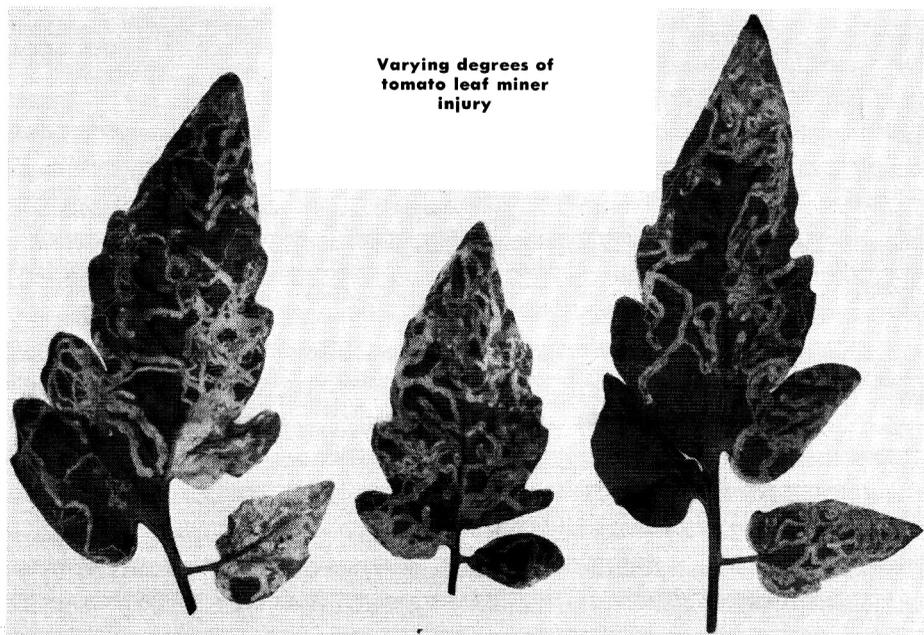


Control of Tomato Leaf Miners

comparative field tests indicate Dylox and Diazinon may be suitable as replacements for parathion in control programs

A. E. Michelbacher and John Underhill



Serious infestations of the tomato leaf miner in 1958 failed to develop because in most fields natural enemies—mostly parasites—were present in sufficient numbers to suppress the miner population to a level well below one of economic importance.

So rarely did the leaf miner population reach a point where treatment could be justified that difficulty was encountered in locating plantings where the infestation had developed to a degree suitable for experimental purposes. However, several experiments were conducted to compare Dylox—an experimental material not yet released by regulation authorities for use on tomatoes—Diazinon and parathion. Treatments were applied as sprays either by helicopter or by airplane.

The most extensive experiment was conducted in a tomato field near Linden where sprays were applied with a helicopter. The treatments and the results obtained are given in the upper table. No attempt was made to separate parasitized leaf miners from those killed from other causes. However, most of the individuals listed as dead in the check plot were parasitized. In the treated plots those listed as dead in the surveys immediately following the treatments were mostly killed by the insecticides. In the later surveys

more and more of the individuals listed in the dead column were parasitized.

At the dosages used all three insecticides resulted in a good kill of the leaf miner. Reinfestation in the parathion plot was somewhat more retarded than in the plots treated with Diazinon or

Dylox where resurgence in the population was fairly rapid. In a survey conducted on September 9 the populations equaled or exceeded that found in the check.

Because of the adverse action of phosphate insecticides upon the parasites of the leaf miner, an additional treatment may be required in about 2-3 weeks should a destructive population develop. In seasons when environmental conditions are favorable to the leaf miner, more than a single application probably will be needed.

In another experiment parathion, Diazinon, and Dylox were applied by airplane to a tomato field in the Tracy area. Control with Diazinon and Dylox approached that obtained with parathion, and both materials deserve further experimentation.

Based upon current information it appears that Diazinon might be substituted for parathion in areas where parathion presents too great a hazard. However, the precautions as given on the container must be followed carefully.

A. E. Michelbacher is Professor of Entomology, University of California, Berkeley.

John Underhill is Farm Advisor, San Joaquin County, University of California.

Comparative Effectiveness of Dylox, Diazinon and Parathion in Controlling Tomato Leaf Miner in a Field near Linden

Treatment per acre ^a	Average number of individuals per leaflet									
	Aug. 14		Aug. 18		Aug. 25		Sept. 2		Sept. 9	
	Live	Dead	Live	Dead	Live	Dead	Live	Dead	Live	Dead
Check	2.84	1.04	0.60	2.12	0.00	3.80	0.80	0.84	0.76	0.40
Dylox 50% soluble powder, 0.5 pound			0.04	0.56	0.04	1.92	0.76	0.24	1.80	0.32
Diazinon 25% emulsion (1.9 pounds actual per gallon), 1 quart			0.00	0.84	0.00	0.60	0.04	0.64	0.90	0.40
Parathion, 25% WP, 2 pounds	1.00	0.08	0.00	0.28	0.00	0.60	0.00	0.12	0.24	0.12

^a Treatments applied in 10 gallons of water August 14 by helicopter.

Comparative Effectiveness of Dylox, Diazinon, and Parathion in Controlling Tomato Leaf Miner in a Field Near Tracy

Treatment per acre ^a	Average number of individuals per leaflet							
	Sept. 6 ^b		Sept. 9		Sept. 15		Sept. 24	
	Live	Dead	Live	Dead	Live	Dead	Live	Dead
Check	1.05	1.50	0.35	1.90	0.20	4.35	1.05	2.30
Dylox 50% soluble powder, 0.5 lb.	1.40	0.90	0.00	1.70	0.30	1.50	1.95	1.55
Diazinon 25% WP, 1.5 lbs.	1.05	1.25	0.00	2.45	0.05	0.90	2.10	1.90
Parathion 25% WP, 2.0 lbs.	1.25	0.95	0.00	1.80	0.15	0.90	1.70	0.85

^a Treatments applied in 10 gallons of water September 6 by airplane.

^b Count made prior to application.