Pome Fruits—Chemical Control

Pear Psylla

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A 1.1 acre block of mixed pear varieties located at the Medford field station of Southern Oregon Experiment Station was used in this study. The study area was divided in half with one side treated and the other left unsprayed in the prebloom period. The spray program consisted of a dormant spray of horticultural spray oil and a delayed dormant application of oil in combination with sulfur. The pyrethroid chemical normally combined with the latter treatment was deleted. In each the treated and nontreated portions of the plot five single tree replicates of each of four pear varieties were selected for sampling. Cultivars selected were Anjou, Comice, Seckel and Bosc. Estimates of pear psylla densities were made at two time intervals, petal fall (May 6) and on May 6 prior to the first foliar spray for codling moth. Sampling of psylla immatures was conducted by selecting 20 fruit cluster leaves/rep/variety and recording the number of nymphal stages. The entire plot was treated on May 15 with Mitac to eliminate pear psylla and additional sprays were applied when needed to minimize any further psylla damage. Evaluation of pear psylla induced fruit damage was made at harvest on August 13. At this time the fruit was graded as to percent of the surface injured by honeydew marking and placed into the standard categories of number 1, number 2 (fancy) and culls.

Results

Densities of pear psylla nymphs averaged 0.3 and 15.0/leaf on April 16 in the treated and untreated sections of the plot respectively, or a 98% reduction in the treated portion. By May 16 nymphal densities had increased to an average of 5.4 in the treated and 38.8 in the untreated or about a 86% reduction resulting from the prebloom program. Density of nymphs was lowest on the Bosc and Comice cultivars on both dates, probably reflecting their delayed bud development compared to that of the Anjou and Seckel varieties. Fruit damage at harvest in the portion of the plot receiving the prebloom program averaged 0.4% on the Anjou and Comice varieties and 0 on the Seckel and Bosc. In the untreated portion the percentage of fruit downgrading averaged 5.2, 0.8, 11.2 and 1.6% on the Anjou, Bosc, Comice and Seckel cultivars, respectively.