

## PROPAGATION OF HARD-TO-ROOT RHODODENDRONS

JOHN E. EICHELSER

Melrose Nursery  
8620 Johnson Pt. Road, N.E.  
Olympia, Washington 98506

In light of the recent, rapid developments in tissue culture, one might wonder why we should still be concerned about improved techniques in rooting rhododendron cuttings. While dozens of rhododendron cultivars are now being successfully produced by tissue culture, there are many more that have not yet been tried, and several that have been tried but without success to date. Among the cultivars that have so far been unsuccessful are the cultivars with indumentum and, at least some of the yellow cultivars, also those with *R. fortunei* parentage, such as the *R. Loderi* hybrids (*R. fortunei* × *R. griffithianum*).

It is with those cultivars that fall in the above categories that this paper is concerned, such as all the *Loderi* hybrids, the various Naomi hybrids, and the cultivars with indumentum such as 'Ken Janeck', 'Bureavii', and *R. yakusimanum*.

Proper timing, to obtain just the right condition of the wood is even more important with difficult rhododendrons than it is with the rest of the genus. Cuttings of most of our difficult cultivars are propagated as early in the season as possible. In our location in western Washington we start with the earliest cultivars about mid-June. This can vary according to the weather, but usually not more than a week either way. At any rate the wood must still be soft, not mushy when squeezed between the fingers, but not yet at the brittle stage.

Cuttings that are too soft will turn dark and that portion of the stem which is in the medium will die quite rapidly. If too mature they will either take much longer to root or, not root at all.

Most rhododendron plants put on a second growth flush in late summer. The wood produced by the late growth, taken at the proper stage of maturity, which usually occurs in September, roots quite rapidly. We have found a few cultivars, however, which do not do as well at this time as the early cuttings. One example of this is 'Crest'. We usually obtain a high rooting percentage with this when cuttings are taken as soon as possible in the early summer. We have had some dismal failures from fall cuttings of 'Crest'.

In preparing these cuttings we always use a double wound, about one inch long. These cuts are made down to the wood but removing little or no wood. The basal cut is made at

a slight angle and both this and the side cuts are made with a sharp knife. We have tried making these cuts with a pruning shears, but we feel that the crushing effect of the shear has caused problems at times on difficult cultivars.

We have tried all the various kinds of hormones over the years but now use only "Dip and Grow". On the most difficult to root rhododendrons, we use this hormone at 3500 ppm. A shallow container is used to dip the cuttings in; not more than  $\frac{1}{4}$  inch of the base is submerged. This shallow dip is very important. If the cutting happens to be a little soft and tender, the lower  $\frac{1}{4}$  inch may be killed, but the cutting will form roots rapidly just above this point.

In trimming the cuttings we prefer to break the leaves instead of cutting as this does a cleaner job. No stub of the petiole is left to become diseased and infect the cutting. Three to four leaves are left, according to size. With large-leaved cultivars the leaves are cut back about one-half. Leaves on the small-leaved cultivars are not trimmed. Some disease problems have been reported in the past due to cutting back the leaves. We have never experienced excessive disease that we could credit to cutting leaves. Perhaps this is due to the fact that all our cuttings are dipped, before being made, into a Benlate solution (one tablespoon in two gallons of water). This is followed by an overhead application of the same strength solution about two weeks after sticking.

We prefer medium sized wood in making the cuttings. Large, heavy wood seems to root slower and is usually accompanied by large heavy leaves which take up too much space in the rooting bed. Very small, light wood usually produces a weak liner.

Our cuttings are rooted in a Gothic arch greenhouse covered with polyethylene. We have had equal success in covering the house with 50 percent shade saran cloth, or with spraying the outside with a light coat of paint before we have any hot days.

We do not maintain a block of stock plants. We collect our cuttings from the production area. Cuttings from young plants are preferred to those from older plants, as they seem to root better.

Our normal procedure is to take our cutting early in the morning; however, we have taken cuttings later in the day after the hot sun has been on them. These later-collected cuttings seem to root equally as well as cuttings taken at any other time. We do, however, spray them with water as soon as they are brought in from the field.

The benches in which these cuttings are rooted are six



inches deep, constructed of cedar and sprayed with copper naphthenate. Bottom heat is supplied by electric cables and a temperature close to 73°F is maintained. Some experimenting has been done recently with ½ inch hot water pipes placed six inches apart in the bottom of the bed. Results have been equal to electric cables.

A mist system is used, controlled by a micro switch which is activated by a moisture-balanced screen. This system compensates for dark days and nighttime. The greenhouse is ventilated by a vent fan which is thermostatically controlled to keep the house temperature down on hot days.

For many years we have been interested in the influence that sawdust seems to have on root growth of mature rhododendron plants. As a result we started experimenting with various types and quantities of sawdust in our rooting medium. The use of sawdust proved so successful that we now use a medium consisting of 90 percent sawdust and 10 percent peat moss on all rhododendron cultivars. Douglas fir and cedar sawdust seem to work equally well. Fresh fir sawdust and all cedar sawdust should be thoroughly leached before use. We accomplish this by placing it in the benches and thoroughly soaking it with a hose until the water running out is no longer brown.

The results of using sawdust are good aeration and drainage, resulting in rapid rooting and large root balls. We have avoided any serious removal of nitrogen from the cuttings by the sawdust by starting a feeding program as soon as the cuttings are transplanted.

When the above procedures are followed, we experienced no difficulty in obtaining an acceptable percentage in rooting cuttings of difficult rhododendrons.

## **ROOTING *ACER RUBRUM* CULTIVARS USING SINGLE NODE CUTTINGS**

J.A. ENGLISH

Shady Nook Gardens, Ltd.

9423 Gibson Road

Chilliwack, British Columbia V2P 6H4 Canada

We have been propagating *Acer rubrum* for a number of years; however the work done by E.R. Orton of Rutgers University on single node cuttings (Sept. 1978 issue of *The Plant Propagator*) made large scale propagation practical due to the better utilization of cutting wood.