Peach Rootstocks

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Until several years ago, the Carolina or Tennessee "natural" peach seedling was by far the principal rootstock on which to bud peach varieties. The true "natural" seeds germinated easily, were plentiful, and the seedlings were uniformly vigorous in the nursery. Furthermore, peach varieties budded on "naturals" usually gave satisfactory orchard trees insofar as vigor and productiveness were concerned.

The true "natural" seeds have become very difficult to obtain in quantity, and are used less each year. Frequently only seeds of an assortment of varieties are available from sources where once reliable seeds were obtained. These seeds vary considerably in size and shape and are not dependable for germination in the nursery. About 12 years ago, it became evident that some source of seed for peach stock other than the Carolina "natural" would be necessary.

Seeds of plum and apricot varieties, as well as of many peach varieties, have been tested for growing seedlings for peach understocks. Plums and apricots are usually, but not always, unsatisfactory because they often produce a relatively weak and short-lived peach tree.

Many Peach Seedlings Tested

Dr. H. E. Gardner and Dr. P. C. Marth of the United States Department of Agriculture collected the seed of 57 different peach varieties and tested their value for rootstocks. After the nursery tests, the seedlings produced from these seeds were budded to Elberta and Halehaven varieties. These budded trees were planted in an orchard where the relative tree growth was compared. After 5 years in the orchard, there was no significant difference in the size of the Halehaven trees on the different peach variety understocks. The orchard, now 9 years old, seems just as uniform as if all the trees had been budded on seedlings of a single variety.

In the Elberta planting, however, the size of the trees after 5 years was slightly greater on Mao Tao (a Chinese variety) and on Muir than on Engle, Illinois, Mt. Rose, New Prolific, or Veteran. Elberta trees on Muir were also slightly larger than on Chili seedlings. Furthermore, Elbertas on Halberta were larger than on Engle. No significant differences were found between the other varieties used as rootstocks. All differences in the growth of Elberta trees on the large number of varieties used as rootstocks were small. The orchard appears quite uniform and only by detailed measurements are the differences noted. No incompatibilities between the budded variety and these 57 different rootstock varieties were found.

Selection of Desirable Seedlings

On the basis of several such important factors as germination, seedling vigor, uniformity, and growth characters, as well as on orchard performance, the most

promising peach varieties for rootstocks seem to be Lemon Free, Banner, Champion, Gold Drop, Admiral Dewey, and Lovell. Another important factor which must be considered is the availability of seed in large quantities. From this standpoint, the Lovell has a distinct advantage since it may be obtained in large quantities from the drying yards in California. The Lovell seedlings are becoming increasingly popular as peach understocks.

Nematode Resistant Varieties

Where nematodes are serious on peach roots, seedlings of such varieties as Shalil and Yunnan have been used recently. Although these varieties are not always completely free from nematodes, they seem to be the best varieties of which seeds are now available. Efforts are being made to find stocks that are still more resistant to nematodes and will produce vigorous orchard trees and also be satisfactory seedlings in the nursery.

Cherimoya Varieties in California

By C. A. Schroeder

"Deliciousness itself" is Mark Twain's description of the cherimoya. This attractive fruit, which claims the highlands of Peru as its home, is now found more or less generally in tropical and subtropical regions. It has been known in California for more than seventy years, but only within the past decade or two has it received attention which may result in its culture as a small commercial industry in the state.

The cherimoya (*Annona cherimola*) is known under other names such as custard apple, annona and chirimoyer. Botanically it is related to such fruits as the sugar-apple (*A. squamosa*), sour-sop (*A. muricata*), both tropical fruits, and to the pawpaw (*Asimina triloba*) of eastern United States.

Tree and Fruit Characteristics

The tree is a tender semideciduous subtropical which will withstand little frost and is intolerant to strong winds or extremely low atmospheric humidity. Numerous areas in southern California, however, provide suitable conditions for its growth.

The fruit is short conical to chordate in form. It ranges in size from three to eight inches in length and in weight from three-quarters to one and one-half