

Table 8. Insect loss estimates for Arizona Bt cotton during 2021.

Pest	Acres	% Acres	Acres Treated	% Acres	# of apps /acres treated	Cost of 1 application	% loss /acre	# of apps/ total acres	cost/acre	overall % reduction	Bales lost /		Loss + cost	Loss + cost/acre	% Total Loss+Cost
	Infested	Infested		Treated			infested				pest	Loss + cost			
Bollworm/Budworm	9,707	8.77%	0	0.0%	0.0	\$0.00	0.04%	0.00	\$0.00	0.00%	13	\$5,616	\$0.05	0.0%	
Beet Armyworm	3,726	3.37%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Fall Armyworm	3,043	2.75%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Loopers	4,107	3.71%	163	0.1%	0.3	\$25.00	0.12%	0.00	\$0.00	0.00%	17	\$7,344	\$0.07	0.1%	
Cutworms	0	0.00%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Cotton Leaf Perforator	1,546	1.40%	163	0.1%	0.3	\$25.00	0.12%	0.00	\$0.00	0.00%	9	\$3,888	\$0.04	0.0%	
Saltmarsh Caterpillar	2,337	2.11%	1,660	1.5%	1.3	\$22.00	0.12%	0.02	\$0.44	0.00%	9	\$4,916	\$0.04	0.0%	
Lygus	109,645	99.04%	87,133	78.7%	1.6	\$26.26	4.07%	1.29	\$33.87	4.03%	17,202	\$11,145,326	\$100.68	76.9%	
Cotton Fleahopper	42,167	38.09%	1,749	1.6%	0.3	\$31.50	0.29%	0.00	\$0.00	0.11%	465	\$200,880	\$1.81	1.4%	
Stink Bugs (other than brown stink bug)	25,937	23.43%	0	0.0%	0.0	\$0.00	0.08%	0.00	\$0.00	0.02%	81	\$34,992	\$0.32	0.2%	
Brown Stink Bug	63,670	57.51%	3,499	3.2%	1.0	\$34.00	0.33%	0.03	\$1.02	0.19%	819	\$418,751	\$3.78	2.9%	
Clouded Plant Bug	0	0.00%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Leaf Footed Bugs	5,858	5.29%	3,433	3.1%	1.0	\$13.50	0.13%	0.03	\$0.41	0.01%	30	\$15,333	\$0.14	0.1%	
Spider Mites	36,844	33.28%	11,083	10.0%	0.9	\$21.00	0.06%	0.09	\$1.89	0.02%	94	\$110,243	\$1.00	0.8%	
Thrips	105,145	94.98%	13,587	12.3%	0.9	\$13.71	0.17%	0.11	\$1.51	0.16%	670	\$448,059	\$4.05	3.1%	
Aphids	9,723	8.78%	3,043	2.7%	0.2	\$20.00	0.00%	0.01	\$0.20	0.00%	0	\$1,945	\$0.02	0.0%	
Grasshoppers	19,282	17.42%	4,979	4.5%	0.8	\$11.50	0.13%	0.03	\$0.35	0.02%	94	\$47,260	\$0.43	0.3%	
Banded Winged Whitefly	21,100	19.06%	732	0.7%	0.2	\$30.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Silverleaf Whitefly	80,257	72.50%	33,308	30.1%	1.1	\$33.87	0.73%	0.34	\$11.51	0.53%	2,264	\$1,902,179	\$17.18	13.1%	
Colaspis beetles	31,768	28.70%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Cotton stainers	325	0.29%	325	0.3%	0.3	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Crickets	19,355	17.48%	4,068	3.7%	0.5	\$12.00	0.24%	0.02	\$0.24	0.04%	179	\$81,973	\$0.74	0.6%	
Darkling Beetles	5,924	5.35%	868	0.78%	1.0	\$10.00	0.00%	0.01	\$0.10	0.00%	0	\$592	\$0.01	0.0%	
False Chinch Bug	23,736	21.44%	325	0.3%	0.5	\$13.00	0.09%	0.00	\$0.00	0.02%	81	\$34,992	\$0.32	0.2%	
Pale-Striped Flea Beetle	30,482	27.53%	325	0.3%	0.5	\$13.00	0.06%	0.00	\$0.00	0.02%	72	\$31,104	\$0.28	0.2%	
Potato leafhopper	28,312	25.58%	3,092	2.8%	0.1	\$18.00	0.00%	0.00	\$0.00	0.00%	4	\$1,728	\$0.02	0.0%	
Thrips, Bean	5,044	4.56%	0	0.00%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Cockroaches	4,651	4.20%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Mealybugs	1,220	1.10%	1,220	1.1%	0.5	\$24.00	0.00%	0.01	\$0.24	0.00%	0	\$293	\$0.00	0.0%	
Thrips, Citrus	3,629	3.28%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
White-marked fleahopper	1,953	1.76%	1,953	1.76%	0.2	\$18.00	0.01%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
Boll Weevil	0	0.00%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%	
TOTAL								1.99	\$51.78	5.18%	22,103	\$14,497,414	\$130.96		

Table 8. Insect loss estimates for Arizona Bt cotton during 2021, continued.

				SUMMARY DATA				
Data Input		Yield and Management Results			Economic Results			
State	Arizona	Total Acres		110,702		Total	Per Acre	
Region	West	Total Bales Harvested		338,128	Foliar Insecticide Costs	\$5,731,804	\$51.78	
Year	2021	Total Bales Lost to Insects		22,103	Seed Treatment Costs	\$1,623,067	\$14.66	
Total Acres (Upland)	110,702	In-furrow cost/treated acre	\$16.23	Percent Yield Loss	5.2%	In-Furrow Costs	\$156,542	\$1.41
Yield / Acre (Upland)	1,466	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,546	Scouting Costs	\$1,920,681	\$17.35
Price / lb	\$0.90	Cost/acre Boll Weevil Eradication	\$3.37	Av. # Applications	1.99	Eradiation Costs	\$788,198	\$7.12
yield potential (lb/acre)	1,849	% acres in Pink Bollworm Eradication	100%	Total Bales lost (all factors)	88,259	Bt Cotton	\$5,223,124	\$47.18
Acres (Pima)	8,772	Cost/acre Pink Bollworm Eradication	\$3.75	Total % yield Loss	20.7%	Total Costs	\$15,443,416	\$139.50
Yield / Acre (Pima)	1,004	% Insect apps by air	56%	Transgenic Cotton (arthropods) (# acres)	110,702	Yield Loss to Insects	\$9,548,496	\$86.25
% Acres Scouted	100%	No. apps by air	2.0	Boll Weevil Eradication (# acres)	110,702	Total Losses + Costs	\$24,991,912	\$225.76
Fee / Scouted Acre	\$17.35	Cost/app by air	\$11.69	Pink Bollworm Eradication (# acres)	110,702			
No. times scouted/week	2.1	% insect apps by ground	44%	# Scouted Acres	110,702			
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	2.4	Seed Treatments (arthropods) (# acres)	45,138			
Cost/treated acre (Bt) Cotton	\$47.18	Cost/app by ground	\$11.56	In-Furrow Applications (# acres)	9,646			
% acres with seed treatment	41%	% Loss to weather	11.0%	Applications by Air (acres)	61,569			
Seed trt. cost/ treated acre	\$35.96	% loss to non-arthropods	0.0%	Applications by Ground (acres)	48,823			
% acres with in-furrow	9%	% loss to other (chemical injury, weeds, diseases, etc.)	4.5%	No. acres with no foliar insecticide applications	22,394			

Table 8. Cotton insect loss estimates for Arizona Bt cotton 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	46.8%	51,822	-	\$47.18	0%	0	0.0
Bollgard III	41.6%	46,057	-	\$47.18	0%	0	0.0
WideStrike	3.5%	3,857	-	\$47.18	0%	0	0.0
WideStrike 3	5.9%	6,569	-	\$47.18	0%	0	0.0
TwinLink	0.7%	814	-	\$47.18	0%	0	0.0
TwinLink Plus	1.4%	1,583	-	\$47.18	0%	0	0.0
Total Bt	100.0%	110,702	-	\$47.18	0.0%	0	0.0
Herbicide Traits Only	0	0	-	-	0	0	0
Conventional	0	0	-	-	0	0	0
Organic	0	0	-	-	0	0	0
Total Upland Cotton	100.0%	110,702	-	-	-	-	-
Non Upland Cotton							
Pima	-	8,772	-	-	-	-	-
-Other	-	0	-	-	-	-	-
Organic	-	0	-	-	-	-	-
Total (all Cotton)	-	119,474	-	-	-	-	-