

INVESTIGATING THE RELATIONSHIP BETWEEN SAN JOSE SCALE LIFE STAGES AND WOOD INFESTATION IN ALMONDS

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Five almond orchards having San Jose scale (SJS) infestation were monitored in winter 2001. Male SJS were monitored using standard pheromone caps and traps manufactured by Trece[®]. Traps were placed in orchards on February 19 and monitored through November. Sticky traps were changed weekly. Pheromone caps were changed monthly. Three of the orchards (over 60 acres in size) were monitored with four SJS traps, evenly distributed throughout the orchard. The remaining two orchards were less than 20 acres and only three SJS traps utilized. All five orchards grew the nonpareil cultivar in 2/3 of the planting. The five orchards had been in full production for 10 years.

Crawlers were monitored on four trees around each of the pheromone traps. A single tree at each of the four compass points around the tree that held the pheromone trap was selected and a single double-sided sticky tape was placed on one of the scaffolds. Tapes were placed prior to crawler emergence in the spring (April 1) and were changed after each crawler generation (a total of five changes made at approximately 6-week intervals). The tapes were counted and the number of crawlers per tape was totaled for the season. During December 25 live spurs were collected from each of the trees where sticky tapes were used. Counting of SJS was done from the base to a distance of 3 inches on the spur.

A simple regression analysis was performed (Stat View 5.1) using the number of crawlers per tape per season as the independent variable and the number of infested spurs as the dependent variable. The number of male SJS was also used as the independent variable and a regression performed with the number of infested spurs. The 18 data points from the five orchards were pooled for the analyses. When the number of crawlers per tape per season at each trapping location was regressed with the number of infested spurs per 100, a highly significant ($P < 0001$) relationship was found. The R square was .788 using the no intercept model (Stat View 5.1). The Regression equation was $Y = 0 + .029 * X$. Similarly, the number of male scale per trap per season was regressed with the number of infested spurs out of 100 collected. The R square was .718 and was highly significant ($P < .001$ Stat View 5.1, no intercept model). The Regression equation is $Y = 0 + .01 * X$.

The information gained will be used in developing an insecticide treatment threshold for San Jose Scale.