

SOFTWOOD CUTTINGS TAKEN FROM DEVELOPING HARDWOOD CUTTINGS

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The rooting of softwood cuttings from hardwoods began at Riverbend Farms in December, 1980, in a 96 × 27 ft. double polyhouse. We use a hot-water boiler for heating our benches with wood from our farm as the main fuel source. The heated benches are located in the front half of the polyhouse and are used for propagating evergreen cuttings and grafting. The space at the back of the polyhouse on the floor is reserved for propagating deciduous hardwood cuttings. Two additional polyhouses supply further space and storage for pot liners.

In December, 1980, I utilized the space past the heated benches to stick hardwood cuttings in flats, as listed in Table 1. The cuttings were approximately 4 to 5 in. and the media, our favourite, was a 6 sand, 4 peat, 3 perlite, mixture.

Table 1. Species from which hardwood cuttings were prepared

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| <i>Cornus alba</i> 'Elegantissima' | <i>P. parvifolia</i> 'Gold Drop' |
| <i>Forsythia</i> × <i>intermedia</i> 'Spectabilis' | <i>Spiraea</i> × <i>bumalda</i> 'Anthony Waterer' |
| <i>Kerria japonica</i> 'Variegata' | <i>S. × bumalda</i> 'Gold Flame' |
| <i>Lonicera japonica</i> 'Halliana' | <i>Symphoricarpos orbiculatus</i> |
| <i>Philadelphus coronarius</i> | <i>Weigela florida</i> 'Bristol Ruby' |
| <i>Physocarpus opulifolius</i> 'Dat's Gold' | <i>W.</i> 'Minuet' |
| <i>Potentilla fruticosa</i> 'Abbotswood' | <i>W.</i> 'Variegata' |

In March, 1981 the hardwood cuttings started to flush, and to form a small root ball. After the cuttings had developed a small root ball and had a good flush of new growth we potted them into 7 oz styrofoam cups.

In April, I tried the very soft young cuttings from the new pot liners. The cuttings, which usually have four leaves; were treated with Hormodin #1 and stuck in the bench or in flats, wherever space permits. We continue taking softwood cuttings as the various species flush. Taking softwoods from hardwoods can produce a double or triple crop in one season, before traditional softwoods in June, July, and August.

The softwood cuttings receive no mist, only occasional hand watering. The day temperature in early spring is warm but not hot. Roots develop quickly with some spirea cuttings rooted in 2 weeks. By May we were potting up our rooted softwood cuttings.

Before the end of summer, both the original crop of hardwood cuttings and the bonus crop of softwood cuttings were lined out. We like the heavy, well-branched plants harvested from our pot liners in the following 1 to 2 years. Grading is greatly reduced because the finished plants are uniform.

At Riverbend Farms we have utilized limited space, equipment, heat, water, and labor to produce softwood cuttings from developing hardwood cuttings. Utilization of early spring propagation also leaves more time during the summer to keep our nursery clean, to prune our evergreens, and to organize our inventory.

PROPAGATION OF *ILEX OPACA* BY CUTTINGS

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I will attempt to explain the procedures for propagation of *Ilex opaca* by cuttings that we have found most successful and profitable.

Cuttings are taken from healthy plant in mid-to-late December after a good freeze, prepared, and stuck in greenhouse benches filled with perlite and heated with bottom heat. When taking the cuttings, we try to make them at a finished length of 8 to 10 in., to reduce handling. Cuttings should be taken when the temperature is above freezing. This may be important. I lost about 100 cuttings this past year due, perhaps, to the "wind chill" factor. That is the only variable that was different in all the groups of cuttings. The actual temperature was about 36°F, but with a wind chill of 10 to 15°F. Of 105 cuttings taken under these conditions, only two rooted.

The cuttings are stripped, wounded, and dipped in the appropriate hormone solution. We strip the leaves on the lower 3 in. of the cutting. The bottom ½ to ¾ in. of the cutting is then wounded on two sides with a short piece of worn hacksaw blade. The wounded cuttings are then dipped in concentrated Chloromone for about 5 sec., followed by Hormodin #3.

I have been advised to use Chloromone on *Taxus baccata* 'Repandens' by Leonard Savella about 3 years ago. I also tried it on several other subjects, including holly. The Chloromone-treated holly cuttings rooted about 20% better than the untreated group.