

PROPAGATION OF FILBERT TREES BY LAYERING AND BY GRAFTING

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The introduction of new cultivars of filbert (*Corylus avellana*) for the production of hazelnuts in Oregon has sparked new interest in planting more orchards, thus creating a demand for more trees of the newer cultivars. *Corylus avellana*, having been in cultivation for the last 4,500 years, is easy to propagate by seed, or from selected cultivars by layering but the latter process is lengthy and laborious.

The most primitive method of propagating a desirable cultivar is simple division. *Corylus avellana* is prone to produce shoots from the base of the tree or root crown. These shoots, commonly called suckers, sometimes arise from below ground level and root naturally. The naturally rooted sucker is then simply cut from the mother tree and planted in the desired location.

PROPAGATION OF FILBERT TREES BY SIMPLE LAYERING

The commercial production of filbert trees in the Willamette Valley of Oregon is now accomplished by simple layering. A layer bed is established by planting cultivars on their own roots. When the plant is well established after 2 to 3 years the top is cut off near ground level, forcing the plant to send up a cluster of suckers. These suckers may then be bent down into the ground and out again leaving 12 in. or more sticking out of the ground to continue growing.

Roots will form where the stem is in contact with moist, well aerated soil. The layering process is best done in early spring when the buds are just beginning to swell. The shoots are quite supple and easily bent with a minimum of breakage. A trench 4 to 5 in. wide and about 6 in. deep is dug close to the clump of water shoots. Then, moving backwards on hands and knees, each shoot is bent into the trench and back out again. Soil is then back filled into the trench and tamped into place to keep the shoots from whipping back out of the ground. Still being attached to the mother clump, the new layers will sometimes reach 6 ft. in height in a single season. The tops have to be reduced considerably when planting in order to balance the small root system on the layer. Simple layering is expensive, uses a lot of land, and does not lend itself to mechanization or cultivar change very easily. Introducing a new cultivar is a slow tedious process.

PROPAGATION OF FILBERT TREES BY MACHINE WEDGE GRAFTING

Filbert trees can now be grafted successfully by using the hot callus treatment (2,3). I am using the Heitz Grafting Tool to make a fast, easy precision wedge graft (1). The desired cultivar is grafted onto 1-0 seedlings with a caliper ranging from $\frac{1}{4}$ to $\frac{5}{8}$ in. Scionwood of any cultivar can be taken from orchard trees rather than wait for a layer bed to be established. Thus a new cultivar with limited scionwood can be brought into production quickly.

LITERATURE CITED

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HOT-CALLUS GRAFTING OF FILBERT TREES

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The hot-callusing pipe, a grafting aid (1), was first introduced by Dr. H.B. Lagerstedt, U.S. Dept. of Agriculture, Agricultural Research Service, Corvallis, Oregon at the 1981 IPPS Western Region meeting in Vancouver, British Columbia, Canada (2). The first hot-callus pipe was a 2 in. PVC pipe with slots cut in it. Inside the 2 in. pipe, is a $\frac{1}{2}$ in. liquid-filled PVC pipe with heating cables taped onto both sides to maintain 80°F in the hot-callusing pipe.

In August 1981 the first large scale hot callusing pipe was constructed with 1,200 feet of 2 in. PVC pipe and 9,600 $\frac{1}{2}$ in. and $\frac{5}{8}$ in. slots cut perpendicular to the pipe. Three slots were cut at one time by clamping three pipes together, and with the use of a radial arm saw containing a variable width dato blade, the slots were uniformly notched.

The heat source for this system is circulating hot water through a $\frac{1}{2}$ in. PVC pipe inside the 2 in. slotted pipe. This is accomplished by using a closed system consisting of a residential 40-gallon gas water heater, $\frac{1}{4}$ H.P. 1,725 RPM electric circulating pump and a 20-gal. expansion tank placed 6 ft.