

Table 28. Cotton insect loss estimates for the United States 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	6,556,009	50%	2,234,886	17.2%	1.3	\$20.12	1.50%	0.23	\$4.59	0.75%	269,801	\$116,949,730	\$8.98	18.4%
Beet Armyworm	459,065	4%	1,100	0.0%	1.0	\$11.30	0.00%	0.00	\$0.00	0.00%	0	\$438	\$0.00	0.0%
Fall Armyworm	585,846	5%	18,802	0.1%	1.0	\$11.91	0.10%	0.00	\$0.02	0.00%	1,897	\$620,605	\$0.05	0.1%
Loopers	486,026	4%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	363,644	3%	408,440	3.1%	1.0	\$5.45	0.04%	0.03	\$0.17	0.00%	489	\$219,513	\$0.02	0.0%
Cotton Leaf Perforator	91,794	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$92	\$0.00	0.0%
Saltmarsh Caterpillar	101,962	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	6,316,911	49%	3,401,690	26.1%	2.7	\$12.75	1.70%	0.70	\$8.96	0.83%	335,091	\$164,523,838	\$12.64	25.9%
Cotton Fleahopper	4,971,119	38%	1,962,288	15.1%	1.7	\$12.70	2.21%	0.26	\$3.28	0.84%	229,711	\$90,263,862	\$6.93	14.2%
Stink Bugs (other than brown stink bug)	5,673,463	44%	2,502,117	19.2%	1.2	\$9.11	0.93%	0.23	\$2.09	0.40%	132,446	\$54,529,275	\$4.19	8.6%
Brown Stink Bug	4,732,931	36%	2,341,992	18.0%	1.0	\$8.09	0.88%	0.17	\$1.39	0.32%	111,285	\$42,391,302	\$3.26	6.7%
Clouded Plant Bug	1,452,402	11%	83,880	0.6%	1.0	\$8.57	0.11%	0.01	\$0.05	0.01%	4,740	\$1,602,839	\$0.12	0.3%
Leaf Footed Bugs	1,431,339	11%	84,950	0.7%	0.9	\$8.66	0.09%	0.01	\$0.06	0.01%	3,158	\$1,099,275	\$0.08	0.2%
Spider Mites	3,860,716	30%	1,364,755	10.5%	1.2	\$12.20	0.94%	0.12	\$1.52	0.28%	103,115	\$39,089,112	\$3.00	6.1%
Thrips	11,846,076	91%	3,367,555	25.9%	1.1	\$8.63	0.44%	0.27	\$2.36	0.40%	130,814	\$70,111,325	\$5.39	11.0%
Aphids	7,517,481	58%	2,251,770	17.3%	1.0	\$13.05	0.21%	0.17	\$2.26	0.12%	39,787	\$29,832,840	\$2.29	4.7%
Grasshoppers	2,466,258	19%	113,607	0.9%	0.5	\$13.58	0.77%	0.00	\$0.06	0.15%	40,035	\$13,051,391	\$1.00	2.1%
Banded Winged Whitefly	448,562	3%	4,616	0.0%	0.2	\$32.00	0.00%	0.00	\$0.00	0.00%	0	\$763	\$0.00	0.0%
Silverleaf Whitefly	1,288,752	10%	508,218	3.9%	1.1	\$11.33	0.68%	0.04	\$0.49	0.07%	23,975	\$8,347,430	\$0.64	1.3%
Other insect pests	413,474	320%	201,081	150.0%	0.5	\$8.60	120.00%	0.34	\$3.89	0.28%	7,873	\$2,979,271	\$4.71	2.6%
See individual states for details														
Boll Weevil	820,721	6%	656,576	5.0%	0.1	\$0.00	0.03%	0.01	\$0.00	0.00%	603	\$194,065	\$0.01	0.0%
TOTAL								2.60	\$31.20	4.47%	1,434,820	\$635,806,970	\$53.32	

SUMMARY DATA

Data Input		Yield and Management Results			Economic Results	
		Total Acres		13,042,876	Total	Per Acre
Year	2019	Total Bales Harvested		19,789,079	Foliar Insecticide Costs	\$406,216,777
Total Acres (Upland)	13,018,350	Total Bales Lost to Insects	\$12.15	1,434,820	Seed Treatment Costs	\$114,810,229
Yield / Acre (Upland)	728	Percent Yield Loss	98%	762	In-Furrow Costs	\$12,815,141
Price / lb	\$0.67	Yield w/o Insects (lb/acre)	26%	2.6	Scouting Costs	\$69,830,593
yield potential (lb/acre)	1,155	Av. # Applications	51%	7,824,894	Eradication Costs	\$26,900,042
Acres (Pima)	*	Total Bales lost (all factors)	2.7%	33,325,088	Bt Cotton	\$273,269,273
Yield / Acre (Pima)	*	Total % yield Loss	4.8%	65.9%	Total Costs	\$903,842,055
% Acres Scouted	60%	Transgenic Cotton (arthropods) (# acres)	2.7%	12,203,254	Yield Loss to Insects	\$462,010,100
Fee / Scouted Acre	\$8.92	Boll Weevil Eradication (# acres)	2.3%	12,803,350	Total Losses + Costs	\$1,365,852,155
No. times scouted/week	1.2	Pink Bollworm Eradication (# acres)	2.3%	210,079		
% acres Transgenic (Bt) Cotton	94%	# Scouted Acres	51%	7,824,894		
Cost/treated acre (Bt) Cotton	\$22.39	Seed Treatments (arthropods) (# acres)	2.7%	11,359,743		
% acres with seed treatment	87%	In-Furrow Applications (# acres)	2.7%	1,054,579		
Seed trt. cost/ treated acre	\$10.11	Applications by Air (acres)	4.8%	3,435,103		
% acres with in-furrow	8%	Applications by Ground (acres)	4.8%	6,600,889		
		% loss to weather	4.8%	5,468,678		
		% loss to non-arthropods				
		% loss to other (chemical injury, weeds, diseases, etc.)				

*See individual states for Pima cotton data.

Table 28. Cotton insect loss estimates for the United States 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	56.1%	7,300,984	\$86.38	\$21.94	19.5%	1,421,778	0.8
Bollgard III	13.7%	1,781,550	\$94.05	\$26.31	1.0%	17,181	0.1
WideStrike	3.7%	478,276	\$71.59	\$11.72	27.6%	132,061	0.6
WideStrike 3	13.0%	1,688,166	\$89.07	\$23.99	1.9%	31,715	0.2
TwinLink	5.8%	751,344	\$79.01	\$20.02	13.8%	103,880	0.6
TwinLink Plus	1.6%	202,932	\$84.98	\$25.02	0.5%	1,113	0.1
Total Bt	94%	12,203,254	\$86.81	\$22.39	14.0%	1,707,728	0.6
Herbicide Traits Only	4.4%	570,751	\$40.32	-	7.0%	39,927	0.6
Conventional	1.6%	210,363	\$17.85	-	19.9%	41,894	1.1
Organic	0.4%	48,609	\$8.60	-	1.2%	577	0.1
Total Upland Cotton	100.1%	13,032,977	\$83.37	\$22.39	13.7%	1,790,127	0.6

See individual states for Pima cotton data.