

Table 15. Cotton insect loss estimates for the Delta region of Mississippi during 2019.

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	410,400	95%	388,800	90.0%	1.9	\$20.00	2.50%	1.71	\$34.20	2.38%	36,338	\$26,245,248	\$60.75	27.6%
Beet Armyworm	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	21,600	5%	4,320	1.0%	1.0	\$11.50	1.00%	0.01	\$0.12	0.05%	765	\$259,524	\$0.60	0.3%
Loopers	4,320	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	108,000	25%	64,800	15.0%	1.0	\$6.00	0.10%	0.15	\$0.90	0.03%	383	\$225,888	\$0.52	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	432,000	100%	427,680	99.0%	3.3	\$11.00	4.00%	3.27	\$35.97	4.00%	61,200	\$36,102,240	\$83.57	37.9%
Cotton Fleahopper	43,200	10%	0	0.0%	0.0	\$0.00	0.10%	0.00	\$0.00	0.01%	153	\$51,408	\$0.12	0.1%
Stink Bugs (other than brown stink bug)	43,200	10%	8,640	2.0%	1.0	\$9.00	1.00%	0.02	\$0.18	0.10%	1,530	\$521,856	\$1.21	0.5%
Brown Stink Bug	259,200	60%	64,800	15.0%	1.0	\$9.00	1.50%	0.15	\$1.35	0.90%	13,770	\$4,976,640	\$11.52	5.2%
Clouded Plant Bug	21,600	5%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	21,600	5%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	367,200	85%	302,400	70.0%	2.1	\$12.00	2.25%	1.47	\$17.64	1.91%	29,269	\$16,311,792	\$37.76	17.1%
Thrips	432,000	100%	108,000	25.0%	1.0	\$9.00	1.00%	0.25	\$2.25	1.00%	15,300	\$6,112,800	\$14.15	6.4%
Aphids	367,200	85%	259,200	60.0%	1.0	\$10.00	0.50%	0.60	\$6.00	0.43%	6,503	\$4,388,208	\$10.16	4.6%
Grasshoppers	21,600	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	4,320	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	432	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								7.63	\$98.61	10.80%	165,211	\$95,195,604	\$220.36	

SUMMARY DATA

Data Input		Yield and Management Results		Economic Results	
State	Mississippi	Total Acres	432,000	Total	Per Acre
Region	MidSouth	Total Bales Harvested	1,008,000	Foliar Insecticide Costs	\$42,597,360
Year	2019	Total Bales Lost to Insects	165,211	Seed Treatment Costs	\$4,062,960
Total Acres (Upland)	432,000	Percent Yield Loss	10.8%	In-Furrow Costs	\$270,000
Yield / Acre (Upland)	1,120	Yield w/o Insects (lb/acre)	1,256	Scouting Costs	\$3,421,440
Price / lb	\$0.70	Av. # Applications	7.63	Eradication Costs	\$1,728,000
yield potential (lb/acre)	1,700	Total Bales lost (all factors)	792,509	Bt Cotton	\$13,810,176
Acres (Pima)	0	Total % yield Loss	51.8%	Total Costs	\$65,889,936
Yield / Acre (Pima)	0	Transgenic Cotton (arthropods) (# acres)	431,568	Yield Loss to Insects	\$55,510,896
% Acres Scouted	99%	Boll Weevil Eradication (# acres)	432,000	Total Losses + Costs	\$121,400,832
Fee / Scouted Acre	\$8.00	Pink Bollworm Eradication (# acres)	0		
No. times scouted/week	1.8	# Scouted Acres	427,680		
% acres Transgenic (Bt) Cotton	100%	Seed Treatments (arthropods) (# acres)	427,680		
Cost/treated acre (Bt) Cotton	\$32.00	In-Furrow Applications (# acres)	21,600		
% acres with seed treatment	99%	Applications by Air (acres)	345,600		
Seed trt. cost/ treated acre	\$9.50	Applications by Ground (acres)	216,000		
% acres with in-furrow	5%	No. acres with no foliar insecticide applications	0		
		% insect apps by air	80%		
		No. apps by air	6		
		Cost/app by air	\$6.00		
		% insect apps by ground	50%		
		No. apps by ground	3		
		Cost/app by ground	\$5.50		
		% Loss to weather	25.0%		
		% loss to non-arthropods	2.0%		
		% loss to other (chemical injury, weeds, diseases, etc.)	14.0%		

Table 15. Cotton insect loss estimates for the Delta region of Mississippi during 2019, 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	79.9%	345,168	\$140.00	\$32.00	98%	338,265	1.9
Bollgard III	14.0%	60,480	\$140.00	\$32.00	10%	6,048	0.2
WideStrike	1.0%	4,320	\$140.00	\$32.00	99%	4,277	3.0
WideStrike 3	3.0%	12,960	\$140.00	\$32.00	11%	1,426	0.2
TwinLink	0.5%	2,160	\$140.00	\$32.00	90%	1,944	3.0
TwinLink Plus	1.5%	6,480	\$140.00	\$32.00	10%	648	0.2
Total Bt	99.9%	431,568	\$140.00	\$32.00	81.7%	352,607	1.6
Herbicide Traits Only	0.10%	432	\$108.00	-	100%	432	3.0
Conventional	0.01%	43	\$22.00	-	100%	43	3.0
Organic	0.00%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	432,043	\$139.96	\$32.00	81.7%	353,082	1.6
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	\$0.00	-	0%	0	0
Total (all Cotton)		432,043	\$139.96	-	81.7%	353,082	1.6