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NEW TECHNIQUES FOR PEACH TREE PROPAGATION IN AUSTRALIA

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With the trend towards higher density planting of peach trees, low cost methods of rapidly producing large numbers of trees are desirable. Earlier this year I visited the Irrigation Research Institute, Tatura, Victoria, Australia, where they have developed two techniques for commercial production of saleable trees from cuttings in one season. Both techniques are simple; however there are several critical requirements which must be fulfilled if they are to be used with success.

Hardwood Cuttings. Pencil thick basal cuttings 25 to 30 cms long are taken from one-year-old laterals borne on branches that carried fruit the previous summer. The cuttings are typified by short internodes and are only harvested from healthy, vigorous trees less than six years old. Care in selection of cutting material is important to ensure a good strike and rapid growth in the nursery. Cuttings are taken from late June to mid-July (mid-winter).

The cuttings are then treated with the rooting hormone, indolebutyric acid (1000 ppm in 50% alcohol), the base of the cuttings being dipped for 10 seconds then air dried. Treatment must be done within 10 hours of harvesting the cuttings.

The cuttings are then rooted in a medium of 4 parts coarse river washed sand and 1 part peat at a bottom heat of 23°C (75°F). Moisture levels at this stage are critical because overwatering can result in death of the callus and roots. Within three to four weeks most peach cultivars begin rooting. When the roots have grown 2 to 3 cms the bottom heat is reduced for a few days then turned off.

Delays in reducing bottom heat can result in root death; also it is important to harden the roots off for planting out or potting on before they become intertwined and impossible to remove from the propagating box without damage.

When the roots have been hardened they are either lined out directly into the nursery or potted into 5 cm peat pots containing a medium of coarse river washed sand and then lined out in the nursery in spring. Care must be taken not to damage the roots which are very brittle or let them dry out. From now on the cuttings are given a balanced liquid fertilizer every second watering.

At the end of the summer the cuttings have grown into rods 1.5 metres high and are suitable for lifting and planting out into orchards. For the Golden Queen cultivar more than 70% of the cuttings produce trees.

Leafy Cuttings. Cuttings may be taken throughout the summer although the best results are achieved using basal cuttings taken in November-December (early summer). The cutting is selected from new growth on fruiting laterals. The soft tip is removed and leaf areas reduced to four half-leaves. Cuttings are about 10 to 15 cm long. Care must be taken to ensure cuttings do not dry out between harvesting them and when they are processed.

Cuttings are given a basal dip of indolebutyric acid (1000 ppm in 50% alcohol) and then inserted into a rooting medium of equal parts vermiculite and perlite. They are rooted under mist at 85% relative humidity and at temperatures below 32.5°C (90°F). No bottom heat is used.

Moisture control in the rooting medium is very critical as overwatering can inhibit rooting or cause root death. Drainage of both the medium and the container needs to be good. Cuttings must also be shaded from full sunlight.

Roots are produced within 35 days and, after a further 14 days hardening off, the cuttings may be lined out in the nursery. Care must be taken not to allow the roots to be damaged or dry out when being planted out. At the end of the summer these cuttings have grown into small trees 60 cm high. For the cultivar Golden Queen, more than 90% of cuttings are successful.

These two techniques offer the nurseryman the possibility of propagating large numbers of peach trees at a low cost and at a one year production cycle compared with the present two year cycle for worked trees with its high labour requirements for budding and heading back.

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PRODUCTION POT-POURRI

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When we started our nursery we grew a moderate range of plants, some in fairly large quantities, and sold a substantial amount of our total production wholesale using the income derived from this to purchase other lines for our retail requirements. As sales in our new garden centre expanded from 1970 we started to experience real difficulties in obtaining sufficient stock in adequate variety for our retail sales. About mid-1974 we decided to change our production process and try to grow the maximum number of cultivars and quantities possible for our own garden centre sales. This policy has proved well worth while for us particularly over the last two years as we have managed to get our re-organised production system functioning in something approaching high gear. We still buy in substantial quantities of some lines but now grow a very large range of several hundred species and cultivars.

This method of running a business works for us with, I believe, real benefits, but I'm not suggesting that our method of operating would have similar benefits for other businesses. We now propagate and grow in containers, and in the field, some 100,000 trees, shrubs, basket plants, climbers, etc., each year. These are propagated in the estimated numbers required in batches throughout the year. For example, if we think we can sell 400 *Ceanothus papillosus* var *roweanus* annually we propagate them in three or four batches several months apart so that we have fresh groups coming into the garden centre throughout the year. Obviously we aim to have the largest group saleable in