

Rooting Paradox Walnut Hybrids

promising method for vegetative reproduction of walnut hybrids developed by trench layering

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Twenty-four new shoots were produced by five layered paradox hybrid seedlings in preliminary trials at Davis in 1953.

In all but three cases roots grew from the bases of the new shoots above the point of attachment to the parent layer. Also, roots grew from the parent layer near the bases of three-quarters of the new shoots.

If this method of vegetative reproduction of walnut hybrids proves practical, nurserymen should soon be able to satisfy demands for hybrids, and research men will be able to go ahead with tests of individual paradox varieties on problems of replanting old walnut orchard land, variations in desirable vigor, and resistance to diseases and pests.

Propagation Method

In the 1953 tests, the five paradox seedlings were planted about March 1 in the bottom of a six-inch deep trench, at an angle of about forty-five degrees with the horizontal. As soon as buds started, the trees were staked flat in the bottom of the trench. Buds on the upper side were the only ones that grew.

As the shoots grew, the trench was gradually filled with potting mixture—one third each of loam, sand, and peat—keeping the level just a little below the growing tips. New material was added once a week while the shoots were growing rapidly. Material in the trenches, as well as the soil between the rows, was kept moist by regular nursery irrigations. Probably a light loam soil could be used instead of potting mixture for the filling material, but the soil should not be too heavy nor subject to bad cracking following rain or irrigation.

Trials Continuing

The shoots from the layers averaged 40" in height by the end of the season. In December there was an average of almost four roots growing on or near the base of each shoot. These roots averaged about one-sixth inch in diameter. In future trials, the layer sections will be cut apart without digging them up, with the expectation that the roots will develop rapidly during the second season. The budding of commercial varieties on the

shoots will be tried during the first summer in order to get a satisfactory nursery worked tree for orchard planting in two years, the same time required when seeds are planted.

Last spring, paradox hybrids of several selected varieties were budded on black seedlings in the nursery at Davis, and tops grew during the summer. This season they will be layered in the nursery for further tests. It is planned to trench layer additional varieties in order

to have about a dozen ready for orchard tests on a good scale in 1956. In the meantime, very vigorous paradox varieties from original trees growing well on soil known to be heavily infested with lesion nematodes are available to growers who want to try the trench layering method of propagation.

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Paradox walnut hybrid rooted by trench layering.

