TAROLEAF

FACTSHEET no: 2

• *True Taro leaves*

• *Tannia leaves*

• *Taro plants*

Botanical name: *Colocasia esculenta; Xanthosoma sagittifolium* (Araceae)

Location specific common names: *C. esculenta*: true taro, talo, dalo, dasheen

X. sagittifolium: tannia, taro palagi, Singapore taro, malanga, cocoyam, eddoe

Plant characteristics: All taros are edible aroids, with large, broad leaves on stems growing from a corm or enlarged starchy stem with numerous roots. The main difference between *X. sagittifolium* and *C. esculenta* is in the leaf shape; *Xanthosoma* spp have sagittate (arrow-shaped leaves) whereas the leaves of *Colocasia* spp are peltate (rounded/shield shaped). Most taros are known as a starchy vegetable but in many countries leaves, stems, and runners are important and nutritious foods. Plants range from 1 to 3 m in height. The sap from these plants can irritate the skin.

Uses: The younger full leaves are best to eat. They are often used as edible wraps for food parcels but must be well cooked (preferably boiled) to reduce the itchiness caused by calcium oxalate crystals in the leaf tissue. For example in Tonga the leaves of *C esculenta* are used to produce *lupulu* (corned beef wrapped in taro leaf then baked), and in Samoa for *palusami* which is onion and coconut cream (sometimes with meat/fish included) wrapped in taro leaf and baked. Shredded leaves can be added to other ingredients and cooked by steaming, boiling, frying or baking.

Availability: Leaves of both taros are available all year in most tropical locations.

Propagation methods: New plants can be produced from tops of the main corm, suckers or in some cases, runners. Tissue cultured plants are recommended for introducing new varieties into a country or in some cases, between different islands and areas within a country, to ensure disease free mother plant material and to prevent the spread of diseases.

How to grow: Both aroids are not difficult to grow providing the soil is rich in organic matter; however *C. esculenta* is more demanding of water than *X. sagittifolium*. Both species can be grown in full sun but preferably with some afternoon shade. Ideally the plants should be well-mulched, keeping the soil moist and the area around the plants free of grass and other weeds.

Threats: *C. esculenta* is more susceptible to pests and diseases than *X. sagittifolium*. Taro leaf blight, a fungal disease, is a serious problem in some countries, for example, Samoa and therefore resistant varieties must be grown. Leaf eating insects like the hornworm (hawk moth) and armyworm caterpillars can also cause significant leaf damage, if not controlled. Selecting healthy planting material and providing good growing conditions can reduce the occurrence and impact of these pests.

Harvesting: Suitable leaves (younger) can be harvested daily. They should be neatly picked, kept cool and moist and rolled into small bundles. Harvesting in the cooler

• *Mature Taro plants in cultivation*

• *Harvested taro leaves in Suva market*

• *Mature Tannia plants in agroforestry plot*

part of the day prevents wilting. Unless being grown solely for leaves, plants should grow 2-3 new leaves after harvesting; this allows the plant to maintain its vigour and produce a reasonable corm.

Post harvest and storage: Leaves should be used fresh after washing carefully with water of drinking quality or clean seawater. They can be loosely bundled, wrapped in damp paper and kept in a cool location. If covered with a clean plastic bag, and kept cool, they should store for a day or two.

Project findings/nutritional value: Samples of taro leaves for analysis were collected from north Queensland, Torres Strait Islands, Tonga, Solomon Islands and Samoa. Around 100 grams of fresh leaf (about 3 handfuls) per person for a meal serving will provide useful nutrition. Taro leaves are good sources of the carotenoids, lutein and beta-carotene, protein and certain minerals

Carotenoids: Lutein is important for eye health (e.g. reducing risk of cataracts), and beta-carotene (pro-vitamin A) is important for vision, immunity and bone health.

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 18%.

Iron: Important for healthy blood and energy.

Zinc: Important for immunity, growth, carbohydrate metabolism, and DNA and protein formation. Humans have around 600 different Zn-containing enzymes/ proteins.

Potassium: Controls body water balance through its interactions with sodium and chloride ions, and is involved in electrical stimulation of nerves and muscles. Its deficiency can cause muscle weakness, cramps and irregular heartbeat.

This table compares selected mineral nutrients and carotenoids in leaves of taro (*C. esculenta*), ete (*Polyscias spp.*) and "sandpaper cabbage" (*Ficus spp.*) grown together on a low pH soil at Nunura Village, Marau, Guadalcanal, Solomon Islands 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	Cu	Zn	Ca	Mg	K	P	N %	lutein	alpha carotene	beta carotene
Taro	75	11	27	12900	3500	42000	3100	4.1	364	10	148
Ete	61	19	33	16300	10400	41000	2400	4.8	233	29	66
Ficus	27	5	16	22000	3500	17600	1250	2.1	300	32	80
Cabbage	40	2	20	5700	1450	29000	3750	2.8	5	0	2

Fe: iron; Cu: copper; Zn: zinc; Ca: calcium; Mg: magnesium; K: potassium; P: phosphorus; N: nitrogen.

Analyses conducted by Waite Analytical Services and the Mares Laboratory, University of Adelaide, South Australia

Australian Government

Australian Centre for International Agricultural Research

This fact sheet is one of a series produced for the Australian Centre for International Agricultural Research (ACIAR) funded activity "Feasibility study on increasing the consumption of nutritionally-rich leafy vegetables by indigenous communities in Samoa, Solomon Islands and Northern Australia. PC/2010/063"

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

COMPILED BY **R. GOEBEL, M. TAYLOR** & **G. LYONS**