

Table 13. Cotton insect loss estimates for the Hills 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	140,000	70%	120,000	60.0%	1.1	\$20.00	1.50%	0.66	\$13.20	1.05%	7,446	\$3,992,448	\$19.96	14.4%
Beet Armyworm	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	24,000	12%	4,000	2.0%	1.0	\$11.50	1.00%	0.02	\$0.23	0.12%	851	\$250,608	\$1.25	0.9%
Loopers	1,000	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	30,000	15%	40,000	20.0%	1.0	\$6.00	0.10%	0.20	\$1.20	0.02%	106	\$66,528	\$0.33	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	200,000	100%	160,000	80.0%	2.5	\$11.00	4.00%	2.00	\$22.00	4.00%	28,367	\$12,569,696	\$62.85	45.2%
Cotton Fleahopper	20,000	10%	0	0.0%	0.0	\$0.00	0.10%	0.00	\$0.00	0.01%	71	\$20,448	\$0.10	0.1%
Stink Bugs (other than brown stink bug)	60,000	30%	10,000	5.0%	1.0	\$9.00	1.00%	0.05	\$0.45	0.30%	2,128	\$639,864	\$3.20	2.3%
Brown Stink Bug	90,000	45%	40,000	20.0%	1.0	\$9.00	1.50%	0.20	\$1.80	0.68%	4,787	\$1,540,656	\$7.70	5.5%
Clouded Plant Bug	40,000	20%	10,000	5.0%	1.0	\$9.00	3.00%	0.05	\$0.45	0.60%	4,255	\$1,243,440	\$6.22	4.5%
Leaf Footed Bugs	10,000	5%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	130,000	65%	90,000	45.0%	1.3	\$12.00	2.25%	0.59	\$7.08	1.46%	10,375	\$3,908,400	\$19.54	14.1%
Thrips	200,000	100%	60,000	30.0%	1.0	\$9.00	1.00%	0.30	\$2.70	1.00%	7,092	\$2,582,496	\$12.91	9.3%
Aphids	110,000	55%	80,000	40.0%	1.0	\$10.00	0.50%	0.40	\$4.00	0.28%	1,950	\$1,001,600	\$5.01	3.6%
Grasshoppers	10,000	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	2,000	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	2,000	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					4.47			\$53.11		9.51%	67,428	\$27,816,184	\$139.08	

SUMMARY DATA

Data Input		Yield and Management Results			Economic Results				
State	Mississippi	Total Acres	200,000	Total Bales Harvested	500,000	Foliar Insecticide Costs	\$10,622,000	Per Acre	\$53.11
Region	MidSouth	Total Bales Lost to Insects	67,428	Seed Treatment Costs	\$1,843,000	In-Furrow Costs	\$75,000		\$0.38
Year	2021	Percent Yield Loss	9.5%	Scouting Costs	\$1,372,000	Eradication Costs	\$800,000		\$4.00
Total Acres (Upland)	200,000	Yield w/o Insects (lb/acre)	1,326	Av. # Applications	4.47	Bt Cotton	\$6,400,000		\$32.00
Yield / Acre (Upland)	1,200	Total Bales lost (all factors)	209,261	Total % yield Loss	29.5%	Total Costs	\$21,112,000		\$105.56
Price / lb	\$0.60	% acres in Pink Bollworm Eradication	0%	Transgenic Cotton (arthropods) (# acres)	200,000	Yield Loss to Insects	\$19,419,264		\$97.10
yield potential (lb/acre)	1,702	% acres in Pink Bollworm Eradication	0%	Boll Weevil Eradication (# acres)	200,000	Total Losses + Costs	\$40,531,264		\$202.66
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Pink Bollworm Eradication (# acres)	0				
Yield / Acre (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	# Scouted Acres	196,000				
% Acres Scouted	98%	% Insect apps by air	20%	Seed Treatments (arthropods) (# acres)	194,000				
Fee / Scouted Acre	\$7.00	No. apps by air	1	In-Furrow Applications (# acres)	6,000				
No. times scouted/week	1.5	Cost/app by air	\$7.50	Applications by Air (acres)	40,000				
% acres Transgenic (Bt) Cotton	100%	% insect apps by ground	80%	Applications by Ground (acres)	160,000				
Cost/treated acre (Bt) Cotton	\$32.00	No. apps by ground	2	No. acres with no foliar insecticide applications	2,000				
% acres with seed treatment	97%	Cost/app by ground	\$5.50						
Seed trt. cost/ treated acre	\$9.50	% Loss to weather	10.0%						
% acres with in-furrow	3%	% loss to non-arthropods	5.0%						
		% loss to other (chemical injury, weeds, diseases, etc.)	5.0%						

Table 13. Cotton insect loss estimates for the Hills 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	70.0%	140,000	\$140.00	\$32.00	86%	119,700	1.1
Bollgard III	18.0%	36,000	\$140.00	\$32.00	0%	0	0.0
WideStrike	0.0%	0	\$140.00	\$32.00	0%	0	0.0
WideStrike 3	10.0%	20,000	\$140.00	\$32.00	0%	0	0.0
TwinLink	0.0%	0	\$140.00	\$32.00	0%	0	0.0
TwinLink Plus	2.0%	4,000	\$140.00	\$32.00	0%	0	0.0
Total Bt	100%	200,000	\$140.00	\$32.00	59.9%	119,700	0.7
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%	200,000	\$140.00	\$32.00	59.9%	119,700	0.7
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)		200,000	\$140.00		59.9%	119,700	0.7