

Table 4. Cotton insect loss estimates for Southeast Arkansas 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	210,000	100%	139,650	67%	1.3	\$31.46	3.5%	0.86	\$27.06	3.50%	32,845	\$15,456,348	\$73.60	29.7%
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	16,800	8%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	2,100	1%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	52,500	25%	6,300	3%	1.0	\$11.00	0.0%	0.03	\$0.33	0.00%	0	\$17,325	\$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	0	0%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	210,000	100%	210,000	100%	4.5	\$20.00	4.1%	4.50	\$90.00	4.10%	38,476	\$30,350,458	\$144.53	58.4%
Cotton Fleahopper	136,500	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)	147,000	70%	5,250	3%	1.0	\$20.00	0.3%	0.03	\$0.60	0.18%	1,642	\$576,859	\$2.75	1.1%
Brown Stink Bug	147,000	70%	5,250	3%	1.0	\$20.00	0.3%	0.03	\$0.60	0.18%	1,642	\$576,859	\$2.75	1.1%
Clouded Plant Bug	136,500	65%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	10,500	5%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	84,000	40%	42,000	20%	1.0	\$20.00	1.5%	0.20	\$4.00	0.60%	5,631	\$2,011,786	\$9.58	3.9%
Thrips	210,000	100%	42,000	20%	1.0	\$13.00	0.5%	0.20	\$2.60	0.50%	4,692	\$1,942,339	\$9.25	3.7%
Aphids	210,000	100%	52,500	25%	1.0	\$20.00	0.0%	0.25	\$5.00	0.00%	0	\$1,050,000	\$5.00	2.0%
Grasshoppers	21,000	10%	0	0%	0.0	\$0.00	0.0%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	42,000	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					6.10	\$130.19			9.05%		84,928	\$51,981,974	\$247.53	

SUMMARY DATA

Data Input		Yield and Management Results			Economic Results		
State	Arkansas	Total Acres		210,000	Total	Per Acre	
Region	MidSouth	Total Bales Harvested		525,000	Foliar Insecticide Costs	\$27,338,976	
Year	2020	Total Bales Lost to Insects		84,928	Seed Treatment Costs	\$2,493,750	
Total Acres (Upland)	210,000	In-furrow cost/treated acre	\$15.00	Percent Yield Loss	9.1%	In-Furrow Costs	\$378,000
Yield / Acre (Upland)	1,200	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,319	Scouting Costs	\$2,100,000
Price / lb	\$0.62	Cost/acre Boll Weevil Eradication	\$3.00	Av. # Applications	6.1	Eradication Costs	\$630,000
yield potential (lb/acre)	2,145	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	413,382	Bt Cotton	\$7,276,500
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	44.1%	Total Costs	\$40,217,226
Yield / Acre (Pima)	0	% Insect apps by air	80%	Transgenic Cotton (arthropods) (# acres)	207,900	Yield Loss to Insects	\$25,274,573
% Acres Scouted	100%	No. apps by air	4	Boll Weevil Eradication (# acres)	210,000	Total Losses + Costs	\$65,491,799
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	210,000		
% acres Transgenic (Bt) Cotton	99%	No. apps by ground	4	Seed Treatments (arthropods) (# acres)	199,500		
Cost/treated acre (Bt) Cotton	\$35.00	Cost/app by ground	\$7.00	In-Furrow Applications (# acres)	25,200		
% acres with seed treatment	95%	% Loss to weather	21.0%	Applications by Air (acres)	168,000		
Seed trt. cost/ treated acre	\$12.50	% loss to non-arthropods	6.0%	Applications by Ground (acres)	210,000		
% 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 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	71.0%	149,100	\$112.00	\$35.00	90%	134,190	1.5
Bollgard III	14.0%	29,400	\$112.00	\$35.00	5%	1,470	1.0
WideStrike	0.0%	0	\$97.00	\$35.00	0%	0	0.0
WideStrike 3	9.0%	18,900	\$112.00	\$35.00	10%	1,890	1.0
TwinLink	0.0%	0	\$112.00	\$35.00	0%	0	0.0
TwinLink Plus	5.0%	10,500	\$112.00	\$35.00	0%	0	0.0
Total Bt	99.0%	207,900	\$112.00	\$35.00	66.2%	137,550	1.0
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	1.0%	2,100	\$26.00	-	100%	2,100	2.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	210,000	\$111.14	\$35.00	66.5%	139,650	1.0
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)		210,000	\$111.14	-	66.5%	139,650	1.0