

**CONTROL OF THE COTTON LOOPER, *COSMOPHILA FLAVA*
(FABR.) (LEPIDOPTERA : NOCTUIDAE), AND NOTES
ON LIFE-HISTORY**

The cotton looper is a well-known pest of cotton crops in Queensland, occurring occasionally in plague numbers capable of defoliating large areas of cotton. An insecticide screening trial against this pest was carried out at the Hermitage Research Station, Warwick, during February and March 1962.

Plague numbers of larvae and large numbers of ovipositing adults were present when the trial was commenced. A 16 x 3 randomized block layout, 13 treatments and 3 untreated controls, with a plot size of 20 ft of single row (approximately 36 plants), and suitable guard rows were used. Materials were applied as water-diluted sprays with a hand-operated knapsack. All larvae on 26 leaves per plot were counted immediately before, and 2, 7 and 14 days after treatment.

Spray concentrations and results are presented in Table 1. All treatments gave virtually complete kills of all larvae present. Useful persistence was demonstrated only with endrin, azinphos-ethyl and DDD, the effect being satisfactory for 14 days. These results were confirmed by subsequent commercial applications in the Hermitage area.

TABLE 1
SPRAY CONCENTRATIONS AND PEST KILLS

Treatment			Mean Larvae per Plot (26 leaves)							
Material	Concentration (% active w/v*)	Pretreatment		Post-treatment						
		Plot Total	Transformed Mean†	2 Days	7 Days		14 Days			
				Plot Total	Plot Total	Transformed Mean‡	Plot Total	Transformed Mean‡		
Endrin emulsifiable	0.05	56	7.45	0.6‡	10.0‡	3.09	18.0§	4.22		
Azinphos-ethyl emulsion	0.05	54	7.38	Nil	0.2‡	0.47	19.0§	4.34		
DDD emulsion	0.10	66	8.12	2.0‡	10.0‡	3.10	22.0§	4.64		
Chlordane emulsifiable	0.10	51	7.14	6.0‡	13.0§	3.56	35.0	5.94		
DDT emulsifiable	0.10	55	7.40	3.0‡	14.0§	3.70	43.0	6.57		
"Telodrin" 	0.10	59	7.70	1.0‡	18.0§	4.19	44.0	6.60		
Dieldrin emulsifiable	0.05	70	8.36	3.0‡	7.0§	2.60	48.0	6.96		
Diazinon emulsifiable	0.10	57	7.53	0.3‡	34.0§	5.82	57.0	7.57		
BHC emulsifiable	0.04	50	7.04	2.0‡	29.0§	5.41	61.0	7.78		
Azinphos-methyl emulsion	0.05	45	6.71	Nil	10.0§	3.24	66.0	8.12		
Malathion emulsifiable	0.10	52	7.24	Nil	27.0§	5.17	70.0	8.37		
Sevin dispersible	0.10*	64	7.99	Nil	8.0§	2.74	71.0	8.43		
Metasystox emulsifiable	0.05	79	8.90	3.0	18.0	4.30	85.0	9.23		
Untreated controls		54	7.33	29.0	35.0	5.95	58.0	7.61		
Necessary differences for significance ..	{ 0.05 0.01	No significant differences		Not analysed		1.19		1.66		
						1.60		2.23		
For comparisons	{ 0.05 0.01					0.97		1.35		
						1.30		1.82		

* Except sevin w/w; † \sqrt{x} ; ‡ All newly hatched; § All early instars; || An emulsifiable concentrate containing 20 per cent. w/v octochloro-tetrahydro-methanophthalan.

Commencing on February 14, a life-history study of *C. flava* was carried through in the laboratory. Eggs were collected in the field and the emerging larvae reared to maturity. Data collected are given in Tables 2 and 3.

TABLE 2
DATA FOR *COSMOPHILA FLAVA*

—	Egg Diameter (mm)	Head Width (in mm) of Larval Instar					
		1	2	3	4	5	6
Mean	0.71	0.32	0.54	0.86	1.20	1.60	2.45
Range	0.65-0.79	0.29-0.33	0.50-0.63	0.77-0.93	1.00-1.36	1.40-2.00	2.20-2.70

TABLE 3
LIFE-HISTORY DATA FOR *COSMOPHILA FLAVA*

—	Duration in Days								
	Larval Instar						Larva	Pupa	
	1	2	3	4	5	6			
Mean	3½	2	2	2½	2½	6	16	16	
Range	3-4	1½-2½	—	2-3	1-5	4-8	14-19	14-17	

T. H. KIRKPATRICK,
Queensland Department of Agriculture and Stock

(Received for publication January 8, 1963)