

Table 4. Cotton insect loss estimates for Southeast Arkansas during 2021.

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	188,000	100%	35,720	19%	1.3	\$31.46	2.5%	0.25	\$7.87	2.50%	22,305	\$9,390,650	\$49.95	16.8%
Beet Armyworm	0	0%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Fall Armyworm	20,680	11%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	1,880	1%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	47,000	25%	5,640	3%	1.0	\$11.00	0.0%	0.03	\$0.33	0.00%	0	\$15,510	\$0.08	0.0%
Cotton Leaf Perforator	0	0%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Saltmarsh Caterpillar	9,400	5%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	188,000	100%	188,000	100%	5.5	\$20.00	5.8%	5.50	\$110.00	5.80%	51,749	\$39,036,405	\$207.64	69.7%
Cotton Fleahopper	122,200	65%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Stink Bugs (other than brown stink bug)	188,000	100%	5,640	3%	1.0	\$20.00	0.3%	0.03	\$0.60	0.30%	2,677	\$1,062,385	\$5.65	1.9%
Brown Stink Bug	188,000	100%	5,640	3%	1.0	\$20.00	0.3%	0.03	\$0.60	0.30%	2,677	\$1,062,385	\$5.65	1.9%
Clouded Plant Bug	141,000	75%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	9,400	5%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	75,200	40%	37,600	20%	1.0	\$20.00	1.5%	0.20	\$4.00	0.60%	5,353	\$2,199,616	\$11.70	3.9%
Thrips	188,000	100%	56,400	30%	1.0	\$13.00	0.5%	0.30	\$3.90	0.50%	4,461	\$2,315,606	\$12.32	4.1%
Aphids	188,000	100%	47,000	25%	1.0	\$20.00	0.0%	0.25	\$5.00	0.00%	0	\$940,000	\$5.00	1.7%
Grasshoppers	18,800	10%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	37,600	20%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Silverleaf Whitefly	0	0%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Boll Weevil	0	0%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL					6.59			\$132.30		10.00%	89,222	\$56,022,557	\$297.99	

SUMMARY DATA

Data Input		Yield and Management Results			Economic Results		
State	Arkansas	Total Acres		188,000	Total	Per Acre	
Region	MidSouth	Total Bales Harvested		504,075	Foliar Insecticide Costs	\$24,871,460	
Year	2021	Total Bales Lost to Insects		89,222	Seed Treatment Costs	\$2,350,000	
Total Acres (Upland)	188,000	In-furrow cost/treated acre	\$15.00	Percent Yield Loss	10.0%	In-Furrow Costs	\$338,400
Yield / Acre (Upland)	1,287	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,430	Scouting Costs	\$1,880,000
Price / lb	\$0.74	Cost/acre Boll Weevil Eradication	\$3.00	Av. # Applications	6.59	Eradication Costs	\$564,000
yield potential (lb/acre)	2,278	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	388,114	Bt Cotton	\$6,580,000
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	43.5%	Total Costs	\$36,583,860
Yield / Acre (Pima)	0	% Insect apps by air	80%	Transgenic Cotton (arthropods) (# acres)	188,000	Yield Loss to Insects	\$31,648,828
% Acres Scouted	100%	No. apps by air	4	Boll Weevil Eradication (# acres)	188,000	Total Losses + Costs	\$68,232,688
Fee / Scouted Acre	\$10.00	Cost/app by air	\$10.00	Pink Bollworm Eradication (# acres)	0		
No. times scouted/week	1.5	% insect apps by ground	100%	# Scouted Acres	188,000		
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	4	Seed Treatments (arthropods) (# acres)	188,000		
Cost/treated acre (Bt) Cotton	\$35.00	Cost/app by ground	\$7.00	In-Furrow Applications (# acres)	22,560		
% acres with seed treatment	100%	% Loss to weather	19.5%	Applications by Air (acres)	150,400		
Seed trt. cost/ treated acre	\$12.50	% loss to non-arthropods	6.0%	Applications by Ground (acres)	188,000		
% acres with in-furrow	12%	% loss to other (chemical injury, weeds, diseases, etc.)	8.0%	No. acres with no foliar insecticide applications	0		

Table 4. Cotton insect loss estimates for Southeast Arkansas 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	11.1%	20,868	\$112.00	\$35.00	94%	19,616	1.5
Bollgard III	84.5%	158,860	\$112.00	\$35.00	10%	15,886	1.0
WideStrike	0.0%	0	\$97.00	\$35.00	0%	0	0.0
WideStrike 3	2.9%	5,452	\$112.00	\$35.00	10%	545	1.0
TwinLink	0.0%	0	\$112.00	\$35.00	0%	0	0.0
TwinLink Plus	1.5%	2,820	\$112.00	\$35.00	0%	0	0.0
Total Bt	100.0%	188,000	\$112.00	\$35.00	19.2%	36,047	0.2
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	0.0%	0	\$26.00	-	0%	0	0.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	188,000	\$112.00	\$35.00	19.2%	36,047	0.2
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)		188,000	\$112.00		19.2%	36,047	0.2