

Mollis Azaleas, a Window of Opportunity®

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INTRODUCTION

The azalea mollis group of deciduous *Rhododendron* hybrids have generally been derived from several species, and were introduced into cultivation as follows:

- *Rhododendron molle* subsp. *japonicum* from Japan in 1861
- *Rhododendron luteum* from Eastern Europe and Asia Minor in 1793
- *Rhododendron molle* from China in 1824
- *Rhododendron occidentale* from North America in 1851
- *Rhododendron flammeum* (syn. *R. speciosum*) from North America in 1789

From Belgium and Holland the Ghent and Rustica forms were hybridised with single and hose-in-hose forms. English nurserymen produced the Exbury and Knap Hill hybrids. All these forms have been hybridised and re-crossed in Western Europe and England with many beautiful hybrids being produced.

At about the same time as the Exbury hybrids appeared, Edgar Stead of Ilam (in Christchurch, New Zealand) developed the Ilam strain by crossing the almost sterile Ghent 'Coccineum Speciosum' and 'Unique' with large flowered English mollis types. His strain was a larger flowered Ghent type with wide flaring florets in larger rounded trusses, some with nicely frilled petal margins.

Dr. Yeates of Palmerston North carried on this work and his Melford strain is the one with which I am most familiar. He selected and named two dozen or so of his best hybrids which all have big trusses of intense colours, with the individual blooms large, flared, and frilled. The hybrids which Duncan and Davies grew included those shown in Table 1.

Denis Hughes of Blue Mountain Nurseries has continued hybridising this general group of deciduous azaleas, expanding the scope with some excellent new forms, doubles and pastel selections.

The propagation of the azalea mollis group in the first half of the 1900s was from labour intensive layering, or grafting onto *R. luteum* seedlings which were prone to suckering beneath the graft and thus unsatisfactory. Many were grown from seed but only a few selfed forms came true to type. However with the advent of intermittent mist propagation methods, production from cuttings became a possibility. Root-inducing hormone treatment of vegetative soft to semi-ripe cuttings enabled selected named clones to be produced viably on a commercial scale. In more recent years tissue culture methods have enabled these deciduous *Rhododendron* hybrids to be produced commercially in large volumes. However my paper is aimed at the average small family nursery where modest propagation facilities and production of a wide range of products in quantities more in keeping with our smallish ornamental nursery market here in New Zealand.

At Duncan and Davies, softwood to semi-ripe cutting production of Dr. Yeates' Melford strain under an intermittent misting system began in the early 1970s and was a successful commercial production method. Numerous production trials were

Table 1. Melford strain hybrids bred by Dr. Yeates and grown by Duncan and Davies.

Hybrid	Description
'Carmen'	Pale salmon yellow with golden flare. Early flowering.
'Chartreuse'	Pale yellow with soft orange flare, buds lime green. Late.
'Jasper'	Pure vermilion red. Frilled, mid season.
'Ilan Louie Williams'	Delicate soft pink suffused cream. Large heads, frilled florets. Compact growth habit. Mid season.
'Martie'	Dusky red, frilled. Late.
'Melford Flame'	Fiery orange, frilled. Large compact head. Mid season.
'Melford Gold'	Golden orange overlaid with bronze. Mid season.
'Ilan Melford Lemon'	Glowing saffron yellow, apricot flare. Large florets. Mid season.
'Melford Red'	Rich orange red. Early to mid-season.
'Melford Salmon'	Bright salmon, orange flare, large frilled florets. Compact habit. Mid season.
'Melford Yellow'	Clear lemon yellow, orange flare, frilled. Mid to late season.
'Ilan Ming'	Brilliant tangerine orange. Large florets. Early to mid season.
'Persian Rose'	Neyron rose, prominent orange flare, very frilled margins. Large compact heads. Mid season.
'Red Ball'	Intense mandarin red, frilled compact heads. Late.
'Red Frills'	Deep scarlet red, frilled. Compact heads. Early.
'Red Gem'	Clear, luminous red, large florets. Compact head. Early to mid season.
'Red Giant'	Intense blood red, frilled. Compact heads. Mid to late season.
'Yellow Beauty'	Vivid buttercup yellow, deeper flare. Florets and heads very large. Mid to late season
'Yellow Giant'	Vivid buttercup yellow, deeper flare, large florets. Mid season.

undertaken testing various timing of cutting taken with different rates of root inducing hormones — IBA and NAA tested on semi-ripe vigorous vegetative young shoots. Results achieved indicated that by carefully monitoring shoot growth and timing of cutting collection, good commercial rooting percentages could consistently be achieved with various selected clones.

The window of opportunity offered by these deciduous azalea mollis hybrids is largely one of recognition of the vital right physiological state of the vigorously growing shoots and the correct timing of the cutting collection. This is the key. Collected too soft and the cuttings will rot at the base. Collected too firm and they do not give a viable rooting percentage. George Smith, our mentor and master propa-

gator at Duncan and Davies, taught us to recognise the crucial time, just when the outer whorl of leaves on the new shoots reach mature size and showed a firming blush. The time each year can vary depending on seasonal variances, usually from early to mid-November to about the end of the month in New Plymouth.

Mother stock has to be in a healthy, vigorous, vegetative state; well maintained and fertilised, hedged, and winter pruned to give strong, vital cuttings. But better still, the crop-grown young plants with youthful vitality give the highest percentage cutting strikes. The cuttings collected early in the cooler part of the day are held until processed in a dark, cool room at around 10 °C, but cuttings should be made and stuck as soon as possible.

Cutting making at Duncan and Davies was done with stainless steel surgical scissors, one blade file sharpened to a knife edge. This enabled cutting makers with no skills or experience with sharp knives to confidently make cuttings at a fast rate. The approximate 10–12 cm long cuttings with soft tips left in, base wounded on one side with a slicing motion, just exposing approximately 15 mm of cambium, making a larger contact area for the hormone powder's stimulation. Treatments used were talcum-powder-based IBA 0.8% or a 50/50 mixture of NAA 0.4% and IBA 0.8%. Cuttings are set in multipot plixi 54s in a medium of 50% good Cumberland peat and 50% cutting grade perlite which gave air-filled porosity of around 30%. Propagators will have their own media recipes which give them best results in their own varying facilities. Stuck cutting trays were placed in a poly tunnel intermittent misting house with bottom heat at 21 °C, lightly shaded, relatively bright natural light, misting controlled by a solar radiation calorie energy counter, solenoid sequencer system, with misting gradually reduced after the first 3 weeks. The azalea mollis-type cuttings take 8–10 weeks to root sufficiently for potting up.

The 8–10 weeks of rooting time from around mid-November makes potting up time around the end of January and into early February. Deciduous azalea mollis types are active, long-day-length plants, and as day lengths shorten they produce terminating overwintering buds, and quite quickly growth processes shut down. This can be detrimental to the establishment of the cuttings, hence the need for supplementary lighting. It is important to maintain daylight hours in a positive long-day-length regime. This enables potted up cuttings to continue to grow and develop a strong root system to utilise the nutrition in the potting medium to build an overwintering food store. Without supplementary lighting and extended day lengths the cuttings fail to establish strongly before becoming deciduous, and overwintering losses occur.

The window of opportunity for the deciduous azalea mollis types is a narrow one, but one that the “in tune” propagator can exploit for good financial reward. The many beautiful, easily grown, hardy hybrids produced by New Zealand breeders such as Edgar Stead, Dr. Yeates, and Denis Hughes, are all very desirable colourful ornamentals that have been poorly utilised by the garden industry in this country. In my view this is an opportunity waiting to be exploited.