



Cordyline australis

Cordyline australis, commonly known as the cabbage tree, cabbage-palm or tī kōuka is a widely branched monocot tree endemic to New Zealand.

It grows up to 20 metres (66 feet) tall with a stout trunk and sword-like leaves, which are clustered at the tips of the branches and can be up to 1 metre (3.3 feet) long. With its tall, straight trunk and dense, rounded heads, *C. australis* is a characteristic feature of the New Zealand landscape. Its fruit is a favourite food source for the New Zealand pigeon and other native birds. It is common over a wide latitudinal range from the far north of the North Island at 34° 25'S to the south of the South Island at 46° 30'S. Absent from much of Fiordland, it was probably introduced by Māori to the Chatham Islands at 44° 00'S and to Stewart Island at 46° 50'S. It grows in a broad range of habitats, including forest margins, river banks and open places, and is abundant near swamps. The largest known tree with a single trunk is growing at Pakawau, Golden Bay. It is estimated to be 400 or 500 years old, and stands 17 metres (56 feet) tall with a circumference of 9 metres (30 feet) at the base.

Known to Māori as tī kōuka, the tree was used as a source of food, particularly in the South Island, where it was cultivated in areas where other crops would not grow. It provided durable fibre for textiles, anchor ropes, fishing lines, baskets, waterproof rain capes and cloaks, and sandals. Hardy and fast growing, *C. australis* is widely planted in New Zealand gardens, parks and streets, and numerous cultivars are available. The tree can also be found in large numbers in island restoration projects.

It is also grown as an ornamental tree in Northern Hemisphere countries with mild maritime climates, including parts of the upper West Coast of the United States and the warmer parts of

the British Isles, where its common names include Torbay palm and Torquay palm. It does not do well in hot tropical climates like Queensland, Southeast Asia and Florida.

Description

The long narrow leaves are sword-shaped, erect, dark to light green, 40 to 100 cm (16 to 39 in) long and 3 to 7 cm (1.2 to 2.8 in) wide at the base, with numerous parallel veins. The leaves grow in crowded clusters at the ends of the branches, and may droop slightly at the tips and bend down from the bases when old. They are thick and have an indistinct midrib. The fine nerves are more or less equal and parallel. The upper and lower leaf surfaces are similar.

In spring and early summer, sweetly perfumed flowers are produced in large, dense panicles (flower spikes) 60 to 100 cm (2.0 to 3.3 ft) long, bearing well-spaced to somewhat crowded, almost sessile to sessile flowers and axes.

The fruit is a white berry 5 to 7 mm (0.20 to 0.28 in) in diameter which is greedily eaten by birds. The nectar attracts great numbers of insects to the flowers.

Large, peg-like rhizomes, covered with soft, purplish bark, up to 3 metres (9.8 feet) long in old plants, grow vertically down beneath the ground. They serve to anchor the plant and to store fructose in the form of fructan. When young, the rhizomes are mostly fleshy and are made up of thin-walled storage cells. They grow from a layer called the secondary thickening meristem.

Taxonomy and names

Cordyline australis was collected in 1769 by Sir Joseph Banks and Dr Daniel Solander, naturalists on the Endeavour during Lieutenant James Cook's first voyage to the Pacific. It is sometimes still sold as a *Dracaena*, particularly for the house plant market in Northern Hemisphere countries.

The genus name *Cordyline* derives from an Ancient Greek word for a club (*kordyle*), a reference to the enlarged underground stems or rhizomes, while the species name *australis* is Latin for "southern". The common name cabbage tree is attributed by some sources to early settlers having used the young leaves as a substitute for cabbage. The *Cordyline* somewhat, and was named for the cabbage-like appearance of its terminal bud.

Cordyline australis is the tallest of New Zealand's five native *Cordyline* species.

Ecology

Habitat

Generally a lowland species, it grows from sea level to about 1,000 metres (3,300 feet), reaching its upper limits.

Cordyline australis is a light-demanding pioneer species, and seedlings die when overtopped by other trees. To grow well, young plants require open space so they are not shaded out by other vegetation. Another requirement is water during the seedling stage. Although adult trees can store water and are drought resistant, seedlings need a good supply of water to survive.

Reproduction

The cabbage tree's year begins in autumn among the tight spike of unopened leaves projecting from the centre of each tuft of leaves. Some of the growing tips have changed from making leaves to producing inflorescences for the coming spring, and around these, two or three buds begin to produce leaves. The inflorescence and the leaf buds pass the winter protected by the enveloping spike of unopened leaves. Flowering takes place over a period of four to six weeks, giving maximum exposure to pollinating insects. The flowers produce a sweet perfume which attracts large numbers of insects. The nectar produced by the flowers contains aromatic compounds,

Bees use the nectar to produce a light honey to feed their young and increase the size of the hive in the early summer. It takes about two months for the fruit to ripen, and by the end of summer a cabbage tree can have thousands of small fruits available for birds to eat and disperse.

Response to fire

Cordyline australis is one of the few New Zealand forest trees that can recover from fire. It can renew its trunk from buds on the protected rhizomes under the ground. This gives the tree an advantage because it can regenerate itself quickly and the fire has eliminated competing plants. Cabbage tree leaves contain oils which make them burn readily. The same oils may also slow down the decay of fallen leaves, so that they build up a dense mat that prevents the seeds of other plants from germinating. When the leaves do break down, they form a fertile soil around the tree. Cabbage tree seed also has a store of oil, which means it remains viable for several years. When a bushfire has cleared the land of vegetation, cabbage tree seeds germinate in great numbers to make the most of the light and space opened up by the flames.

Older trees sometimes grow epicormic shoots directly from their trunks after storm or fire damage. Aerial rhizomes can also be produced from the trunk if it sustains damage or has become hollow, and grow down into the soil to regenerate the plant. Such regeneration can lead to trees of great age with multiple trunks.

Māori cultural uses

In traditional times, Māori had a rich knowledge of the cabbage tree, including spiritual, ecological and many practical aspects of its use. While much of that specialised knowledge was lost after the European settlement of New Zealand, the use of the tree as food and medicine has persisted, and the use of its fibres for weaving is becoming more common.

Cultivation today

Cordyline australis is one of the most widely cultivated New Zealand native trees. In Northwest Europe and other cool oceanic climates, it is very popular as an ornamental tree because it looks like a palm tree.