(B12)

PLUM (JAPANESE): *Prunus salicina* Lindl.

PACIFIC SPIDER MITE CONTROL IN PLUM, 2005

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Pacific spider mite: *Tetranychus pacificus* (McGregor)

During the early summer of 2005 an insecticide trial was conducted to determine the effects of experimental and registered insecticides on Pacific spider mite in plums. A total of 80 trees were organized into a CRB design with five blocks of seven treatments and an untreated check. Plot size was two trees and treatments were applied on 23 Jun using a Schaben sprayer equipped with a hand gun at 150 psi. Applications were made at 200 gpa. Mite populations were evaluated before treatments on 23 Jun and 4, 8, 12, 15 and 19 DAT on 27 Jun, 1 Jul, 5 Jul, 8 Jul, and 12 Jul. On each evaluation date, 10 random leaves were collected between the two trunks at the center portion of the two-tree plot area and returned to the laboratory where the total number of Pacific spider mite eggs and motiles (juveniles + adults) were counted under magnification. Average motiles and eggs per leaf were calculated for each experimental plot. These data were transformed by using a square root transformation and analyzed by ANOVA with means separated by Fisher's Protected LSD ($P \leq 0.05$).

Table 1 shows the effects of miticide treatments on the number of motile spider mites per leaf. There were no differences in mite density in the precounts or 4 DAT. By 8 DAT, lowest mite counts were in the two abamectin treatments (Agri-Mek and A-8612) followed by Zeal and Acramite. Each of these four miticides had significant reductions in mite numbers compared to the untreated check. Desperado, Envidor and Fujimite all had mite counts statistically equivalent to the untreated check. By 12 DAT, Agri-Mek, A-8612, Acramite, Envidor and Zeal all reduced mite densities compared to Desperado and Fujimite (which had mite densities more than twice the untreated check), though no treatment was statistically higher or lower than the untreated check. This same pattern was seen 14 DAT except that mite counts in plots treated with Desperado were now significantly increased compared to the untreated check. By 19 DAT the abamectin treatments still had the lowest mite counts numerically, though no treatment significantly reduced mite density compared to the untreated check. Desperado and Fujimite both had mite densities significantly higher than the untreated check during evaluations 19 DAT. The trial was terminated 23 DAT when the entire trial was oversprayed due to severe defoliation in the most heavily infested plots as well as in the rest of the commercial block surrounding the trial. Table 2 shows the effects of miticide treatments on the density of spider mite eggs. There were no differences in egg density in the precounts or 4 DAT. After that date, egg densities paralleled the numbers of mites in Table 1. However, Agri-Mek and A-8612 were the only treatments to significantly reduce egg densities on at least one of the 8, 12, 14, or 19 DAT evaluation dates.

Table 1.

Treatment/ formulation	Rate amt product/acre	Precounts	Motile (nymph + adult) spider mites per leaf				
			4 DAT	8 DAT	12 DAT	14 DAT	19 DAT
Acramite 50WS	1.0 lb	4.6a	6.5a	4.6abc	10.0a	21.8ab	64.7bcd
Agri-Mek 0.15EC + 1% oil	10.0 fl oz	13.5a	0.4a	2.3a	9.9a	22.6ab	23.1ab
A-8612 0.15EC	10.0 fl oz	7.5a	1.8a	2.6a	4.6a	7.5a	18.7a
Desperado 54AS	1.0 gal	8.4a	4.9a	13.6bcd	54.4bc	79.3c	129.0e
Envidor 240SC	18.0 fl oz	5.2a	8.1a	14.9bcd	13.3a	9.8a	37.5abc
Fujimite 5EC	2.0 pt	4.6a	9.4a	17.6cd	42.1bc	49.8bc	99.8de
Zeal 72WDG	2.0 oz	9.5a	5.7a	3.6ab	13.4a	13.7a	57.3cd
Untreated check	--	3.6a	10.6a	17.8d	18.9ab	23.1ab	46.8abc

Means in a given column followed by the same letter are not significantly different (Fisher's protected LSD, $P > 0.05$). Data are reported as original numbers with means separation from a sqrt (value + 0.5) transformation.

Table 2.

Treatment/ formulation	Rate amt product/acre	Precounts	Spider mite eggs per leaf				
			4 DAT	8 DAT	12 DAT	14 DAT	19 DAT
Acramite 50WS	1.0 lb	13.8a	8.0a	9.6ab	16.5a	37.7ab	82.7cd
Agri-Mek 0.15EC +1% oil	10.0 fl oz	14.6a	1.5a	1.2a	16.7a	32.9ab	27.2ab
A-8612 0.15EC	10.0 fl oz	17.9a	3.0a	1.7a	6.9a	7.6a	12.3a
Desperado 54AS	1.0 gal	16.2a	9.3a	18.1b	74.0bc	95.4c	110.3d
Envidor 240SC	18.0 oz	15.8a	11.9a	19.7b	22.5a	14.3ab	72.0bcd
Fujimite 5EC	2.0 pt	15.4a	21.3a	22.1b	26.8bc	55.9bc	76.1cd
Zeal 72WDG	2.0 oz	20.1a	13.6a	10.6ab	26.4ab	26.7ab	67.2bcd
Untreated Check	--	9.4a	9.3a	21.1b	28.6ab	28.0ab	47.4abc

Means in a given column followed by the same letter are not significantly different (Fisher's protected LSD, $P > 0.05$). Data are reported as original numbers with means separation from a sqrt (value + 0.5) transformation.