

# THE INFLUENCE OF TRAP PLACEMENT IN MONITORING SAN JOSE SCALE (HOM.: DIASPIDIDAE) AND ITS NATURAL ENEMIES

Kent M. Daane and Brian N. Hogg

Division of Insect Biology, University of California, Berkeley, CA 94720, USA

San Jose Scale, *Quadraspidiotus perniciosus* Comstock, a major pest of stone fruit in California, is commonly monitored with pheromone traps. The density of SJS parasitoids captured on sticky traps has been used to assess the natural regulation of SJS. In this study, trap placement, both by cardinal direction and by height within the tree canopy, was studied for its influence on trap efficacy. Experiments were conducted both with and without SJS pheromone lures. Without pheromone lures, results show little difference in capture rates between sticky traps placed at the four cardinal directions. Although *Aphytis* spp. showed no clear preference for traps at any height, traps placed in the lower sections of the tree canopy captured greater numbers of *Encarsia perniciosi*, while the number of SJS was greatest in the upper canopy. This indicates that trap placement has important implications for monitoring SJS and its natural enemies—traps placed low in the tree canopy yield an inaccurately high *Encarsia*: SJS ratio, while a higher trap placement gives a high SJS: *Encarsia* ratio. When pheromone lures were added this pattern was still evident and the numbers of *Encarsia* increased; *Encarsia* is attracted to SJS pheromone, but *Aphytis* spp. most likely are not. As a result, the importance of *Aphytis* spp. in controlling SJS is probably greatly underestimated.