

MOUNTAIN LAUREL SELECTIONS AND METHODS OF PROPAGATING THEM

RICHARD JAYNES

Connecticut Agricultural Experiment Station
New Haven, Connecticut 06504

Mountain laurel, *Kalmia latifolia*, is slow in growing from seed to flower and clonal propagation is difficult. As a consequence, demand for common mountain laurel exceeds supply and most of the special flower and foliage selections are either unavailable or expensive.

Selection and breeding studies in recent years have focused attention on the diverse kinds of mountain laurel. These include: red-budded, banded, pink, or white-flowered types; selections with petaled flowers, and some with willow-like leaves or miniature habit. The genetic diversity, clonal selections, culture, and propagation techniques were recently reviewed in a book (3). Laurel propagation has also been discussed by Jaynes (2), Eichelser (1), and Radder (4) in the Proceedings of the International Plant Propagators' Society.



Figure 1. A new seedling selection of the banded type, *K. latifolia* form *fusca* where the purplish-cinnamon brown pigment virtually fills the inside of the corolla. Crosses were made in 1976 to produce seedlings that will have the same deep coloration on the corolla face and, in addition, red pigment on the bud and back side of the open flower.

Seed. Mountain laurel seed is small, about 1.4 million seeds to the ounce. It will germinate without any special pre-treatment but the germination percentage of freshly-harvested seed can be enhanced about 50% by soaking for 12 to 24 hrs in



Figure 2. *Kalmia* 'Shooting Star', an unusual flower form of mountain laurel found in the wild in 1971 at Hanging Rock State Park, Danbury, North Carolina.

200 ppm gibberellin (GA). Seed stored more than 6 months requires no GA treatment for complete germination. The seed germinates best near 72°F; at 79° and 86° fewer seeds germinate and at 64°, although germination is good, seedling growth is slow.

Germination and seedling growth are greatly enhanced by enriching the air with CO₂ from the normal 300 ppm to 2,000, so long as light and other conditions are not limiting. Seedlings will sometimes stagnate, even under apparently good growing conditions, and form a "rosette". A foliar spray of 200 ppm GA is useful to stimulate such plants to elongate and resume growth.

Some selected mountain laurels can be reproduced true-to-type from seed. However, seed propagation of selections depends on knowledge of how the desirable traits are inherited. Red-budded, white-flowered, and miniature habit types are reproducible from seed if both pollen and seed parent are of the same type. Seed set from self-pollination is usually poor and plants grown from the seeds are often weak. Emasculation and hand pollination of flowers is tedious, but bumble bees can be "harnessed" to do the work. Parent plants with flower buds are planted together in the spring and before the flowers open the plants are covered with an insect-proof, screened cage. When the flowers open a bumble bee is placed in the cage. They are easy to catch in a jar when they are visiting a deep throated flower like weigela. The bee cross-pollinates the flowers and

the seed can be harvested in the fall. Banded laurel has not yet been produced completely true-to-type from seed, but 50% of the seedlings from a plant with banded flowers and pollinated by a normal mountain laurel will be banded.

Cuttings. Mountain laurel selections can be propagated from cuttings but are rarely propagated in this way commercially, indicating that there are problems. The best time of year to take cuttings is not agreed upon. My best success over the past several years has been with fall (early October) cuttings. Radder (4) had good success with July cuttings and Eichelsor (1) and others have had fair success for several years with December and January cuttings. A disadvantage with fall-rooted cuttings is the need for cold treatment of the rooted cuttings to obtain uniform flushing of new growth in the spring. Exposing the cuttings to long days with lights from the time of sticking is not enough. December-January cuttings have had enough cold to break dormancy after rooting. Rooting generally takes 3 to 5 months regardless of the time of year the cuttings are stuck.

The results of auxin treatments to stimulate rooting are mixed. Some clones respond to certain treatments whereas others consistently root without auxin or wounding. A few selected, relatively easy-to-root clones are listed in Table 1. *Kalmia latifolia* 'Pink Surprise' is a pink selection that roots with surprising ease. *K. latifolia* 'Ostbo Red' is propagated commercially from cuttings in the U.S. Northwest, but under our conditions is much more difficult to root than the other red-bud selections listed. Note that with these easy-to-root clones more than 50% of the cuttings root every year, whereas random selections average 10 to 40% rooting.

As more selections are tested for ease of rooting more will be found. Once good rooting clones are discovered cuttings should be taken from plants kept in the juvenile vegetative

Table 1. Rooting of fall cuttings of selected *Kalmia latifolia* clones in a humidity case; no auxin treatment. (Medium — 2 parts peat: 1 part perlite. Temperature — 70-80°F)

Selection ¹	Percent rooted ²							Average for all years
	1969	1970	1971	1972	1973	1974	1975	
'Pink Surprise'	100	50	90	93	80	92	70	76
×120 plt 18		50	60	82	60	72	60	66
×120 plt 23		55	100	100	90	87	80	82
×122 plt 9		86	80	90	—	96	100	93
×122 plt 11		89	67	62	100	92	80	80
×122 plt 13		92	—	80	50	100	93	87
'Ostbo Red'		20	23	0	10	48	40	34

¹ All selections are red-buds except for 'Pink Surprise'

² Aver. of 20 cuttings of each clone were tested each year

phase. Cuttings from 1 to 2 year old seedlings, young grafts, and rooted cuttings still in the vegetative phase root much more readily than those taken from older plants.

Grafting. Selections difficult to obtain from seed and unresponsive in the cutting bench can be grafted. The technique is essentially the same as that used for other evergreens, especially rhododendrons. They can be side-grafted or cut back and splice or cleft-grafted. Grafts made in late winter force rapidly. Sprouting from the stock is seldom a problem after the first season's growth.

Most of the unique and desirable characteristics of the mountain laurel selections of today can be genetically transferred to a race of miniature mountain laurel. However, until we can do a better job of growing the "normal" forms our enthusiasm for slower growing miniatures will have to be tempered.

LITERATURE CITED

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