SELECTIVE PRUNING OF CLOSE-PLANTED ASHLEY WALNUTS

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Selective annual pruning vs. no pruning vs. grower trimming of a dense Ashley orchard began in 1978. In 1978 the selective annually pruned plots averaged 38 pruning cuts/tree, 32 less than 1½ inches in diameter, 5 between 1½ and 2½ inches and 1 above 2½ inches. As a result of this initial heavy pruning, yield of sound nuts was reduced by 320 lbs./acre over the nonpruned plots. Although nut quality was improved by this pruning, the increase in value was not enough to affect the reduced yield and resulted in a loss of $27/acre as compared to nonpruning.

In 1979, 67 cuts/tree were taken on the selective annually pruned trees, 66 less than 1½ inches in diameter and 1 between 1½ and 2½ inches in diameter. The grower trimming averaged 10 cuts/tree, 9 cuts less than 1½ inches in diameter and 1 cut between 1½ and 2½ inches in diameter. Selective annual and grower-trimmed plots resulted in a reduction of sound yield/acre as compared to the nonpruned plots, 1.34, 1.35 and 1.39 tons/acre respectively. Again, nut quality was improved by pruning. Selective annual pruning resulted in $795, grower trimming $764, and nonpruning $746/acre.

In 1980 the selective annual pruning was directed primarily at the removal of fruitwood since after two years of intense pruning the trees were now opened up with light and fruitwood dispersed throughout the tree. The pruning averaged 33 cuts/tree, 32 less than 1½ inches in diameter and 1 greater than 2½ inches in diameter. The grower embarked on a program of opening up the tops of his trees, and the grower-trimmed trees averaged 15 cuts/tree, 10 cuts less than 1½ inches, 4 between 1½ and 2½ inches and 1 cut greater than 2½ inches in diameter. The total amount of wood removed/tree was greatest in the grower-trimmed trees. Light measurements of selective pruned and nonpruned trees revealed that the pruned trees had a greater amount of light reaching the ground than did the nonpruned tree. Selective pruned trees averaged 74 micro einsteins greater light penetration per reading over nonpruned trees. Spur fruitfulness on the interior two-thirds canopy of pruned trees averaged 48 percent fruitful spurs; nonpruned trees averaged 25 percent fruitful spurs. On the outer third of the tree canopy, pruned trees averaged 55 percent fruitful spurs while nonpruned trees averaged 46 percent fruitful spurs. These measurements reveal that pruned trees had nuts dispersed throughout the tree canopy while the crop on nonpruned trees was concentrated in the outer third of the canopy. Sound yield of selective pruned trees was 2.7 tons/acre; grower trimming, where the heaviest pruning was done, 2.4 tons/acre; and nonpruning 2.6 tons/acre. For the third year in a row, quality factors such as % large, % light meats and % edible were improved in pruned over nonpruned plots. Value/acre was $85 greater in selective pruned plots as compared to nonpruned plots, and $100 greater than the heavy pruned grower-trimmed plots. This trial will be continued for at least one more year.

Any conclusions drawn at this time would have to indicate that pruning, particularly heavy pruning, of Ashley walnut trees does two things: it reduces yield and increases quality. The amount of pruning to be done to capitalize on the nut quality attributes without the penalty of reduced production will be the focus of the trial in 1981.