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

KATHRYN K. MERCHANT

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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.

After the hormone has been applied, the cuttings are stuck in a bottom-heated bench, filled with perlite. We try to keep the heat in the bench between 68° and 72°F. At present, we are considering going back to sand. The perlite seems to break-down and hold too much water after 2 or 3 years. The cuttings are stuck about 25 to 30 per sq. ft. They are watered in by hand and then, as needed, to keep the medium slightly moist to the touch and to keep the foliage moist.

During the period the cuttings are in the bench, they are drenched about three times with a Benlate solution (½ table-spoon to a gallon of water) to help prevent leaf drop.

About late May or early June the cuttings are potted, set in a lath house for one or two years, and then lined out.

EVERETT VAN HOF: How much Benlate did you use?

KATE MERCHANT: One-half tablespoon/gal warm water. This is drenched over the cuttings.

PETER VERMEULEN: What was your bench temperature?

KATE MERCHANT: From 68° to 72°F.

ELWIN ORTON: What was the air temperature?

KATE MERCHANT: We do not try to heat the air. What-ever it is that day. We just heat under the bench. Last year, in a cold period, we had ice on the inside of the greenhouse walls, but the cuttings rooted well.

ELWIN ORTON: If you could keep the air at about 50°F and the medium at 70°F, you could up your percentage to 100%.

TOM MCCLOUD: Are your cuttings under mist?

KATE MERCHANT: No, hand-watered. We water the cut-tings in well when we stick them, and then water as needed to keep the foliage damp.

ROOTING CUTTINGS IN OUTDOOR MIST BEDS

ROBERT J. GOUVEIA
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We have been using outdoor mist beds at our nursery for 5 years. They are an alternative to a costly greenhouse struc-ture and the use of an expensive energy source.