

film. The lightweight film ensures good light during the short autumn and winter days. Crop two is marketed between September and March. The rooted cuttings are potted-on outside during April. We use a 70% sphagnum peat and 30% bark potting compost. To each cubic metre we add:

2.5 kg	12-to-14-month Osmocote plus
0.75 kg	12-to-14-month Sierrablen
1.2 kg	magnesium limestone
400 g	Rovral.

We intend to produce a compost with pH 5.5.

The rooted cuttings are potted from a mobile potting unit that is capable of producing 24,000 7cm pots a day. A gang of five people operate the unit. They work a two-shift system, which equates to a 16-hour day. Plants are stood down pot thick on sand beds. Watering is by overhead Mamset nozzles. One-litre and three-litre plants are potted on using 1/2-litre stock as liners.

PROPAGATION OF A SELECTION OF NEW ZEALAND NATIVE SPECIES OF COMMERCIAL SIGNIFICANCE

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At Lyndale Nurseries situated in Whenuapai, Auckland, the problem of what not to grow is often more difficult to decide than the more commonly asked question of what to grow. There is a need to be continually assessing cultivars and market response to them.

When we identify a plant with "potential", resources have to be allocated to produce a required number. Given a production limit something has to be sacrificed—what not to grow. The two species discussed in this paper add to the dilemma of what not to grow.

In identifying what criteria are necessary for shrubs of commercial promise or significance the demands of the market are paramount. The market specified for these plants is for flowering shrubs with end use as patio plants in pots, or in rockeries and small courtyard gardens.

These requirements are:

1. A long flowering period.
2. Good shape and form, irrespective of flowers.
3. Good colour of flower contrasting with foliage.
4. A height of under two meters and shape suitable for a life of container growing.

Hence we have a good place to start identifying and developing species that would fit the criteria.

The genus *Sophora*, while not confined to New Zealand, is often identified with this country. Indeed, the flower of one member of the genus is often symbolized as representing our culture.

Recent work carried out at the Horticultural Research Center, Research Division, Ministry of Agriculture and Fisheries, Levin, has resulted in the release of a number of cultivars of *Sophora tetraptera*. One of these, *Sophora tetraptera* 'Early Gold' forms a compact, small pyramidal tree with dark green foliage during summer but it is semideciduous at flowering. Flowers are a lemon-yellow with a light green calyx.

The propagation of *Sophora* by cuttings is not easy. Best results seem to be achieved by taking cuttings of new growth 10 to 15 cm long in either of two periods, early spring (September) or towards the end of summer (February–March). We make a single wound opposite the basal bud, treat with a fungicidal dip and either 0.8% IBA or IBA + 0.4% NAA, then insert the cutting into a mix of 90 percent pumice and 10 percent peat and place it on bottom heat of 25°C with mist.

This procedure has given 80% rooting in six weeks. The cuttings, once rooted, progress rapidly. However, care must be taken when potting the rooted cuttings, as the newly initiated roots are easily knocked off. The slightly pendulous habit of this cultivar and its early flowering (July and August) qualities will ensure demand for a well-grown specimen.

The second species identified in this paper is *Metrosidros carminea*. This interesting specimen is listed as an endangered species as it has been recorded as existing in only six wild localities today. The genus *Metrosidros* is made up of about 30 species of hardy evergreen trees, shrubs, and climbers and is found in New Zealand and tropical Polynesia. The species endemic to New Zealand are amongst the few highly coloured native trees found here.

Metrosidros carminea is a particularly unusual specimen in that it is generally listed as being a climber. However, this pertains to its juvenile form. As a climber it can grow across a rocky face or up a canopy tree reaching heights of 10 meters or more. Once it reaches the top of a rocky face its new growth is in adult form, which results in a bushy shrub of approximately 1 meter in height. Grown from a cutting of adult wood, this plant will come into flower quickly and produce a bushy shrub suitable for growing in tubs.

We do not find the propagation of *Metrosidros* species by cuttings easy. We achieve 40 to 50% success on average, an indication of the difficulties of these species.

Metrosidros carminea is best attempted from cuttings of new wood made in late summer (February or March). Use semisoft or $\frac{3}{4}$

softwood material which is greenwood with brown at the base. Dip in a 0.1% IBA or Seradix I as a quick-dip. The dipped cuttings are then planted into a 90:10% mix of pumice, sand and peat, then placed on bottom heat of 25°C with mist. Results are relatively quick with this type of soft material, the first roots showing in 3 to 4 weeks. A 30- to 40% rooting rate has been our initial experience with this species. This low percentage has led us to offer material to a local tissue culture laboratory that has had success with reproducing other *Metrosidros* species. We have been fortunate in getting *Metrosidros carminea* established in culture.

Specimens taken out of micropropagation situations are in their juvenile or climber form, not the desired adult form. However, they advanced to the adult form within a period of approximately three months from deflasking.

Due to the still experimental nature of this material from culture, I cannot comment on the time lapse to flowering at this stage. However, we feel this specimen has much to offer as a potted tub plant or a small garden shrub with its unique masses of carmine red flowers.

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VEGETATIVE PROPAGATION OF FOLIAGE PLANTS

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The various methods of propagating foliage plants include making cuttings, airlayers, divisions, tissue cultures, sowing seed, and spores. Vegetative propagation by cuttings is the most popular. Cuttings are sometimes placed in flats or benches, but placement in pots is the method used most. Although direct sticking requires more space, growth is usually accelerated and labor for transplanting is reduced. Less labor is a big advantage as labor costs continue to increase.

The vigor of the stocks plant is important. They should be healthy, turgid, free of insects, diseases, and nutritional deficiencies (Table 1). Single-eye cuttings of *Ficus elastica* 'Decora' stock plants grown in full sun and fertilized with 21 grams of 18-6-12 per