Table 17. Cotton insect loss estimates for Missouri during 2024.

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	80,000	20.0%	20,000	5.0%	1.0	$20.00	0.50%	0.05	$1.00	0.10%	1,388	$546,368	$1.37	0.7%
Beet Armyworm	4,000	1.0%	4,000	1.0%	1.0	$0.00	0.20%	0.01	$0.00	0.00%	28	$9,408	$0.02	0.0%
Fall Armyworm	4,000	1.0%	4,000	1.0%	1.0	$0.00	0.10%	0.01	$0.00	0.00%	14	$4,704	$0.01	0.0%
Loopers	0	0.0%	0	0.0%	0.0	$0.00	0.00%	0.00	$0.00	0.00%	0	$0	$0.00	0.0%
Cutworms	80,000	20.0%	48,000	12.0%	1.0	$6.00	0.00%	0.12	$0.72	0.00%	0	$57,600	$0.14	0.1%
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	8,000	2.0%	0	0.0%	0.0	$0.00	0.00%	0.00	$0.00	0.00%	0	$0	$0.00	0.0%
Lygus	400,000	100.0%	400,000	100.0%	4.0	$16.00	4.00%	4.00	$64.00	4.00%	55,533	$44,259,088	$110.65	58.5%
Cotton Fleahopper	0	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)	100,000	25.0%	20,000	5.0%	1.0	$10.00	0.40%	0.05	$0.50	0.10%	1,388	$516,368	$1.29	0.7%
Brown Stink Bug	20,000	5.0%	20,000	5.0%	1.0	$10.00	0.10%	0.05	$0.50	0.01%	69	$33,184	$0.08	0.0%
Clouded Plant Bug	260,000	65.0%	240,000	60.0%	4.0	$10.00	1.00%	2.40	$24.00	0.65%	9,024	$9,272,064	$23.18	12.3%
Leaf Footed Bugs	8,000	2.0%	2,000	0.5%	0.0	$0.00	0.00%	0.00	$0.00	0.00%	0	$0	$0.00	0.0%
Spider Mites	200,000	50.0%	80,000	20.0%	2.0	$13.00	0.75%	0.40	$5.20	0.38%	5,206	$2,789,216	$6.97	3.7%
Thrips	400,000	100.0%	400,000	100.0%	2.0	$12.50	1.75%	2.00	$25.00	1.75%	24,296	$18,163,456	$45.41	24.0%
Aphids	0	0.0%	0	0.0%	0.0	$12.00	0.00%	0.00	$0.00	0.00%	0	$0	$0.00	0.0%
Grasshoppers	4,000	1.0%	2,000	0.5%	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	$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								9.09	$120.92	6.98%	96,946	$75,651,456	$189.13	

SUMMARY DATA

Data Input				Yield and Management Results		Economic Results		
State	Missouri			Total Acres	400,000		Total	Per Acre
Region	Midsouth			Total Bales Harvested	1,041,667	Foliar Insecticide Costs	$48,368,000	$120.92
Year	2024			Total Bales Lost to Insects	96,946	Seed Treatment Costs	$4,400,000	$11.00
Total Acres (Upland)	400,000	In-furrow cost/treated acre	$9.00	Percent Yield Loss	7.0%	In-Furrow Costs	$1,080,000	$2.70
Yield / Acre (Upland)	1,250	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,344	Scouting Costs	$3,800,000	$9.50
Price / lb	$0.70	Cost/acre Boll Weevil Eradication	$1.50	Av. # Applications	9.09	Eradication Costs	$600,000	$1.50
yield potential (lb/acre)	1,666	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	346,847	Bt Cotton	$12,376,000	$30.94
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	$0.00	Total % yield Loss	25.0%	Total Costs	$70,624,000	$176.56
Yield / Acre (Pima)	0	% Insect apps by air	40%	Transgenic Cotton (arthropods) (# acres)	400,000	Yield Loss to Insects	$32,573,856	$81.43
% Acres Scouted	95%	No. apps by air	2	Boll Weevil Eradication (# acres)	400,000	Total Losses + Costs	$103,197,856	$257.99
Fee / Scouted Acre	$10.00	Cost/app by air	$11.00	Pink Bollworm Eradication (# acres)	0			
No. times scouted/week	2	% insect apps by ground	60%	# Scouted Acres	380,000			
% acres Transgenic (Bt) Cotton	100%	No. apps by ground	4.5	Seed Treatments (arthropods) (# acres)	400,000			
Cost/treated acre (Bt) Cotton	$30.94	Cost/app by ground	$6.00	In-Furrow Applications (# acres)	120,000			
% acres with seed treatment	100%	% Loss to weather	12.0%	Applications by Air (acres)	160,000			
Seed trt. cost/ treated acre	$11.00	% loss to non-arthropods	3.0%	Applications by Ground (acres)	240,000			
% acres with in-furrow	30%	% loss to other (chemical injury, weeds, diseases, etc.)	3.0%	No. acres with no foliar insecticide applications	0			

Table 17. Cotton insect loss estimates for Missouri during 2024, 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	20.0%	80,000	$110.00	$20.00	5%	4,000	1.0
Bollgard III	46.0%	184,000	$115.00	$22.00	0%	0	0.0
Bollgard III/Thryvon	30.0%	120,000	$0.00	$28.00	0%	0	0.0
WideStrike	0.0%	0	$0.00	$0.00	0%	0	0.0
WideStrike 3	2.0%	8,000	$105.00	$20.00	0%	0	0.0
TwinLink	1.0%	4,000	$0.00	$0.00	0%	0	0.0
TwinLink Plus	1.0%	4,000	$110.00	$22.00	0%	0	0.0
Total Bt	100.0%	400,000	$78.10	$30.94	1.0%	4,000	0.0
Herbicide Traits Only	0.0%	0	$0.00	-	0%	0	0.0
Conventional	0.0%	0	$0.00	-	0%	0	0.0
Organic	0.0%	0	$0.00	-	0%	0	0.0
Total Upland Cotton	100.0%	400,000	$78.10	$30.94	1.0%	4,000	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)		400,000	$78.10		1.0%	4,000	0.0

Upland Cotton	% acres treated for Thrips	# acres treated for Thrips	# apps for Thrips	Thryvon Bt cost/acre	% acres treated for Lygus	# acres treated for Lygus	# apps for Lygus
Bollgard III/Thryvon	0.0%	0	0.0	$26.00	95.0%	114,000	3.0