RHODODENDRON PROPAGATION

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Our nursery is located 20 miles from the nearest rail head, 60 miles from the nearest airport, 100 miles from our main market of any size. Since the loss of our local rail link three years ago some changes have had to be made in our nursery production. In the past it was easy to take our tractors and trailers to the local rail station and consign flower budded plants to the garden centres. Now, without this convenience, we have to do this transporting ourselves. (We find the local trucking firms have no plant sense and our product can arrive in very poor shape when left to them.) With this in mind we have moved away from the production of full-size plants to liners, which are taken to other growing nurseries nearer the population areas This has also meant a greater interest in new cultivars. These have to be bulked up from very small numbers which may have been imported from other countries, or from friends or acquaintances of single pieces from newly named and registered plants. To achieve this we maintain a quantity of *Rhododendron* 'Cunningham's White' for either grafting or chip budding some of this very limited material onto By doing this we can gain two to three years. Occasionally we saw down a plant of an old obsolete cultivar and green graft on it one of the newer more outstanding cultivars and, in this way, we can have remarkably vigorous growth which gives us a large bush from which we can take a large number of cuttings in three years.

GRAFTING

We only use this method for a special purpose, as mentioned previously, or where an already popular cultivar is difficult to produce from cuttings, e.g. *Rhododendron* Loderi Grex. Propagation from cutting-grafts onto *Rhododendron* 'Cunningham's White' is a more efficient use of propagation space giving 50 percent more plants from a given area of mist bench. In *R. yakusimanum* we find that we can gain a year's growth by using cutting-grafts. Once again we think this to be worthwhile for such a popular plant When making cutting-grafts it is possible to remove all buds from the stock while wounding. This avoids one of the big disadvantages of grafted rhododendron, which often sucker.

CUTTINGS

Having mentioned some of the lesser used methods of

rhododendron production I must stress that cuttings represent over 90 percent of our production and we favour this method wherever possible Our propagation houses (12′ × 50′) are designed with benches containing 4″ of fine sand in which are imbedded ½″ hot water heating pipes spaced 6″ apart. The thermostat is set to give a bottom heat temperature of 70°F at the base of the cutting. On these benches are placed the trays of cuttings. The misting is controlled through an Aquatron mist unit coupled to a weaner, which is the electronic leaf type. We adjust as near as possible to give a short quick burst of mist to maintain a coating of water on the leaves but have as little run-off as possible.

The cuttings are collected mainly from stock plants growing in a lathhouse while the dew is still on the leaves. They are placed in plastic bags in a coolstore until required. We prefer only to collect the cuttings required for that day; however, we do store some cuttings up to 14 days without apparent damage. The type of cuttings we prefer are half ripe and still feel rubbery in the hand. Most clones are at this stage in New Zealand sometime from January to March (late summer). Like most things in horticulture there are exceptions and we find that cuttings of some of the old hardy hybrids, e.g. *R.* 'Fastuosum Flore Pleno' root best when much harder, as in April or even May.

The cutting are made 3″ long with three leaves, often shortened back so that they do not overlap when inserted in the cutting trays. The basal 1″ is given a heavy wound into the cambium layer on one side. At this stage the cutting is placed in a suspension of Captan and left to drain before being dipped to the full length of the wound in a rooting hormone. The rooting powder consists of 1.5 percent IBA + 2½ percent Benlate and 2½ percent Captan in talc. The cuttings are then inserted in trays and placed in the propagation house. We prefer to have, if possible, only one cultivar per tray as this helps to prevent mixing; also all the cuttings then root at the same rate. The cutting mix consists of 50 percent sphagnum peat moss and 50 percent sand of similar particle size.

To keep aeration high we handle the trays carefully so that the mix stays soft and fluffy. While the trays are under the mist we drench fortnightly, alternating between Captan and Benlate. At this time care is taken to remove any dead or decaying leaves from the propagation house as they appear. After six weeks for quick-rooting types and six months for the most stubborn we harden them off by placing the trays in an unheated glasshouse. The cool treatment should continue for about six to eight weeks at about 40°F but never down to freezing. After this, the rooted cuttings are ready to be potted

on. Should time not be available at this stage we water the rooted cuttings weekly with MaxiCrop. This prevents the plants from starving while they wait for cuttings of the other cultivars to catch up with them. In this way we can pot most at the one time, or send most of their order out to other nurseries.

The plants we retain for ourselves are potted into 4″ p or P.B. 1½ and, at first, are in a 50 percent shaded plastic tunnel house but later, as they settle in, the plastic is removed and they grow the remainder of the summer in a 50 percent Sarlon shade cloth tunnel.

In the autumn the well-established plants are planted in raised beds in a lathhouse where they remain for two growing seasons. As they grow through the following summer the terminal buds are removed as soon as they are large enough but have not begun to harden. By doing this the plants continue to grow and become very bushy. By growing a few of these larger plants we can monitor our propagation techniques and sometimes obtain a few extra cuttings from clones we are short of.

LEAF-BUD CUTTINGS

When very short of propagation material leaf-bud cuttings may be used. These are particularly successful when dealing with easy-to-root clones, which have large buds, e.g. *R.* 'Anna Rose Whitney'. Care must be taken when making and dealing with these since, if the hormone is placed too near the bud, problems may be encountered by good roots developing but the bud will not break. Also the large leaves have to be carefully supported, otherwise they may fall against each other and so begin to decay.

SEED

Seed is used for the production of selected strains which flower quickly from seed, e.g. *R. racemosum* 'Forrest's Dwarf', or which are usually used as a foliage plant, e.g. *R. macaebeanum*. It is important to select the seed carefully or a very variable crop can result.

The seed is sown on a chopped spagnum moss veneer on potting soil during August. When the cotyledons are fully developed the seedlings are pricked off and established under mist for the first week and then weaned and kept in a shaded glasshouse for eight weeks By this time the weather has warmed sufficiently and the seedlings are large enough to go into a 50 percent shaded tunnel where they remain for the remainder of the growing season. Deciduous azaleas are treated in the same manner and have proved very popular when hand pollinated seed has been used.