

The Production of Evergreen Azaleas in a Sub-Tropical Climate

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It is often thought that Brisbane is too hot to grow Indica azaleas (*Rhododendron*). Our climate is subtropical with summer day temperatures averaging near 30C and winter day temperatures 15C. We are situated on a latitude of 27°S and have an average annual rainfall of 1150 mm (45 in.) which predominantly falls in the summer months.

This paper will outline how we have adapted this particular plant to our environment.

CULTIVAR SELECTION

Careful matching of cultivar to environment is perhaps the key to success in any crop. In azaleas we look for the following traits for a successful cultivar:

- Flower colour
- Amount of flower
- Flower longevity and holding capacity
- Number of flower flushes in a year
- Foliage colour
- Growing habit of plant
- Overall appearance
- Resistance to diseases
- Ability to propagate.

Our trials to access the above characteristics can quite often take 2 to 3 years. One year is not enough time to evaluate fully the potential of a new cultivar, as quite often the plant can perform above or below average in the first year and needs more time to settle into its new environment. It is also very important that we trial our own plants that we have propagated and not plants that we have brought in from outside our system, as they may behave differently.

PROPAGATION

Medium and Nutrition. The propagation medium is a 1 peat and 1 sand (v/v) mixture. Dolomite is incorporated at a rate of 1 kg/m³. There are no fertilisers added at this stage of production.

Facilities Required. If propagation is timed correctly no heating or cooling is required. Therefore, we need only to control light intensity and relative humidity. Light is controlled by no less than 50% shade cloth and a mist system is used to reduce water loss through transpiration from the cuttings.

Availability of Cuttings. Being an evergreen, material is available all year-round, however, cuttings are taken from January to April. In our system cuttings taken any later than April do not root because root initiation will be without temperature control and the cold causes dormancy.

If timed correctly, the collection of cuttings may act as a light pruning for the growing crop from which the cuttings are collected.

Method of Propagation. Semihardwood cuttings are used and they are collected in the morning before the heat of the day. The cuttings are kept moist until they are prepared and planted. Preparation of the cutting involves grading to length, removing unwanted leaves, and removing the apical bud. The average cutting length is 10 cm and the bottom two-thirds of the leaves are removed, leaving intact a minimum of three leaves on the cutting. The apical flower bud is removed to promote vegetative and root growth.

Once prepared, the cuttings are planted one per cell in cell trays. Rooting hormone powder containing 8 g/kg IBA is applied to the base of the cutting immediately before planting. Planting depth is approximately two-thirds the depth of the cell. Root initiation is inhibited with deeper planting and shallower planting may not give the cutting ample support.

It is very important to use protective fungicides to minimise diseases in the wet, humid conditions under mist. We have found that an application of Thiram (active - 800 g/kg Thiram) no later than three days after planting, will significantly reduce disease incidence.

Hygiene. Hygiene plays a critical part in successful Azalea propagation. It is crucial that anything touching the open wounds of the cutting be disinfected or sterilised.

Hardening Off. Misting frequency is gradually reduced as the cuttings develop their own root systems. It takes approximately 10 to 12 weeks from taking the cutting to developing the plant to the stage whereby it no longer requires any mist.

GROWING ON

Media and Nutrition. The medium used consists of 2 composted hardwood sawdust, 1 composted pine bark, and 1 peat (by volume), to which is added a basal level of nutrients. Ongoing nutrition is supplied via a slow-release fertiliser added at 5 to 6 kg/m³ as a direct dibble at planting. This is supplemented as needed with liquid feeding.

Potting. Potting from propagation tubes into 140-mm (6-inch) pots takes place during October, November, and December. The planted pots are placed out on their growing beds. These need to have good drainage away from the bottom of the pot. The single-flowering cultivars grow on beds in the full sun and the double and kurume cultivars grow under 30% to 50% shade provided by shade cloth.

The majority of these plants will be sold in the following spring (August to September). Some early-flowering cultivars are sold from April onwards.

Pruning and Training. All plants are pruned and trained. The first light pruning occurs in January when cuttings are taken for the next crop. This pruning encourages the plant to fill out. Soon after all propagation material is collected, each plant is individually trained by pruning back unnecessary wood and creating a framework, so that at the time of sale the plants will be well structured. Plants have to be pruned no later than early April, otherwise they have insufficient time to set buds for spring.

Water Quality. Diseases caused by *Phytophthora* species are common in azaleas. Contaminated water must be treated.

Plant Protection. Weeds in pots are controlled with pre-emergent herbicides or pulling by hand.

Insect pests are monitored and sprayed on a need basis only, whereas fungicides are sprayed on a regular preventative program.

CONCLUSION

By careful selection of cultivars we find that evergreen azaleas are a very successful crop for us here, even though our climate is often thought to be too tropical for this crop.