

Preplant		Treatment			Weed control Percent estimated 9/30/64		Yield of seed cotton in pounds per acre
Herbicide	lb/A	Date	Layby Herbicide	lb/A	Broadleaf	Grasses	
<u>Test A</u>							
trifluralin	0.75				79	96	2,422
trifluralin	0.75	5/18	diuron	1.25	94	96	2,857
trifluralin	0.75	6/18	diuron	1.25	98	98	2,721
trifluralin	0.75	7/1	diuron	1.25	99	99	2,558
trifluralin	0.75	7/22	diuron	1.25	97	96	2,721
trifluralin	0.75	6/18	monuron	1.25	96	94	2,585
trifluralin	0.75	6/18	prometryne	1.60	87	77	2,313
		6/18	diuron	1.25	95	81	2,422
		6/18	monuron	1.25	95	79	2,340
Check-cultivated and hand-weeded					99	96	2,721
Check-cultivated					0	0	1,170
<u>Test B</u>							
D CPA	8.00				96	94	2,885
D CPA	8.00	6/18	diuron	1.25	99	95	2,806
D CPA	8.00	6/18	monuron	1.25	97	89	2,687
D CPA	8.00	6/18	prometryne	1.60	94	89	2,428
prometryne	1.60	6/18	prometryne	1.60	84	69	2,408
Check-cultivated					0	0	1,990

On-Farm Herbicide Trial Summary

(Henry Brubaker)

Demonstrations with herbicides for cotton weed control were conducted in Yuma, Pima, Pinal, Greenlee and Graham Counties. Yuma County work was primarily with trifluralin, although diuron, Tupersan, and Prometryne were also used. Yuma County tests included layby applications, trifluralin in irrigation water, puncture vine control with trifluralin on sandy soils, and morning-glory control with Prometryne. In the layby applications, trifluralin, Tupersan and diuron gave good weed control except in the skips. Trifluralin in water runs gave some control, but not as much as was hoped. Puncture vines were controlled on sandy soil near Salome with 1/2 and 3/4 pound per acre. The 3/4 pound rate hindered cotton emergence. Prometryne controlled morning-glory for less than two months following layby applications. The pre-plant application of Prometryne with and without trifluralin did not control morning-glory

Prometryne also was tested in Pima County along with trifluralin. These tests gave varying results as to weed control. Stands were damaged by pre-plant applications of trifluralin.

A preplant application test was conducted in Greenlee County using Prometryne and diuron at 1 1/2 and 2 pounds per acre. Both chemicals gave good control with no damage to the cotton.

A pre-plant test was made in Graham County using trifluralin and Prometryne. Both chemicals gave good control. In another test using Prometryne at layby, good control of morning-glory was obtained.

In Pinal County a test was conducted with the cooperation of Geigy Chemical Company using different rates of Prometryne and a new chemical. These were applied after planting and before irrigating up with sprinklers. Control was difficult to determine due to an absence of weeds even in check plots. This method of application had a disastrous effect on the cotton. Parts of the field had to be plowed up due to killing of the cotton by chemicals.

COTTON PRODUCTION - Insect Control

The Department of Entomology, University of Arizona, supports research relating to cotton insects and their control, under the following project leaders.

George P. Wene (Cotton Center)(Assisted by L. W. Sheets, USDA, ARS)
Field tests of insecticides, field ecology of cotton insects, pink bollworm investigations.

George D. Butler, Jr.
Parasites and predators, biology of cotton insects

James M. Witt
Pesticide drift experiments (with P. D. Gerhardt),
Pesticide residue studies

The work of these project leaders is aided by the support and cooperation of Leon Moore and J. N. Roney, Extension Entomologists, Dale Fullerton, Survey Entomologist, F. G. Werner, Taxonomist, and L. A. Carruth, Department Head.

Close cooperation is maintained with G. T. Bottger and his staff of the U.S.D.A., Agricultural Research Service, who are active in Arizona in numerous areas of research including the following:

- Western boll weevil (distribution, ecology, genetics)
- Insecticide investigations (laboratory and small scale tests of new and promising materials.)
- Investigations of non-chemical insect control (parasites, predators, pathogens, resistant varieties.)
- Biology, physiology, and nutritional studies of cotton insects, including bollworms, lygus bugs, fleahoppers, and other pests.

Pink Bollworm

(George P. Wene)

The pink bollworm, Pectinophora gossypiella (Saunders), since its initial discovery in 1926 in Cochise County, has spread to every cotton producing county in Arizona except Mohave, Yavapai and Yuma. In 1963 it was very destructive in a few fields in Graham County. In 1964 it reduced yields in a few fields in Graham and Maricopa Counties. In both Graham and Maricopa Counties the overwintering larvae commenced emerging as adults in the spring before squaring started on field planted cotton and continued emerging throughout most of the summer. The latest emergence from overwintering larvae was on August 17, 1964, in Graham County. The data show that the peak emergence occurred about the time the first squares appeared in the field.