

COTTON INSECT LOSSES - 2003
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Abstract

Cotton losses to arthropods were light in 2003. Pests reduced overall yields by 4.16%. The bollworm/budworm complex retained the top ranking as the number one cotton pest by reducing yields by 1.39%. *Lygus* was number two at 0.897%; stink bugs were 3rd at 0.735%; cotton fleahoppers were 4th at 0.322%, and Thrips were 5th at 0.261%. Total cost and loss for insects in 2003 were \$1.076 billion. Direct management costs for arthropods were \$58.88 per acre.

Introduction

Arthropods and arthropod management continues to be a vital factor in US cotton production. Management in the last few years has successfully reduced losses to well below previous years. Only Oklahoma and Missouri reported a greater than 10% loss to arthropod pests in 2003 (Table 1). The national average is always affected greatest by Texas which has 4.7 million acres of cotton and losses in Texas were lowest on record at 1.90%. Management of the bollworm/budworm complex, primarily by transgenic cotton, has greatly reduced their impact, yet they remain the number one pest for 2003 at 1.394% reduction in yield. They infested about 74% of the US cotton crop in 2003, second only to Thrips which were found in more than 91% of the US crop (Table 2). Boll weevils continue to be a factor even though they infest only 16.7% of the crop (Table 2), and are reported as pests in 4 states but causing losses in only Texas and Arkansas (Table 8). Total arthropod losses across the US (Table 1) were 4.16% translating to 1.170 million bales of cotton. Oklahoma reported 11.7% loss representing 30,403 bales and Missouri was second at 10.27% and 89,589 bales. South Carolina (3rd) reported losses of 8.09%, Alabama (4th) had 6.86%, and Mississippi (5th) had 5.86%. Arizona (5.75%), Tennessee (5.63%), Arkansas (5.63%), Kansas (5.52%), Virginia (5.33%), and Florida (5.25%) reported arthropod losses greater than 5%. Six states reported less than 5% loss and two had less than 2%. Texas (1.9%) actually reported more bales lost (181,687) than all other states, and Mississippi (5.86%) was 2nd in bales lost at 178,306. New Mexico (1.08%) lost fewest at 1,138 bales.

Pest status continues to change and minor pests now cause losses. Yellowstriped armyworms, western flower Thrips, darling beetles, saltmarsh caterpillars, striped flea beetles, southern armyworms and clouded plant bugs all contributed to the new look in losses. Bugs continue to increase in importance and overall rank among pests of cotton. *Lygus* spp. and stink bugs rank 2nd and 3rd respectively among most injurious pests in 2003. No pest, other than bollworm/budworm, exceeded 1% in losses in 2003 and only five pests: Thrips (92%), bollworm/budworm (74%), aphids (70%), stink bugs (54%) and *Lygus* (53%) infested more than half of the US crop (Table 2).

Discussion

Heliothines: US Top Arthropod Pest Complex

Bollworms and budworms seem to be the undisputed top cotton pests again for 2003, and once more, the bollworms were the dominant species at more than 85%. Total losses by these two species have actually dropped in the last few years, but losses to all pests have also been low. The 1.39% loss in 2003 is about the same as that recorded in 2001 and about a percentage point below the 2002 report. About 74% of the US crop reported infestations of the heliothines resulting in the loss of 391,612 bales of cotton (Table 3).

South Carolina (4.41%), Missouri (2.87%), Oklahoma (2.66%), Tennessee (2.62%), Alabama (2.57%), Arkansas (2.51%), Virginia (2.34%) and North Carolina (2.02%) reported losses to heliothines greater than 2%. Arkansas, Mississippi and Texas lost more than 50,000 bales each to this pest complex. Only California reported no losses to heliothines.

Bt cotton acreage increased to 6.04 million acres in 2003 (Table 4). Heliothines were sprayed on 3.15 million *Bt* cotton acres in 2003. The cost of *Bt* is estimated at \$11.61 per acre of the US crop. This represents about 19% of the cost of arthropod management and is second only to foliar application costs. (Williams, 2004).

Lygus: Second most Damaging Pest in US Cotton

When all bug species are combined, losses in the US to bugs (1.96%) exceed the Heliothine complex (1.39%). *Lygus* and cotton fleahopper infestations remain almost static, but stink bugs have expanded their range throughout most of the cotton belt. Stink bugs now infest 53.5% of US cotton (Table 2).

Lygus bugs infested about 53% of US cotton in 2003. This report combines the western species, *Lygus hesperus*, and the eastern species, *Lygus lineolaris*. Missouri (3.65%) and Arizona (3.48%) reported highest losses to *Lygus*. All other state losses were less than 3%: Louisiana (2.1%), Arkansas (1.9%), Mississippi (1.8%), Virginia (1.8%), California (1.2%), and Alabama (1.1%). North Carolina, South Carolina, Tennessee, Florida, Oklahoma and New Mexico reported less than 1% loss from *Lygus*. Georgia, Texas and Kansas reported less than 0.1% loss to *Lygus*. These pests combined to reduce yields by 0.897%, for a loss of 252,288 bales of US cotton (Table 5).

Stink Bugs: Third most Damaging Pests

Stink bugs reduced yield by 0.735% across the US. Florida (3.09%), South Carolina (3.04%), Georgia (2.67%) Alabama (2.01%) and Tennessee (1.09%) lost the most to stink bugs. The complex infested 6.712 million acres of cotton in 2003, over a million acres more than in 2002. Stink bugs destroyed 206,675 bales of cotton (Table 5). California, Kansas, and Virginia reported no losses to stink bugs.

Cotton Fleahopper Ranks Fourth in Damage

Cotton fleahopper (0.322%) infested more than 5.190 million acres of cotton, ranking as the 4th most damaging pest in 2003 (Table 6). Oklahoma (5.7%) and Kansas (4.0%) reported heaviest losses to cotton fleahopper. All other states reported less than 1% loss. Nine states had no losses from these pests. Fleahoppers destroyed 90,573 bales of cotton.

Early Season Thrips reduce US Crop by 0.257%

Early season Thrips infested 91.6% of the US acreage in 2003 and cost US farmers \$6.18 per acre in management (Williams, 2004). There were 73,408 bales of US cotton lost to this complex of pests in 2003. Oklahoma (2.67%), Missouri (1.51%), Virginia (1.23%), and Kansas (1.12%) reported heaviest losses from Thrips. Alabama and South Carolina reported no losses from early-season Thrips (Table 6).

Spider Mites at 0.122%

Spider mites are a persistent low level pest which occurs in most years. Mites infested 2.8 million acres of cotton in 2003. Alabama (0.81%), Missouri (0.41%), Mississippi (0.36%) and California (0.35%) reported highest losses to spider mites in 2003. 34,367 bales of US cotton were lost to spider mites (Table 7).

Aphids: Seventh most Damaging Pest of US Cotton

Aphids infested 70% of US cotton, and yield losses were 0.094%. Florida (0.40%), Missouri (0.40%), California (0.35%), Mississippi (0.20%) and Alabama (0.12%), reported the heaviest losses to aphids. Seven states: Arkansas, Georgia, Kansas, New Mexico, North Carolina, South Carolina and Virginia reported no losses to aphids; only Kansas reported no acres infested (Table 7). Aphids reduced yields by 26,539 bales of US cotton.

Fall Armyworm Ranked Eighth

Fall armyworm (0.093%) infested about 2.09 million acres of cotton and reduced yields by 26,235 bales of cotton. Missouri (0.498%), Arkansas (0.374%), Mississippi (0.269) and Alabama (0.215%) reported highest losses to fall armyworm in 2003. Nine states reported no losses to these pests (Table 9).

Boll Weevils Rank Ninth most Damaging Pest in US Cotton

Boll weevils infested 2.221 million acres of cotton in 2002 and slightly less at 2.097 million acres in 2003. This pest reduced US cotton yield by 0.077%. Arkansas, Louisiana, Missouri, and Texas reported acres infested by boll weevil. Only Texas (0.191%) and Arkansas (0.148%) reported lost bales to boll weevil. Those losses amounted to 21,706 bales of cotton (Table 8). Boll weevil eradication costs for US cotton were \$9.96 per acre (Williams, 2004).

Other Pests of Cotton

Silverleaf whiteflies reduced yields by 0.053% infesting 1.017 million acres of cotton (Table 11). Averaged across the cotton belt, all other pests of cotton reduced yields by less than 0.05% in 2003. European cornborers (Table 8), beet armyworms (Table 9), cutworms and loopers (Table 10), bandedwinged whiteflies (Table 11), cotton leafperforator and pink bollworm (Table 12), grasshoppers and other insects, which included darkling beetles, striped flea beetles, clouded plant bugs and western flower Thrips (Table 13), and saltmarsh caterpillars and southern armyworms (Table 14) contributed to the losses from arthropod pests in 2003.

Conclusion

Total losses from insect pests in US cotton in 2003 were 4.16%, down from the 4.61% in 2002 (Table 2). This reflects a year of low insect pressure over the cotton belt. It also reflects a year in which management technologies were more responsive to needs of production. Research, development, and management are 'currently' rising to the challenge presented by the new pest species. The costs of insect management were \$58.88 per acre in 2003; costs plus loss were \$85.72 per acre.

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References

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Table 1. Number of acres, percent reduction in yield by arthropods, cost plus loss and bales lost by state in 2003.

	Acres cotton	% Reduction	Cost plus loss	Bales lost
US	12,556,433	4.16	\$1,076,350,071	1,170,223
Oklahoma	166,000	11.72	\$16,550,829	30,403
Missouri	403,214	10.27	\$57,335,208	89,589
South Carolina	217,000	8.09	\$25,136,100	36,583
Alabama	570,000	6.86	\$55,305,240	90,850
Mississippi	1,100,000	5.86	\$150,967,285	178,306
Arizona	206,250	5.75	\$35,582,521	39,035
Tennessee	544,000	5.63	\$63,694,970	54,217
Arkansas	950,000	5.77	\$161,487,050	133,814
Kansas	125,000	5.52	\$5,092,069	11,500
Virginia	84,000	5.33	\$5,651,266	7,007
Florida	110,000	5.25	\$9,577,575	14,438
Louisiana	520,000	4.53	\$63,221,863	55,540
Georgia	1,290,000	4.17	\$103,658,500	112,135
North Carolina	790,000	4.03	\$59,661,452	75,152
California	691,930	2.55	\$85,068,794	58,829
Texas	4,740,867	1.90	\$176,267,080	181,687
New Mexico	48,172	1.18	\$2,050,504	1,138

Table 2. Percent lost, acres infested, rank, and percent of US cotton infested by insect pests.

pest	% Reduction	acres infested	rank	% infested
Bollworm/Budworm	1.394	9,241,324	1	73.6%
Lygus	0.897	6,653,375	2	53.0%
Stink Bugs	0.735	6,711,557	3	53.5%
Cotton Fleahopper	0.322	5,190,820	4	41.3%
Thrips	0.261	11,504,430	5	91.6%
Spider Mites	0.122	2,800,749	6	22.3%
Aphids	0.094	8,735,232	7	69.6%
Fall Armyworm	0.093	2,091,205	8	16.7%
Boll Weevil	0.077	2,096,889	9	16.7%
Silverleaf Whitefly (Bemisia)	0.053	1,016,946	10	8.1%
Beet Armyworm	0.032	1,267,902	11	10.1%
Other Insects*	0.027	839,088	12	6.7%
Pink Bollworm	0.021	461,687	13	3.7%
Grasshoppers	0.013	1,554,003	14	12.4%
Banded Winged Whitefly	0.007	1,403,154	15	11.2%
Loopers	0.007	1,492,581	16	11.9%
Cutworms	0.004	1,715,050	17	13.7%
Cotton Leaf Perforator	0.0002	220,173	19	1.8%
Saltmarsh Caterpillars	0.000	755,604	18	6.0%
European Cornborer	0.0000	289,838	20	2.3%
Southern Armyworms	0.0000	534,000	21	4.3%

*Other Insects include yellowstriped armyworms, western flower Thrips, darkling beetles striped flea beetles and clouded plant bugs.

Table 3. Bollworm and budworm: percent of population, yield reduction, acres infested and bales lost by state in 2003.

States	% yield Reduction	% crop infested	% bollworm	Acres infested	Bales lost
US	1.394	73.6	85.8	9,241,324	391,772
Alabama	2.565	100	90.5	570,000	33,949
Arizona	0.130	52.4	90.0	108,102	881
Arkansas	2.506	100	75.3	950,000	58,073
California	0	0	0.0	0	0
Florida	1.025	25.0	75.0	27,500	2,819
Georgia	1.357	81.4	90.9	1,050,000	36,458
Kansas	0.400	8.0	100.0	10,000	833
Louisiana	1.246	86.6	100.0	450,320	15,285
Mississippi	1.904	100	93.7	1,100,000	57,917
Missouri	2.871	91.1	75.0	367,445	25,030
New Mexico	0.540	54.0	100.0	26,000	520
North Carolina	2.024	100	96.7	790,000	37,707
Oklahoma	2.660	100	83.0	166,000	6,899
South Carolina	4.406	100	90.0	217,000	19,917
Tennessee	2.623	100	90.0	544,000	25,263
Texas	0.704	58.7	93.0	2,784,957	67,140
Virginia	2.342	95.2	99.0	80,000	3,080

Table 4. Bt cotton acreage, acres sprayed for caterpillars, average number of applications and percent of population which was bollworm from 1995 to 2003.

Year	Bt cotton acreage	Acres Bt sprayed	Avg. # applications	% Population bollworm
1995	<15,000	nr	nr	30*
1996	1,851,094	nr	nr	40*
1997	2,271,824	nr	nr	50*
1998	2,731,827	nr	nr	60*
1999	4,234,785	1,055,331	0.290	76
2000	5,220,392	1,455,084	0.330	79
2001	5,717,747	2,727,821	0.400	74
2002	4,893,810	3,091,586	0.520	83
2003	6,040,529	3,151,114	0.551	86

nr – not reported

* polled entomologists for estimates

Table 5. *Lygus* and stink bugs: percent yield reduction, acres infested and bales lost by state in 2003.

States	<i>Lygus</i>			stink bugs		
	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost
US	0.897	6,653,375	252,288	0.735	6,711,557	206,657
Alabama	1.142	570,000	15,112	2.014	549,000	26,656
Arizona	3.475	199,024	23,602	0.144	110,720	977
Arkansas	1.869	950,000	43,307	0.629	950,000	14,583
California	1.165	537,244	26,862	0	0	0
Florida	0.400	20,000	1,100	3.091	100,000	8,500
Georgia	0.043	275,000	1,146	2.674	1,150,000	71,875
Kansas	0.000	0	0	0.000	0	0
Louisiana	2.079	491,400	25,495	0.914	364,000	11,208
Mississippi	1.789	1,030,000	54,425	0.867	1,100,000	26,363
Missouri	3.648	390,207	31,812	0.521	147,845	4,540
New Mexico	0.183	11,000	176	0.187	9,000	180
North Carolina	0.955	790,000	17,794	0.891	790,000	16,603
Oklahoma	0.250	41,500	648	0.339	67,728	878
South Carolina	0.645	100,000	2,917	3.041	150,000	13,750
Tennessee	0.500	544,000	4,817	1.085	544,000	10,452
Texas	0.008	644,000	766	0.001	674,264	92
Virginia	1.757	60,000	2,310	0.000	5,000	0

Table 6. Thrips and cotton fleahoppers: percent yield reduction, acres infested and bales lost by state in 2003.

States	Thrips			cotton fleahopper		
	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost
US	0.261	11,504,430	73,408	0.322	5,190,820	90,573
Alabama	0.000	570,000	0	0.000	90,000	0
Arizona	0.154	170,211	1,047	0.134	152,509	909
Arkansas	0.199	950,000	4,609	0.013	350,000	310
California	0.082	570,822	1,903	0	0	0
Florida	0.209	23,000	575	0.000	1,000	0
Georgia	0.089	1,150,000	2,396	0.000	0	0
Kansas	1.120	70,000	2,333	4.000	100,000	8,333
Louisiana	0.161	559,000	1,977	0.010	104,000	123
Mississippi	0.267	1,100,000	8,125	0.012	75,000	375
Missouri	1.510	403,214	13,166	0.282	113,594	2,456
New Mexico	0.023	7,000	22	0.000	0	0
North Carolina	0.164	790,000	3,048	0.000	430,000	0
Oklahoma	2.670	166,000	6,925	5.660	166,000	14,681
South Carolina	0.000	205,000	0	0.000	21,000	0
Tennessee	0.500	544,000	4,817	0.000	11,760	0
Texas	0.218	4,142,183	20,847	0.664	3,575,957	63,386
Virginia	1.230	84,000	1,617	0.000	0	0

Table 7. Spider mites and aphids: percent yield reduction, acres infested and bales lost by state in 2003.

States	spider mites			aphids		
	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost
US	0.122	2,800,749	34,367	0.094	8,735,232	26,539
Alabama	0.810	180,000	10,725	0.118	570,000	1,564
Arizona	0.037	55,139	251	0.000	13,281	3
Arkansas	0.028	350,000	651	0.000	600,000	0
California	0.349	604,400	8,059	0.349	604,400	8,059
Florida	0.000	500	0	0.400	110,000	1,100
Georgia	0.000	0	0	0.000	575,000	0
Kansas	0.000	0	0	0.000	0	0
Louisiana	0.006	65,000	77	0.035	358,800	423
Mississippi	0.360	1,000,000	10,958	0.196	1,100,000	5,975
Missouri	0.405	104,110	3,535	0.399	149,146	3,483
New Mexico	0.000	0	0	0.000	900	0
North Carolina	0.000	40,000	0	0.000	790,000	0
Oklahoma	0.000	16,600	0	0.060	19,920	156
South Carolina	0.000	12,000	0	0.000	100,000	0
Tennessee	0.011	206,000	109	0.008	412,000	73
Texas	0.000	167,000	3	0.060	3,326,785	5,703
Virginia	0.000	0	0	0.000	5,000	0

Table 8. Boll weevil and European cornborers: percent yield reduction, acres infested and bales lost by state in 2003.

	boll weevil			European cornborers		
	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost
US	0.077	2,096,889	21,706	0.000004	289,838	1
Alabama	0.000	0	0	0.000	0	0
Arizona	0.000	0	0	0.000	0	0
Arkansas	0.148	950,000	3,438	0.000	45,000	0
California	0.000	0	0	0.000	0	0
Florida	0.000	0	0	0.000	0	0
Georgia	0.000	0	0	0.000	0	0
Kansas	0.000	0	0	0.000	0	0
Louisiana	0.000	117,000	0	0.000	0	0
Mississippi	0.000	0	0	0.000	5,000	0
Missouri	0.000	1,301	0	0.000	9,538	0
New Mexico	0.000	0	0	0.000	0	0
North Carolina	0.000	0	0	0.000	214,000	0
Oklahoma	0.000	0	0	0.000	0	0
South Carolina	0.000	0	0	0.000	0	0
Tennessee	0.000	0	0	0.0001	1,300	1
Texas	0.191	1,028,588	18,268	0.000	0	0
Virginia	0.000	0	0	0.000	15,000	0

Table 9. Beet and fall armyworms: percent yield reduction, acres infested and bales lost by state in 2003.

States	Beet armyworm			Fall armyworm		
	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost
US	0.032	1,267,902	9,110	0.093	2,091,205	26,235
Alabama	0.000	35,000	0	0.215	220,000	2,844
Arizona	0.060	99,313	405	0.0004	18,614	2
Arkansas	0.001	75,000	13	0.374	800,000	8,658
California	0.272	470,089	6,268	0.000	0	0
Florida	0.000	0	0	0.000	300	0
Georgia	0.000	60,000	0	0.010	125,000	260
Kansas	0.000	0	0	0.000	0	0
Louisiana	0.000	54,600	0	0.032	83,200	392
Mississippi	0.077	100,000	2,350	0.269	280,000	8,188
Missouri	0.000	0	0	0.498	171,691	4,344
New Mexico	0.000	600	0	0.000	0	0
North Carolina	0.000	8,000	0	0.000	11,000	0
Oklahoma	0.000	16,600	0	0.000	8,300	0
South Carolina	0.000	5,000	0	0.000	2,800	0
Tennessee	0.000	15,500	0	0.161	270,800	1,547
Texas	0.001	328,200	75	0.000	99,500	0
Virginia	0.000	0	0	0.000	0	0

Table 10. Cutworms and loopers: percent yield reduction, acres infested and bales lost by state in 2003.

	Cutworm			Loopers		
	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost
US	0.004	1,715,050	1,159	0.007	1,492,581	1,895
Alabama	0.000	45,000	0	0.000	60,000	0
Arizona	0.000	0	0	0.006	63,660	44
Arkansas	0.007	250,000	172	0.000	450,000	0
California	0.000	0	0	0	67,156	0
Florida	0.000	0	0	0.000	1,000	0
Georgia	0.000	11,000	0	0.000	65,000	0
Kansas	0.000	0	0	0.000	0	0
Louisiana	0.000	67,184	0	0.046	158,600	561
Mississippi	0.032	430,000	987	0.042	270,000	1,290
Missouri	0.000	200,306	0	0.000	26,880	0
New Mexico	0.000	0	0	0.000	0	0
North Carolina	0.000	80,000	0	0.000	4,000	0
Oklahoma	0.000	83,000	0	0.000	0	0
South Carolina	0.000	3,000	0	0.000	0	0
Tennessee	0.000	23,560	0	0.000	47,000	0
Texas	0.000	522,000	0	0.000	279,285	0
Virginia	0.000	0	0	0.000	0	0

Table 11. Whiteflies: percent yield reduction, acres infested and bales lost by state in 2003.

States	Bandedwing whitefly			Silverleaf whitefly		
	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost
US	0.007	1,403,154	1,972	0.053	1,016,946	15,010
Alabama	0.000	11,000	0	0.000	0	0
Arizona	0.000	77,567	0	0.991	199,839	6,732
Arkansas	0.000	350,000	0	0.000	0	0
California	0.000	50,000	0	0.330	570,822	7,611
Florida	0.000	2,000	0	0.000	0	0
Georgia	0.000	0	0	0.000	6,000	0
Kansas	0.000	0	0	0.000	0	0
Louisiana	0.000	26,000	0	0.000	0	0
Mississippi	0.024	620,000	729	0.021	10,000	625
Missouri	0.140	112,987	1,222	0.000	0	0
New Mexico	0.000	0	0	0.000	0	0
North Carolina	0.000	29,000	0	0.000	0	0
Oklahoma	0.000	0	0	0.000	0	0
South Carolina	0.000	0	0	0.000	0	0
Tennessee	0.002	117,600	2	0.000	0	0
Texas	0.000	7,000	0	0.000	230,285	43
Virginia	0.000	0	0	0.000	0	0

Table 12. Cotton leafperforator and pink bollworm: percent yield reduction, acres infested and bales lost by state in 2003.

States	Cotton leafperforator				Pink bollworm		
	% Reduction	Acres infested	Bales lost	Eradication costs per acre	% Reduction	Acres infested	Bales lost
US	0.000	220,173	47	\$0.38	0.021	461,687	5,983
Alabama	0.000	0	0	0	0.000	0	0
Arizona	0.005	59,473	33	0	0.610	185,312	4,145
Arkansas	0.000	0	0	0	0.000	0	0
California	0.000	0	0	\$4.92	0.003	20,375	68
Florida	0.000	0	0	0	0.000	0	0
Georgia	0.000	0	0	0	0.000	0	0
Kansas	0.000	0	0	0	0.000	0	0
Louisiana	0.000	0	0	0	0.000	0	0
Mississippi	0.000	0	0	0	0.000	0	0
Missouri	0.000	0	0	0	0.000	0	0
New Mexico	0.000	700	0	\$0.01	0.249	4,000	240
North Carolina	0.000	0	0	0	0.000	0	0
Oklahoma	0.000	0	0	0	0.000	0	0
South Carolina	0.000	0	0	0	0.000	0	0
Tennessee	0.000	0	0	0	0.000	0	0
Texas	0.000	160,000	14	\$0.10	0.016	252,000	1,530
Virginia	0.000	0	0	0	0.000	0	0

Table 13. Grasshoppers and others: percent yield reduction, acres infested and bales lost by state in 2003.

States	Grasshoppers			Others*		
	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost
US	0.013	1,554,003	3,766	0.027	839,088	7,729
Alabama	0.000	33,000	0	0.000	50,000	0
Arizona	0.000	4,303	0	0.000	201,628	0
Arkansas	0.000	150,000	0	0.000	0	0
California	0.000	0	0	0.000	0	0
Florida	0.002	500	6	0.123	5,400	338
Georgia	0.000	65,000	0	0.000	0	0
Kansas	0.000	0	0	0.000	0	0
Louisiana	0.000	2,600	0	0.000	0	0
Mississippi	0.000	70,000	0	0.000	0	0
Missouri	0.000	0	0	0.000	0	0
New Mexico	0.000	0	0	0.000	0	0
North Carolina	0.000	130,000	0	0.000	0	0
Oklahoma	0.083	16,600	215	0.000	0	0
South Carolina	0.000	14,000	0	0.000	0	0
Tennessee	0.000	23,500	0	0.739	370,400	7,117
Texas	0.037	1,044,500	3,545	0.003	211,660	275
Virginia	0.000	0	0	0.000	0	0

*Others include western flower Thrips, yellowstriped armyworms, darkling beetles, striped flea beetles and clouded plant bug.

Table 14. Saltmarsh caterpillars and southern armyworms: percent yield reduction, acres infested and bales lost by state in 2003.

States	Saltmarsh caterpillars			Southern armyworms		
	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost
US	0.000	755,604	5	0.000	534,000	0
Alabama	0.000	0	0	0.000	199,000	0
Arizona	0.001	30,804	5	0.000	0	0
Arkansas	0.000	250,000	0	0.000	0	0
California	0.000	0	0	0.000	0	0
Florida	0.000	0	0	0.000	5,000	0
Georgia	0.000	0	0	0.000	250,000	0
Kansas	0.000	0	0	0.000	0	0
Louisiana	0.000	5,200	0	0.000	0	0
Mississippi	0.000	63,000	0	0.000	80,000	0
Missouri	0.000	1,300	0	0.000	0	0
New Mexico	0.000	0	0	0.000	0	0
North Carolina	0.000	395,000	0	0.000	0	0
Oklahoma	0.000	8,300	0	0.000	0	0
South Carolina	0.000	0	0	0.000	0	0
Tennessee	0.000	0	0	0.000	0	0
Texas	0.000	2,000	0	0.000	0	0
Virginia	0.000	0	0	0.000	0	0