

KALMIA LATIFOLIA—TISSUE CULTURE VS. CUTTINGS

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At Knuttel Nursery, we produce *Kalmia latifolia* (mountain laurel) for the nursery industry three ways. (1) From stem cuttings taken from existing stock. (2) We buy micropropagated plantlets that are grown in an accelerated growth program. (3) We take small stem cuttings from the growing micropropagated plants.

We have had good results from each method, and each method has merit in our program.

To propagate *Kalmia latifolia* from stem cuttings, we implemented a program inspired by the research presented by Alfred J. Fordham of Weston Nurseries Inc., Hopkinton, Massachusetts, at the 1977 meeting of the Eastern Region, International Plant Propagators' Society (1).

Kalmia latifolia cuttings are taken the first week in December from the current year's growth. We generally take cuttings from 2 to 4 in. in length. The cutting is wounded on one side. The wound is approximately one inch long and treated with a hormone. The hormone powder is a 2.2% IBA mixture (5 tbsp 4.4% IBA, 3 tbsp 0.1% IBA, 1 tbsp Dithane M-45 [Mancozeb], 1 tbsp. Benlate [benomyl], and a pinch of boric acid).

The cuttings are placed in beds filled with horticultural grade sphagnum peat moss and southern pine bark (6:1, v/v). The benches are tented with clear plastic. Bottom heat is maintained from 72 to 75 °F.

Roots begin to appear in three months. The plastic tents are then removed. Root growth continues and the plants are well-rooted in five months. We achieve from 92 to 95% rooting.

These rooted cuttings are planted into one-gallon containers, where they remain for two years. The first year the plants make substantial root growth, but very little vegetative growth. The following year the plants make vigorous top growth. The third year these plants are potted into two-gallon pots to grow to salable landscape size.

Five years ago we began to purchase tissue-cultured mountain laurel and grow them in a winter accelerated growth program (2). We purchase small rooted microcuttings in late fall to parallel our traditional cutting propagation program.

We pot the small plants into trays filled with a soil mix containing 2 yd³ softwood bark, and one yd³ each of vermiculite, peat, and hardwood bark. Dolomitic limestone, triple superphosphate, and

Osmocote 18-6-12 (8-9 month formulation) are also included in this soil mix.

The trays are placed on benches at a height of 3 ft. in a greenhouse heated to between 65 and 67 °F. The natural daylength is extended by night lighting five minutes every ½ hr. Standard greenhouse management practices are followed. Special care is taken to regularly prune the plantlets so that they become full, multibranched plants.

By June, we have well-established liners that we pot into 1½ gal. containers. At the end of the second growing season, we have full, 12 to 15 in. budded mountain laurel plants for garden center sales.

An additional method, cutting amplification, was suggested by Dr. Richard Jaynes. The tiny tips of the juvenile growing tissue-cultured plants are pruned and stuck unwounded into our tented propagation beds. Within three to four weeks, 97% of these small cuttings will have rooted, producing a large rootball in two months. These cuttings are taken from December to April, whenever the tissue-cultured plants need pruning. These rooted cuttings are then put in our one-gallon production cycle.

In conclusion, we feel that the various methods of mountain laurel propagation described can yield equal benefit for the commercial nursery.

LITERATURE CITED

- 1 Fordham, A J 1977 Propagation of *Kalmia latifolia* by cuttings *Proc. Inter Plant Prop Soc.* 27.479-483
- 2 Knuttel, A J and L K Benoit 1987 Growing rhododendrons from tissue culture *Proc Inter Plant Prop Soc* 37 321-323