

Table 21. Cotton insect loss estimates for North Carolina during 2023.

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	240,500	65%	7,400	2.0%	1.3	\$22.00	0.05%	0.03	\$0.66	0.03%	256	\$257,034	\$0.69	0.9%
Beet Armyworm	3,700	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	3,700	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	3,700	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	3,700	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cotton Leaf Perforator	0	0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	3,700	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	351,500	95%	314,500	85.0%	2.5	\$17.00	0.20%	2.13	\$36.21	0.19%	1,473	\$13,293,447	\$35.93	47.5%
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)	136,900	37%	0	0.0%	0.0	\$0.00	1.90%	0.00	\$0.00	0.70%	5,451	\$2,093,184	\$5.66	7.5%
Brown Stink Bug	196,100	53%	37,000	10.0%	2.0	\$12.00	1.90%	0.20	\$2.40	1.01%	7,809	\$3,469,296	\$9.38	12.4%
Clouded Plant Bug	18,500	5%	0	0.0%	0.0	\$0.00	0.10%	0.00	\$0.00	0.01%	39	\$14,976	\$0.04	0.1%
Leaf Footed Bugs	3,700	1%	0	0.0%	0.0	\$0.00	0.20%	0.00	\$0.00	0.00%	16	\$6,144	\$0.02	0.0%
Spider Mites	370,000	100%	7,400	2.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Thrips	370,000	100%	351,500	95.0%	1.3	\$16.00	0.50%	1.19	\$19.04	0.50%	3,877	\$8,533,568	\$23.06	30.5%
Aphids	370,000	100%	11,100	3.0%	1.0	\$16.00	0.00%	0.03	\$0.48	0.00%	0	\$177,600	\$0.48	0.6%
Grasshoppers	18,500	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	0	0%	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%
Garden fleahopper	74,000	20%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
False chinch bug	3,700	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Asiatic garden beetle	18,500	5%	3,700	1.0%	1.0	\$8.00	1.00%	0.01	\$0.08	0.05%	388	\$150,472	\$0.41	0.5%
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								3.59	\$58.87	2.49%	19,309	\$27,995,721	\$75.66	

SUMMARY DATA

	Data Input		Yield and Management Results			Economic Results	
	North Carolina		Total Acres			Total	Per Acre
State	North Carolina		370,000				
Region	Southeast						
Year	2023						
Total Acres (Upland)	370,000	In-furrow cost/treated acre	\$13.00	Total Bales Harvested	725,354	Foliar Insecticide Costs	\$21,781,900
Yield / Acre (Upland)	941	% acres in Boll Weevil Eradication	100%	Total Bales Lost to Insects	19,309	Seed Treatment Costs	\$5,799,750
Price / lb	\$0.80	Cost/acre Boll Weevil Eradication	\$0.75	Percent Yield Loss	2.5%	In-Furrow Costs	\$3,126,500
yield potential (lb/acre)	1,006	% acres in Pink Bollworm Eradication	0%	Yield w/o Insects (lb/acre)	965	Scouting Costs	\$1,776,000
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Av. # Applications	3.59	Eradication Costs	\$277,500
Yield / Acre (Pima)	0	% Insect apps by air	20%	Total Bales lost (all factors)	50,327	Bt Cotton	\$13,257,100
% Acres Scouted	60%	No. apps by air	1	Total % yield Loss	6.5%	Total Costs	\$46,018,750
Fee / Scouted Acre	\$8.00	Cost/app by air	\$9.00	Transgenic Cotton (arthropods) (# acres)	366,300	Yield Loss to Insects	\$7,414,656
No. times scouted/week	1	% insect apps by ground	8%	Boll Weevil Eradication (# acres)	370,000	Total Losses + Costs	\$53,433,406
% acres Transgenic (Bt) Cotton	99%	No. apps by ground	1	Pink Bollworm Eradication (# acres)	0		
Cost/treated acre (Bt) Cotton	\$36.19	Cost/app by ground	\$8.00	# Scouted Acres	222,000		
% acres with seed treatment	95%	% Loss to weather	2.0%	Seed Treatments (arthropods) (# acres)	351,500		
Seed trt. cost/ treated acre	\$16.50	% loss to non-arthropods	1.0%	In-Furrow Applications (# acres)	240,500		
% acres with in-furrow	65%	% loss to other (chemical injury, weeds, diseases, etc.)	1.0%	Applications by Air (acres)	74,000		
				Applications by Ground (acres)	29,600		
				No. acres with no foliar insecticide applications	11,100		

Table 21. Cotton insect loss estimates for North Carolina during 2023, 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	1.0%	3,700	\$91.00	\$30.00	100%	3,700	1.3
Bollgard III	62.0%	229,400	\$101.00	\$35.00	0%	0	0.0
Bollgard III/Thryvon	8.0%	29,600	\$117.00	\$35.00	0%	0	0.0
WideStrike	0.0%	0	\$0.00	\$0.00	0%	0	0.0
WideStrike 3	23.0%	85,100	\$101.00	\$35.00	0%	0	0.0
TwinLink	1.0%	3,700	\$91.00	\$30.00	100%	3,700	1.3
TwinLink Plus	4.0%	14,800	\$101.00	\$35.00	0%	0	0.0
Total Bt	99.0%	366,300	\$102.09	\$36.19	2.0%	7,400	0.0
Herbicide Traits Only	0.0%	0	\$0.00		0%	0	0.0
Conventional	1.0%	3,700	-		100%	3700	2.0
Organic	0.0%	0	\$0.00		0%	0	0.0
Total Upland Cotton	100.0%	370,000	\$101.07	\$36.19	3.0%	11,100	0.0
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)		370,000	\$101.07		3.0%	11,100	0.0

Upland Cotton	Thryvon Bt cost/acre	% acres treated for Thrips	# acres treated for Thrips	# apps for Thrips	% acres treated for Lygus	# acres treated for Lygus	# apps for Lygus
Bollgard III/Thryvon	\$16.00	1%	0	0	75%	22,200	1.5