

spraying. There is some growth of moss and weeds on uncovered areas of the matting but these are readily cleaned off by scraping with a tile layer's trowel. The build-up of roots from the plants in the mats has little or no effect on their efficiency and, so far, it seems that at least three years can be expected from each felt.

LITERATURE CITED

1. Bunt, A. C. 1976. *Modern Potting Composts*, London; George Allen and Unwin Ltd. pp 208–213.
2. Richards, Murray. 1978. Capillary watering of container-grown plants, *Proc. Inter. Plant Prop. Soc.* 28:411–413.

THE BASICS OF PROPAGATING BOUGAINVILLEA

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Bougainvillea plants grow readily in tropical and sub-tropical areas, and can easily be produced in the Sydney metropolitan area. Care must be taken however, in positioning these plants in the colder and more frosty areas. With careful positioning these delightful scramblers can be encouraged to grow indoors, and in glass-houses and arboretariums.

There is a lucrative market for bougainvillea in Australia, as they give a beautiful display of colour throughout the summer, which makes them very popular.

To successfully grow this plant a sanitation program to eliminate disease should be used. This should begin before the cuttings are taken from the mother plant, rather than trying to arrest problems after the cuttings have been made.

Mother plants are grown in large shrub tubs in polythene tunnels to produce the correct type of cutting material. They are watered by trickle irrigation, because the sprawling habit and the large thorns make conventional watering very difficult.

Mother plants are sprayed on a weekly basis with Zineb at 60 g/100 liters, Benlate 7 g/100 liters and 5 ml wetting agent per 100 liters.

Spraying is discontinued one week prior to cuttings being taken to reduce the hazard to the staff. Cuttings are not sprayed after they are made because the leaves are prone to drop off.

Bougainvillea drop their leaves quickly after being severed from the mother plant if they are not watered immediately. It is

essential to spray the freshly cut material and the newly-made cuttings.

The ideal time for making cuttings is from early spring to mid-summer (September to January). The wood is considered suitable as soon as the new green growth is firm, and has reached a stage where it will not snap. Cutting material is collected in the early morning and kept moist under mist until all cuttings are processed.

Cuttings are made with double nodes, as these have proved superior to single node cuttings. Cuttings of 15 to 17 cm in length are severed 0.5 cm below the bottom node. The lower leaves are removed and the top leaves are halved. Cuttings can also be made by removing all leaves. This has proved successful, as sometimes they will drop all halved leaves anyway before striking.

The bottom 7 mm of the cuttings are treated with a 5 sec. quick dip of 4% IBA and are planted in community 17 mm squat pots, with 25 cuttings to a pot. Each pot has 15 mm of 5 mm sterile pea gravel placed in the bottom with the remainder of the pot filled with coarse washed river sand.

The pots are placed in the glasshouse under intermittent mist, using a thermister set at 60% humidity. No bottom heat is used as cuttings strike well without it during the summer months.

Callus forms in 3 to 4 weeks and roots are initiated from 6 weeks onwards. No dead leaves or material is removed from the pots during this period, and this has not caused a problem.

After 7 weeks the cuttings in pots are removed from the glasshouse and placed in the shade house to harden off for about 10 days. They are syringed with water during the hottest part of the day.

The strike rate is usually 85 to 90%, but some cuttings which have not struck are re-cut back to the second node, re-dipped with IBA, and placed back in the glasshouse and struck at a later date. This proves the value of double node cuttings.

Great care must be taken when removing bougainvillea cuttings from the pots to be tubed. This is a very crucial part of their production as their roots are very brittle and are prone to breaking when disturbed.

The method we use is called "floating out" and has proved very successful. A large wheelbarrow is half filled with clean water and the pot of cuttings is submerged. The pot is gently tilted, and the roots are gently floated away from the medium. It is important not to pull or shake the roots. This method may take a little more time than the conventional knocking-out process, but is well worth the extra time and effort.

Cuttings are then potted into 75 mm grow tubes with John Innes soil mix and placed in poly tunnels until they are large enough to be transplanted into 150 mm pots. Once in the 150 mm pots they are staked and returned to the poly tunnels.

In late winter plants are treated with 5 grams of potassium nitrate to each 2.5 litre pot to induce flowering. There is a product called "More Bloom" which can also be used to induce flowering.

When all danger of frost is gone, and the flower buds are beginning to develop, the plants are moved out into full sun. They are also top-dressed with sand together with hoof and horn meal; this promotes rapid growth enabling the plant to reach a salable size.

The potting mix used was as follows:-

46 cubic metres sawdust
11.5 cubic metres pinebark
11.5 cubic metres "coke breeze"

The "coke breeze" improved drainage and aeration. The following fertilizers were added to compost the sawdust mix:-

single superphosphate	28kg
gypsum	60kg
iron sulphate	12kg
Agra-mag 95%	30kg
potassium sulphate	46kg
Esminel	12kg
urea (46N)	140kg

A dressing of three-year-old chicken manure is added to the mother plants after cuttings are taken. These plants produce strong vigorous growth for future cutting material following this dressing.

Care must be taken not to over-fertilise bougainvillea as they produce unwanted water shoots and lush growth which inhibits flowering. Plants which flower successfully are grown under harder conditions.

Castle Hill Nursery produces 50,000 bougainvillea plants of the Rhodesian and Hawaiian cultivars each year. These can all be grown in the Sydney metropolitan area.

Bougainvillea can be successfully propagated provided all the procedures mentioned above are followed. In particular, the taking of cuttings, the timing, and the handling of rooted cuttings, are the most important operations.