

LAND MANAGEMENT

NATIVE TREES

Raising Native Plants from Cuttings

Introduction

A number of the more commonly grown native plants have always been available from commercial nurseries, though in the past these have generally been species most suited to ornamental or landscape use. An increasing number of nurseries are now supplying a much wider range of eco-sourced material, and can even grow to order, if the numbers required are large enough. Even so, it can be rewarding and educational to raise your own plants for use in your own, or other, projects.

For information on the collection of native seedlings from existing stands of native bush, ask for the Environment Topic "Enhancing Indigenous Vegetation in Protected Areas".

This Environment Topic covers the propagation of native plants from cuttings.

Seedlings

While many native plant species produce abundant viable seed, others do not, such as: *Brachyglottis repanda* (Rangiora), *Pomaderris apetala* (Tainui), some *Cassinia* (Tauhinu), and *Hebe*.

Olearia and *Senecio spp* produce some viable seed, but are more easily propagated from cuttings. Other species, propagate equally well from seed or cuttings, a handy attribute in a year when seed is not available. These include *Aristotelia serrata* (Wineberry), *Fuchsia excortica* (Kotukutuku), *Griselinia littoralis* (Broadleaf), *Myoporum laetum* (Ngaio), *Weinmannia racemosa* (Kamahi), some *Carmichaelia* (native broom), *Coprosma*

(mostly the large leaved ones and *C. acerara*), *Corokia*, *Hebe*, and *Sophora* (Kowhai).

Cuttings

Plants grown from cuttings are clones of the parent plant, i.e they are genetically identical. This may be desirable in uses such as shelter planting, but less desirable in mixed planting situations. This can be overcome to some extent by collecting cuttings of any one species from a number of parent plants.

Three types of cuttings are used, and these relate to the age of the material collected. These, in increasing age are - softwood cuttings, semi-hardwood cuttings, and hardwood cuttings.

1. Softwood Cuttings

These are made from soft new growth, which commonly occurs in spring, but may for some species or in some seasons, occur at other times during the year. Late spring or early summer is the normal time for collecting these cuttings. From a healthy plant, select average sized growing shoots from a lateral (side branch). These should be well developed, still flexible (ie not woody), but snap easily like fresh asparagus when bent sharply. As a guide, length should be between 5cm and 15cm.

2. Semi-hardwood Cuttings

These are taken from partially hardened or semi-mature wood which is present after a growth flush. Collection is normally carried out later in summer, between January and April. Cuttings seem to be best between 7cm and 15cm in length.

3. *Hardwood Cuttings*

Hardwood cuttings are generally collected in early Winter (May), from the previous season's growth that has matured and become woody. Two year wood is sometimes collected, but in general, the older the material, the slower it is to callus and form roots. Hardwood cuttings are generally longer, say 25cm to 30cm, though some may only need to be 10cm to 15cm.

Collection

Cuttings can be taken in two main ways:

1. As heel cuttings, by peeling a lateral from the main stem of the parent plant. This is particularly suitable for *Hebes* and *Coprosmas*. The excess stem part is trimmed back to produce a small heel.



Taking a heel cutting from a Coprosma spp.



Lateral cutting from a Coprosma spp.

2. By cutting a lateral approximately 5mm below a node or joint, using a knife, secateurs, or other suitable tool which will produce a clean cut at right angles to the stem.

It is very important that cutting material be kept cool and out of direct sunlight until they can be prepared and planted. To further reduce the risk of drying, cuttings should be taken from shaded parts of the plant early in the morning, or on cloudy or slightly damp days when transpiration will be at a minimum. Material should be kept cool and moist during transportation.

Preparation

For softwood and semi-hardwood cuttings, the young growing tips can be left on, but 30 - 50% of the foliage should be removed from the stem, using scissors or secateurs.

For hardwood cuttings remove the soft tips and up to 75% of the foliage. Large leaves on all cuttings should be reduced in size to further reduce moisture loss. For species that are difficult to root, a vertical cut of 2 - 3cm from the bottom of the stem can be made to promote callus formation. Cuttings should be kept cool and moist during all these operations.

(See page 4 for a list of native plants suitable for propagation by cuttings)



A cutting with lower leaves removed and upper leaves trimmed, to reduce moisture loss.

Planting

Softwood or semi hardwood cuttings should be planted into suitable containers in a 50/50 potting mix, clean river sand mixture, in shadehouses or shelters. Plant half the length of the cutting, by making a hole, rather than forcing the cutting into the mixture. Firm the medium up and around the cutting to ensure it doesn't loosen, which would allow the newly formed roots to dry out.

Hardwood cuttings can be lined out in open ground, in well cultivated soil. A narrow trench 10 – 15cm can be formed and, if the soil is heavy, lined with 2cm of clean river sand. The soil is firmed up around the cutting in the normal way. The commercial nursery practice of wrenching to promote fibrous root growth can be followed if knowledge, time, or equipment is available. If the hardwood cuttings are to be rooted in containers and grown in a shadehouse or shelter, a 2/3 potting mix, 1/3 sand mixture can be prepared, and the cuttings treated as for softwood and semi-hardwood cuttings.

Although many native cuttings will form roots naturally, all will benefit to some extent from the use of growth regulators, or rooting hormones. Products are available for all types of cuttings, just follow the directions on the appropriate product.

The cuttings should be kept well watered, and the leaves kept moist with a fixed or hand mister. The production of a good crop of new leaves should indicate good root development. At this stage the plants can be potted up, or transferred into root trainers, and grown on. Prior to planting out in the field in the second spring, potted plants should be put out into sheltered and shaded areas where they can harden up.

Summary

- Take cuttings from a number of plants to ensure genetic variability.
- Take cuttings from healthy plants.
- Short laterals should be used rather than terminal shoots.
- Always use a clean knife, sharp secateurs, or other tool such as razor or scalpel which will produce a clean cut.
- Keep cuttings cool and moist at all times during preparation.
- Keep detailed records.

REFERENCES

Plant Materials Handbook for Soil Conservation, Water and Soil
Miscellaneous Publication Number 95
Planting Native Trees, John Millard - NZ
Natural Heritage
Foundation
Native Forest Restoration, Tim Porteous -
QEII National Trust
A Field Guide to the Native Trees of NZ, JT
Salmon
Planting Native Plants in Hawke's Bay –
Hawke's Bay Regional Council

NATIVE PLANTS SUITABLE FOR PROPAGATION BY CUTTINGS

(or refer to the many good texts on native plants and plant raising)

Aristotelia serrata (makomako - wineberry)	Semi-hardwood
Brachyglottis repanda (rangiora)	Hardwood or semi-hardwood
Carmichaelia	Semi-hardwood
Cassinia fulvida (golden tauhinu)	
Cassinia leptophylla (tauhinu)	Hardwood or semi-hardwood
Cassinia vauvilliersii (mountain cottonwood)	Hardwood or semi-hardwood
Coprosma acerosa	
Coprosma lucida (karamu)	Semi-hardwood
C.propinqua (mingimingi)	
C.repens (taupata)	Semi-hardwood
C.robusta (karamu)	Semi-hardwood
Corokia cotoneaster	
Fuchsia excorticata (kotukutuku)	
Griselinia littoralis (Papauma, Kapuka)	Semi-hardwood
Hebe spp.	
Melicytus ramiflorus (mahoe, whiteywood)	
Metrosiderous excelsa (pohutukawa)	Semi-hardwood
M. umbellata (southern rata)	Semi-hardwood
Myoporum laetum (ngaio)	
Myrsine australis (red matipo)	Semi-hardwood
Olearia spp.	Hardwood or semi-hardwood
Pittosporum spp.	Mostly grown from seed but many will propagate from cuttings
Plagianthus divaricatus (Makaka)	Will propagate from cuttings
Podocarpus totara (Totara)	Mostly propagated from seed but cuttings have been used to produce shelter trees with the adult form Pomaderris apetala (Tainui)
Pomaderris apetala (Tainui)	
Senecio spp.	

For further information

For further information, ask for other titles in this series, or contact Land Management Staff at the Hawke's Bay Regional Council for advice.

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