THE FRUITING OF COTTON IN RELATION TO INSECT CONTROL

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During 1948 the rate of blooming and the percentage of blooms that developed into mature bolls on the cotton plant were studied at Canadian, Oklahoma as part of an insect control project on this crop. The variety used was Rowden. The soil was a sandy loam with rather low fertility, having been farmed for many years without the application of fertilizers.

There was considerable angular leaf spot infection, but it was not serious enough to influence visibly the production of blooms and bolls. Boll weevil infestation was comparatively light until late July, but very heavy thereafter. Bollworm infestation was very heavy in August. Cotton fleahoppers, cotton aphids and cotton leafworms did not occur in injurious numbers.

The fruiting was studied in two plots, each composed of 50 consecutive plants. One plot was not treated with any insecticide, one was dusted seven times with a formulation which contained 20 per cent chlorinated camphene (toxaphene) and 40 per cent sulphur. Dust applications averaging 10.03 pounds per acre were made on each of the following dates: July 2, 8, 29; August 3, 9, 13 and 21. As a result of these treatments, good control of the bollworm and boll weevil was obtained. Blooms were tagged daily from July 1 to August 25. At the latter date, the insects had completely stopped the plants from blooming in both plots. At the end of the experiment the total number of mature bolls set on all plants in both plots was recorded according to the 5-day period when they were tagged as blooms.

There were 567 blooms in the plot treated with the chlorinated camphene and 627 in the check plot. (Table I). Forty and nine-tenths per cent of the blooms in the plot which was treated with insecticide produced bolls, and 30.5 per cent of the blooms in the check plot produced bolls. By July 25 the number of bolls set in both plots was practically the same, although the plot treated with insecticide had produced more blooms. As of that date, 28.6 per cent of the crop had been set as bolls in both plots. From that date on, however, a greater percentage of the blooms made bolls in the plot treated with insecticide. As 71.4 per cent of the crop was made after July 25, this was undoubtedly the period when greatest protection to the crop was given by the insecticide treatments. This period coincided with the heaviest bollworm and boll weevil infestation.

TABLE I

Cotton Fruiting on Plants Treated with Chlorinated Camphene as Compared to Non-Treated Plants

Date	Plants Dusted with Chlorinated Camphene							Check					
				Av. Per Cent Infestation							Av. Per Cent Infestation		
	No. of Blooms	Bolls Set* No	%	Boll Weevil Squares	Boll Weevil Bolls@	Bollworm Squares	Bollworm Bolls@	No. of Blooms	Bolls Set* No	%	Boll Weevil Squares	Boll Weevil Bolls@	Bollworm Squares	Bollworm Bolls@
July 1-25	94	55	58.5	8	—	—	—	72	56	77.8	16.6	—	—	—
July 26 to Aug. 25	473	177	37.4	42.8	19.7	8.5	49	555	135	24.3	45.3	27	21	70
Totals	567	232	40.9					627	191	30.5				

*Mature bolls containing pickable cotton recorded on plants September 2.

@Small bolls not over 10 days from blooming.