

Table 14. Cotton insect loss estimates for the Delta region of Mississippi during 2021.

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	308,750	95%	243,750	75.0%	1.5	\$20.00	2.50%	1.13	\$22.60	2.38%	31,197	\$15,962,486	\$49.12	24.1%
Beet Armyworm	325	0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	16,250	5%	3,250	1.0%	1.0	\$11.50	1.00%	0.01	\$0.12	0.05%	657	\$191,085	\$0.59	0.3%
Loopers	0	0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	65,000	20%	48,750	15.0%	1.0	\$6.00	0.10%	0.15	\$0.90	0.02%	263	\$134,244	\$0.41	0.2%
Cotton Leaf Perforator	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	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	325,000	100%	321,750	99.0%	4.0	\$11.00	4.00%	3.96	\$43.56	4.00%	52,542	\$29,289,096	\$90.12	44.2%
Cotton Fleahopper	16,250	5%	0	0.0%	0.0	\$0.00	0.10%	0.00	\$0.00	0.01%	66	\$19,008	\$0.06	0.0%
Stink Bugs (other than brown stink bug)	16,250	5%	6,500	2.0%	1.0	\$9.00	1.00%	0.02	\$0.18	0.05%	657	\$192,141	\$0.59	0.3%
Brown Stink Bug	178,750	55%	48,750	15.0%	1.0	\$9.00	1.50%	0.15	\$1.35	0.83%	10,837	\$3,362,369	\$10.35	5.1%
Clouded Plant Bug	81,250	25%	3,250	1.0%	1.0	\$11.00	1.00%	0.01	\$0.11	0.25%	3,284	\$954,730	\$2.94	1.4%
Leaf Footed Bugs	9,750	3%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	243,750	75%	227,500	70.0%	1.5	\$12.00	2.25%	1.05	\$12.60	1.69%	22,173	\$9,457,074	\$29.10	14.3%
Thrips	325,000	100%	130,000	40.0%	1.0	\$9.00	1.00%	0.40	\$3.60	1.00%	13,135	\$4,952,880	\$15.24	7.5%
Aphids	195,000	60%	97,500	30.0%	1.0	\$10.00	0.50%	0.30	\$3.00	0.30%	3,941	\$1,720,008	\$5.29	2.6%
Grasshoppers	16,250	5%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	3,250	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	3,250	1%	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								7.18	\$88.02	10.56%	138,752	\$66,235,121	\$203.80	

SUMMARY DATA

Data Input		Yield and Management Results			Economic Results		
State	Mississippi	Total Acres		325,000	Total	Per Acre	
Region	MidSouth	Total Bales Harvested		846,354	Foliar Insecticide Costs	\$28,604,875	
Year	2021	Total Bales Lost to Insects		138,752	Seed Treatment Costs	\$2,964,000	
Total Acres (Upland)	325,000	In-furrow cost/treated acre	\$12.50	Percent Yield Loss	10.6%	In-Furrow Costs	\$162,500
Yield / Acre (Upland)	1,250	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,398	Scouting Costs	\$2,574,000
Price / lb	\$0.60	Cost/acre Boll Weevil Eradication	\$4.00	Av. # Applications	7.18	Eradication Costs	\$1,300,000
yield potential (lb/acre)	1,940	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	467,135	Bt Cotton	\$10,400,000
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	35.6%	Total Costs	\$46,005,375
Yield / Acre (Pima)	0	% Insect apps by air	80%	Transgenic Cotton (arthropods) (# acres)	325,000	Yield Loss to Insects	\$39,960,576
% Acres Scouted	99%	No. apps by air	6	Boll Weevil Eradication (# acres)	325,000	Total Losses + Costs	\$85,965,951
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	321,750		
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	3	Seed Treatments (arthropods) (# acres)	312,000		
Cost/treated acre (Bt) Cotton	\$32.00	Cost/app by ground	\$5.50	In-Furrow Applications (# acres)	13,000		
% acres with seed treatment	96%	% Loss to weather	10.0%	Applications by Air (acres)	260,000		
Seed trt. cost/ treated acre	\$9.50	% loss to non-arthropods	5.0%	Applications by Ground (acres)	162,500		
% acres with in-furrow	4%	% loss to other (chemical injury, weeds, diseases, etc.)	10.0%	No. acres with no foliar insecticide applications	0		

Table 14. Cotton insect loss estimates for the Delta region of Mississippi during 2021, 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	74.0%	240,500	\$140.00	\$32.00	90%	216,450	1.5
Bollgard III	15.0%	48,750	\$140.00	\$32.00	2%	975	1.0
WideStrike	0.0%	0	\$140.00	\$32.00	0%	0	0.0
WideStrike 3	10.0%	32,500	\$140.00	\$32.00	2%	650	1.0
TwinLink	0.0%	0	\$140.00	\$32.00	0%	0	0.0
TwinLink Plus	1.0%	3,250	\$140.00	\$32.00	2%	65	1.0
Total Bt	100.0%	325,000	\$140.00	\$32.00	67.1%	218,140	1.0
Herbicide Traits Only	0.00%	0	\$0.00	-	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%	325,000	\$140.00	\$32.00	67.1%	218,140	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)		325,000	\$140.00		67.1%	218,140	1.0