PLANT FACT SHEET

Canarium indicum L.

GENUS *Canarium* **FAMILY** Burseraceae

COMMON NAMES Galip nut, Java almond

EDIBLE PARTS AND USES

Edible parts: Nuts, Seeds - oil

The kernels are eaten raw or slightly roasted.
Seeds can be dried and stored.
The nuts can be pressed for oil. The fresh oil is mixed with food.
CAUTION The seed coat should not be eaten as it carries some substance producing diarrhoea.

DESCRIPTION

It is a large tree often up to 40m high. The stems are often twisted or rough and 1 m across the trunk and there are usually buttresses at the base of the tree. The buttresses are tall but thin. The small branches are more or less powdery. The vascular strands are unusual as can be seen in the pith or centre mass of cells, not spaced in a continuous circle as in many trees. The leaf of a galip tree is made up of 3 to 7 pairs of leaflets. The leaves do not have hairs on them. The leaflets are oblong and can be 7 to 28 cm long and 3 to 11 cm wide. In young trees the leaves are distinctly larger. The leaves are pointed at the tip and rounded at the base. The leaflets are stiff and glossy being dark green on top and light green underneath. At the base of a leaf where the stalk joins the branch there is a stipule and it is large and has saw like teeth around the edge. This is important for identifying species. The flowers are mostly produced at the end of the branches. A group of flowers are produced on the one stalk. The flowers are separately male and female often on separate trees. The male flowers have 6 anthers or pollen containers in a ring. In the female flower these 6 stamens are improperly developed (staminodes) around a 3 celled ovary. The fruit is slightly triangular in cross section and black when mature. The galip fruit has 3 cells (sometimes 4) but mostly only one cell is fertile so that 2 of the cells are empty, and one has a kernel. The fruit has a thin layer of pulp and a very hard inner shell. The kernel is inside the shell. Fruit can be 6 cm x 3 cm. This kernel is oily and edible.

HABITAT

A tropical plant. The galip (Canarium indicum) grows in coastal areas, and is most common in the islands such as North Solomons Province, New Britain and New Ireland. It also occurs naturally in the Solomon Islands, Vanuatu and Guam. It occurs on the New Guinea mainland and Papua as well as in Maluku in Indonesia. It has been taken to some other countries to grow. Galip nuts are common in the lowland rainforest. It suits humid locations. They mostly grow from sea level up to about 450 m altitude in the equatorial tropics but can be up to 900 m above sea level.

PRODUCTION

Cultivation

Trees are planted near houses. They are mostly grown from seed. Many of the galip nuts take several months for the seeds to start to grow. As well, the seeds normally should not be buried under the ground, but should be just near the surface of the ground. Care is needed to see that the seeds and seedlings do not dry out. As the seed grows or germinates, a well defined cap is split off the nut. Trees grow fairly quickly. They can be grown by budding or grafting.

Considerable varietal variation occurs.

Harvesting and Seed Production

Trees flower after 5-7 years. Fruit reach maturity 5-8 months after flowering. The main season is often April to May but trees can bear nuts 2 or 3 times a year. An average kernel weighs 3 g. A mature tree can produce 100 kg of nuts which results in 15 kg of kernels. Climbing the large trees is difficult and dangerous, so often nuts are harvested after they fall. Nuts are often stored inside houses after the fleshy outer layer is removed but the hard shell remains. Nuts which are removed from the shell and roasted can be stored in sealed containers for many months. The nuts are often coarsely ground and added to other foods.

Planting instructions

Galip nuts

Canarium indicum

Names.

In Tok Pisin the word "galip" can be used in several different ways. It has both a general and then also a specific meaning. It can be used very widely to include many nuts such as peanuts, pao nuts, and several other nuts from trees. As the word "galip" was originally a Tolai word from the Kuanua language this is the way it is being used in this article. Tolais used "galip" for the nuts of a particular tree which is also called the Canarium almond in English.

Scientists give every plant a scientific name in the Latin language, then it is the same for all scientists of the world, no matter what language they speak. The name scientists have given to this plant is Canarium indicum. It was given this name by a man called Linnaeus as long ago as 1759. Unfortunately early scientists mixed up two similar nut trees and so the scientific names have also got mixed up and are often used incorrectly. The correct name for the common galip in Papua New Guinea is Canarium indicum L. A similar, but different, nut tree grown in Malaysia and in Pacific Island countries such as Fiji, is called Canarium vulgare Leenhauts. A name which has been used incorrectly for both these plants is Canarium commune L and this name should no longer be used.

The way to tell the difference between these 2 plants is by looking at a leafy type of growth (called a stipule) which occurs near where the leaf stalk joins the branch. In the PNG galip (C.indicum) this leafy part stays on the stalk and around the edge of it, there are teeth like a saw. In the Pacific tree (C.vulgare) this leafy stipule has a smooth edge and also tends to drop off the tree quickly.

This group of plants called Canarium were given this part of their name after a Malayan word "kanari" which was used for these plants. There are about 100 different species of plants belonging to this group called Canarium. All of these plants originally occurred only in a few countries of the world, mostly in the Asia and Pacific area. The area is shown on this map drawn by a botanists called Leenhauts who has made a special study of these plants. A few of these plants also occur in Africa.

Within the Canarium genus or group, there are several different plant species which produce edible nuts. The ones that occur in Papua New Guinea and have nuts which are eaten are listed below.

Canarium indicum L - common galip or galip tru
Canarium salomonense ..urtt
Canarium kaniense Laut
Canarium schlechteri Laut.

There is also probably a species in the Western Province of which the flesh is eaten, after cooking, like the Chinese olives (Canarium album).

It is interesting that such a large and important group of food plants has not been studied and improved by agriculturalists.

The next table is of the different scientific names of the edible Canarium plants known from other countries.

Canarium album Raeusch
Canarium amboinensis Hochr.
Canarium australasicum
Canarium bengalense Rozb.
Canarium decumanum Gaertn.
Canarium denticulatum Blume
Canarium grandiflorum Benn
Canarium littorale Blume
Canarium luzonicum A Gray
Canarium megalanthum Merr.
Canarium muelleri
Canarium nigrum Engl.
Canarium nitidum Benn
Canarium odontophyllum Miqu.
Canarium oleosum (Lamk.)Engl.
Canarium ovatum Engl.
Canarium patentinervium Miqu.
Canarium polyphyllum K.Schum.
Canarium pseudo-decumanum Hoohr.
Canarium purpurascens Benn.
Canarium rufum Benn.
Canarium samoense Engl.
Canarium schweinfurthii Engl.
Canarium secundum Benn
Canarium strictum Roxb.
Canarium sylvestris Gaertn.
Canarium vulgare Leenh.
Canarium williamsii C.B.Rob.
Canarium zeylanicum Blume

What is a galip nut tree like?

It is a large tree often up to 40m high. The stems are often twisted or rough and there are usually buttresses at the base of the tree.

The small branches are more or less powdery. If a small branch is cut crossways and looked at very carefully, small round vascular strands can be seen in the pith or centre mass of cells. (This is different to most woody trees where these are in a more or less continuous circle around the edge of the branch).

The leaf of a galip tree is made up of 3to 7 pairs of leaflets. The leaves do not have hairs on them. The leaflets are oblong and can be 7 to 28cm long and 3 to 11 cm wide.

At the base of a leaf where the stalk joins the branch there is a special leaf like structure that is important for helping to identify the PNG galip tree. This leafy structure is called a stipule and it is large and has saw like teeth around the edge. (Another PNG Canarium nut (C.kaniense) also has a similar large stipule.)

The flowers are mostly produced at the end of the branches. A group of flowers are produced on the one stalk. The flowers are seperately male and female. The male flowers have 6 anthers or pollen containers in a ring. In the female flower these 6 stamens are improperly developed (staminodes) around a 3 celled ovary.

The galip fruit has 3 cells (sometimes 4) but mostly only one cell is fertile so that 2 of the cells are empty, and one has a kernel.

Where do galip nuts grow?

The galip (C.indicum) grows in coastal areas, and is most common in the islands such as North Solomons Province, New Britain and New Ireland. It also occurs naturally in the Solomon Islands, Vanuatu and Guam. It occurs on the New Guinea mainland and Irian Jaya as well as in Maluku in Indonesia. It has been taken to some other countries to grow.

Galip nuts are common in the lowland rainforest.

They mostly grow from sea level up to about 300 m altitude.

How do you grow galip nut trees ?

Many of the galip nuts take several months for the seeds to start to grow. As well, the seeds normally should not be buried under the ground, but should be just near the surface of the ground. Care is needed to see that the seeds and seedlings do not dry out.

As the seed grows or germinates, a well defined cap is split off the nut.

Trees grow fairly quickly.

Varieties of galip nuts ?

Not all galip nuts are the same. People on the St Matthias group of islands off New Ireland recognise 7 different kinds. These include the most common pale coloured galip but also one with a reddish black seed, one with a larger kernel, one with a small kernel, one with a round fruit and one with a thin walled nut. This sort of variation is important for plant breeders who want to improve the kinds that are grown.

People who have talked briefly about galip nut growing and use in villages.

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Peekel, An Illustrated Flora of the Bismarck Archipelago

NOTES

There are 80-95 Canarium species. Galip nuts Canarium indicum
Names.

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PICTURES



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