

South Pacific Commission

Community
Health
Services

South
Pacific
Foods

Leaflet
Revised 1995 **6**



Green leaves

Nutritious Pacific plants

The green leaves of plants are important foods in almost all parts of the world. Scientists believe that about 1000 different plants have leaves that can be eaten. Many of these plants grow in the Pacific Islands. A few can be found or grown on dry coral atolls.

Some kinds of green leaves grow on trees or bushes, and others on smaller, leafy plants. Trees and bushes produce leaves for a long time, provide leaves even during the dry season, need very little care, and can be used to fence gardens. Cabbages, spinach-like green leaves, and other small leafy plants produce more leaves in a shorter time and are easier to pick than trees or bushes.

Trees, bushes and small leafy plants are all good crops for a home garden. Growing green leaves in a home garden is a good way to make sure fresh green leaves are always available for family meals.

Sometimes green leaves can also be found in the bush or growing as weeds in gardens or farm-land. Gathering and preparing traditional leaves is a low-cost way to enjoy the taste and goodness of green leaves.



Quality foods for everyone

Many popular plants that are grown for other purposes have leaves that can be eaten, for example, taro, sweet potato, cassava, pumpkin and chilli. Often, the leaves have a greater food value than the main crop. However, if too many leaves are picked from one plant, the main crop may not grow properly. Sometimes it is best to keep two plots – one for leaves and one for the other crop.

The market is another place to find green leaves, especially for people who live in towns. The traditional green leaves that can be bought at the market are usually a better buy than European lettuce and cabbage. An advantage of growing your own green leaves is that you know they are fresh and have no pesticide on them.

In some places in the Pacific, green leaves are eaten often, whereas in other places, they are regarded as 'poor man's food' or animal food. This is not

true. Green leaves are one of the most healthy foods found in the Pacific. Where possible, everyone should learn to grow or buy whatever kinds of leaves can be eaten.

Dark green leaves are one of the most nutritious foods available. Some foods have only a few of the nutrients the body needs, but green leaves have many important vitamins and minerals. Therefore, serving lots of green leaves can help make sure family meals are well balanced.

Plants make and store **protein**, which the body needs to grow and stay healthy. Meals that do not include other protein sources such as meat, fish, eggs or beans should always include lots of dark green leaves.

Eating green leaves gives people important minerals, such as **iron** which makes blood strong, **calcium** which is necessary for healthy bones, **magnesium** and **potassium** which are needed to help bodily functions during heavy work or when playing sports in hot climates.

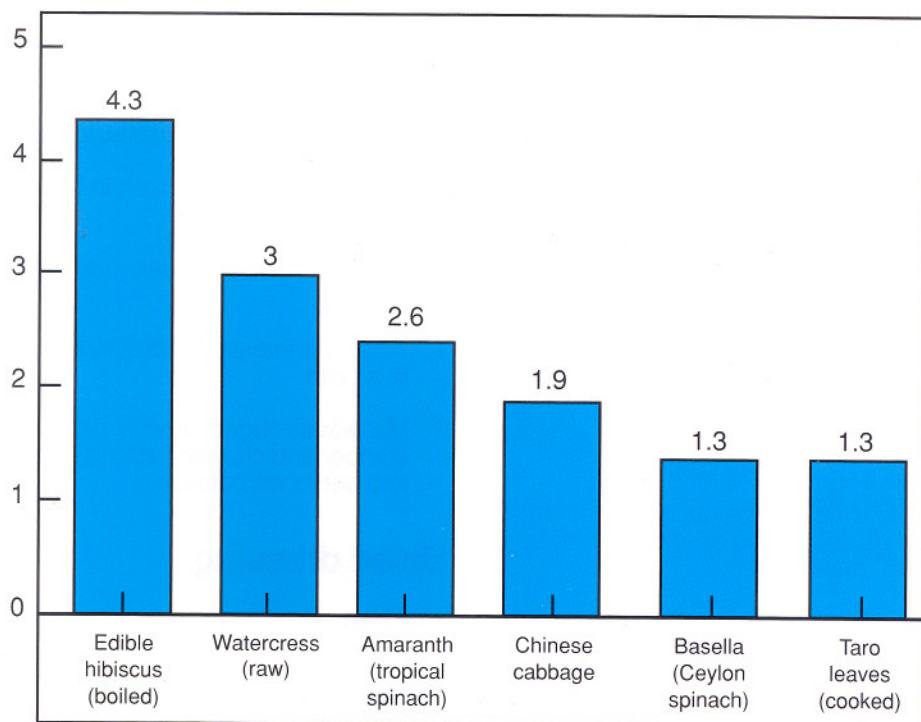


Some green leaves of the Pacific

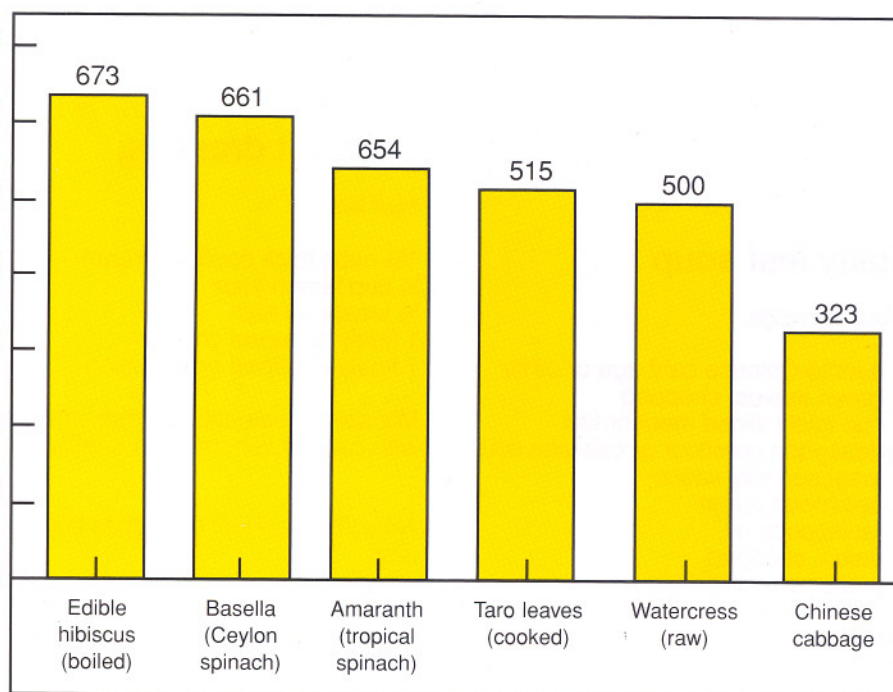
English name	Scientific name	Some local names	Food value	Description of plant	Preparation method
1. Amaranth, tropical spinach, Ceylon spinach	<i>Amaranthus</i> species	Aupua (PNG) Tubua (Fiji) Te mota (Kiribati) Bhaji (Indian)	Very good	Plant with stand-up stems and spikes of flowers; many different kinds	Easy method, stir frying
2. Basella, creeping spinach, Ceylon spinach	<i>Basella alba</i> <i>Basella rubra</i>	Poi (Indian)	Good	Climbing or bushy plant with pink or white flowers and dark, oval leaves	Easy method (no longer than 5 minutes), stir frying or fresh in salads
3. Cassava leaves	<i>Manihot esculenta</i>	Iaui manioke (Tonga) Te tabioka (Kiribati)	Very good	Root-bearing shrub with different stem colours and leaf shapes	Choose young leaves; cook by special method. Do not eat raw.
4. Chilli leaves	<i>Capsicum frutescens</i>	Polo (Polynesia) Te boro (Kiribati)	Very good	Small fruit-bearing bush	Easy method, stir frying
5. Chinese cabbage, pak choi	<i>Brassica chinensis</i>	Te kabitini taina (Kiribati) Kapisi siaina (Tonga)	Good	Dark green leaves with light stalks	Easy method, stir frying or use fresh in salads
6. Cowpea leaves (no photo)	<i>Vigna unguiculata</i>	Piini (Tonga) Te bin (Kiribati)	Good	Climbing or bushy plant with long pea-pods	Easy method or stir frying
7. Drumstick tree, horse-radish tree	<i>Moringa oleifera</i>	Tiaitian (Kiribati) Suijan (Fiji)	Very good	Small tree with yellowish-white flowers and long pods	Easy method or stir frying
8. Edible hibiscus	<i>Abelmoschus manihot</i> or <i>Hibiscus manihot</i>	Aibika (PNG) Bele (Fiji) Pele (Polynesia) Ailan kapis (Vanuatu)	Very good	Small shrub with soft, dark-green leaves of various shapes and yellow flowers	Easy method (no longer than 5 minutes, turn leaves once)
9. European cabbage	<i>Brassica oleracea</i> var. <i>capitata</i>	Te kabitini ni Imatang (Kiribati)	Fair	Solid round heads of light green leaves	Easy method, stir frying or use fresh in salads
10. Fern	<i>Athyrium esculentum</i>	Ota (Fiji)	Good	Large wild fern that grows in wet places and along edges of rivers	Use top of stalks, split into four pieces, then cook by easy method.
11. Fig leaves (no photo)	<i>Ficus</i> species	Lau fiki (Tonga)	Very good	Small tree, often with rough leaves, with edible fruit	Easy method or stir fry. Use young leaves.
12. Gnetum, jointfir spinach	<i>Gnetum gnemon</i>	Tulip (PNG)	Very good	Small nut-bearing tree that usually grows in the bush	Choose very young leaves, use easy method or stir frying. Do not eat raw.
13. Indian mulberry tree	<i>Morinda citrifolia</i>	Te non (Kiribati) Nonu (Tonga)	Very good	Small tree with dark green leaves, white flowers and bumpy fruits	Choose very young leaves and use easy method
14. Kale seedlings	<i>Brassica oleracea</i> var. <i>acephala</i>	—	Good	Small seedlings grow up to 10 centimetres before harvesting.	Easy method or stir fry or use fresh in salads.
15. Kangkong, water spinach	<i>Ipomoea aquatica</i>	Te kangkong (Kiribati)	Good	Trailing plant that grows in water or on damp land, with pink or white flowers	Easy method, stir frying or use fresh in salads
16. Lettuce	<i>Lactuca sativa</i>	Letisi (Polynesia)	Fair	Small, upright plant with long or cylindrical leaves	Use fresh in salad after washing in clean water.
17. Nightshade	<i>Solanum nigrum</i>	Polo kai (Tonga) Malasou (Fiji) Karakap (PNG)	Good	Small flowering plant, has small berries that are poisonous and must not be eaten	Easy method or stir frying. Choose young leaves.
18. Pumpkin leaves	<i>Cucurbita moschata</i>	Te baukin (Kiribati) Lip pamkin (PNG) Lau hina (Tonga)	Good	Fruit-bearing vine with soft leaves	Choose young shoots and leaves, use easy method or stir fry.
19. Sweet potato leaves	<i>Ipomoea batatas</i>	Te kumara (Kiribati)	Good	Root-bearing vine with soft green leaves	Easy method or stir frying
20. Taro leaves	<i>Colocasia esculenta</i> , <i>Xanthosoma</i> species	Te taororo (Kiribati)	Very good	Root-bearing shrub with soft leaves	Choose soft young leaves with pale stalks, use special method. Do not eat raw. Stalks can also be cooked.
21. Watercress	<i>Nasturtium officinale</i> , <i>Roripa nasturtium-aquaticum</i>	Cresson (New Caledonia) Kapisi vai (Samoa) Cress (PNG)	Good	Trailing plant that grows in water	Collect only from clean water and wash well. Easy method (only 3 minutes), stir frying, or use fresh in salads.
22. Winged bean leaves (no photo)	<i>Psophocarpus tetragonolobus</i>	Bin (PNG)	Very good	Climbing plant with long four-sided pods	Easy method, stir frying or use fresh in salads.



7
6
5
4
3
2
1



Iron in mg for 100 g of green leaves



Vitamin A in µg for 100 g of green leaves

Green leaves are also a source of vitamins, including **Vitamin A**, **Vitamin B** and **Vitamin C**. Vitamins are necessary for good health. They help the body work properly.

Almost all green leaves are a good source of some protein, vitamins and minerals, but darker green leaves usually have more nutrients than lighter green leaves.

Green leaves also provide a good source of dietary fibre. Fibre prevents constipation and helps the body to have regular bowel motions. It also tends to lower blood cholesterol and help prevent heart disease.

Green leaves for special needs

Everyone in the family should eat some green leaves every day. In particular, children, pregnant women and nursing mothers need the protein, vitamins and minerals found in green leaves. If these groups of people do not get enough iron, they are likely to get *anaemia*, which means they do not have enough red cells in their blood. This condition makes women feel tired and weak and children do poorly in school and sports. Anaemia can be prevented by eating lots of green leaves.

People with special needs should eat each day the amounts of cooked green leaves listed below:

Babies,
4 – 6 mths to 2 years: 1 – 2 tablespoons

2 years – 5 years: ¼ cup

School children: ½ cup
Pregnant women: ½ cup

Nursing mothers: ½ cup

For babies, soft leaves with no stems are best. Some good leaves for babies are: basella, edible hibiscus ferns and tropical spinach.

Since babies cannot chew well, the leaves can be mashed, strained or ground, and given by spoon to the baby. Adding a small amount of green leaves to other soft foods prepared for babies is also a good idea.

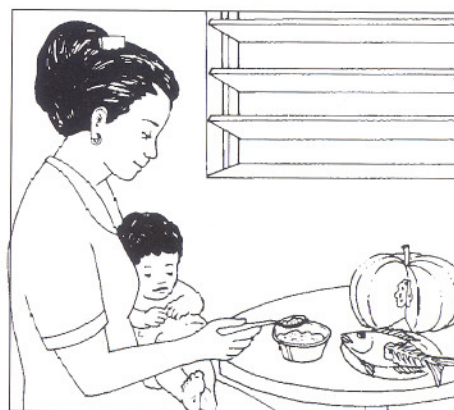
Plain or fancy preparation?

Green leaves are usually at their best during the hot, wet months. When leaves are picked from the plant during this time, new ones will grow back quickly.

The leaves chosen for eating should be young and soft. The crisp tops and side shoots of some plants can be used. Older leaves are sometimes tough, have a stronger flavour and need to be cooked longer.

Some green leaves, such as watercress, kangkong, basella, Chinese cabbage and European cabbage, can be eaten raw in salads. Raw salads are a healthy way to use green leaves since no vitamins or minerals are lost in cooking. This also saves cooking fuel.

If green leaves are to be eaten uncooked, they must first be washed thoroughly so that they do not cause sickness. Soaking leaves in the sink or a bowl of clean water for a few minutes is also a good idea. They should be gently dried with a cloth or shaken dry before use.



Some other green leaves can be cooked, left to cool, then used for salad. *Athyrium* ferns and pumpkin shoots are good this way.

Salads do not have to be prepared strictly according to recipes. Any available vegetables or other foods can be used. They taste best with a little lemon juice and oil mixed together, or salad dressing.

Green leaves should never be cooked longer than necessary. They should be eaten straight after cooking. Some good methods for cooking leaves are given here.

Easy method for most green leaves

1. Wash leaves in clean water and remove tough stems.
2. Put a small amount of water in a cooking pot, and bring to the boil.
3. Add the leaves, cover with a lid, and cook until tender but still crisp (3 – 10 minutes).
4. Add coconut cream a few minutes before the leaves are cooked, or serve with coconut cream, if desired.
5. If making a soup or a sauce, use left-over cooking water (but when cooking cassava leaves, throw away the water and use thin coconut cream instead).

Special method for leaves that are very bitter or that cause the mouth to itch or burn, such as taro leaves or cassava leaves

1. Wash leaves and place in a pot with enough water to cover.
2. Bring to the boil and boil 5 – 10 minutes with lid off.
3. Drain the water off and throw it away.
4. Add enough fresh water or coconut cream to cover the leaves again, add a little salt, put a lid on, and steam until tender (15 – 20 minutes).

Stir frying

1. Cut up leaves. Heat a little oil or fat in a pot (1 teaspoon for every cup of leaves).
2. Add chopped garlic, ginger or other flavourings, and fry for 1 minute.
3. Stir in cut-up leaves and fry, stirring all the time, for about 5 minutes.
4. Add a few teaspoons of water if necessary, cover the pot, and steam for 2 – 5 minutes. Serve hot.



Note: Coconut cream can be added to the green leaves for extra flavour and food value.

Cooking green leaves with coconut cream, a little oil, or other body-building foods such as meat, fish (especially fatty fish) and chicken helps the body use the Vitamin A that is in the leaves. Green salads mixed with shellfish, legumes (beans and peas) and a little dressing are very easy and nutritious ways to eat green leaves.

Green leaves can also be added to any kind of soup or stew to add flavour and nutritional value, or simply cooked with meat or fish as a main dish for the family.

Tasty leaf soup

Four servings:

- 1 bundle Chinese cabbage or other green leaves, chopped
- 1 cup thinly sliced meat or fish
- ½ teaspoon cornflour or cassava flour
- 1 teaspoon soy sauce
- ½ teaspoon sugar
- 1 tablespoon oil
- 1 onion, chopped
- 2 teaspoons sliced ginger
- 6 cups water
- Salt
- Pepper

1. Combine soy sauce, sugar, and cornflour, and mix well. Add meat or fish and set aside.
2. Heat oil, add ginger and onion, and fry until tender.
3. Boil water in a large pot. Add meat or fish and soy sauce mixture, ginger, and onion. Simmer 10 minutes.
4. Add green leaves and simmer another 10 minutes.
5. Season with salt and pepper to taste, and serve.

Note: Most green leaves are suitable for this recipe, except very soft ones such as taro leaves, gnetum and Indian mulberry.

Summer salad

Four servings:

- 1 cup shredded Chinese cabbage leaves
- 1 cup watercress
- 1 cup basella leaves, broken in half
- 1 cup diced cucumber
- 3 spring onions, chopped
- 1 cup salad dressing (see recipe this page)

1. Wash the leaves thoroughly and dry in a cloth.
2. Mix leaves together with diced cucumber and chopped spring onions, and serve with dressing.

Salad dressing

Half litre:

- 2½ cups oil
- ¼ cup vinegar or lemon juice
- ¼ teaspoon salt
- Pepper, to taste
- Crushed garlic, to taste

Put all ingredients in a bottle and shake well. Use immediately or store for later use.

Coconut dressing

Half litre:

- 1¾ cups thick coconut cream
- ¼ cup lemon juice
- ¼ teaspoon salt
- 1 finely chopped chilli
- 1 finely chopped green onion

Mix all ingredients together and serve with cooked fish, meat or shellfish.

Note: Prepare just enough to last for the day.

Tropical salad

Four servings:

- 2 cups chopped lettuce or other green leaves
- ½ cup fresh grated coconut
- 2 tablespoons chopped green pepper (capsicum)
- ¼ cup chopped nuts
- ¼ teaspoon salt
- 1 cup salad dressing (see recipe in this leaflet)

Mix all ingredients together, then serve.

Note: Only green leaves that taste good raw should be used in this recipe. They include creeping spinach, Chinese cabbage, European cabbage, kangkong (water spinach) and watercress.

Fish and green leaf curry

Four servings:

- 1 small onion
- 1 small chilli
- 2 pieces of garlic
- ½ teaspoon salt
- 1 bundle (230 g/8 oz) green leaves
- 2 tablespoons oil
- 1 cup water or coconut cream, if desired
- ½ large or 1 small tin of fish
- Curry powder to taste

1. Finely chop onion. Grind garlic and chilli with salt. Wash and cut up green leaves.
2. Put the oil in a pot, heat, then add onion, garlic and chilli, and fry.
3. Add curry powder and fry. Stir in green leaves and fry one minute.
4. Add the fish and stir well. For a wet curry, add water or coconut cream.
5. Cook slowly until green leaves are soft, then serve.

Note: The best leaves for this recipe are amaranth (tropical spinach), drumstick, European cabbage, Chinese cabbage, kangkong (water spinach) and pumpkin tips.

Green leaves with white sauce

Four servings:

- 2 tablespoons butter or oil
- 2 tablespoons flour
- ¼ teaspoon salt
- 1 pinch pepper
- 1 cup milk
- 2 cups cooked green leaves

1. Heat butter or oil in a pot. Remove from heat and stir in the flour, salt, and pepper.
2. Return to heat and stir until mixture bubbles. Remove from heat and stir in the milk.
3. Return to heat and stir until mixture boils. Simmer for a few minutes, then add the cooked green leaves. Serve.

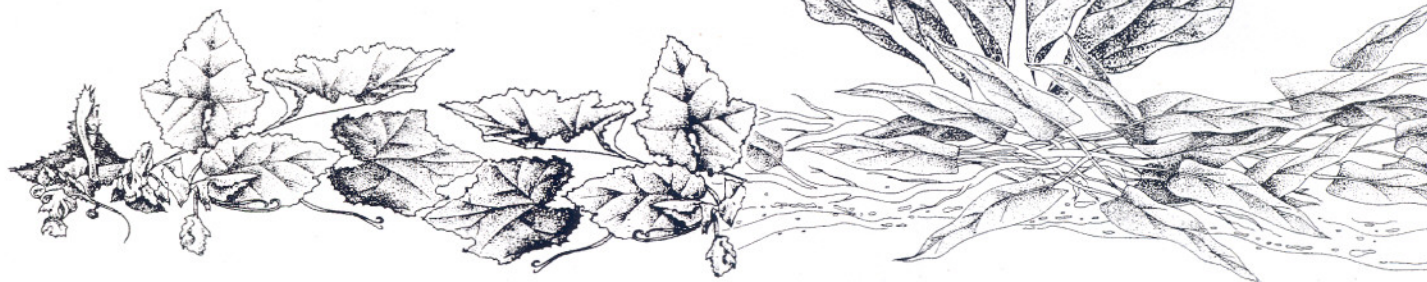
Variations: Add a little chopped onion to the butter and fry for a few minutes before adding the flour. Or, add some grated cheese to the hot sauce before adding the cooked green leaves.

Green leaf laplap

Four to six servings:

- 8 large edible hibiscus leaves
- 4 cups grated raw cassava
- 1 cup cooked fish or lean meat
- 1 medium onion, finely chopped
- ½ cup coconut cream
- 8 small banana leaves

1. Soften eight small banana leaves over a fire. Lay a layer of green leaves on the banana leaves.
2. Add a layer of cassava and then a layer of meat or fish. Top with a final layer of edible hibiscus leaves.
3. Using a clean finger, poke holes from the top layer down to the bottom layer. Pour coconut cream through holes.
4. Sprinkle onions over the mixture and fold leaves over to make a parcel.
5. Steam or bake for 1½ – 2 hours. Serve.



This leaflet is the sixth in a series devoted to the uses of local Pacific foods. Other leaflets available in this series are:

- Leaflet 1 – Taro
- Leaflet 2 – Pawpaw
- Leaflet 3 – Mango
- Leaflet 4 – Guava
- Leaflet 5 – Cassava
- Leaflet 7 – Banana
- Leaflet 8 – Coconut
- Leaflet 9 – Breadfruit
- Leaflet 10 – Pineapple
- Leaflet 11 – Citrus fruits
- Leaflet 12 – Pumpkin
- Leaflet 13 – Sweet potato
- Leaflet 14 – Yam
- Leaflet 15 – Nuts and seeds
- Leaflet 16 – Legumes
- Leaflet 17 – Fish
- Leaflet 18 – Seafoods

Published by the South Pacific Commission and printed by Stredder Print Limited, Auckland, New Zealand.

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Original text: English.

First printed 1983. Revised 1995. Reprinted in 1998 with financial assistance from the Territory of New Caledonia.

South Pacific Commission Cataloguing-in-publication data

Green leaves: nutritious Pacific plants – Rev. ed.
(South Pacific foods leaflet ; 6)

1. Greens, edible 2. Cookery (Greens)
I. Series

641.3565

AACR2

ISBN 982-203-412-1

Copies of this and other leaflets in this series can be obtained from:

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