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CLONAL PROPAGATION OF PLUMS, CHERRIES STUDIED

Rootstocks for cherries and certain plums may be improved materially by clonally propagating superior plants of certain species or their hybrids. This approach to standardization of the nursery tree for further improvement is supported by research in Oregon and elsewhere. This research shows that differences in tree size and vigor, tree structure, disease resistance, fruit production, and soil adaptability can be achieved by such rootstock selection.

If desired rootstock effects are to be perpetuated without change, we must resort to clonal propagation. The propagation of clonal rootstocks for apple and plum trees is now well established. This method is also being used extensively in some areas with pear and walnut trees. There is good reason, then, for interest in the use and propagation of named understocks for cherries. Layerage - highly successful for propagation of dwarfing apple and selected Mazzard cherry stocks - has not been successful with Mahaleb cherry rootstocks and the semi-dwarfing cherry stock, Stockton Morello. While hardwood cuttings have been used successfully in propagating some plum stocks, they have not been effective for all clones, and have failed completely for the Mahaleb and Stockton Morello cherries. However, certain research workers have successfully rooted summer softwood cuttings of these difficult-to-propagate stocks.

To determine the future feasibility of rooting, on a large scale, softwood cuttings of certain desirable cherry and plum rootstock selections, a test of treatments was carried out in August 1963 at Oregon State. Cuttings 6 to 8 inches in length, bearing 5 to 6 mature leaves and 4 to small immature leaves, were taken from stock plants which had been kept vegetative by annual shearing during the dormant season. Cuttings from such stock plants were sufficiently mature for rooting any time after late July or early August. They were taken before growth had ceased and terminal buds had formed. In our test, cuttings were taken in the week of August 26. Cuttings were immediately dipped for 5 seconds in concentrated solutions of either 4,000 ppm indolebutyric acid (IBA) or 4,000 ppm IBA plus 600 ppm adenine sulfate. Previous studies have shown cuttings of immature stems of some species to root more readily following treatment with IBA plus adenine sulfate than with IBA alone. Following treatment, the cuttings were placed in sand with bottom heat (75 to 80° F.) and overhead misting for rooting.

Some cuttings rooted in 12 to 15 days. The cuttings were taken out of the rooting media on September 18, 23 days following treatment. The percentages of cuttings having well-developed roots are given in Table 1. These are based on 60 to 65 cuttings in each treatment. These results verify that most rootstock selections can be propagated in substantial numbers from softwood cuttings under mist. Certain of the selections may present special problems, but these can be

solved by proper timing and chemical treatment. Although adenine seemed to enhance rooting significantly only in a few instances, it never appeared to be detrimental.

These results are encouraging, considering the difficulty usually experienced when trying to propagate these materials. In all previous tests, untreated cuttings of some of these clones rooted little or not at all. Testing of these treatments will be continued in the hope that nurserymen will find it feasible to propagate commercially some of the superior Mahaleb selections now available.

Table 1. Rooting percentage of softwood cuttings of selected clones of cherry and plum rootstocks

Rootstock selection	4000 ppm IBA only	4,000 ppm IB A + 600 ppm adenine sulfate
	%	%
<i>Cherries:</i>		
Mahaleb 163091-----	92	81
Mahaleb 193701 -----	83	71
Mahaleb 194098 .---	74	73
Mahaleb x Mazzard (A)--	52	82
Mahaleb x Mazzard (B)--	50	58
Stockton Morello-----	55	37
<i>Plums:</i>		
Marianna 2623 -----	89	85
Marianna 2624 -----	87	84
Marianna 4001 -----	58	58
Myrobalan 29C -----	60	66
Myrobalan EM-B-----	55	55
Myrobalan 5Q---	55	35
Myrobalan 2-7 -----	73	75
Pershore Egg -----	29	39
Common Mussel -----	15	37
Marunke -----	58	78
St. Julian A -----	31	25
Michaelmas Prune -----	69	58

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