

**(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/<br>formulation   | Rate amt<br>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<br>+ 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/<br>formulation  | Rate amt<br>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<br>+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.