

AVOCADO BREEDING

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Variety Improvement. We are continuing to closely monitor 'Gwen' performance, with special concern for commercial weaknesses. Tree height has been greater on most commercial properties than with the earlier UC trees, apparently due to delayed fruiting from unfavorable weather or other factors. We are looking at means of controlling objectionable height, of 'Gwen' and other varieties. The Earhart grove of nursery trees, planted spring 1985, had a calculated per acre yield of over 20,000 pounds set spring 1988 for 1989 harvest. Preliminary fruit processing experience with 'Gwen' is favorable.

Second testing of grafted earlier selections led to discarding the majority this past year, with a few carried forward for a thorough examination. Some 155 new selections graded high enough overall to be entered into our new computer system; those that perform very well a second year will become candidates for second-test grafting. Thirty such were top worked last summer with the good help of Larry Rose and other members of the Nurserymen's Section.

Selections now being made from spring 1989 set are considered of special interest because most seedling set was inhibited by the April heat spell. Two years of frost had helped to sharply limit our seedling fruit for evaluation. The February 1990 freeze did little harm at Riverside or S.C.F.S., but 9/10 of our seedlings are on private property elsewhere and, alas!--some have been hit hard. At least this should help us to select for cold hardiness. Our final seedling planting last spring was of 3,500 trees.

Propagation. Since we met last spring, our avocado propagation bulletin (with Hank Brokaw and Alvin Lypps) has come out. It represents a large time investment, but we have heard the opinion that it is the finest propagation publication available for any crop. We trust that it will be useful to many of you. Gray Martin is continuing his researches on avocado propagation, with a major study comparing top-working methods well underway. Also, he has shown that summer budding can be surprisingly successful, by judicious wrapping with a common surveyor's tape.

Rootstock Improvement. Breeding for resistance to *Phytophthora* has been limited by unfavorable weather and grafting over to more promising parents. The final re-grafting for now will be completed this spring, plus expansion of our isolation plots with the encouragement of Dr. John Menge. About 550 seeds were turned over to Menge and Guillemet for testing.

Gray Martin is obviously essential to my program, but so far it has proved impossible to

obtain any UC financial support for him. Without industry funding, my avocado breeding project would largely collapse—I am very grateful to you.