

one of the most popular native plants to be grown in recent years, because of its rapid growth, all year flowering, and proven reliability in a wide range of climatic conditions.

The native nectar-feeding birds are welcome visitors to any garden and the sub-tropical and tropical grevilleas, such as *G.* 'Misty Pink', *G.* 'Pink Surprise', *G.* 'Sandra Gordon', *G. banksii*, *G. pteridiifolia*, *G.* 'Honey Gem', *G.* 'Starfire', *G.* 'Pink Parfait', *G.* 'Ned Kelly', etc., are excellent plants for attracting these birds. The hybrids with their showy, vividly coloured flowers, are very good for use in floral displays and arrangements. The flowers last at least as well as most common cut flowers and, because they flower for most of the year, there is never any shortage of fresh flowers.

Their use in parks and public gardens, in private gardens, and as roadside planting would result in an abundance of colour and nectar-feeding birds and animals.

With such a wide range of flower colours and growth habits there is a tropical and sub-tropical grevillea, or hybrid, for every garden and landscape.

## HIBISCUS PROPAGATION IN COOL CLIMATES

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In earlier years, Melbourne nurserymen usually propagated *Hibiscus rosa-sinensis* cultivars in late winter to early spring from hardwood cuttings taken from established garden plants. Results were quite often variable and unreliable, particularly with less hardy cultivars, due to frosty conditions affecting the parent plants.

When the struck cuttings were potted into 125 mm pots they generally did not attain saleable size until early summer, thus missing out on late spring sales.

With experimental batches of cuttings taken during summer and autumn, I found that success rates with soft tip and vigorous stem cuttings were much better and more predictable.

A strike rate of 90% to 95% was achieved consistently with soft tip cuttings approximately 100 to 125 mm long. An

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<sup>1</sup> Formerly at Charman Road Nurseries.

IBA in talc (0.5%) cutting powder was used over a range of both common and Hawaiian cultivars.

**Table. 1** *Hibiscus rosa-sinensis* cultivars used in the trial.

*Hibiscus rosa-sinensis* cultivars:

'Mrs George Davies'	'General Courteges'	'Agnes Galt'
'D. J. O'Brien'	'Cameo Queen'	'Wilders White'
'Mrs Tomkins'	'Sabrina'	'Wrightii'
'Andersonii'	'Copper Queen'	'Johnsonii'

*H. rosa-sinensis* Hawaii cultivars:

'Surfrider'	'White Kalakua'	'Covakanic'
'Catavki'	'Miss Venno'	'Mary Forbes'

To obtain sufficient suitable cutting material, a quantity of selected plants from the spring crop were potted into 200 mm pots in early summer (early December) and grown inside a polythene igloo, which had been coated with Parasolene® glasshouse paint on three separate occasions. The igloo was well ventilated on sunny days to prevent overheating, and the plants were liquid fertilised to maintain rapid growth. Cuttings were harvested from mid-summer to mid-autumn (late January to the end of April).

Prior to preparation, the cutting material was immersed for 30 to 40 sec. in a solution of Aliette® fungicide (fosetyl 74%) at the rate of 10 grams of product to 10 litres of water. After preparation, the cuttings were dipped in a 0.5% IBA in talc, and then placed in plastic trays in a steam sterilised medium of 4 parts coarse river sand to 1 part German peat moss.

The propagation house was a conventional glasshouse with thermostatically controlled ventilation, and heated benches 65 cms above the floor. The 200 mm deep sand propagating beds were heated by basal hot water pipes at 100 mm centres and bench temperature was thermostatically maintained at 22°C. The mist system was controlled by an artificial leaf and pivoting balance arm. Benches for establishing stock after tubing were constructed of asbestos cement sheet over thermostatically controlled heating pipes, without misting sprinklers.

Healthy root development occurred after 4 to 5 weeks during summer and early autumn but took longer as daylight hours grew shorter and sunlight intensity decreased in late April and May. Strong, vigorous cuttings with good root development were potted into 75 mm tubes, whilst smaller cuttings were potted into 50 mm tubes; both sizes were placed on the heated bench without mist and kept in the glasshouse for a further two to three weeks until well established in the tubes.

Subsequently they were transferred to a polythene igloo and placed on wire mesh benches 100 to 150 mm above the floor. This procedure maintained hygiene, promoted air pruning of root systems, and insulated them from the cold ground temperature over winter.

Electric fan heaters within the igloos maintained a minimum air temperature of 10°C during winter, enabling the plants to carry through in good condition ready for potting on into 150 mm pots in August. Igloos were of double skin construction giving extra protection from extreme cold conditions.

After potting on, the plants were grown on in the igloos and by early October some of the better developed plants were suitable for moving on into 200 mm pots. The remainder of the crop was ready for sale in late October to early November and the 200 mm pot size saleable by December. Regular fortnightly sprayings for fungal control was carried out during winter and spring with alternate applications of Rovral® (iprodione) and Aliette®.

Hibiscus require high nitrogen levels during spring and summer to attain maximum growth, therefore a weekly or fortnightly liquid feeding programme was essential.

This method of propagation has enabled *H. rosa-sinensis* to be propagated during autumn and winter ready for sale in spring, with a high degree of success.

## VEGETATIVE PROPAGATION OF HYACINTH

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The hyacinth (*Hyacinthus orientalis*) is a member of the Liliaceae family and is a native of the Mediterranean and Asia Minor. It is called the Dutch hyacinth and is a true bulb. Bulbs are highly modified underground structures which are made up of swollen leaf bases. These tissues hold food reserves which are used for the growth of the plant.

Except for the specialist bulb producers, few people have any knowledge of hyacinth propagation. Only a few books on propagation carry any reference to them, and their morphology is not well understood.

The main areas of bulb production in Australia are Victoria, New South Wales, and South Australia. Hyacinths are produced for use as pot plants and for the home garden.