

## **Research Note**

### **EVALUATION OF NEW INSECTICIDES FOR CONTROL OF THE GREEN PEACH APHID, *MYZUS PERSICAE* (SULZER), ON PEPPERS**

The green peach aphid, *Myzus persicae* (Sulzer), is the most important insect pest of sweet peppers in Puerto Rico. The insect attacks mostly the lower side of the leaves, particularly those of new shoots. It sucks the sap causing both physiological and mechanical injury to the plant. At the same time transmits the virus causing pepper mosaic, a disease which is a limiting factor in pepper production in Puerto Rico.

Chemical control of the pepper aphid is very difficult. The practice of using insecticides routinely may result in the development of populations resistant to insecticides. Many previously effective insecticides furnish no adequate control. This Station consequently continually evaluates new and promising insecticides for control of this pest on pepper. Results obtained from recent preliminary tests with several materials are reported herewith.

Field tests were conducted at the Isabela Experiment Substation during April 1973, to evaluate eight insecticides in a commercial plantation of the pepper variety "Blanco del País," heavily infested with the green peach aphid. The insecticides used were: 1) Methomyl 90S (Lannate), 2) Acephate 75S (Orthene), 3) Methamidophos 4E (Monitor), 4) Dimethoate 2.67E (Cygon), 5) Endosulfan 2E (Thiodan), 6) Azinphosmethyl 2E (Guthion), 7) Carbofuran 10G. (Furadan), and 8) Pirimicarb 50 WP (Primor). The plantation was divided into row plots 20 foot long each with 20 plants. The treatments were arranged in a completely randomized block design and replicated 4 times. Foliar spray treatments with each of the insecticides except Furadan were applied in water at the rate of 100 gal/acre with a 5-gallon knapsack sprayer in amounts specified in table 1. Furadan granules were applied by hand in a band 5 inches from the plants on only one side of each row. Treatments were applied one time. Aphid counts were made before treatment and 48 hours afterwards. Counts were made 1 week after treatment in the Furadan-treated plots.

All aphid counts were made directly on the lower side of 10 pepper leaves selected at random in each plot.

Methomyl (both dosages), Pirimicarb and Methamidophos gave excellent results (table 1). The effectiveness of the Carbofuran treatments was observed 7 days after soil treatment. Of the above materials, Methomyl is the only one registered for use on pepper; Pirimicarb is recommended for use in England and Latin America. Most of the information required by the Environmental Protection Agency for approving the use of the other

TABLE 1.—*Mean number of aphids per 10 pepper leaves before and following insecticide treatment*

Insecticide	Per 100 gallons of water	Mean number of aphids	
		Before treatment	48 hours after treatment
Methomyl 90S (Lannate)	1.00 lb.	98	0.5
Methomyl 90S (Lannate)	.50 lb.	100+	3.7
Acephate 75S (Orthene)	1.33 lb.	97	4.2
Methamidophos 4E (Monitor)	1 pt.	100+	0
Dimethoate 2.67E (Cygon)	1 pt.	96	77.5
Endosulfan 2E (Thiodan)	2 pt.	97	75.5
Azinphosmethyl 2E (Guthion)	2 pt.	100+	87.5
Endosulfan 50 WP (Thiodan)	1.00 lb.	97	75.2
Carbofuran 10G. (Furadan)	20.00 lbs. <sup>a</sup>	97	7.5 <sup>b</sup>
Pirimicarb 50 WP (Primor)	.50 lb.	100+	0
Control		100+	100.0+

<sup>a</sup> Applied by hand in a band along the row.

<sup>b</sup> Counts made 1 week after treatment.

materials has been obtained. Dimethoate, Endosulfan and Azinphosmethyl were considered ineffective. Continuous research with promising new materials is required to develop alternate treatments as a means to prevent the development of insect populations resistant to presently known methods of insect control.

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