Table 19. Cotton insect loss estimates for Missouri during 2017.

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	228,750	75%	183,000	60.0%	1.1	$16.50	1.60%	0.66	$10.89	1.20%	11,056	$6,418,179	$21.04	16.3%
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	61,000	20%	15,250	5.0%	1.0	$14.00	0.20%	0.05	$0.70	0.04%	369	$173,769	$0.57	0.4%
Loopers	0	0%	0	0.0%	0.0	$0.00	0.00%	0.00	$0.00	0.00%	0	$0	$0.00	0.0%
Cutworms	30,500	10%	183,000	60.0%	1.0	$4.00	0.00%	0.60	$2.40	0.00%	0	$73,200	$0.24	0.2%
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	30,500	10%	0	0.0%	0.0	$0.00	0.00%	0.00	$0.00	0.00%	0	$0	$0.00	0.0%
Lygus	305,000	100%	305,000	100.0%	3.0	$13.50	2.00%	3.00	$40.50	2.00%	18,427	$18,897,770	$61.96	48.1%
Cotton Fleahopper	183,000	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)	305,000	100%	30,500	10.0%	1.0	$9.50	0.30%	0.10	$0.95	0.30%	2,764	$1,271,523	$4.17	3.2%
Brown Stink Bug	305,000	100%	18,300	6.0%	1.0	$9.50	0.10%	0.06	$0.57	0.10%	921	$500,989	$1.64	1.3%
Clouded Plant Bug	106,750	35%	6,100	2.0%	1.0	$9.50	0.00%	0.02	$0.19	0.00%	0	$20,283	$0.07	0.1%
Leaf Footed Bugs	30,500	10%	0	0.0%	0.0	$0.00	0.00%	0.00	$0.00	0.00%	0	$0	$0.00	0.0%
Spider Mites	305,000	100%	204,350	67.0%	1.3	$12.00	1.40%	0.87	$10.44	1.40%	12,899	$7,765,925	$25.46	19.8%
Thrips	305,000	100%	259,250	85.0%	1.1	$7.00	0.30%	0.94	$6.58	0.30%	2,764	$2,988,673	$9.80	7.6%
Aphids	305,000	100%	61,000	20.0%	1.0	$13.50	0.10%	0.20	$2.70	0.10%	921	$1,150,639	$3.77	2.9%
Grasshoppers	0	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	30,500	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								6.50	$75.92	5.44%	50,121	$39,260,950	$128.72	

SUMMARY DATA

Data Input				Yield and Management Results		Economic Results		
State	Missouri			Total Acres	305,000		Total	Per Acre
Region	Midsouth			Total Bales Harvested	744,708	Foliar Insecticide Costs	$23,155,600	$75.92
Year	2017			Total Bales Lost to Insects	50,121	Seed Treatment Costs	$3,050,000	$10.00
Total Acres (Upland)	305,000	In-furrow cost/treated acre	$0.00	Percent Yield Loss	5.4%	In-Furrow Costs	$0	$0.00
Yield / Acre (Upland)	1,172	% acres in Boll Weevil Eradication	100%	Yield w/o Insects (lb/acre)	1,239	Scouting Costs	$2,806,000	$9.20
Price / lb	$0.74	Cost/acre Boll Weevil Eradication	$2.00	Av. # Applications	6.5	Eradication Costs	$610,000	$2.00
yield potential (lb/acre)	1,450	% acres in Pink Bollworm Eradication	0%	Total Bales lost (all factors)	179,111	Bt Cotton	$7,130,900	$23.38
Acres (Pima)	0	Cost/acre Pink Bollworm Eradication	$0.00	Total % yield Loss	19.4%	Total Costs	$36,752,500	$120.50
Yield / Acre (Pima)	0	% Insect apps by air	40%	Transgenic Cotton (arthropods) (# acres)	301,950	Yield Loss to Insects	$17,802,979	$58.37
% Acres Scouted	80%	No. apps by air	2.58	Boll Weevil Eradication (# acres)	305,000	Total Losses + Costs	$54,555,479	$178.87
Fee / Scouted Acre	$11.50	Cost/app by air	$8.50	Pink Bollworm Eradication (# acres)	0			
No. times scouted/week	1.5	% insect apps by ground	60%	# Scouted Acres	244,000			
% acres Transgenic (Bt) Cotton	99%	No. apps by ground	3.87	Seed Treatments (arthropods) (# acres)	305,000			
Cost/treated acre (Bt) Cotton	$23.62	Cost/app by ground	$4.75	In-Furrow Applications (# acres)	0			
% acres with seed treatment	100%	% Loss to weather	5.0%	Applications by Air (acres)	122,000			
Seed trt. cost/ treated acre	$10.00	% loss to non-arthropods	3.0%	Applications by Ground (acres)	183,000			
% acres with in-furrow	0%	% loss to other (chemical injury, weeds, diseases, etc.)	6.0%	No. acres with no foliar insecticide applications	0			

Table 19. Cotton insect loss estimates for Missouri during 2017, 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	% of Population Bollworm
Bollgard II	93.0%	283,650	$98.00	$24.00	50%	141,825	1.0	100%
Bollgard III	0.0%	0	-	-	-	-	-	-
WideStrike	4.0%	12,200	$80.00	$16.00	75%	9,150	1.5	100%
WideStrike 3	1.0%	3,050	$89.00	$20.00	0%	0	0.0	100%
TwinLink	1.0%	3,050	$87.00	$22.00	50%	1,525	1.0	100%
TwinLink Plus	0.0%	0	$90.00	$24.00	0%	0	0.0	0%
Total Bt	99%	301,950	$97.07	$23.62	50.5%	152,500	1.0	100.0%
Herbicide Traits Only	0%	0	-	-	-	-	-	-
Conventional	1%	3,050	$22.00		100%	3,050	2.0	80%
Organic	0%	0	-	-	-	-	-	-
Total Upland Cotton	100.0%	305,000	$96.32	$23.62	51.0%	155,550	1.0	99.8%
Non Upland Cotton								
Pima	0%	0	-	-	-	-	-	-
Other	0%	0	-	-	-	-	-	-
Organic	0%	0	-	-	-	-	-	-
Total (all Cotton)		305,000	$96.32		51.0%	155,550	1.0	