

Table 25. Cotton insect loss estimates for the High Plains area of Texas during 2020.

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	200,000	10%	14,000	0.7%	1.0	\$20.00	0.250%	0.01	\$0.20	0.03%	2,173	\$749,267	\$0.37	1.8%
Beet Armyworm	40,000	2%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	60,000	3%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	40,000	2%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	10,000	1%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	400,000	20%	20,000	1.0%	1.0	\$15.00	0.800%	0.01	\$0.15	0.16%	13,907	\$4,599,245	\$2.30	11.2%
Cotton Fleahopper	1,000,000	50%	80,000	4.0%	1.0	\$12.00	1.000%	0.04	\$0.48	0.50%	43,458	\$14,664,691	\$7.33	35.9%
Stink Bugs (other than brown stink bug)	400,000	20%	10,000	0.5%	1.0	\$11.00	0.500%	0.01	\$0.11	0.10%	8,692	\$2,881,069	\$1.44	7.0%
Brown Stink Bug	0	0%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Clouded Plant Bug	0	0%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	10,000	1%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	60,000	3%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	2,000,000	100%	300,000	15.0%	1.0	\$9.00	0.500%	0.15	\$1.35	0.50%	43,458	\$16,884,691	\$8.44	41.3%
Aphids	100,000	5%	10,000	0.5%	1.0	\$15.00	0.100%	0.01	\$0.15	0.01%	435	\$156,984	\$0.08	0.4%
Grasshoppers	400,000	20%	14,000	0.7%	1.0	\$15.00	0.010%	0.01	\$0.15	0.00%	174	\$116,794	\$0.06	0.3%
Banded Winged Whitefly	40,000	2%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Wireworms	60,000	3%	0	0.0%	0.0	\$0.00	1.000%	0.00	\$0.00	0.03%	2,608	\$851,251	\$0.43	2.1%
Boll Weevil	0	0%	0	0.0%	0.0	\$0.00	0.000%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL								0.24	\$2.59	1.32%	114,905	\$40,903,992	\$20.45	

SUMMARY DATA

Data Input		Yield and Management Results			Economic Results		
					Total	Per Acre	
State	Texas	Total Acres		2,000,000			
Region	Central	Total Bales Harvested		2,666,667	Foliar Insecticide Costs	\$5,180,000 \$2.59	
Year	2020	Total Bales Lost to Insects		114,905	Seed Treatment Costs	\$16,000,000 \$8.00	
Total Acres (Upland)	2,000,000	In-furrow cost/treated acre	\$15.00	Percent Yield Loss	1.3%	In-Furrow Costs	\$900,000 \$0.45
Yield / Acre (Upland)	640	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	649	Scouting Costs	\$9,000,000 \$4.50
Price / lb	\$0.68	Cost/acre Boll Weevil Eradication	\$1.33	Av. # Applications	0.24	Eradication Costs	\$2,660,000 \$1.33
yield potential (lb/acre)	2,086	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	6,025,237	Bt Cotton	\$29,500,000 \$14.75
Acres (Pima)	35,000	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	69.3%	Total Costs	\$63,240,000 \$31.62
Yield / Acre (Pima)	900	% Insect apps by air	25%	Transgenic Cotton (arthropods) (# acres)	1,522,000	Yield Loss to Insects	\$37,504,992 \$18.75
% Acres Scouted	50%	No. apps by air	0.25	Boll Weevil Eradication (# acres)	2,000,000	Total Losses + Costs	\$100,744,992 \$50.37
Fee / Scouted Acre	\$9.00	Cost/app by air	\$6.00	Pink Bollworm Eradication (# acres)	0		
No. times scouted/week	1	% insect apps by ground	75%	# Scouted Acres	1,000,000		
% acres Transgenic (Bt) Cotton	76%	No. apps by ground	0.75	Seed Treatments (arthropods) (# acres)	1,600,000		
Cost/treated acre (Bt) Cotton	\$19.38	Cost/app by ground	\$5.00	In-Furrow Applications (# acres)	60,000		
% acres with seed treatment	80%	% Loss to weather	61.0%	Applications by Air (acres)	500,000		
Seed trt. cost/ treated acre	\$10.00	% loss to non-arthropods	2.0%	Applications by Ground (acres)	1,500,000		
% acres with in-furrow	3%	% loss to other (chemical injury, weeds, diseases, etc.)	5.0%	No. acres with no foliar insecticide applications	1,660,000		

Table 25. Cotton insect loss estimates for the High Plains area of Texas during 2020, 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	30.0%	600,000	\$83.00	\$16.00	0%	0	0.0
Bollgard III	24.0%	480,000	\$91.00	\$23.00	0%	0	0.0
WideStrike	0.1%	2,000	\$70.00	\$0.00	0%	0	0.0
WideStrike 3	15.0%	300,000	\$91.00	\$20.00	0%	0	0.0
TwinLink	4.0%	80,000	\$78.00	\$18.50	0%	0	0.0
TwinLink Plus	3.0%	60,000	\$82.00	\$23.00	0%	0	0.0
Total Bt	76.1%	1,522,000	\$86.78	\$19.38	0.0%	0	0.000
Herbicide Traits Only	17.0%	340,000	\$64.00	-	3%	10,200	1.0
Conventional	6.0%	120,000	\$23.00	-	3%	3,600	1.0
Organic	0.9%	18,000	\$23.00	-	0%	0	0.0
Total Upland Cotton	100.0%	2,000,000	\$78.51	\$19.38	0.7%	13,800	0.007
Non Upland Cotton							
Pima	0.9%	17,800	\$58.00	-	15%	2,670	1.0
Other	0.0%	0	\$0.00	-	0%	0	0.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		2,017,800	\$78.33	-	0.8%	16,470	0.008