	\$1,637,360	\$16.88	17.0%
Aphids	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshoppers	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					3.70	\$39.00			7.80%		18,916	\$9,648,364	\$99.47	

SUMMARY DATA

Data Input				Yield and Management Results				Economic Results		
State	Virginia			Total Acres	97,000			Total		Per Acre
Region	Southeast			Total Bales Harvested	195,010	Foliar Insecticide Costs		\$3,783,000		\$39.00
Year	2018			Total Bales Lost to Insects	18,916	Seed Treatment Costs		\$931,200		\$9.60
Total Acres (Upland)	97,000	In-furrow cost/treated acre	\$6.00	Percent Yield Loss	7.8%	In-Furrow Costs		\$116,400		\$1.20
Yield / Acre (Upland)	965	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,047	Scouting Costs		\$58,200		\$0.60
Price / lb	\$0.74	Cost/acre Boll Weevil Eradication	\$4.00	Av. # Applications	3.7	Eradication Costs		\$388,000		\$4.00
yield potential (lb/acre)	1,200	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	79,540	Bt Cotton		\$1,661,125		\$17.13
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	32.8%	Total Costs		\$6,937,925		\$71.53
Yield / Acre (Pima)	0	% Insect apps by air	25%	Transgenic Cotton (arthropods) (# acres)	97,000	Yield Loss to Insects		\$6,718,963		\$69.27
% Acres Scouted	5%	No. apps by air	2	Boll Weevil Eradication (# acres)	97,000	Total Losses + Costs		\$13,656,888		\$140.79
Fee / Scouted Acre	\$12.00	Cost/app by air	\$15.00	Pink Bollworm Eradication (# acres)	0					
No. times scouted/week	1	% insect apps by ground	75%	# Scouted Acres	4,850					
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	2	Seed Treatments (arthropods) (# acres)	77,600					
Cost/treated acre (Bt) Cotton	\$17.14	Cost/app by ground	\$15.00	In-Furrow Applications (# acres)	19,400					
% acres with seed treatment	80%	% Loss to weather	20.0%	Applications by Air (acres)	24,250					
Seed trt. cost/ treated acre	\$12.00	% loss to non-arthropods	0.0%	Applications by Ground (acres)	72,750					
% acres with in-furrow	20%	% loss to other (chemical injury, weeds, diseases, etc.)	5.0%	No. acres with no foliar insecticide applications	0					

Table 31. Cotton insect loss estimates Virginia during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	45.5%	44,135	\$130.00	\$15.00	80%	35,308	1.0
Bollgard III	7.5%	7,275	\$130.00	\$20.00	0%	0	0.0
WideStrike	5.0%	4,850	\$130.00	\$15.00	100%	4,850	1.0
WideStrike 3	35.0%	33,950	\$130.00	\$20.00	0%	0	0.0
TwinLink	7.0%	6,790	\$130.00	\$15.00	100%	6,790	1.0
TwinLink Plus	0.0%	0	\$130.00	\$20.00	0%	0	0.0
Total Bt	100.0%	97,000	\$130.00	\$17.13	48.4%	46,948	0.6
Herbicide Traits Only	0%	0	\$0.00	-	0%	0	0.0
Conventional	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	97,000	\$120.25	\$17.13	48.4%	46,948	0.6
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0
Other	0%	0	\$0.00	-	0%	0	0
Organic	0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		97,000	\$120.25		48.4%	46,948	0.6

Table 32. Cotton insect loss estimates for the United States during 2018.

Pest	Acres Infested	% Acres Infested	Acres Treated	% Acres Treated	# of apps /acres treated	Cost of 1 application	% loss /acre infested	# of apps/ total acres	cost/acre	overall % reduction	Bales lost / pest	Loss + cost	Loss + cost/acre	% Total Loss+Cost
Bollworm/Budworm	8,384,053	62.8%	3,100,987	23.2%	1.3	\$19.82	1.85%	0.30	\$6.02	1.16%	553,110	\$252,931,977	\$18.93	34.3%
Beet Armyworm	518,538	3.9%	2,051	0.0%	0.5	\$5.15	0.00%	0.00	\$0.00	0.00%	101	\$37,028	\$0.00	0.0%
Fall Armyworm	811,444	6.1%	60,983	0.5%	0.6	\$8.59	0.24%	0.00	\$0.02	0.01%	8,001	\$2,948,659	\$0.22	0.4%
Loopers	516,953	3.9%	1,091	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	9	\$3,273	\$0.00	0.0%
Cutworms	435,248	3.3%	564,232	4.2%	1.0	\$10.09	0.03%	0.04	\$0.43	0.00%	524	\$376,860	\$0.03	0.1%
Cotton Leaf Perforator	3,309	0.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	150,947	1.1%	380	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	5,449,810	40.8%	3,127,011	23.4%	2.9	\$14.13	1.62%	0.68	\$9.59	0.66%	335,992	\$175,270,947	\$13.12	23.8%
Cotton Fleahopper	5,112,002	38.3%	1,902,061	14.2%	1.4	\$11.00	0.54%	0.20	\$2.16	0.21%	86,467	\$42,673,473	\$3.19	5.8%
Stink Bugs (other than brown stink bug)	5,221,696	39.1%	2,744,459	20.5%	1.2	\$9.37	0.96%	0.24	\$2.25	0.37%	152,115	\$67,406,989	\$5.05	9.1%
Brown Stink Bug	4,347,300	32.5%	2,043,637	15.3%	1.0	\$8.72	0.83%	0.16	\$1.37	0.27%	108,982	\$45,843,706	\$3.43	6.2%
Clouded Plant Bug	1,129,341	8.5%	128,498	1.0%	1.0	\$11.31	0.13%	0.01	\$0.11	0.01%	5,100	\$1,988,335	\$0.15	0.3%
Leaf Footed Bugs	837,842	66.3%	215,071	1.6%	0.5	\$3.97	0.11%	0.01	\$0.03	0.01%	2,163	\$819,284	\$0.06	0.1%
Spider Mites	3,128,000	23.4%	1,110,529	8.3%	1.4	\$14.07	1.15%	0.12	\$1.68	0.27%	148,229	\$59,501,424	\$4.45	8.1%
Thrips	11,161,091	83.6%	3,705,744	27.7%	0.9	\$8.68	0.29%	0.26	\$2.22	0.24%	115,234	\$66,976,144	\$5.01	9.1%
Aphids	7,295,752	54.6%	1,235,085	9.2%	1.0	\$11.61	0.10%	0.09	\$1.06	0.05%	26,728	\$17,537,945	\$1.31	2.4%
Grasshoppers	1,164,589	8.7%	52,700	0.4%	0.8	\$3.81	0.03%	0.00	\$0.01	0.00%	750	\$288,181	\$0.02	0.0%
Banded Winged Whitefly	441,922	3.3%	569	0.0%	1.9	\$29.16	0.00%	0.00	\$0.00	0.00%	45	\$17,581	\$0.00	0.0%
Silverleaf Whitefly	1,147,836	8.6%	248,961	1.9%	0.7	\$11.22	0.13%	0.01	\$0.14	0.01%	5,505	\$2,174,122	\$0.16	0.3%
Darkling Beetles	253,548	1.9%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Pale-Striped Flea Beetle	270,727	2.0%	171	0.001%	0.5	\$8.75	0.01%	0.00	\$0.00	0.00%	61	\$22,165	\$0.00	0.0%
Empoasca leafhoppers	18,068	0.1%	0	0.0%	0.0	\$0.00	0.03%	0.00	\$0.00	0.00%	22	\$8,188	\$0.00	0.0%
Mealybugs	76	0.001%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Kurtoma Thrips	235,129	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Wireworms	235,129	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	277,414	2.1%	277,414	2.1%	0.2	\$0.00	0.00%	0.01	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL								2.13	\$27.09	3.29%	1,549,137	\$736,826,279	\$55.16	

SUMMARY DATA

Data Input				Yield and Management Results			Economic Results		
Year				2018					
Total Acres (Upland)	13,357,924	In-furrow cost/treated acre	\$13.53	Total Acres	13,388,318		Total		Per Acre
Yield / Acre (Upland)	702	% acres in Boll Weevil Eradication	98%	Total Bales Harvested	19,582,405	Foliar Insecticide Costs	\$361,856,425		\$27.09
Price / lb	\$0.76	Cost/acre Boll Weevil Eradication	\$2.16	Total Bales Lost to Insects	1,549,137	Seed Treatment Costs	\$115,911,013		\$8.68
yield potential (lb/acre)	1,767	% acres in Pink Bollworm Eradication	2%	Percent Yield Loss	3.3%	In-Furrow Costs	\$13,905,559		\$1.04
Acres (Pima)	30,394	Cost/acre Pink Bollworm Eradication	\$5.90	Yield w/o Insects (lb/acre)	725	Scouting Costs	\$68,176,356		\$5.10
Yield / Acre (Pima)	925	% Insect apps by air	38%	Av. # Applications	2.1	Eradication Costs	\$29,631,250		\$2.22
% Acres Scouted	58%	No. apps by air	1.0	Total Bales lost (all factors)	35,165,166	Bt Cotton	\$208,263,004		\$15.59
Fee / Scouted Acre	\$8.82	Cost/app by air	\$7.63	Total % yield Loss	67.3%	Total Costs	\$797,743,607		\$59.72
No. times scouted/week	1.2	% insect apps by ground	67%	Transgenic Cotton (arthropods) (# acres)	11,797,547	Yield Loss to Insects	\$567,047,283		\$42.45
% acres Transgenic (Bt) Cotton	88%	No. apps by ground	1.4	Boll Weevil Eradication (# acres)	13,149,919	Total Losses + Costs	\$1,364,790,890		\$102.17
Cost/treated acre (Bt) Cotton	\$17.65	Cost/app by ground	\$5.32	Pink Bollworm Eradication (# acres)	218,276				
% acres with seed treatment	86%	% Loss to weather	56.3%	# Scouted Acres	7,727,986				
Seed trt. cost/ treated acre	\$10.13	% loss to non-arthropods	2.9%	Seed Treatments (arthropods) (# acres)	11,446,258				
% acres with in-furrow	8%	% loss to other (chemical injury, weeds, diseases, etc.)	4.7%	In-Furrow Applications (# acres)	1,028,051				
				Applications by Air (acres)	5,112,531				
				Applications by Ground (acres)	8,964,329				
				No. acres with no foliar insecticide applications	5,874,572				

Table 32. Cotton insect loss estimates for the United States during 2018, continued.

Upland Cotton	% Acres	# Acres	Total cost/acre	Bt cost/acre	% acres treated for BW/TBW	# acres treated for BW/TBW	# apps for BW/TBW
Bollgard II	53.7%	7,167,076	\$84.91	\$17.69	20.6%	1,475,340	1.0
Bollgard III	3.6%	486,998	\$89.93	\$22.71	0.2%	1,071	0.1
WideStrike	7.3%	975,365	\$69.51	\$12.23	32.5%	316,785	1.1
WideStrike 3	8.6%	1,147,043	\$90.32	\$18.96	0.8%	8,835	0.2
TwinLink	11.0%	1,468,638	\$82.04	\$16.88	18.5%	271,844	0.9
TwinLink Plus	4.1%	552,427	\$86.63	\$21.64	0.2%	1,193	0.1
Total Bt	88.3%	11,797,547	\$84.09	\$17.65	17.6%	2,075,069	0.8
Herbicide Traits Only	8.2%	1,097,921	\$45.15	-	44.2%	485,038	0.9
Conventional	3.0%	397,478	\$20.80	-	63.2%	251,172	1.2
Organic	0.5%	61,020	\$15.10	-	3.3%	2,010	0.1
Total Upland Cotton	100.0%	13,353,967	\$75.41	\$17.65	21.1%	2,813,289	0.8
Non Upland Cotton							
Pima	0.3%	35,296	\$7.38	-	0.04%	15	0.003
Other	0.0%	0	\$0.00	-	0.00%	0	0.0
Organic	0.001%	96	\$0.00	-	0.00%	0	0.0
Total (all Cotton)		13,389,359	\$75.23		21.0%	2,813,304	0.8