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PROPAGATION OF CAMELLIA JAPONICA USING HORTICULTURAL ROCKWOOL

RALPH SCOTT

Spencer Scott & Sons

Kurrajong Heights, New South Wales 2758

Our nursery has been experimenting for the past 5 years with various rooting media for camellia propagation. In the spring of 1982 it was suggested to us that we try Rockwool as a medium. The nurseryman making the suggestion had experienced great success in its use for the propagation of miniature roses. We purchased from the manufacturer of Rockwool, approximately 10,000 blocks measuring 38 × 38 × 40 mm. These blocks came in sheets of 28 units measuring 266 × 152 × 40 mm.

The sheets of Rockwool were laid on a sand bed in a glasshouse, the bed being heated by an electrical cable and maintained at 21°C. Intermittent mist was used on a time clock system, misting occurring for 10 sec every 10 min during daylight hours. The Rockwool sheets were placed on the bed dry and then thoroughly watered 2 or 3 times to ensure that they were wet through. Gloves were used with the dry sheets as the fibre can affect sensitive skin.

Cutting preparation began the first week of January (mid-summer), 1983. The 10,000 blocks were used, along with approximately 100,000 tubes containing our usual medium. The cuttings were semi-mature new growth approximately 100 mm long. Some cultivars were longer and some shorter. They were dipped in "Rite Gro" Striking Powder No. 4, the active ingredient being 16 gms/kg indolebutyric acid. The cuttings were inserted in the Rockwool on the glasshouse bench and thoroughly watered.

Watering was continued by hand only rarely as the mist kept the cuttings sufficiently wet. Spraying with a combined fungicide of Benlate and Dacinal was done every two weeks. Cuttings were checked frequently — the beginnings of callus was noted after about 2 weeks. Roots started to appear in 5 weeks, and the cuttings were ready for potting in 8 to 10 weeks.

The first batch of cuttings gave a strike of about 90%. This far exceeded our expectations and the 65% strike in our usual medium. The Rockwool cuttings were potting in 100 mm pots and later into 150 mm pots for sale in autumn, 1984. The tube cuttings were moved into 125 mm pots and by autumn, 1984 were still not as well established.

During the summer of 1984 we propagated our entire crop of camellias in 57 mm deep, Rockwool blocks. These deeper blocks were treated in the same way as the shallower size used in 1983. They were thoroughly hand-watered 2 or 3 times and used in the same way as outlined for the first experiment.

We cannot give a rooting percentage for 1984 at the time of writing but the results look very encouraging.

The only problem we have encountered so far is in the control of green algae, which grows rapidly on any area of Rockwool exposed to sunlight. The area covered by leaves is unaffected by algae.

One conclusion we have reached, when using Rockwool for propagation, is that you must be prepared to pot as soon as the plants are rooted. If the plants are left for any extended time after rooting they can deteriorate rapidly. The use of

liquid fertilizer regularly can help, but the sooner they are potted the better.

As we grow about 150 *Camellia japonica* cultivars we are likely to have difficulties with some.

We have found that only one or two *C. japonica* cultivars have failed to root; it will take a number of seasons to determine if this is due to the use of Rockwool or to the cutting material used. We also experimented with two cultivars previously discarded because of propagation difficulties and found them to strike very well using Rockwool as a medium.

An advantage of using Rockwool is the speed with which it can be handled. There are no pots to fill and no trays or baskets to pack and the medium requires no sterilization. The potting stage is facilitated by planting the entire material; there is no "knocking out" and no empty tubes to store. Sheets of Rockwool can be picked up wet if handled carefully; alternatively a bricklayer's trowel can be used.

Our use of Rockwool in 1983 resulted in a 25% better strike and saved considerable time and labour. Potting, however, must be carried out quickly after rooting to preserve the strike. A solution to the green algae problem must be found.

ENCLOSED MIST SYSTEM FOR PROPAGATION OF BROAD-LEAVED EVERGREENS

MURRAY RICHARDS

*New Zealand Nursery Research Centre,
Massey University,
Palmerston North, New Zealand*

The first requirement in any propagating system for leafy cuttings is to conserve water in the cutting, which no longer has access to a free water supply from a root system. While some water can be absorbed through the cut base of the cutting, this is generally insufficient to replace water loss from transpiration. This water loss occurs because the humidity of the air around the cutting is lower than the humidity of the air inside the cutting. If the temperature of the air around the cutting increases, the relative humidity decreases; if the leaf temperature rises the vapour pressure inside the cutting increases, both lead to increased water loss from the cutting. Plants will endeavour to regulate this water loss in two ways: some have evolved structural forms of stomata which restrict rate of water transfer, while all plants will tend to close the