

Table 20. Cotton insect loss estimates for Missouri during 2018.

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	320,000	100.0%	224,000	70.0%	1.5	\$22.00	2.00%	1.05	\$23.10	2.00%	24,000	\$15,456,000	\$48.30	22.8%
Beet Armyworm	0	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	80,000	25.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Loopers	3,200	1.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Cutworms	80,000	25.0%	160,000	50.0%	1.0	\$18.00	0.00%	0.50	\$9.00	0.00%	0	\$720,000	\$2.25	1.1%
Cotton Leaf Perforator	0	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	32,000	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Lygus	320,000	100.0%	320,000	100.0%	4.0	\$20.00	2.50%	4.00	\$80.00	2.50%	30,000	\$35,680,000	\$111.50	52.5%
Cotton Fleahopper	256,000	80.0%	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)	256,000	80.0%	48,000	15.0%	1.0	\$16.00	0.09%	0.15	\$2.40	0.07%	864	\$904,704	\$2.83	1.3%
Brown Stink Bug	256,000	80.0%	32,000	10.0%	1.0	\$16.00	0.05%	0.10	\$1.60	0.04%	480	\$570,880	\$1.78	0.8%
Clouded Plant Bug	160,000	50.0%	32,000	10.0%	1.0	\$20.00	0.05%	0.10	\$2.00	0.03%	300	\$420,800	\$1.32	0.6%
Leaf Footed Bugs	16,000	5.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Spider Mites	288,000	90.0%	144,000	45.0%	2.0	\$20.00	1.30%	0.90	\$18.00	1.17%	14,040	\$9,901,440	\$30.94	14.6%
Thrips	320,000	100.0%	240,000	75.0%	1.0	\$13.00	0.20%	0.75	\$9.75	0.20%	2,400	\$3,926,400	\$12.27	5.8%
Aphids	320,000	100.0%	16,000	5.0%	1.0	\$20.00	0.00%	0.05	\$1.00	0.00%	0	\$320,000	\$1.00	0.5%
Grasshoppers	32,000	10.0%	0	0.0%	0.0	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
Banded Winged Whitefly	32,000	10.0%	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	\$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	\$0.00	0.00%	0.00	\$0.00	0.00%	0	\$0	\$0.00	0.0%
TOTAL								7.60	\$146.85	6.01%	72,084	\$67,900,224	\$212.19	

SUMMARY DATA

Data Input			Yield and Management Results			Economic Results	
State	Missouri		Total Acres	320,000		Total	Per Acre
Region	Mid-South		Total Bales Harvested	850,000		Foliar Insecticide Costs	\$46,992,000
Year	2018		Total Bales Lost to Insects	72,120		Seed Treatment Costs	\$3,880,000
Total Acres (Upland)	320,000	In-furrow cost/treated acre	Percent Yield Loss	6.0%		In-Furrow Costs	\$608,000
Yield / Acre (Upland)	1,275	% acres in Boll Weevil Eradication	Yield w/o Insects (lb/acre)	1,357		Scouting Costs	\$2,816,000
Price / lb	\$0.70	Cost/acre Boll Weevil Eradication	Av. # Applications	7.6		Eradication Costs	\$640,000
yield potential (lb/acre)	1,800	% acres in Pink Bollworm Eradication	Total Bales lost (all factors)	348,120		Bt Cotton	\$11,088,000
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	Total % yield Loss	29.0%		Total Costs	\$66,024,000
Yield / Acre (Pima)	0	% Insect apps by air	Transgenic Cotton (arthropods) (# acres)	316,800		Yield Loss to Insects	\$24,220,224
% Acres Scouted	80%	No. apps by air	Boll Weevil Eradication (# acres)	320,000		Total Losses + Costs	\$90,244,224
Fee / Scouted Acre	\$11.00	Cost/app by air	Pink Bollworm Eradication (# acres)	0			
No. times scouted/week	1.5	% insect apps by ground	# Scouted Acres	256,000			
% acres Transgenic (Bt) Cotton	99%	No. apps by ground	Seed Treatments (arthropods) (# acres)	310,400			
Cost/treated acre (Bt) Cotton	\$35.00	Cost/app by ground	In-Furrow Applications (# acres)	32,000			
% acres with seed treatment	97%	% Loss to weather	Applications by Air (acres)	224,000			
Seed trt. cost/ treated acre	\$12.50	% loss to non-arthropods	Applications by Ground (acres)	320,000			
% acres with in-furrow	10%	% loss to other (chemical injury, weeds, diseases, etc.)	No. acres with no foliar insecticide applications	0			

Table 20. Cotton insect loss estimates for Missouri during 2018, 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	92.0%	294,400	\$112.00	\$35.00	83%	244,352	1.5
Bollgard III	1.0%	3,200	\$112.00	\$35.00	0%	0	0.0
WideStrike	3.0%	9,600	\$97.00	\$35.00	100%	9,600	2.0
WideStrike 3	1.0%	3,200	\$112.00	\$35.00	2%	64	1.0
TwinLink	1.0%	3,200	\$112.00	\$35.00	83%	2,656	1.5
TwinLink Plus	1.0%	3,200	\$112.00	\$35.00	0%	0	0.0
Total Bt	99.0%	316,800	\$111.55	\$35.00	81.0%	256,672	1.5
Herbicide Traits Only	0.0%	0	\$0.00	-	0%	0	0.0
Conventional	1.0%	3,200	\$26.00	-	100%	3200	2.0
Organic	0.0%	0	\$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	320,000	\$109.57	\$35.00	81.2%	259,872	1.5
Non Upland Cotton							
Pima	0%	0	\$0.00	-	0%	0	0.0
Other	0%	0	\$0.00	-	0%	0	0.0
Organic	0%	0	\$0.00	-	0%	0	0.0
Total (all Cotton)		320,000	\$109.57		81.2%	259,872	1.5