ABSTRACT

A study to measure the effect of walnut scale (Quadraspidiotus juglandis-regiae) on English walnut quality and yield was initiated in the spring of 1983. A mature Ashley block infested with walnut scale was used for the study. Half the trees in the plot were treated annually in March to control walnut scale and half remained untreated. Nut samples analyzed for quality in 1984 showed a significant improvement in percent light kernel for the treated trees compared to the untreated trees. Yield data collected during 1984 and 1985 showed no significant difference between treatments. Nut quality data for 1985 is not yet available. Although it is not yet clear cut, 1984 quality data began to show quality improvement due to controlling walnut scale.

OBJECTIVES

To study the effect of walnut scale infestation on walnut kernel quality and total yield.

PROCEDURE

In March of 1983 forty trees in a single row of mature Ashleys infested with walnut scale were selected. The trees were rated according to size and paired with the closest tree in the row with the same size rating. Treatment was then assigned by the toss of a coin. Twenty of the trees were treated on March 25 by a hand gun with the label rate of Supracide. Twenty were left untreated. This treatment was repeated in 1984 and 1985. Five spurs from each tree were sampled at random before and after the treatment during 1983 and all stages of live scale were counted on a 4 inch section of each spur. During 1983, 84 and 85 scale activity was monitored during peak periods by placing double-sided sticky tapes on two limbs (1 1/2 - 2 inches in diameter) in 5 treated trees and 5 untreated trees and changed and counted twice weekly.

At harvest during 1983, 84 and 85 nut samples were collected from all forty trees and analyzed for quality by Diamond Walnut Growers. Yield data was collected from individual trees for the 1984 and 1985 harvests and divided by trunk circumference to take out differences due to tree size.

RESULTS

1983 - Scale counts made on the spur samples collected before and reducing scale populations on the treated trees. Sticky tape counts in 83, 84 and 85 indicated that these populations remained low throughout the growing season while good activity was detected on the check trees.

1983 nut samples showed no significant differences for any of the quality parameters measured. 1984 nut samples showed a significant
improvement in percent light kernel yield for the treated trees compared to the untreated trees with a mean of 34.7% for treated trees compared to 32.0 for the untreated trees. This was significant at the 1.38 level. This was the only quality parameter which showed a difference. Nut quality data for 1985 is not yet available.

Yield data showed no differences for 1984 and 1985.

CONCLUSIONS

1984 nut samples began showing some differences in quality. To date we have not measured any yield differences. Visual observations indicate that although there is still a good population of scale on the check trees, it has declined somewhat from the initial population. Spur counts will be taken next spring to verify this. If 1985 quality sample continue to show quality differences, the trial will be continued for another year.