

Table 17. Cotton insect loss estimates for the Delta 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	361,000	95.0%	114,000	30.0%	1.5	\$22.00	2.50%	0.45	\$9.90	2.38%	28,410	\$13,528,764	\$35.60	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	11,400	3.0%	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	38,000	10.0%	38,000	10.0%	1.0	\$7.00	1.00%	0.10	\$0.70	0.10%	1,196	\$445,678	\$1.17	0.5%
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	\$15.00	4.00%	5.45	\$81.75	4.00%	47,848	\$47,830,939	\$125.87	54.4%
Cotton Fleahopper	3,800	1.0%	0	0.0%	0.0	\$0.00	0.10%	0.00	\$0.00	0.00%	12	\$4,205	\$0.01	0.0%
Stink Bugs (other than brown stink bug)	38,000	10.0%	3,800	1.0%	1.0	\$9.50	1.00%	0.01	\$0.10	0.10%	1,196	\$422,688	\$1.11	0.5%
Brown Stink Bug	190,000	50.0%	38,000	10.0%	1.0	\$9.50	1.50%	0.10	\$0.95	0.75%	8,972	\$3,324,289	\$8.75	3.8%
Clouded Plant Bug	114,000	30.0%	1,900	0.5%	0.5	\$12.50	1.00%	0.00	\$0.00	0.30%	3,589	\$1,257,586	\$3.31	1.4%
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%	190,000	50.0%	1.5	\$12.50	2.25%	0.75	\$9.38	1.80%	21,532	\$10,394,813	\$27.35	11.8%
Thrips	380,000	100.0%	285,000	75.0%	1.5	\$14.00	1.00%	1.13	\$15.82	1.00%	11,962	\$10,203,085	\$26.85	11.6%
Aphids	76,000	20.0%	38,000	10.0%	1.0	\$11.00	0.50%	0.10	\$1.10	0.10%	1,196	\$502,678	\$1.32	0.6%
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	7,600	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%
Boll Weevil	0	0%	0	0%	0%	0%	0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					8.09			\$119.69		10.53%	125,913	\$87,914,725	\$231.35	

SUMMARY DATA

Data Input		Yield and Management Results				Economic Results	
State	Mississippi	Total Acres			380,000	Total	Per Acre
Region	MidSouth	Total Bales Harvested			831,250	Foliar Insecticide Costs	\$45,482,200
Year	2023	Total Bales Lost to Insects			125,913	Seed Treatment Costs	\$3,800,000
Total Acres (Upland)	380,000	In-furrow cost/treated acre	\$13.00	Percent Yield Loss	10.5%	In-Furrow Costs	\$247,000
Yield / Acre (Upland)	1,050	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,174	Scouting Costs	\$3,009,600
Price / lb	\$0.73	Cost/acre Boll Weevil Eradication	\$1.00	Av. # Applications	8.09	Eradication Costs	\$380,000
yield potential (lb/acre)	1,511	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	365,155	Bt Cotton	\$12,692,000
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	30.5%	Total Costs	\$65,610,800
Yield / Acre (Pima)	0	% Insect apps by air	80%	Transgenic Cotton (arthropods) (# acres)	380,000	Yield Loss to Insects	\$44,119,915
% Acres Scouted	99%	No. apps by air	6	Boll Weevil Eradication (# acres)	380,000	Total Losses + Costs	\$109,730,715
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	10.0%	Applications by Air (acres)	304,000		
Seed trt. cost/ treated acre	\$10.00	% loss to non-arthropods	2.0%	Applications by Ground (acres)	190,000		
% acres with in-furrow	5%	% loss to other (chemical injury, weeds, diseases, etc.)	8.0%	No. acres with no foliar insecticide applications	0		

Table 17. Cotton insect loss estimates for the Delta 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	42.0%	159,600	\$140.00	\$32.00	90%	143,640	1.8
Bollgard III	36.0%	136,800	\$140.00	\$32.00	1%	1,368	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	16.0%	60,800	\$140.00	\$32.00	1%	608	4.0
TwinLink	0.0%	0	\$140.00	\$32.00	0%	0	0.0
TwinLink Plus	1.0%	3,800	\$140.00	\$32.00	1%	38	0.1
Total Bt	100.0%	380,000	\$140.75	\$33.40	38.4%	145,844	0.7
Herbicide Traits Only	0.0%	0	\$108.00		0%	0	0.0
Conventional	0.0%	0	\$22.00		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	38.4%	145,844	0.7
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		38.4%	145,844	0.7

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	0.1	80%	15,200	2.5