TREE TRAINING AND MANAGEMENT OF CLOSE-PLANTED WALNUT ORCHARDS.

Part I. Pruning Plots

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OBJECTIVES

Examine the growth and bearing habits of close-planted trees as influenced by environmental factors and use the information to see how orchards might be brought into production while maintaining the trees within reasonable size. The pistillate flower drop of Serr was studied concurrently.

PROCEDURES

Six rows of Serr and Chico trees were planted in Davis as hedgerows. At Vina, Chico trees were planted at 11x11, 11x22 and 22x22 foot spacings. In Gridley, mature bearing Ashley trees were brought under differential pruning. The same was done with Serr trees at the Williams orchard in Gridley and Damon Ranch in Wheatland.

RESULTS

After 5 years of collecting data from the Serr and Chico trees in Davis, the plot was removed, except for two rows for additional experimental use. At Vina, the 11x11 planting became culturally unwieldy so it was made into 11x22 by removing the middle trees. The 1981 yield from the 11x22 and 22x22 spacings are: 30.5 lb/tree where the 11x22 trees were pruned on one side on alternate years; 27.7 lb/tree where both sides of the trees were pruned annually; and 47.9 lb/tree on the 22x22 foot spacing. The lbs. per acre were: 5491, 4756, and 4309, respectively. The yield and pruning data from the Ashley plot in Gridley reveal that the trees in the pruned plots have gradually caught up with and surpassed the unpruned control trees. (see attached report.)

Pruning of mature Serr trees at Williams and the Damon Ranch showed no material increase in fruit set and, therefore, yield.

CONCLUSIONS

With highly fruitful varieties, such as the Chico, early high production can be achieved and sustained by judicial management practices. The Ashley plot indicates that light annual pruning to permit light penetration will provide a stable yield. Allowing trees to become shaded before pruning requires heavy pruning which will reduce yield for several years. If the trees are allowed to get too large, remedial pruning has little effect on restoring productivity because much of the inner wood becomes barren of fruitful spurs.