

10. Brown stink bug (Euschistus impictiventris)
Moderate feeding puncture injury in bolls during August and September in all Arizona counties.
11. Salt-marsh caterpillar (Estigmene acrea)
Light to heavy build-up in all Arizona counties during August. Defoliation of many fields occurred in September. Migrations of larvae took place in October.
12. Spider mites (various spp.)
Light to heavy infestations at Maricopa County from early September to early October.
13. Yellow-striped armyworm (Prodenia ornithogalli)
Light population build-ups during mid-September in Maricopa County.
14. Whitefly (Trialeurodes abutilonea)
Heavy in both Maricopa and Pinal County fields during late September.
15. Boll weevil (Anthonomus spp.)
Two rather heavy infestations found in December in Avra Valley, Pima County.

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PINK BOLLWORM SURVEY

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In 1967 pink bollworm infestations were monitored in Maricopa County through the use of sex-lure traps procured by L. D. McCorkindale, Arizona Commission of Agriculture and Horticulture. On March 31 this office proposed the exchange of information by five groups and the Arizona Cotton Growers Association called an organizational meeting April 11. Mr. McCorkindale's agency, Plant Pest Control (USDA), University of Arizona, the Arizona Cotton Growers Association, and the Arizona Agricultural Chemical Association agreed to cooperate in survey information on a statewide basis.

Reports of sex-lure trap collections created strong awareness of moth emergence and stimulated intensive field inspections. Growers were cautioned to start chemical controls only on the basis of field counts of worms in flowers or bolls, however, since trap counts are not correlated with field infestations. Reports began May 19 and ended June 30, 1967.

Sex-lure trap collections at nine locations in Maricopa County were reported as follows:

PINK BOLLWORM COLLECTIONS - TRAPS AND CAGES
REPORT DATES

SEX-LURE TRAPS	5/19	5/26	6/2	6/9	6/16	6/23	6/30
Avondale	2	20	174	178	137	495	90
Gilbert	1	78	305	477	258	211	11
Harquahala V.	10	19	9	47	48	80	40
Laveen	0	20	107	95	229	12	13
Liberty	90	632	256	860	745	726	115
E. Mesa	0	183	85	282	751	298	17
Peoria	10	389	533	263	8	7	2
S. E. Phx.	--	3	9	--	--	--	--
Waddell	4	49	--	89	36	30	54

Additional observations were made at the Gilbert location where two cages were placed over cotton plants and infested flower counts were made before spraying began:

	COUNTS						
	5/19	5/26	6/2	6/9	6/16	6/23	6/30
Sex-lure traps	1	78	305	477	258	211	11
Infested flowers/acre	-	--	---	---	---	620	--
Case emergence - no/acre	-	--	---	900	3600	1200	600

Insecticide applications commenced June 19 and continued at 6 to 7 day intervals through Sept. 21. Boll infestation never exceeded 5% and inspections both Sept. 20 and Oct. 5 showed 3% infestation of green bolls.

Insecticide fieldmen cooperated with this office in reporting infestations. Infested flower counts in various fields were reported for the week ending July 7 as follows:

FIELD COUNTS OF FLOWER INFESTATIONS

Fieldman	Area	Number larvae per acre
B. Ashby	Scottsdale/Chandler	3310, 140, 690, 140, 3450
M. Christenson	Gilbert	415, 3175
E. Huber	Mesa, Chandler, Gilbert	140, 1100, 140, 965, 1930, 2485
D. Kleinman	Queen Creek	140, 0, 140, 0, 275, 140
R. Lanford	Marinette	3310 (L/S), 2900 (L/S), 140, 0 140, 140
W. Pilling	Harquahala V.	none, none
	Harquahala V.	1930, 3035, 1795
R. Willis	Chandler, Queen Creek	690, 550, 690, 550, 410

In spite of widespread infestations, controls were generally very good with only 3 - 8% infestation of green bolls in mid-September. In a high percentage of cases, growers applied 14 or more insecticide applications with

17 to 19 being commonplace. Where insecticides were discontinued 2 to 3 weeks before defoliation in October, late infestations rose rapidly. Infestation of the top crop might approach 50% if these fields adjoined fields with little or no control during the season.

As a further indication of control needs, three separate fields in the Mesa and Chandler areas with no control produced 90 to 100% infested bolls. One Buckeye grower with 160 cotton acres applied no controls and infestation levels were similar to the eastern Maricopa County fields.

Growers and insecticide fieldmen also found that poor application was a considerable source of trouble in controlling the corn earworm under scheduled spraying. In two cases custom picker operators could even identify streaks in fields at harvest time where common bollworm (corn earworm) control had been unsatisfactory. As a consequence numerous growers will be considering the need for adequate application equipment in the coming year.

Maricopa County yields are again reduced as occurred in 1966. A cool spring retarded plant growth and fruiting which was identified by plant measurement and flowering rate records. This condition along with 4 x 4 planting patterns and corn earworms decreased yields in numerous fields. Total harvest was much earlier than during previous years. A total of 111,673 bales of Upland cotton had been classed in the Phoenix Classing Office through October 27 compared to 82,060 bales in 1966.

The January 15 deadline for plowing cotton ground was extended to January 31 because of excessive rainfall during December. Three to four inches of rain fell in various communities to delay what easily might have been the earliest completion of plowing on record.

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EFFECT OF CULTURAL PRACTICES ON
PINK BOLLWORM MOTH EMERGENCE

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The experiment referred to in this report was conducted at the Safford Experiment Station. The cages which were used to collect moths in order to measure the emergence rate were furnished by USDA and the Graham County Farm Bureau.

The purpose of the experiment was to determine for a higher elevation (approximately 3000 ft.) environment the effect of cultural practices on emergence rate of the pink bollworm moth.

The field used for the experiment was a field of Pima S-2 purposely planted late (1 June 66) under the direction of Dr. George Wene to ascertain the effect of late lush growth on late season infestation by the pink bollworm. The infestation level of the field was estimated to be 75-80% of unopened bolls