

Table 21. Cotton insect loss estimates for Tennessee 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	220,000	80%	143,000	52.0%	1.1	\$19.50	1.30%	0.57	\$11.12	1.04%	7,674	\$4,950,094	\$18.00	15.3%
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	13,750	5%	2,750	1.0%	1.0	\$13.50	0.30%	0.01	\$0.14	0.02%	111	\$38,087	\$0.14	0.1%
Loopers	0	0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	13,750	5%	165,000	60.0%	1.0	\$4.00	0.00%	0.60	\$2.40	0.00%	0	\$33,000	\$0.12	0.1%
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	5,500	2%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	275,000	100%	275,000	100.0%	3.0	\$14.00	2.30%	3.00	\$42.00	2.30%	16,972	\$17,089,661	\$62.14	53.0%
Cotton Fleahopper	0	0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	275,000	100%	165,000	60.0%	1.0	\$10.50	0.60%	0.60	\$6.30	0.60%	4,428	\$3,177,799	\$11.56	9.8%
Brown Stink Bug	275,000	100%	27,500	10.0%	1.0	\$11.00	0.10%	0.10	\$1.10	0.10%	738	\$543,383	\$1.98	1.7%
Clouded Plant Bug	261,250	95%	27,500	10.0%	1.0	\$10.00	0.10%	0.10	\$1.00	0.10%	701	\$490,056	\$1.78	1.5%
Leaf Footed Bugs	8,250	3%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	220,000	80%	52,250	19.0%	1.2	\$11.00	0.30%	0.23	\$2.53	0.24%	1,771	\$1,134,654	\$4.13	3.5%
Thrips	275,000	100%	220,000	80.0%	1.2	\$7.50	1.10%	0.96	\$7.20	1.10%	8,117	\$4,629,389	\$16.83	14.3%
Aphids	275,000	100%	5,500	2.0%	1.0	\$12.00	0.05%	0.02	\$0.24	0.05%	369	\$186,442	\$0.68	0.6%
Grasshoppers	5,500	2%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	13,750	5%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	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					6.19	\$74.02	5.54%				40,881	\$32,272,565	\$117.35	

SUMMARY DATA

Data Input		Yield and Management Results				Economic Results	
State	Tennessee	Total Acres	275,000		Total	Per Acre	
Region	Midsouth	Total Bales Harvested	615,885		Foliar Insecticide Costs	\$20,355,500	
Year	2020	Total Bales Lost to Insects	40,881		Seed Treatment Costs	\$2,915,000	
Total Acres (Upland)	275,000	In-furrow cost/treated acre	\$8.75	Percent Yield Loss	5.5%	In-Furrow Costs	\$48,125
Yield / Acre (Upland)	1,075	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,138	Scouting Costs	\$2,691,563
Price / lb	\$0.68	Cost/acre Boll Weevil Eradication	\$1.50	Av. # Applications	6.19	Eradication Costs	\$412,500
yield potential (lb/acre)	1,288	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	122,051	Bt Cotton	\$6,647,300
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	16.5%	Total Costs	\$33,069,988
Yield / Acre (Pima)	0	% Insect apps by air	25%	Transgenic Cotton (arthropods) (# acres)	274,175	Yield Loss to Insects	\$13,343,558
% Acres Scouted	87%	No. apps by air	2	Boll Weevil Eradication (# acres)	275,000	Total Losses + Costs	\$46,413,546
Fee / Scouted Acre	\$11.25	Cost/app by air	\$9.50	Pink Bollworm Eradication (# acres)	0		
No. times scouted/week	1.5	% insect apps by ground	90%	# Scouted Acres	239,250		
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	4.5	Seed Treatments (arthropods) (# acres)	275,000		
Cost/treated acre (Bt) Cotton	\$24.24	Cost/app by ground	\$5.50	In-Furrow Applications (# acres)	5,500		
% acres with seed treatment	100%	% Loss to weather	9.0%	Applications by Air (acres)	68,750		
Seed trt. cost/ treated acre	\$10.60	% loss to non-arthropods	1.0%	Applications by Ground (acres)	247,500		
% acres with in-furrow	2%	% loss to other (chemical injury, weeds, diseases, etc.)	1.0%	No. acres with no foliar insecticide applications	0		

Table 21. Cotton insect loss estimates for Tennessee 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	80.0%	220,000	\$110.00	\$24.00	65%	143,000	1.1
Bollgard III	12.2%	33,550	\$115.00	\$26.00	0%	0	0.0
WideStrike	0.0%	0	\$0.00	\$0.00	0%	0	0.0
WideStrike 3	6.5%	17,875	\$105.00	\$24.00	0%	0	0.0
TwinLink	0.0%	0	\$0.00	\$16.00	0%	0	0.0
TwinLink Plus	1.0%	2,750	\$110.00	\$24.00	0%	0	0.0
Total Bt	99.7%	274,175	\$110.29	\$24.24	52.2%	143,000	0.6
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	0.3%	825	\$25.00	-	100%	825	2.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	275,000	\$110.03	\$24.24	52.3%	143,825	0.6
Non Upland Cotton							
Pima	0.0%	0	\$0.00	-	0%	0	0.0
Other	0.0%	0	\$0.00	-	0%	0	0.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		275,000	\$110.03	-	52.3%	143,825	0.6