

KANGKONG



• Mature plants of Kangkong



• Leaves with leaf miner damage

Botanical name: *Ipomoea aquatica*, *Ipomoea reptans* (Convolvulaceae)

Location specific common names: water spinach or swamp cabbage

Plant characteristics: Under reasonable growing conditions kangkong is a fast growing, vine-like plant that spreads along the ground or water surface, and is reluctant to climb. It is a close relative to sweetpotato but is grown for its succulent growing tips and not roots or tubers.

There are two recognized types, the upland type, *Ipomoea reptans* is more common throughout the Pacific and adapted to moist soils compared to the lowland or aquatic kangkong (*Ipomoea aquatica*) which is adapted to flooded conditions.

Uses: Kangkong is best prepared fresh/uncooked. After thorough washing, short succulent tips can be eaten in salads or liquidized for adding to a drink. Slightly older leaves are best steamed, boiled, fried or baked; the stems, cut into sections, can be used in stir fry.

Availability: This plant can be cultivated in most tropical locations. It is grown in most Pacific islands and in tropical and sub-tropical Australia.

Propagation methods: New plants can be produced from cuttings or seed. Plants grown from seed are usually slower to establish; the quality is also less reliable compared to plants derived from cuttings. The seeds should be soaked for one day before sowing. Cuttings from 200 to 600 mm long preferably taken a day or two after harvesting the tip, are the most suitable for propagation. Care with watering is needed until the

cuttings are well established. Cuttings can be stored or transported for a few days provided they are kept in the shade, and in a little water, which must be changed regularly to reduce the possibility of stem rots.

How to grow: Kangkong is not difficult to grow providing the soil is rich in organic matter and water is readily available. It can grow in full sun preferably with some afternoon shade. The main roots require soil to grow but the plant will easily spread over water. Soils of poorer fertility and insufficient water will produce slower growing plants with thinner stems and smaller leaves with a stronger, bitter flavour. Cuttings of three or more nodes should be planted with at least one node under the surface. The area around the plant should be kept moist and free of grass and other weeds.

Threats: Pests and diseases do not usually cause problems. Leaf eating insects such as grasshoppers and some caterpillars are occasional pests that may become a problem in drier weather. Leaf miner and mealybug can cause reduced growth and malformed leaves. Healthy planting material and good growing conditions can help reduce the occurrence and impact of these pests.

Harvesting: Depending on the amount of kangkong being grown and the growing conditions, harvesting can be carried out daily. The tips, usually back to the 3rd newest full leaf, should be neatly picked, ideally in the cooler part of the day to prevent wilting. The cut tips can be stood upright in a bucket or container with some clean water. Where a tip has been harvested that runner should produce one or more new tips suitable for harvesting in a few days.



• Kangkong runner suitable for replanting

• Potted cutting ready to transplant

• Harvested tips suitable for eating, about 300 mm long, 10 mm thick at the base and with 3 to 5 full leaves

Post harvest and storage: Tips should be washed carefully with water of drinking quality or clean seawater. They can be bundled with their stems trimmed and stood upright in a small amount of clean fresh water. They should store for a day or two if covered and kept in a cool location.

Project findings/nutritional value: Samples of kangkong for analysis were collected from north Queensland, Tonga and Samoa. Around 100 grams of fresh vegetable (about 3 handfuls) per person for a meal serving will provide useful nutrition. Kangkong is strong in:

Carotenoids: Lutein (important for eye health) and

beta-carotene (pro-vitamin A, important for vision, immunity, bone growth).

Iron: Important for healthy blood and energy.

Manganese: Enzymes containing manganese are important in the metabolism of carbohydrates, protein and fats, and in enhancing immunity.

Copper: Component of enzymes, involved in iron metabolism, therefore supports production of healthy blood and generation of energy.

Protein: This is important in forming muscle, cell membranes, enzymes, blood components (antibodies, DNA and RNA). The nitrogen analysis here indicates a protein content of around 19%.

This table compares selected mineral nutrients and carotenoids in leaves of Kangkong and Sweetpotato grown near each other at Lotofaga, Upolu, Samoa in 2012 and English cabbage (average of samples bought from Honiara market, Solomon Islands and Nukualofa market, Tonga in 2012) (concentration in mg/kg dry weight, except N: % dry weight).

	Fe	Mn	Cu	Zn	Ca	Mg	S	N %	lutein	alpha carotene	beta carotene
Kangkong	75	93	16	17	5500	3500	2900	4.3	373	0	226
Sw.potato leaf	69	53	15	27	5500	4800	2800	3.6	336	6	225
Cabbage	40	23	2	20	5700	1450	5900	2.8	5	0	2

Fe: iron; Mn: manganese; Cu: copper; Zn: zinc; Ca: calcium; Mg: magnesium; S: sulphur; N: nitrogen

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The factsheets are intended to provide information on some of the most nutritious leafy green vegetables suitable for growing in tropical areas.

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