Table 16. Cotton insect loss estimates for the Hills region of Mississippi during 2023.

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	342,000	90.0%	76,000	20.0%	1.5	$22.00	2.50%	0.30	$6.60	2.25%	31,510	$13,298,304	$35.00	15.4%
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	9,500	2.5%	1,900	0.5%	1.0	$12.00	1.00%	0.01	$0.12	0.03%	350	$123,780	$0.33	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	38,000	10.0%	38,000	10.0%	1.0	$6.50	1.00%	0.10	$0.65	0.10%	1,400	$515,260	$1.36	0.6%
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	380,000	100.0%	376,200	99.0%	5.5	$12.50	4.00%	5.45	$68.13	4.00%	56,018	$45,516,207	$119.78	52.6%
Cotton Fleahopper	3,800	1.0%	0	0.0%	0.0	$0.00	0.10%	0.00	$0.00	0.00%	14	$4,906	$0.01	0.0%
Stink Bugs (other than brown stink bug)	38,000	10.0%	7,600	2.0%	1.0	$9.50	1.00%	0.02	$0.19	0.10%	1,400	$497,780	$1.31	0.6%
Brown Stink Bug	190,000	50.0%	38,000	10.0%	1.0	$9.50	1.50%	0.10	$0.95	0.75%	10,503	$3,860,751	$10.16	4.5%
Clouded Plant Bug	114,000	30.0%	3,800	1.0%	1.0	$12.50	1.00%	0.01	$0.13	0.30%	4,201	$1,486,280	$3.91	1.7%
Leaf Footed Bugs	3,800	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	304,000	80.0%	228,000	60.0%	1.5	$12.50	2.25%	0.90	$11.25	1.80%	25,208	$12,252,883	$32.24	14.2%
Thrips	380,000	100.0%	228,000	60.0%	1.5	$9.50	1.00%	0.90	$8.55	1.00%	14,005	$8,156,352	$21.46	9.4%
Aphids	114,000	30.0%	38,000	10.0%	1.0	$10.50	0.50%	0.10	$1.05	0.15%	2,101	$855,890	$2.25	1.0%
Grasshoppers	38,000	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	3,800	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								7.89	$97.61	10.48%	146,710	$86,568,393	$227.81	

SUMMARY DATA

Data Input				Yield and Management Results		Economic Results		
State	Mississippi			Total Acres	380,000		Total	Per Acre
Region	MidSouth			Total Bales Harvested	791,667	Foliar Insecticide Costs	$37,091,800	$97.61
Year	2023			Total Bales Lost to Insects	146,710	Seed Treatment Costs	$3,800,000	$10.00
Total Acres (Upland)	380,000	In-furrow cost/treated acre	$13.00	Percent Yield Loss	10.5%	In-Furrow Costs	$247,000	$0.65
Yield / Acre (Upland)	1,000	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,117	Scouting Costs	$3,009,600	$7.92
Price / lb	$0.73	Cost/acre Boll Weevil Eradication	$1.00	Av. # Applications	7.89	Eradication Costs	$380,000	$1.00
yield potential (lb/acre)	1,769	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	608,863	Bt Cotton	$12,692,000	$33.40
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	$0.00	Total % yield Loss	43.5%	Total Costs	$57,220,400	$150.58
Yield / Acre (Pima)	0	% Insect apps by air	80%	Transgenic Cotton (arthropods) (# acres)	380,000	Yield Loss to Insects	$51,407,184	$135.28
% Acres Scouted	99%	No. apps by air	6	Boll Weevil Eradication (# acres)	380,000	Total Losses + Costs	$108,627,584	$285.86
Fee / Scouted Acre	$8.00	Cost/app by air	$8.00	Pink Bollworm Eradication (# acres)	0			
No. times scouted/week	1.8	% insect apps by ground	50%	# Scouted Acres	376,200			
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	3	Seed Treatments (arthropods) (# acres)	380,000			
Cost/treated acre (Bt) Cotton	$33.40	Cost/app by ground	$6.00	In-Furrow Applications (# acres)	19,000			
% acres with seed treatment	100%	% Loss to weather	20.0%	Applications by Air (acres)	304,000			
Seed trt. cost/ treated acre	$10.00	% loss to non-arthropods	3.0%	Applications by Ground (acres)	190,000			
% acres with in-furrow	5%	% loss to other (chemical injury, weeds, diseases, etc.)	10.0%	No. acres with no foliar insecticide applications	0			

Table 16. Cotton insect loss estimates for the Hills region of Mississippi during 2023, 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	20.0%	76,000	$140.00	$32.00	90%	68,400	1.8
Bollgard III	59.0%	224,200	$140.00	$32.00	1%	2,242	0.1
Bollgard III/Thryvon	5.0%	19,000	$155.00	$32.00	1%	190	0.1
WideStrike	0.0%	0	$140.00	$32.00	0%	0	0.0
WideStrike 3	15.0%	57,000	$140.00	$32.00	1%	570	0.1
TwinLink	0.0%	0	$140.00	$32.00	0%	0	0.0
TwinLink Plus	1.0%	3,800	$140.00	$32.00	0%	0	0.0
Total Bt	100.0%	380,000	$140.75	$33.40	18.8%	71,402	0.3
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%	380,000	$140.75	$33.40	18.8%	71,402	0.3
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)		380,000	$140.75		18.8%	71,402	0.3

Upland Cotton	Thryvon Bt cost/acre	% acres treated for Thrips	# acres treated for Thrips	# apps for Thrips	% acres treated for Lygus	# acres treated for Lygus	# apps for Lygus
Bollgard III/Thryvon	$28.00	1%	190	0	85%	16,150	2.5