

brighter in color than the latter, has size, but may be a little stringy. Freestone.

Kalhaven—For the basket trade, Kalhaven is probably the best at the present time for the season between Veteran and Elberta. Has good color and will size up when well thinned. May cling slightly in some seasons.

McGuigan—As a processing peach in its season, it is proving satisfactory in some cases. Produces well. Fruit has a bright yellow ground color. Lacks quality for dessert purposes, but cans reasonably well. Drops readily when ripe. Freestone.

Victory—Although the tree is somewhat dwarfed, it produces heavy crops of well-colored fruit which ripen a day or two before Elberta. Hangs on better than Elberta. Freestone.

Redskin—Has better quality than Elberta in most seasons. Did not color up quite as well in 1953 as in 1952, probably due to cool weather. Ripens a day or two before Elberta. Freestone.

Vesper—Ripens at the end of the Elberta season. Has size, color and quality for its season, but the tree is only medium in vigor. Is quite subject to bacterial spot. Freestone.

Cherry Breeding at the California Station

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Sweet cherry breeding carried on by the Department of Pomology at the California Agricultural Experiment Station at Davis is concerned primarily with two main objectives. The first is the development of early-maturing varieties which are needed to replace such varieties as Chapman, Burbank, and, especially, Black Tartarian—all of which have serious commercial faults. In addition, it would be desirable for the new variety to be able to successfully pollinate the triumvirate of Bing, Napoleon, and Lambert, which accounts for the main commercial production.

The second main objective is the development of white-fleshed cherries that will not produce doubles in the interior valleys of California, and will be suitable for canning and brining; in other words, replacements for Napoleon are needed.

The cherry breeding project was started in 1935 at the suggestion of

Dr. Warren P. Tufts, Chairman of the Department of Pomology of the University of California. Professor Guy L. Philp carried on the work until his death in 1947. The early hybridization work involved crosses between a number of the old, well-established, standard sorts. An outstanding seedling from these is Selection 46 which resulted from Lambert x Bush Tartarian. It filled the requirements of a new variety with one exception; it cracked badly in humid weather. This precluded its commercial release, although several acres were planted in California by 1946. One cross in particular, Bing x Bush Tartarian, gave rise to excellent seedlings, Selections 52, 55, 56, and 101—all dark-fleshed and large. These were propagated for evaluation in the commercial cherry districts by Professor Philp and are just now coming into bearing.

The second large planting of seedlings (approximately 700) was made in

1942. Professor Philp had made a preliminary evaluation of the trees of this group that came into bearing in 1947. Observation and evaluation of these and the remainder of the 700 trees continued through the ensuing years, and from them several have been chosen as outstanding. Selection 23A-3a is an extremely large, white-fleshed cherry resulting from the cross A-10 x Bush Tartarian. Thus far, it has not produced any doubles at Davis, in the Sacramento Valley, and it is hoped that the trees now planted in the San Joaquin Valley will continue to be free of doubles, a very important consideration in this area, as mentioned above. It, therefore, looks promising as a replacement for Napoleon. A-10, one of the parents of Selection 23A-3a, is an Oregon selection, not to be confused with the virus-free selection Royal Ann A-10, also from Oregon.

Selection 26-15 (Lambert x Long Stem Bing), Selection 18A-15 (A-10 x Ord), and Selection 30-9a (La Cima x Chapman) are all dark-fleshed cherries maturing seven to ten days before Bing. They look promising as replacements for early-maturing standard varieties such as Black Tartarian, Chapman, and Burbank. These new selections are now growing in commercial districts, but it will be some years before an evaluation can be made of them there.

For the home gardener, Selection 19-9 (A-10 x Ord) looks like a winner. A fourteen-year-old tree on Stockton Morello rootstock was only eight feet tall, yet bore a tremendous crop of large fruits, very similar to those produced by Lambert.

Approximately 800 seedlings resulting from the crosses made after 1941 are still undergoing evaluation. More recently the number of varieties used in crosses has been increased to 36. The crosses have also involved the use

of F_1 seedlings resulting from the primary crosses. However, attempts to back cross have, in general, not been very successful to date.

To bring into the genetic constitution of future seedlings germ-plasm of different and better varieties, pollen of outstanding foreign varieties growing at the United States Plant Introduction Garden at Chico, California, has been used in hybridization work during the 1953 and 1954 seasons. Thirty-seven of these varieties have now been propagated at Davis, beginning in 1953, so that these blood lines will be more easily available in the future. Representative of these varieties are Belle d'Annonay, Chrzętha Kozęska, Fruhe Mai, Bopparder Kracker, and Reverchon. Also, varieties of recent introduction from other sources are being propagated at Davis for the same purpose. These include such varieties as Sam, Van, Star, Sparkle, Lamida, Ebony, Spalding, Merton Bounty, Merton Heart, and Merton Bigarreau.

Approximately 16,000 to 45,000 artificial pollinations of emasculated flowers are made each year, depending upon the length of the season, weather conditions, and amount of manpower available. Since we are interested primarily in early-ripening seedlings, the difficulties of getting our early-ripening seed to germinate are hampering our efforts to obtain good early-maturing varieties.

At the present time, the Station has approximately 15 acres devoted to cherries. These include four acres devoted to the Variety Collection which consists of 142 varieties of sweet cherries, 17 varieties of sour cherries, six of Dukes, and 13 flowering cherry varieties; about four acres are given over to the Selection Block for testing further the outstanding seedlings; and the remaining acreage is planted to seedlings.