



HOW TO GROW YOUR OWN POHUTUKAWA AND RATA



Growing pohutukawa and rata is a rewarding activity that helps to ensure these trees are here for future generations to enjoy. Before starting, it is important to spend time planning which variety to grow and where best to put it. This can avoid the tree performing poorly or causing problems later.

Pohutukawa and the different rata species do not occur naturally throughout the country. Determine which species is best to plant in your local area. See below for the natural distribution of pohutukawa and some rata species. We encourage planting of these species within their natural ranges. For pohutukawa this is in the northern half of the North Island, north of New Plymouth and Gisborne. If you wish to plant outside the natural range, bear in mind that the plant is not in its natural environment and therefore may suffer from frost, grow slower or take longer to flower. Also bear in mind that pohutukawa can hybridise with Northern rata. Consider planting pohutukawa well away from any natural stands of Northern rata.

WHERE TO LOCATE YOUR TREE

Consider the tree's natural habitat. If a tree is planted in a location that differs too widely from its natural habitat, then it may not produce flowers or generally thrive. For example, pohutukawa like warm coastal conditions and are unlikely to thrive on a south-facing hill with a tendency to frost. Other factors to take into account include rainfall, soil type, proximity to the coast, wind and the general topography.

See photo captions for guidelines on pohutukawa and rata habitat.

Think ahead before planting pohutukawa and rata as they both grow to become huge trees. This can cause problems when planted on small suburban sections or near fences or other structures. The location of underground drains and water pipes also needs to be taken into account.



Rata seedlings, courtesy of Ata Rangī

GROWING TREES FROM SEEDS

It takes at least two or three years from the time seed is gathered until a seedling is ready for planting out. The following factors must be taken into account when collecting seed:

Decide what you want from a tree - the process of successfully growing trees from seed starts with finding the right parent trees. The best time to evaluate a tree's potential is when the tree is flowering. Look for a specimen with characteristics that you find appealing. For example, are you looking for a tree that flowers well or that has flowers with a great depth of colour? Note that genetic diversity will always occur in trees grown from seed, so a tree's appearance and performance cannot be entirely predictable.

Maintain genetic integrity. It is important not to bring in seed from another part of the country. Locality can affect many important factors, such as the genetic basis for the plant's hardiness, drought resistance, seed viability, size, shape, colour and even its resistance to pests and disease. Try to gather seed only from trees that you know are 'native' to your area, this is known as 'ecosourcing'. This can be difficult to tell but the following guidelines will help:

- Take seed from trees that are growing naturally rather than those that have been deliberately planted.
- Ensure the parent tree is located well away from other types of pohutukawa and rata (e.g. *M. kermadecensis* or *M. colina* 'Tahiti') because they could cross-pollinate to create hybrids.
- Avoid roadside plantings because these trees are generally of unknown origin and may therefore have originated from other regions and not be genetically well-adapted.
- Before planting, check to ensure the species you select is ecologically correct for your area (see distribution below).
- Identify attractive, healthy looking parent trees. Ideally the trees should also flower abundantly and over a long time span because the flowers are an important food source for nectar-eating birds. Please note that some trees that may appear to be pohutukawa and are flowering outside the normal period from mid November to mid January, may be hybrids or closely related exotic varieties including Kermadec Island pohutukawa.
- Don't be put off by insect damage. Lots of native leaf-eating insects live on pohutukawa and rata, most of which have co-existed well with their host for thousands of years. Insects are generally only a problem to the tree's health when it is already sick.

HOW TO COLLECT THE RIGHT SEED

Pohutukawa seed matures in autumn, rata in winter. Pick a dry day, hold a large bag over a cluster of seed capsules and shake it to produce thousands of tiny seeds. Alternatively, put a sheet on the ground, tap the branches and stand clear. Take care when gathering seed because it is very fine. It can make you very itchy and can take several washes to get the seed out of your clothes!

Collecting seed from northern rata can be quite difficult because the trees are very tall making the seed capsules difficult to access. We have heard of people rigging an umbrella upside down on a very long pole to collect seed. Or you could try to find a tree that is growing on a slope, allowing you access to the seed. For small quantities of plants, try propagating from cuttings if seed is not accessible.

Use seed quickly. Pohutukawa and rata seeds lose their viability quickly. Where absolutely necessary, store them dry temporarily in the fridge in a paper bag (not the freezer). Avoid using plastic bags as seed could sweat and become wet and mouldy.



THE SPECIES

Mainland pohutukawa (*Metrosideros excelsa*):

Grows to 20 m high by 35 m. Grows throughout the North Island. Natural range is north of New Plymouth and Gisborne. Prefers warm, drier areas close to the sea.

Northern rata (*Metrosideros robusta*): One of New Zealand's tallest flowering trees. Grows to 25 m or more in height with a trunk up to 2.5 m in diameter. Grows from Hokitika northwards, preferring warm moist areas such as north-west Nelson and Northland. Northern rata grows from sea level to a maximum of 900 m.

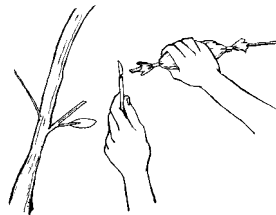
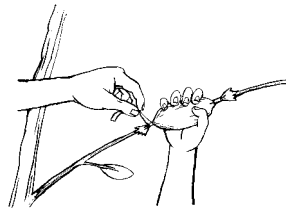
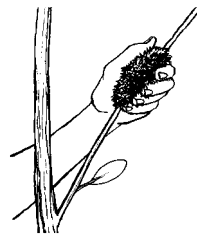
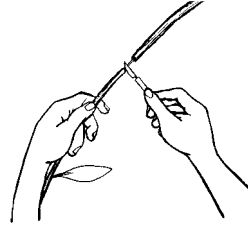
Bartlett's rata (*Metrosideros bartlettii*): Grows to 15 m high by 6 m. Very few adult trees remain in a forest remnant near Cape Reinga, which is almost a sub-tropical climate. Some nurseries are now stocking Bartlett's rata, ensuring the species' continued survival.

Southern rata (*Metrosideros umbellata*): Grows to 15 m high – sometimes more – with a trunk up to 1 m through. Grows throughout New Zealand, particularly along the South Island's West Coast. Best suited to the South Island and cooler, high rainfall regions. Occurs from sea level to 760 m.

GROWING TREES FROM CUTTINGS

Growing from cuttings ensures the tree is more advanced in its development at the time of planting and is a genetic duplicate of the parent tree. However, it can be difficult to 'strike' cuttings. It is therefore advisable to use the 'aerial rooting' technique for taking pohutukawa and rata cuttings. The process for taking aerial cuttings is as follows:

This method is no good for taking cuttings far from home because you need to periodically check the shoot until it is ready for removal.



Spring and autumn are the best times to take cuttings. If this isn't possible, make sure the bark is still green.

Choose a one or two year old growing tip low on the tree. The stalk should be about as thick as a pencil.

About 40 cm from the end, strip leaves away to create a 15 cm clear working zone.

Ring-bark in the middle of the zone, about 2 cm wide, cutting away the bark and soft outer layer but not cutting into the wood.

Rub Seredix 2 or 3 rooting hormone into the cut. Enclose in a fist-sized ball of damp (not wet) sphagnum moss. Wrap clear cling film around the ball of moss, and use plastic tape to seal the cling film tightly to the stalk at either end.

After five or six weeks, depending on the season and growing conditions, roots growing through the moss will be visible through the cling film.

Cut off the shoot, complete with root ball. Keep the cutting in its wrapping if you are unable to plant immediately.

Remove cling film and tape and plant in moist potting mix. Keep damp and shaded for the first week or so. If necessary, encase the leaves in a plastic bag to retain moisture during this period.



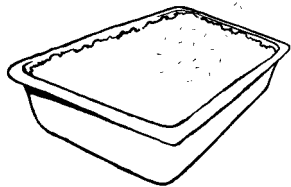
PROPAGATING THE SEED

The following steps show how to successfully grow seedlings from the seed you have collected:

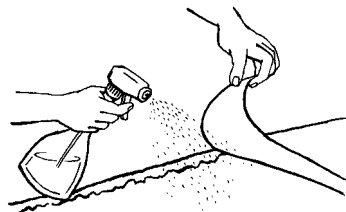
Prepare a number of shallow seedling trays. Fill to 5 cm with sterilised seed-raising mix or leaf-mould and loam (finely sieved and free of weeds).



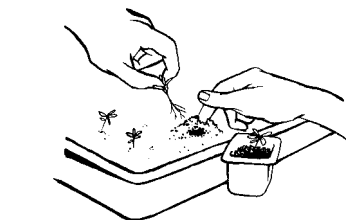
Sow the seed thinly on the dampened mix. Thick sowing may cause the seedlings to rot.



Cover the seed very thinly with fine sand (pumice sand is recommended) – the seeds should be barely covered. Lightly water. Note: avoid coastal sand because its high salt content may kill the seedlings.



Cover the tray with a sheet or two of newspaper (or keep the trays out of direct light / in a low light area) for a maximum of a week.



Check from seven days on. As soon as germination starts, remove the paper and water lightly (with a fine mist spray). Keep the soil just moist. Don't over-water.

Keep the seedlings in a sheltered spot out of the wind and direct sun, and away from frost.

At about three months, the seedlings should be around 1 cm high with four to six leaves. At this stage, prick them out into separate containers (plastic yoghurt and margarine containers with drainage holes poked in the bottom make ideal containers).

The planting mixture should be a commercial potting mixture or a leaf/loam mixture with added fertiliser. Ensure the plants are well-watered.

When the seedlings have recovered from the replanting (after three to four weeks) progressively introduce them to stronger light until they can tolerate full sunshine.

Pot into larger containers as the plants grow. Trees need to be grown for at least two years before planting out. If scale insects or psyllids become a problem, treat every four weeks during the growing season (spring and summer) with a light spraying oil such as Conquer Oil.

PLANTING SEEDLINGS AND YOUNG TREES

Good forward planning and site preparation are the keys to successful planting.

Plant at the right time – The best time to plant is in autumn and early winter when the ground is still warm and there is likely to be good rainfall. Spring may be a safer time if the planting site is prone to ground frost.

To shelter or not to shelter? – Trees can be planted straight away in moderately or well-sheltered situations. However, if planting pohutukawa in fully exposed coastal sites it is advisable to plant a semicircle of flax and ngaio on the windy side, and wait two years or more until they are approaching two metres high before planting the pohutukawa in a well lit gap in between. Shade cloth can be used for shelter if you do not have time to wait for a nursery crop to grow. Alternatively larger trees if available can be transplanted but these will require staking on exposed sites and watering for at least the first year after planting.

Weed control – Grasses and weeds usually don't cause seedlings too much trouble as long as the tops of pohutukawa remain in full sunlight. Grass and weed control is desirable in some situations such as for specimen trees planted in parks or lawns. Where herbicide spraying considered, use only with good practice guidelines and safety protocols. Care is required in using line trimmers for clearing weeds and grass – these kill seedlings and young trees by ring barking!

Preparing the planting hole.

- Careful preparation of the planting site will greatly increase the tree's chances of survival.
- Choose a planting site compatible with the tree's natural habitat and growth potential.
- Dig a hole that is as deep as the tree's collar (the part where the trunk turns into the root system). Avoid planting any deeper because it may cause rot to set in.
- Dig compost and blood and bone into the planting hole (allow up to a couple of handfuls of each, depending on the size of the tree). Note: this may not be practicable for large-scale plantings.
- Plant the seedling or tree and 'heel' it in so that it sits firmly within the soil.
- Apply mulch.

Water the newly planted tree or seedling and ensure it does not get too dry while it becomes established. It is particularly important to water trees during their first summer, especially if conditions are very dry. Animals such as livestock, rabbits, possums and goats can quickly kill a tree. Trees planted on farmland must be well fenced to protect them from grazing animals.

Young trees can be protected from summer drought and attack from rabbits and possums by growing them inside a large, bottomless bucket. Drive a stake on either side of the tree and slide a 20 litre bucket with the bottom cut out down the stakes. Keep the buckets in place for a maximum of two years, then slide them up the stakes and tie the trees to their stakes. Alternatively there are commercially available trees shelters for newly planted seedlings such as Combi Guards that comprise a plastic sleeve and bamboo stakes.

Mulch 5 cm deep x 100 cm across to retain moisture and stop weeds from growing above the plants.

Wild seedlings

Many people find that they have 'wilding' pohutukawa seedlings growing under an existing plant. With care and attention, these can be transplanted to another location. Take care to minimise root disturbance when removing the plant and keep them well watered while they are establishing.

