INSECTICIDES AND TIMING SPRAYS FOR CONTROL OF SAN JOSE SCALE

R. E. RICE  •  J. E. DIBLE 
R. A. JONES  •  J. H. LA RUE

Scale insects are among the most serious pests known to agriculture, and San Jose scale, Quadraspisidius perniciosus (Comstock), ranks as the primary scale pest on deciduous fruit and nut trees. It is distributed worldwide and has been collected from approximately 700 different hosts. Unlike many insect pests, San Jose scale has the ability to kill all or parts of infected trees, in addition to making infected fruit unmarketable.

Field trials were conducted in the San Joaquin Valley in 1970–71 to evaluate the effectiveness of three insecticides for control of San Jose scale. Two new materials were compared with both untreated check and a standard insecticide—three in combination with various formulations of supreme-type spray oils.

The two experimental insecticides (Supracide and chlordimeform) were tested alone and in combination with oil, as fall, dormant and May sprays on Casselman plums in Fresno County. The standard chemical (Diazinon), was evaluated for scale control in combination with four different formulations of oils.

The plot design was a randomized complete block with four single tree replicates per treatment. Materials were applied with a handgun at 300 psi, using 5 gals of spray per tree. Treatments were applied September 29, 1970 (fall), January 21, 1971 (dormant), and May 24, 1971 (May treatment).

All treatments were evaluated and compared with the untreated check plot on August 31, 1971. Because the fruit in the orchard was not commercially harvested, evaluations were made by calculating the percentage of infested fruit in 25 plums picked at random from each replicate.

Results of this trial (table 1) indicated that Supracide, alone or in combination with oil, gave good reduction of scale populations regardless of time of treatment. Chlordimeform did not provide satisfactory control. All four oil formulations at 2 gal per 100 gal water, in combination with Diazinon, gave good control when applied as dormant treatments, whereas the same sprays at lower rates did not perform as well when applied in September. There were insufficient trees available for testing the Diazinon-oil combinations as May sprays.

These data indicate that dormant sprays, using a suitable organophosphorous insecticide in combination with oil, were generally more effective than fall treatments for control of San Jose scale. Additional benefits from the dormant treatment are control of overwintering eggs of mites and aphids, and peach twig borer larvae.