

Cutting Propagation of Large Leaf Rhododendrons and Deciduous Azaleas®

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BACKGROUND

RareFind Nursery is a specialty nursery in central New Jersey. Our customer base is internet mail order, retail at the nursery, and high-end landscapers. We carry over 2,000 plants, half of which are rhododendrons and azaleas. Propagating our own rhododendrons is a necessity, due to the fact that our list contains cultivars not available elsewhere. Many of our plants are being propagated for the first time; therefore there is no rooting track record, as there is for standards such as 'Roseum Elegans', 'Nova Zembla', and 'Catawbiense Album'. In fact we rarely sell these standards, which are easily rooted. We do purchase tissue culture plants, which account for perhaps 50 of the 1,000 or so rhododendron and azalea cultivars we typically stock. Therefore we must root our own, usually in smaller lots, for which we are often "flying blind" with little specific cultivar experience. In a given year we root approximately 10,000 rhododendrons, but we rotate our list of plants and limit it to about 500 cultivars per year. This is not a formula for efficiency!

ROOTING LARGE-LEAF RHODODENDRON: ELEPIDOTES

- We typically start taking large-leaf rhododendrons on Aug. 1 and continue into November, refrigerating the cuttings in plastic bags for up to a week. Due to the large number of taxa we propagate, clearly marking each bag is important.
- All cuttings are taken off of this year's growth and are probably classified as semihardwood cuttings.
- Our preferred cutting wood is slender, in the 1/4-inch caliper range; however we will use heavier caliper material if the wood is scarce or if we are trying to swiftly increase the number of plants. Rooting success tends to decrease as the caliper increases.
- Successful rooting can also be dependant upon the age of the plant donating the wood. We see higher success rates from younger plants.
- The donor plants should be well watered, and the cuttings should be turgid. Cuttings are typically taken in the 4- to 5-inch range and cut back to 3 to 4 inches.
- Excess leaves are cut off until we have a rosette of 3 to 4; if the leaves are large, they will be trimmed back to half their normal length to reduce transpiration and to enhance air circulation.
- Using a box cutter, both sides of the cutting are wounded, slicing down to the cambium.
- A standard plastic tray (with drain holes) containing an 18-cell insert is prepared. The medium is 1 supercoarse perlite : 1 peat (v/v), pre-watered, but well drained.

- The rooting hormone we use is Dip 'N Gro® concentrate. We modify the dilution rate as the season progresses and the cuttings harden:

Month	Dilution Ratio
August	15:1 and 10:1
September	10:1 and 8:1
October	8:1
November	8:1 and 5:1

- As many cuttings as can be held are dipped in the hormone solution for 5 to 6 sec and then placed one to a cell in the plastic flat.
- The cuttings are watered in and placed under intermittent mist; in our case it is 5 to 6 sec on and 5 min off. This timing must be watched and adjusted depending upon the weather—especially on cloudy versus sunny days.
- Some of our benches are tented, and others only have plastic sides. We do not see differences between the two methods.
- Our large Lexan propagating house is run at 65 °F in fall and winter. Hot-water bottom heat is run at 70 °F.
- Rooting begins at 30 days, and feeding with ¼-strength liquid fertilizer begins at 45 days.
- As rooting progresses, the heavier rooted trays are moved to another heated house until spring when they are up potted into 300's. Liquid fertilization continues at half the normal rate. As they go outside, the full rate is applied.
- Overall success rates are generally in the 65% to 70% range, but individual cultivars can be highly variable. This rate is lower than what has been reported for standard cultivars, but given the untested cultivars we grow, we are not sure if the ratio can be improved.

ROOTING DECIDUOUS AZALEAS

- Ninety five percent of the 120 deciduous azaleas we grow are American natives or native hybrids. There are 20 cultivars, which are in tissue culture, and the remainder is rooted cuttings. The basic rooting principles are the same for large-leaf rhododendrons and deciduous azaleas, but some of the details change:
- Deciduous azalea cuttings are taken in late May to early June. They are usually classified as softwood cuttings and are just hard enough to snap.
- Our rooting medium, the stripping of leaves, wounding techniques, misting and bench heating are the same, except more care needs to be taken due to the fragile nature of the softwood cuttings. Cuttings are stuck in 24 cell trays
- We use Dip 'N Gro in the following dilutions:

Month	Dilution ratio
May	20:1 and 15:1
June	15:1 and 10:1
- Rooting occurs in the 4 to 5 week range. One-quarter-strength liquid feeding begins at the 6-week level and gradually increases to half-strength until they are potted in 300's in spring.
- We do run extra lighting in the fall to force growth or bud swelling before they go into dormancy. We also apply more heat in the spring to encourage their breaking dormancy.