Grape Bud Mite Tests

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THE GRAPE BUD MITE, *Eriophes vitis* Pgst. causes greatly shortened basal internodes on grape shoots. Often the berry clusters are reduced or absent.

In severe cases the overwintering buds are killed and the vines respond with a vigorous growth of suckers. Before the vines lose their leaves in the fall bud mites are generally prevalent in all vineyards and may be found in from 60% to 90% of the buds. Overwinter mortality is great, however, so that injury in the spring can not be predicted from prevalence of bud mites in the fall.

A series of preliminary tests were made on Carignane grapes in the University vineyard at Davis on September 20, 1947. Single vines were sprayed using a hand-sprayer before the leaves had fallen. Cane samples were collected on September 23 and again from a few of the treated vines on October 22. From 25 to 50 buds were examined from each treatment. The results are summarized in table 1.

On October 1, 1947, a series of sprays were applied to plots of Thompson Seedless vines of 0.7 acres each. Using a power driven sprayer at 500 pounds pressure, sprays were applied at the rate of 1.3 gallons per vine. Each row of vines was sprayed from both sides by two operators each using a single nozzle spray gun. One rode on top of the spray rig while the other walked behind at a distance of some 15 feet. At the time of application the leaves were still green and the canes had not fully matured.

An examination of 50 buds from each treatment was made on October 15 and again on October 27. The results are tabulated in table 2.

While examining buds under the binocular microscope many dead bud mites were observed on all treated plots. Often dead mites were seen beneath the outer portion of a bud scale while live mites were found at the base of the scale. It appeared that nearly all treatments reduced the per cent of buds having live bud mites to some extent. On the whole, the addition of kerosene to the spray increased its efficiency slightly.

It may be that immediate control of grape bud mites depended more on penetration of the spray beneath the bud scales than on the amount of toxic agent used. Because of the slow action of parathion it may take until spring of 1948 to evaluate these experimental sprays.

TABLE 1—Results of Hand-Spray Tests to Control Grape Bud Mite

Treatment per 100 gallons September 20, 1947	Per cent buds with live mites	
	September 23	October 22
Parathion 15% wettable, 1 lb.	61.5	....
Parathion 15% wettable, 2 lbs.	46.8	....
Parathion 15% wettable, 4 lbs.	38.5	....
Parathion 15% wettable, 6 lbs.	33.3	34.4
Parathion 15% wettable, 1 lb.; di 2-ethyl hexyl phthalate, 1 qt.	52.6	....
Parathion 15% wettable, 2 lbs.; di 2-ethyl hexyl phthalate, 1 qt.	31.8	....
Parathion 15% wettable, 4 lbs.; di 2-ethyl hexyl phthalate, 9 qt.	44.4	....
Parathion 15% wettable, 6 lbs.; di 2-ethyl hexyl phthalate. 1 qt.	36.2	56.2
Parathion 15% wettable, 1 lb.; di 2-ethyl hexyl phthalate, 1 qt.; kerosene, 2 gals.	50.0	....
Parathion 15% wettable, 2 lbs.; di 2-ethyl hexyl phthalate, 1 qt.; kerosene 2 gals.	38.6	....
Parathion 15% wettable, 4 lbs.; di 2-ethyl hexyl phthalate, 1 qt.; kerosene, 2 gals.	38.9	....
Parathion 15% wettable 6 lbs.; di 2-ethyl hexyl phthalate, 1 qt.; kerosene, 2 gals.	36.0	19.2
Unsprayed	59.9	60.0

TABLE 2—Results of Sprays to Control Grape Bud Mites on Thompson Grapes

Treatment per 100 gallons October 1, 1947	Per cent buds with live mites	
	October 15	October 27
Parathion 15% wettable, 3 lbs.	46	36
Parathion 15% wettable, 3 lbs.; di 2-ethyl hexyl phthalate, 1 qt.	50	42
Parathion 15% wettable, 3 lbs.; di 2-ethyl hexyl phthalate, 1 qt.; kerosene, 2 gals.	30	40
Unsprayed	72	60

Red Spiders on Grapes

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THE PACIFIC MITE, *Tetranychus pacificus* McG. is a serious pest on nearly all varieties of grapes grown in northern and central California, as far south as Fresno. In the vineyards around Fresno and south the Willamette Mite, *Tetranychus willamettei* McG. predominates. Tests on this latter species are reported on page 13.

In view of the phenominal success obtained with HETP in 1946, it was decided to conduct a timing experiment in 1947 to determine the most advantageous time to apply this material. Since DDT is normally applied to grapes in the spring to control the grape leafhopper, tests were designed to study the efficiency of DDT plus HETP in combination. The efficiency of single applications of HETP was contrasted with double applications, both with and without DDT.

An experiment was conducted in 1947 on a commercial Zinfandel vineyard (No. 1) at Woodbridge and repeated on a commercial Zinfandel and Alicante vineyard