COTTON INSECT LOSSES - 2004 Michael R. Williams Mississippi State University Extension Service Mississippi State, MS

Abstract

Cotton losses to arthropods were light in 2004. Pests reduced overall yields by 4.18%. The bollworm/budworm complex retained the top ranking as the number one cotton pest by reducing yields by 1.23%. *Lygus* was number two at 1.06%; stink bugs were 3rd at 0.588%; Thrips were 4th at 0.559%., and cotton fleahoppers were 5th at 0.193%. Total cost and loss for insects in 2004 were \$1.118 billion. Direct management costs for arthropods were \$54.54 per acre.

Introduction

For the fourth year, arthropod losses have not exceeded 5%. The fact that overall losses are at 4.18% for 2004 indicates that management tactics for arthropods are working. New innovations in scouting, new tools (pesticides and technology), and a continued awareness of the potential for loss keeps the cotton industry focused on the need for intensified management. We dare not become inattentive. Oklahoma and North Carolina reported a greater than 10% loss to arthropod pests in 2004 (Table 1). The national average is always affected greatest by Texas which has 5.97 million acres of cotton; losses in Texas were 4.02%. Management of the bollworm/budworm complex, primarily by transgenic cotton, has greatly reduced their impact, yet they remain the number one pest for 2004 at 1.23% reduction in yield. They infested about 82% of the US cotton crop in 2004, second only to Thrips which were found in 95% of the US crop (Table 2). Boll weevils continue to be a factor even though they infest only 11.5% of the crop (Table 2), and are reported as pests in Arkansas, Louisiana and Texas (Table 8). Total arthropod losses across the US (Table 1) were 4.18% translating to 1.286 million bales of cotton. Oklahoma reported 10.8% loss representing 42.592 bales and North Carolina was second at 10.6% and 119.230 bales. South Carolina (3rd) reported losses of 6.13%, Missouri (4th) had 5.85%, Florida (5th) had 5.29% and Arizona (6th) 5.12%. Eleven states reported less than 5% loss. Arkansas (4.85%), Alabama (4.05%), Texas (4.02%), Mississippi (3.79%), Louisiana (3.46%), New Mexico (3.43%), Tennessee (3.26%) and Kansas (3.07%) reported better than 3% loss. Georgia (2.26%), California (2.02%) and Virginia (1.19%) had the lowest per cent loss. Texas reported 442,986 bales lost, Arkansas lost 140,991 and North Carolina lost 119,230 to arthropod pests.

Pest status continues to change and minor pests now cause losses. Yellowstriped armyworms, western flower Thrips, darkling beetles, saltmarsh caterpillars, striped flea beetles, southern armyworms and clouded plant bugs all contributed to the new look in losses. Slugs and snails became a major concern in some areas in presquaring cotton in 2004. 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 again in 2004. Only bollworm/budworm and *Lygus* exceeded 1% in losses in 2004 and only four pests: Thrips (95%), bollworm/budworm (82%), aphids (76%), and *Lygus* (52%) infested more than half of the US crop (Table 2).

Discussion

Heliothines: US top arthropod pest complex

Bollworms and budworms are the undisputed top cotton pests again for 2004, and once more, bollworms (*H. zea*) were the dominant species at more than 94%. Total losses to all pests have been low since widespread acceptance of boll weevil eradication and the introduction of transgenic cotton. The 1.23% loss to heliothines continues a downward trend and the 94% bollworm dominance also points to the elimination of tobacco budworm as an effective pest of cotton in 2004. About 82% of the US crop reported infestations of the heliothines resulting in the loss of 378,491bales of cotton (Table 3). North Carolina (3.22%), South Carolina (3.00%), Oklahoma (2.88%), and New Mexico (2.52%) reported losses to heliothines greater than 2%. Almost half the total bales lost was attributed to Texas (153,983). No other state lost more than 45,000 bales to this pest complex. California and Virginia reported no losses to heliothines.

Bt cotton acreage increased to 6.59 million acres in 2004 (Table 4). Heliothines were sprayed on 2.91million *Bt* cotton acres in 2004. The cost of *Bt* is estimated at \$11.50 per acre of the US crop. This represents about 21% of the cost of arthropod

management and is second only to foliar application costs. *Bt* technology is used on about 47% of the total US Crop. (Williams, 2005).

Lygus: second most damaging pest in US cotton

In 2003 combined losses in the US to bugs were 1.96%, in 2004 combined losses are 1.84%. *Lygus* (1.06%) infest about 51% of the US crop. Stink bugs infest 46% and cotton fleahoppers infest 35% (Table 2).

This report combines the western species, *Lygus hesperus*, and the eastern species, *Lygus lineolaris*. Missouri (3.68%) and Arkansas(2.79%), Louisiana (2.76%) and Arizona (2.13%) reported highest losses to *Lygus*. All other state losses were less than 2%: Mississippi (1.94%), and Alabama (1.20%). California, Florida, New Mexico, North Carolina, South Carolina, Tennessee, Oklahoma and Texas reported less than 1% loss from *Lygus*. Georgia and Kansas reported less than 0.1% loss to *Lygus* and Virginia reported no loss. These pests combined to reduce yields by 1.06%, for a loss of 324,941bales of US cotton (Table 5).

Stink bugs: third most damaging pests

Stink bugs reductions dropped from 0.735% in 2003 to 0.588% across the US in 2004. North Carolina (6.38%) reported major problems with this pest. Florida (3.07%), South Carolina (3.04%), Virginia (1.19%) and Oklahoma (1.05%) lost the most to stink bugs. The stink bug complex infested 6.256 million acres of cotton in 2004 and destroyed 180,917 bales of cotton (Table 5). California, Kansas, and Missouri reported no losses to stink bugs.

Early season Thrips reduce US crop by 0.559%

Early season Thrips infested 95% of the US acreage in 2004 and cost US farmers \$5.33 per acre in management (Williams, 2005). There were 172,047 bales of US cotton lost to this complex of pests in 2004. Oklahoma (1.68%), Missouri (1.05%), and Texas (1.09%) reported greater than 1% losses from Thrips. California and Virginia reported no losses from early-season Thrips (Table 6).

Cotton Fleahopper ranks fifth in damage

Cotton fleahopper (0.19%) infested more than 4.789 million acres of cotton, ranking as the 5th most damaging pest in 2004 (Table 6). Oklahoma (5.0%) and Kansas (1.95%) reported heaviest losses to cotton fleahopper. All other states reported less than 1% loss. Twelve states had no losses from these pests. Fleahoppers destroyed 59,204 bales of cotton.

Spider mites at 0.080%

Spider mites are a persistent low level pest which occurs in most years and they resurged slightly in 2004. Mites infested 3.16 million acres of cotton in 2004. California (0.49%), Alabama (0.23%) and Missouri (0.19%) reported highest losses to spider mites in 2004. 24,768 bales of US cotton were lost to spider mites (Table 7).

Aphids: 10th most damaging pest of US cotton

Aphids infested 76% of US cotton, and yield losses were 0.056%. Only California (0.18%), and Alabama (0.12%), reported greater than 0.1% loss to aphids. Eight states: Arkansas, Georgia, Kansas, Missouri, 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 17,112 bales of US cotton.

Fall armyworm at 0.018%

Fall armyworm (0.018%) infested about 1.81 million acres of cotton and reduced yields by 5,389 bales of cotton. Nine states reported losses to this pest: , Florida (0.34%), Tennessee (0.012%), North Carolina (0.004%), Mississippi (0.046%),

Louisiana (0.022%), Georgia (0.019%), Arkansas (0.064%), Arizona (0.001%), and Alabama (0.024%). Eight 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 and dropped to 1.572 million acres in 2004. This pest reduced US cotton yield by 0.071%. Arkansas, Louisiana, and Texas reported acres infested by boll weevil. Only Texas (0.197%) reported lost bales to boll weevil. Those losses amounted to 21,733 bales of cotton (Table 8). Boll weevil eradication costs for US cotton were \$8.07 per acre (Williams, 2005).

Other pests of cotton

Silverleaf whiteflies reduced yields by 0.115% infesting 1.083 million acres of cotton (Table 11). Arizona reported 1.565% loss to this pest. Pink bollworm ranked 6th among the top pests of cotton in the US in 2004. Pink bollworm (Table 12) infested 1.002 million acres and destroyed 52,296 bales of cotton. This pest reduced yield in only three states and was reported as a pest in four: California, Arizona, New Mexico and Texas. Losses from all remaining pests of cotton were almost negligible. Averaged across the cotton belt, all other pests of cotton reduced yields by less than 0.05% in 2004. European comborers (Table 8), beet armyworms (Table 9), cutworms and loopers (Table 10), bandedwinged whiteflies (Table 11), cotton leafperforator (Table 12), grasshoppers and other insects, which included darkling beetles, yellowstriped armyworms, 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 2004.

Conclusion

Total losses from insect pests in US cotton in 2004 were 4.18%, up from the 4.16% in 2003 (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 and holding the line on the old ones. The costs of insect management were \$54.54 per acre in 2004; costs plus loss were \$81.58 per acre.

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	Acres cotton	% Reduction	Cost plus loss	Bales lost
US	13,701,298	4.18	\$1,117,810,933	1,286,575
Oklahoma	200,649	10.84	\$23,568,693	42,592
North Carolina	722,000	10.64	\$69,297,956	119,230
South Carolina	218,000	6.13	\$22,613,750	27,823
Missouri	385,000	5.85	\$46,575,681	61,005
Florida	94,000	5.29	\$8,968,678	10,873
Arizona	238,000	5.12	\$35,198,377	47,867
Arkansas	930,000	4.85	\$147,545,000	140,991
Alabama	586,639	4.05	\$49,366,046	56,493
Texas	5,969,171	4.02	\$285,939,281	442,986
Mississippi	1,100,000	3.79	\$141,173,028	131,338
Louisiana	496,417	3.46	\$72,140,064	43,828
New Mexico	71,862	3.43	\$5,333,295	6,651
Tennessee	510,000	3.26	\$44,386,782	32,942
Kansas	100,000	3.07	\$1,767,670	5,117
Georgia	1,260,000	2.26	\$90,569,000	59,333
California	738,560	2.02	\$63,421,135	49,730
Virginia	81,000	1.19	\$4,184,976	1,761

Table 1. Number of acres, percent reduction in yield by arthropods, cost plus loss and bales lost by state in 2004

pest	% Reduction	acres infested	Rank by % loss	% infested
Bollworm/Budworm	1.229	11,191,270	1	81.7
Lygus	1.055	7,035,540	2	51.3
Stink Bugs	0.588	6,252,773	3	45.6
Thrips	0.559	13,009,249	4	94.9
Cotton Fleahopper	0.192	4,789,864	5	35.0
Pink Bollworm	0.170	1,002,275	6	7.3
Silverleaf Whitefly (Bemesia)	0.115	1,083,702	7	7.9
Spider Mites	0.080	3,160,118	8	23.1
Boll Weevil	0.071	1,571,620	9	11.5
Aphids	0.056	10,479,923	10	76.5
Other Insects	0.030	622,447	11	4.5
Fall Armyworm	0.018	1,807,692	12	13.2
Beet Armyworm	0.010	393,962	13	2.9
Southern Armyworms	0.002	336,200	14	2.5
Cutworms	0.0012	1,665,605	15	12.2
Loopers	0.0011	1,845,371	16	13.5
Grasshoppers	0.0010	1,070,883	17	7.8
Cotton Leaf Perforator	0.0001	127,952	18	0.9
Saltmarsh Caterpillars	0.0009	1,464,766	19	10.7
European Cornborer	0.0000	393,962	20	2.9
Banded Winged Whitefly	0.0000	1,464,829	21	10.7

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

*Other Insects include yellowstriped armyworms, western flower Thrips, darkling beetles, striped flea beetles and clouded plant bugs. The 2004 estimate also included losses to slugs.

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States	Reduction	% crop infested	% Dollworm	acres infested	bales lost
US	1.231	82	94.2	11,181,805	378,491
Alabama	1.327	92	77.4	540,000	18,510
Arizona	0.103	54	90.0	128,200	897
Arkansas	1.200	100	95.0	930,000	34,875
California	0.000	2	100.0	14,771	0
Florida	1.021	17	80.0	16,000	2,100
Georgia	1.238	79	90.5	990,000	32,500
Kansas	0.300	15	100.0	15,000	500
Louisiana	0.252	88	100.0	434,663	3,192
Mississippi	1.294	83	92.0	910,125	44,806
Missouri	0.928	69	95.0	264,534	9,672
New Mexico	2.517	93	100.0	67,000	4,884
North Carolina	3.223	100	90.0	722,000	36,113
Oklahoma	2.884	90	80.2	180,841	11,333
South Carolina	3.000	100	70.0	218,000	13,625
Tennessee	1.139	100	99.7	510,000	11,500
Texas	1.397	86	96.6	5,160,671	153,983
Virginia	0.000	99	85.0	80,000	0

Table 3. Bollworm and budworm: percent of population, yield reduction, acres infested and bales lost by state in 2004

Table 4. Bt cotton acreage, acres sprayed for caterpillars, average number of applications and percent of population which was bollworm from 1995 to 2004

	Bt cotton	Acres Bt	Avg. #	% Population
Year	acreage	sprayed	applications	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
2004	6,591,338	2,909,459	0.466	94

nr – not reported * polled entomologists for estimates

		Lygus	stink bugs			
<u> </u>	%			%		
States	Reduction	Acres infested	Bales lost	Reduction	Acres infested	Bales lost
US	1.055	7,035,540	324,941	0.588	6,252,773	180,917
Alabama	1.20	566,639	16,776	0.872	500,000	12,167
Arizona	2.13	216,573	19,881	0.149	134,321	1,397
Arkansas	2.79	930,000	81,084	0.480	930,000	13,950
California	0.40	590,848	9,847	0.000	0	0
Florida	0.33	18,000	669	3.073	54,500	6,319
Georgia	0.04	250,000	1,042	0.873	1,100,000	22,917
Kansas	0.02	2,000	33	0.000	0	0
Louisiana	2.76	475,617	34,935	0.262	377,299	3,309
Mississippi	1.94	1,083,500	67,152	0.142	666,500	4,906
Missouri	3.68	385,000	38,372	0.000	243,795	0
New Mexico	0.33	6,000	648	0.117	4,200	227
North Carolina	0.93	722,000	10,473	6.379	722,000	71,481
Oklahoma	0.15	30,000	588	1.046	126,408	4,109
South Carolina	0.11	80,000	500	2.294	200,000	10,417
Tennessee	0.40	510,000	4,038	0.502	429,450	5,071
Texas	0.35	1,159,363	38,995	0.166	733,800	18,270
Virginia	0.00	10,000	0	1.185	30,500	1,761

Table 5. Lygus and stink bugs: percent yield reduction, acres infested and bales lost by state in 2004

		Thrips		cotton fleahopper			
States	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost	
US	0.559	13,009,249	172,047	0.192	4,789,864	59,204	
Alabama	0.239	586,639	3,340	0.000	5,000	0	
Arizona	0.093	220,186	865	0.183	182,336	1,713	
Arkansas	0.270	930,000	7,847	0.000	800,000	0	
California	0.000	731,174	0	0.000	0	0	
Florida	0.468	22,000	963	0.000	200	0	
Georgia	0.089	1,120,000	2,333	0.000	0	0	
Kansas	0.800	40,000	1,333	1.950	65,000	3,250	
Louisiana	0.040	406,831	502	0.008	199,318	106	
Mississippi	0.188	1,073,125	6,508	0.000	6,400	0	
Missouri	1.050	385,000	10,948	0.000	38,115	0	
New Mexico	0.313	4,500	608	0.000	0	0	
North Carolina	0.100	722,000	1,121	0.000	722,000	0	
Oklahoma	1.680	192,623	6,601	5.000	200,649	19,647	
South Carolina	0.722	210,000	3,281	0.000	15,000	0	
Tennessee	0.300	510,000	3,028	0.000	5,350	0	
Texas	1.093	5,774,171	120,532	0.313	2,550,496	34,489	
Virginia	0.000	81,000	0	0.000	0	0	

 Table 6.
 Thrips and cotton fleahoppers: percent yield reduction, acres infested and bales lost by state in 2004

		spider mites		aphids			
States	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost	
US	0.080	3,160,118	24,768	0.056	10,479,923	17,112	
Alabama	0.23	161,000	3,250	0.116	580,000	1,625	
Arizona	0.126	76,447	1,175	0.009	74,212	80	
Arkansas	0.04	825,000	1,289	0.000	930,000	0	
California	0.49	723,789	12,063	0.180	664,704	4,431	
Florida	0.00	0	0	0.060	28,000	123	
Georgia	0.00	60,000	0	0.000	620,000	0	
Kansas	0.00	0	0	0.000	0	0	
Louisiana	0.01	130,233	97	0.014	338,810	173	
Mississippi	0.11	573,500	3,733	0.071	786,375	2,457	
Missouri	0.19	148,649	2,013	0.000	202,048	0	
New Mexico	0.00	0	0	0.000	12,000	0	
North Carolina	0.00	52,000	0	0.000	722,000	0	
Oklahoma	0.00	0	0	0.080	32,103	314	
South Carolina	0.00	5,000	0	0.000	200,000	0	
Tennessee	0.07	255,000	656	0.020	510,000	202	
Texas	0.00	149,500	492	0.070	4,778,671	7,707	
Virginia	0.00	0	0	0.000	1,000	0	

Table 7. Spider mites and aphids: percent yield reduction, acres infested and bales lost by state in 2004

		boll	Euro	European cornborers			
	% Reduction	Acres infested	Bales lost	Eradication costs per acre	% Reduction	Acres infested	Bales lost
US	0.071	1,571,620	21,733	\$8.07	0.000	393962	0
Alabama	0.000	0	0	\$4.49	0.000	20000	0
Arizona	0.000	0	0	\$1.63	0.000	0	0
Arkansas	0.000	800,000	0	\$15.60	0.000	10000	0
California	0.000	0	0	\$0.00	0.000	0	0
Florida	0.000	0	0	\$6.00	0.000	0	0
Georgia	0.000	0	0	\$3.50	0.000	0	0
Kansas	0.000	0	0	\$0.00	0.000	0	0
Louisiana	0.000	6449	0	\$10.00	0.000	0	0
Mississippi	0.000	0	0	\$9.22	0.000	2000	0
Missouri	0.000	0	0	\$12.50	0.000	762	0
New Mexico	0.000	0	0	\$11.63	0.000	0	0
North Carolina	0.000	0	0	\$3.75	0.000	361000	0
Oklahoma	0.000	0	0	\$14.90	0.000	0	0
South Carolina	0.000	0	0	\$4.00	0.000	0	0
Tennessee	0.000	0	0	\$12.00	0.000	200	0
Texas	0.197	765,171	21,733	\$9.15	0.000	0	0
Virginia	0.000	0	0	\$4.35	0.000	0	0

Table 8. Boll weevil and European comborers: percent yield reduction, acres infested and bales lost by state in 2004

	B	eet armyworm		Fall armyworm			
States	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost	
US	0.010	1,845,616	3,038	0.018	1,807,692	5,389	
Alabama	0.000	15,000	0	0.024	72,000	341	
Arizona	0.036	109,731	341	0.001	48,742	11	
Arkansas	0.000	200,000	0	0.061	715,000	1,781	
California	0.100	369,280	2,462	0.000	0	0	
Florida	0.000	0	0	0.340	16,000	700	
Georgia	0.002	45,000	42	0.019	120,000	500	
Kansas	0.000	0	0	0.000	0	0	
Louisiana	0.010	172,281	132	0.022	155,900	278	
Mississippi	0.002	80,875	62	0.046	270,250	1,610	
Missouri	0.000	0	0	0.000	49,550	0	
New Mexico	0.000	0	0	0.000	0	0	
North Carolina	0.000	72,000	0	0.004	270,000	43	
Oklahoma	0.000	20,649	0	0.000	0	0	
South Carolina	0.000	1,000	0	0.000	0	0	
Tennessee	0.000	2,300	0	0.012	55,250	125	
Texas	0.000	757,500	0	0.000	35,000	0	
Virginia	0.000	0	0	0.000	0	0	

Table 9. Beet and fall armyworms: percent yield reduction, acres infested and bales lost by state in 2004

	,	cutworms	,	loopers			
	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost	
US	0.001	1,665,605	363	0.001	1,845,371	344	
Alabama	0.000	68,000	0	0.004	131,000	57	
Arizona	0.001	28,297	7	0.011	72,602	101	
Arkansas	0.006	525,000	164	0.000	600,000	0	
California	0.000	0	0	0.000	73,856	0	
Florida	0.000	0	0	0.000	1,200	0	
Georgia	0.000	12,000	0	0.000	250,000	0	
Kansas	0.000	0	0	0.000	0	0	
Louisiana	0.005	113,156	60	0.011	278,763	142	
Mississippi	0.002	160,500	52	0.001	65,300	44	
Missouri	0.000	120,467	0	0.000	0	0	
New Mexico	0.035	1,700	69	0.000	0	0	
North Carolina	0.000	296,000	0	0.000	24,000	0	
Oklahoma	0.000	0	0	0.000	0	0	
South Carolina	0.000	500	0	0.000	0	0	
Tennessee	0.002	53,685	21	0.000	8,650	0	
Texas	0.000	286,300	0	0.000	340,000	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 2004

	ban	dedwing whitefly	silverleaf whitefly			
States	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost
US	0.000	1,464,829	0	0.115	1,083,702	35,559
Alabama	0.000	13,000	0	0.000	1,000	0
Arizona	0.000	111,530	0	1.565	235,375	14,633
Arkansas	0.000	550,000	0	0.000	0	0
California	0.000	7,000	0	0.850	627,776	20,926
Florida	0.000	550	0	0.000	0	0
Georgia	0.000	0	0	0.000	12,000	0
Kansas	0.000	0	0	0.000	0	0
Louisiana	0.000	114,945	0	0.000	0	0
Mississippi	0.000	108,200	0	0.000	0	0
Missouri	0.000	22,869	0	0.000	0	0
New Mexico	0.000	0	0	0.000	380	0
North Carolina	0.000	361,000	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	0.000	10,735	0	0.000	0	0
Texas	0.000	165,000	0	0.000	207,171	0
Virginia	0.000	0	0	0.000	0	0

2005 Beltwide Cotton Conferences, New Orleans, Louisiana - January 4 - 7, 2005 Table 11. Whiteflies: percent yield reduction, acres infested and bales lost by state in 2004

cotton leaf perforator				pink bo	pink bollworm			
States	% Reduction	Acres infested	Bales lost	Eradication costs per acre	% Reduction	Acres infested	Bales lost	
US	0.0001	127,952	23	\$0.17	0.170	1,002,275	52,296	
Alabama	0.0000	0	0	\$0.00	0.000	0	0	
Arizona	0.0025	63,737	23	\$0.00	0.582	119,629	5,445	
Arkansas	0.0000	0	0	\$0.00	0.000	0	0	
California	0.0000	32,215	0	\$2.00	0.000	32,215	0	
Florida	0.0000	0	0	\$0.00	0.000	0	0	
Georgia	0.0000	0	0	\$0.00	0.000	0	0	
Kansas	0.0000	0	0	\$0.00	0.000	0	0	
Louisiana	0.0000	0	0	\$0.00	0.000	0	0	
Mississippi	0.0000	0	0	\$0.00	0.000	0	0	
Missouri	0.0000	0	0	\$0.00	0.000	0	0	
New Mexico	0.0000	0	0	\$29.00*	0.103	1,850	200	
North Carolina	0.0000	0	0	\$0.00	0.000	0	0	
Oklahoma	0.0000	0	0	\$0.00	0.000	0	0	
South Carolina	0.0000	0	0	\$0.00	0.000	0	0	
Tennessee	0.0000	0	0	\$0.00	0.000	0	0	
Texas	0.0000	32,000	0	\$10.00*	0.423	848,581	46,681	
Virginia	0.0000	0	0	\$0.00	0.000	0	0	

Table 12. Cotton leaf perforator and pink bollworm: percent yield reduction, acres infested and bales lost by state in2004

*A \$10 assessment is made in the Texas Far West over 39,300 acres, a \$29 assessment in New Mexico over 17,286 acres.

		Grasshoppers		Others*			
States	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost	
US	0.0010	1,070,883	316	0.030	622,447	9,264	
Alabama	0.0000	47,000	0	0.000	86,000	0	
Arizona	0.0213	82,753	199	0.006	57,047	54	
Arkansas	0.0000	150,000	0	0.000	0	0	
California	0.0000	0	0	0.000	0	0	
Florida	0.0000	200	0	0.000	0	0	
Georgia	0.0000	60,000	0	0.000	0	0	
Kansas	0.0000	0	0	0.000	0	0	
Louisiana	0.0000	169,005	0	0.071	38,500	903	
Mississippi	0.0000	83,250	0	0.000	41,000	6	
Missouri	0.0000	0	0	0.000	0	0	
New Mexico	0.0083	1,200	16	0.000	0	0	
North Carolina	0.0000	385,000	0	0.000	0	0	
Oklahoma	0.0000	0	0	0.000	0	0	
South Carolina	0.0000	10,000	0	0.000	0	0	
Tennessee	0.0000	21,475	0	0.822	382,500	8,301	
Texas	0.0009	61,000	103	0.000	65,000	0	
Virginia	0.0000	0	0	0.000	0	0	

2005 Beltwide Cotton Conferences, New Orleans, Louisiana - January 4 - 7, 2005 Table 13. Grasshoppers and others: percent yield reduction, acres infested and bales lost by state in 2004

*Others include Western flower Thrips, yellowstriped armyworms, darkling beetles, striped flea beetles, clouded plant bug and quite a number of states reported **slug** damage

	Saltmarsh caterpillars			Southern armyworms		
States	% Reduction	Acres infested	Bales lost	% Reduction	Acres infested	Bales lost
US	0.0009	1,464,766	263	0.002	336,200	478
Alabama	0.0000	0	0	0.031	196,000	427
Arizona	0.0281	83,135	263	0.000	0	0
Arkansas	0.0000	675,000	0	0.000	0	0
California	0.0000	0	0	0.000	0	0
Florida	0.0000	0	0	0.000	14,000	0
Georgia	0.0000	0	0	0.000	55,000	0
Kansas	0.0000	0	0	0.000	0	0
Louisiana	0.0000	172,281	0	0.000	0	0
Mississippi	0.0000	35,000	0	0.000	5,600	3
Missouri	0.0000	3,850	0	0.000	0	0
New Mexico	0.0000	0	0	0.000	0	0
North Carolina	0.0000	480,000	0	0.000	0	0
Oklahoma	0.0000	0	0	0.000	0	0
South Carolina	0.0000	0	0	0.000	0	0
Tennessee	0.0000	0	0	0.000	0	0
Texas	0.0000	15,500	0	0.000	18,000	0
Virginia	0.0000	0	0	0.000	0	0

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