

# ACARICIDES and two-spotted SPIDER MITES

A. BERLOWITZ · J. L. JOOS

C. S. DAVIS · P. MONTOYA

B. E. BEARDEN

EFFECTIVENESS OF NEW AND REGISTERED ACARICIDES AGAINST TWO-SPOTTED SPIDER MITE (*TETRANYCHUS URTICAE* KOCH) ON BARTLETT PEARS IN CALIFORNIA, MENDOCINO CO., 1973

Material and Formulation*	A.I./100 gals	Pretreatment count 8/13	Mites per 20 leaves†				
			Days after treatment				
			8	15	22	29	45
Plictran 50% WP	2 oz	29.5	0	0.3	0.5	0.5	0.7
Vendex 50% WP	8 oz	11.3	0	0	0	0	0.5
Vendex 50% WP	4 oz	16.8	0.7	0	0	0	1.3
PGP-103 3.34 EC	6.68 oz	12	0	0.5a	0.3	0	1.6
PGP-103 3.34 EC	3.34 oz	18	0.6	0.5	0	0	1.4
PGP-103 3.34 EC	1.67 oz	7.8	0	0.5	0.6	1	10.9
Galecron 95% SP	8 oz	8.5	0.5	1.3	2.3	5.5	14.6
DPX 3654 4 EC	8 oz	5	1.3	1.6	6.7	1.4	7.2
PGP-102 3.34 EC	6.68 oz	25.8	0	1.9	1.7	10.2	21.2
PGP-102 3.34 EC	3.34 oz	8.5	1	1.8	4	9	10
PGP-102 3.34 EC	1.67 oz	5.2	3.2	7.5	18.8	21.7	46.8
U-36059 1.66 EC	3 oz	22.8	1	7.8	15.7	22.9	228.5
Untreated check	—	20	34.5	45.6	47.3	92.5	177.5

\* Sprayed to runoff (1.5 gal/tree), by handgun on 8/14/73. Based on 400 gal/acre.  
† 20 leaves per plot. 4 plots per treatment.

**T**HE TWO-SPOTTED SPIDER MITE, *Tetranychus urticae* Koch, is a persistent and destructive pest of pears in California. Bartlett pears are particularly susceptible to this mite, and severe defoliation can occur in relatively short periods of time. Contributing to the severity of mite infestations is the presence of weed hosts, such as morning glory (bindweed), around the base of tree trunks. These weeds can support large numbers of mites which will move up into the foliage when the weeds dry out or are treated with herbicides. Further complicating the mite control picture, is the necessity for chemical control of the codling moth, *Laspeyresia pomonella* (L.), which can result in the suppression of naturally occurring or introduced mite predators.

Because of the rapidity and severity of damage to Bartlett pears, chemical control has been the mainstay in the regulation of the two-spotted spider mite. However, some mite populations have developed varying degrees of resistance to some of the commonly used insecticides

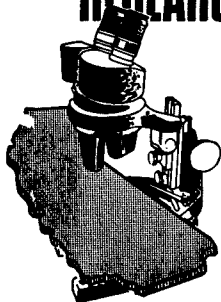
and acaricides. It is important, therefore, to have acaricides available which are capable of providing quick, long-lasting control. This is especially so when natural control organisms are not keeping the mite populations below economic levels. The tests of experimental and registered acaricides reported here were conducted as part of the California pear pest management program in a Bartlett pear orchard located near Ukiah, Mendocino County. Thirteen treatments were replicated four times in a randomized complete block design. Five new spray materials, at one or more dosages, were compared with two commonly used registered materials, and an untreated check.

The formulations, dosages and efficacy of the treatments are shown in the accompanying table. Proctor and Gamble PGP 102 and 103, Shell Vendex, and Plictran are organotin products. Dupont DPX-3654 is a chlorinated hydrocarbon, Galecron is a formamidine, and American Cyanamide U-36059 is a diamide. With the exception of PGP-102, the or-

ganotin materials gave the best control of the two-spotted spider mite. Within this group, Vendex (4 oz and 8 oz A.I./100 gal), Plictran, and PGP-103 (6.68 and 3.34 oz A.I./100 gal) gave excellent control over the 45 days of the test. PGP-103 (1.67 oz A.I./100 gal) was equally as effective up to the 29th day. Galecron, DPX 3654 and PGP-102 (6.68 A.I./100 gal) were somewhat less effective, and each of these three materials gave significantly poorer control on at least two sample dates. PGP-102 (1.67 oz A.I./100 gal) and U-36059 gave inadequate control, and the mite population level in the U-36059 treatment exceeded the untreated check level on the 45th day.

*A. Berlowitz is Staff Research Associate, Division of Entomology and Parasitology, U.C. Berkeley; J. L. Joos is Area Farm Advisor (Santa Rosa); and C. S. Davis is Extension Entomologist, Berkeley. P. Montoya is Farm Advisor's Assistant and B. E. Bearden is Farm Advisor, Mendocino County.*

## RESEARCH PREVIEWS



A continuing program of research in many aspects of agriculture is carried on at University campuses, field stations, leased areas, and many temporary plots loaned by cooperating landowners throughout the state. Listed below are some of the projects currently under way, but on which no formal progress reports can yet be made.

### OZONE AS DISINFECTANT FOR HATCHING EGGS

OZONE IS BEING tested as a fumigant for disinfecting chicken and turkey hatching eggs, because it is more agreeable to work with than commonly used formaldehyde. Thousands of eggs have been exposed repeatedly during incubation to 50 ppm for one hour; hatchability has been equivalent to or better than that obtained with formaldehyde fumigation.

### CALIFORNIA AGRICULTURE

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Jerry Lester . . . . . Editor  
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