

Table 19. Cotton insect loss estimates for Missouri during 2022.

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	360,000	100%	72,000	20.0%	1.0	\$31.00	2.00%	0.20	\$6.20	2.00%	31,500	\$15,840,000	\$44.00	14.9%
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	0	0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	3,600	1%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	0	0%	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	0	0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	360,000	100%	360,000	100.0%	5.0	\$20.00	5.00%	5.00	\$100.00	5.00%	78,750	\$70,020,000	\$194.50	66.0%
Cotton Fleahopper	216,000	60%	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)	360,000	100%	10,800	3.0%	1.0	\$20.00	0.10%	0.03	\$0.60	0.10%	1,575	\$896,400	\$2.49	0.8%
Brown Stink Bug	360,000	100%	10,800	3.0%	1.0	\$20.00	0.10%	0.03	\$0.60	0.10%	1,575	\$896,400	\$2.49	0.8%
Clouded Plant Bug	216,000	60%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Leaf Footed Bugs	0	0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	252,000	70%	144,000	40.0%	1.0	\$20.00	2.00%	0.40	\$8.00	1.40%	22,050	\$11,541,600	\$32.06	10.9%
Thrips	360,000	100%	270,000	75.0%	1.0	\$13.00	0.50%	0.75	\$9.75	0.50%	7,875	\$6,912,000	\$19.20	6.5%
Aphids	360,000	100%	0	0.0%	1.0	\$20.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Grasshoppers	36,000	10%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	36,000	10%	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					6.41			\$125.15		9.10%	143,325	\$106,106,400	\$294.74	

SUMMARY DATA

Data Input		Yield and Management Results				Economic Results	
State	Missouri	Total Acres			360,000	Total	Per Acre
Region	Midsouth	Total Bales Harvested			900,000	Foliar Insecticide Costs	\$45,054,000
Year	2022	Total Bales Lost to Insects			143,325	Seed Treatment Costs	\$4,500,000
Total Acres (Upland)	360,000	In-furrow cost/treated acre	\$15.00	Percent Yield Loss	9.1%	In-Furrow Costs	\$540,000
Yield / Acre (Upland)	1,200	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,320	Scouting Costs	\$3,240,000
Price / lb	\$0.90	Cost/acre Boll Weevil Eradication	\$3.00	Av. # Applications	6.41	Eradication Costs	\$1,080,000
yield potential (lb/acre)	2,100	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	674,888	Bt Cotton	\$12,600,000
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	\$0.00	Total % yield Loss	42.9%	Total Costs	\$67,014,000
Yield / Acre (Pima)	0	% Insect apps by air	80%	Transgenic Cotton (arthropods) (# acres)	360,000	Yield Loss to Insects	\$61,916,400
% Acres Scouted	90%	No. apps by air	4	Boll Weevil Eradication (# acres)	360,000	Total Losses + Costs	\$128,930,400
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	324,000		
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	4	Seed Treatments (arthropods) (# acres)	360,000		
Cost/treated acre (Bt) Cotton	\$35.00	Cost/app by ground	\$8.00	In-Furrow Applications (# acres)	36,000		
% acres with seed treatment	100%	% Loss to weather	17.0%	Applications by Air (acres)	288,000		
Seed trt. cost/ treated acre	\$12.50	% loss to non-arthropods	6.0%	Applications by Ground (acres)	360,000		
% acres with in-furrow	10%	% loss to other (chemical injury, weeds, diseases, etc.)	10.8%	No. acres with no foliar insecticide applications	0		

Table 19. Cotton insect loss estimates for Missouri during 2022, 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%	39,960	\$112.00	\$35.00	80%	31,968	1.5
Bollgard III	84.5%	304,200	\$112.00	\$35.00	6%	18,252	1.0
WideStrike	0.0%	0	\$97.00	\$35.00	0%	0	0.0
WideStrike 3	2.9%	10,440	\$112.00	\$35.00	7%	731	1.0
TwinLink	0.0%	0	\$112.00	\$35.00	0%	0	0.0
TwinLink Plus	1.5%	5,400	\$112.00	\$35.00	6%	324	1.0
Total Bt	100%	360,000	\$112.00	\$35.00	14.2%	51,275	0.2
Herbicide Traits Only	0.00%	0	\$0.00	-	0%	0	0.0
Conventional	0.00%	0	\$0.00	-	0%	0	0.0
Organic	0.00%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	360,000	\$112.00	\$35.00	14.2%	51,275	0.2
Non Upland Cotton							
Pima	0.0%	0	\$0.00	-	0%	0	0
Other	0.0%	0	\$0.00	-	0%	0	0
Organic	0.0%	0	\$0.00	-	0%	0	0
Total (all Cotton)		360,000	\$112.00	-	14.2%	51,275	0.2