

Pome Fruits—Chemical Control

Laboratory Screening of Pesticides Against Grape Mealybug

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Candidate pesticides were applied as topical sprays in a Potter spray tower to overwintering crawler-stage nymphs collected from commercial pear orchards in the Wenatchee area. Five serial dilutions and a water control were applied to two replications of 10 crawlers held in 50 x 9 mm Petri dishes. After 48 h exposure the number of dead crawlers was determined with the aid of 15X magnification. Diazinon, the standard treatment used in commercial pear orchards, was tested against two populations, one from an orchard where this material had not provided control in 1991, the other from a pear block on the Research Center that had not been treated with insecticides during the last 20 yr. All other materials were tested against the population from the commercial orchard. Percent kill was corrected for mortality in water controls using Abbott's formula.

The test seemed to work well for identifying contact toxicity of pesticides against crawlers. However, there was a lot of static charge in the Petri dishes with AC 303,630. This caused some crawlers to cling to the top and sides of dishes. The population from the commercial orchard was much less susceptible to Diazinon than that from the Research Center orchard. Compounds that were most effective against the population from the commercial orchard included NTN 33893, Lorsban, Guthion, Sevin and Imidan. Thiodan was not effective and the results with AC 303,630 were inconsistent.

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Table 1.

Treatment	Concentration AI (ppm)	% dead GMB crawlers 48 h	Treatment	Concentration AI (ppm)	% dead GMB crawlers 48 h
Diazinon 50WP ¹	2400	100	Diazinon 50WP	2400	60
	1200	100		1200	40
	600	100		600	55
	300	100		300	20
	150	100		150	0
NTN 33893 24% L	568	100	Lorsban 50WP	2400	100
	280	100		1200	100
	140	100		600	100
	70	100		300	100
	35	100		150	45
Guthion 35WP	1200	100	Imidan 50WP	3600	100
	600	100		1800	95
	300	90		900	100
	150	90		450	65
	75	45		225	25
Sevin 4L	2400	100	PennCap-M	2400	100
	1200	100		1200	90
	600	85		600	65
	300	85		300	60
	150	35		150	35
Carzol 92% SP	1650	100	Vydate 2L	300	95
	825	90		150	85
	412	65		75	70
	206	60		38	30
	103	20		19	30
Supracide 2E	1200	80	AC 303,630	800	35
	600	70		400	90
	300	65		200	65
	150	60		100	25
	75	35		50	20
Orthene 75% S	4800	65	Thiodan 3EC	2800	0
	2400	70		1400	20
	1200	40		700	10
	600	25		350	40
	300	30		75	30

¹Crawlers collected from an unsprayed pear block on the Research Center. All other treatments tested against crawlers collected from commercial pear orchard where Diazinon sprays did not control GMB in 1991.