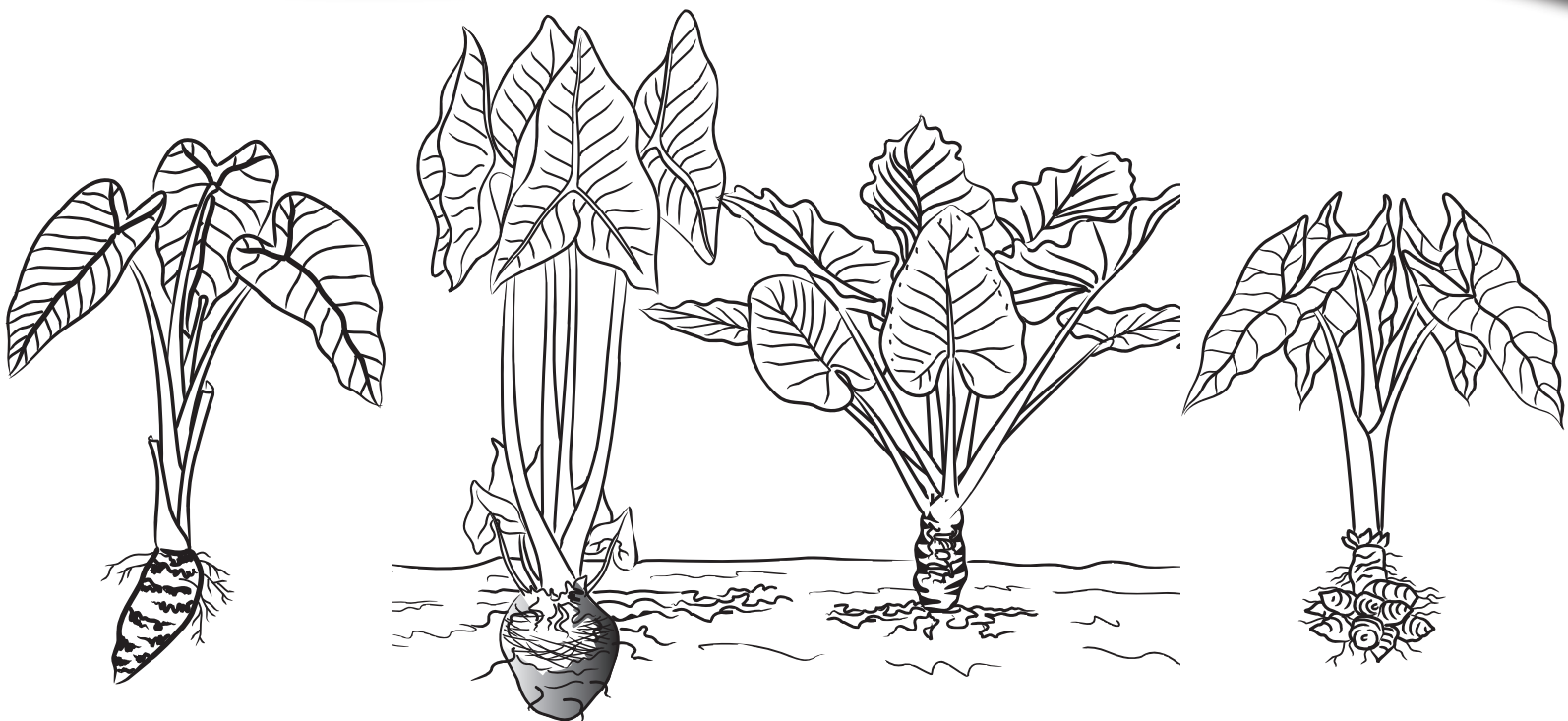


# Taro

*pacific food leaflet n° 5*



*Colocasia*

*Cyrtosperma*

*Alocasia*

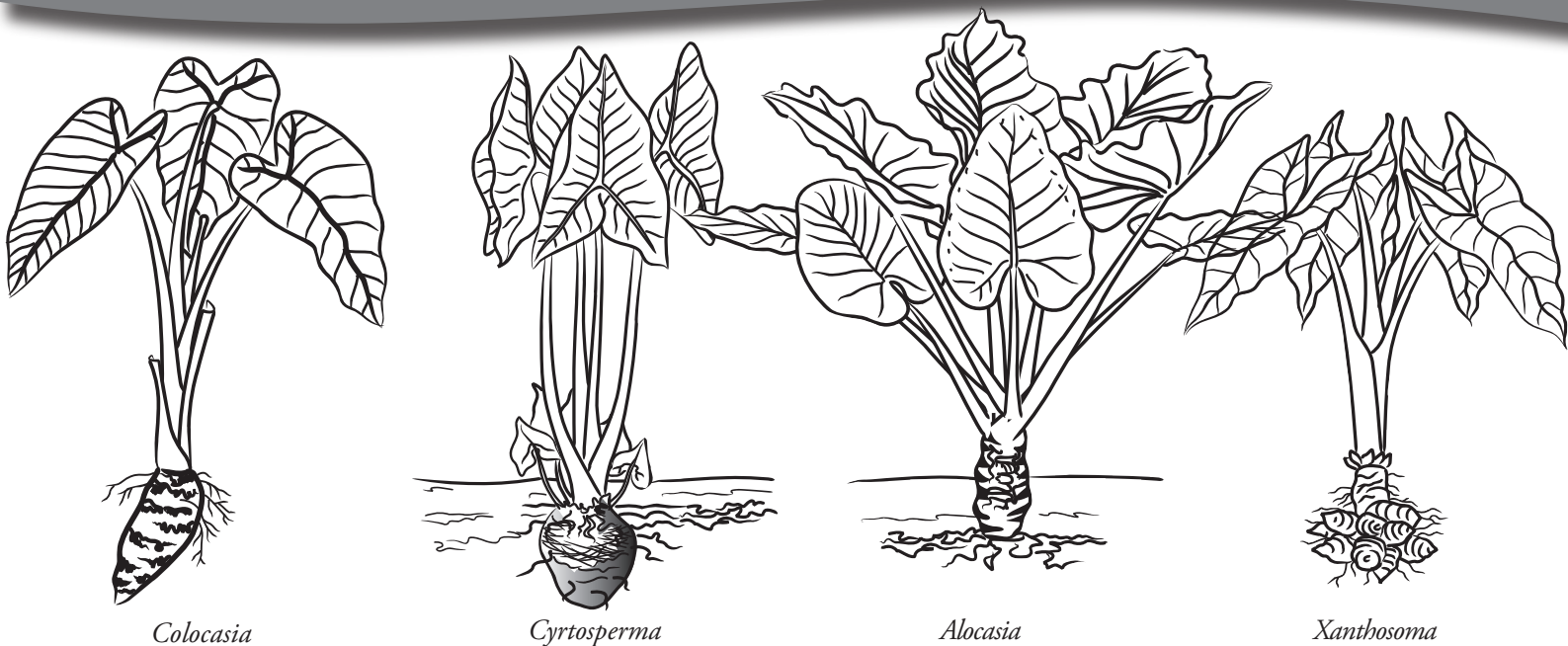
*Xanthosoma*

**T**aro is an important staple food crop in the Pacific and has been for thousands of years. Although taro is increasingly being replaced in the diet by imported products, it remains a treasured food with many different uses. It is also very nutritious and is an important part of a healthy diet.

## Main types of taro

There are four types of taro in the Pacific Islands; all except *Xanthosoma* are native to the Pacific. *Colocasia* taro is the most widespread type with many varieties. It is mainly grown for its corm, but in some areas the stalks and leaves, which are non-vertical, are also eaten after cooking. Usually this taro is grown in rain-fed 'dry' land, but some varieties are able to grow in irrigated terraces or swamps. The crop is important in local customs.

*Cyrtosperma* taro, also called giant swamp taro, is a much taller plant with large arrow-shaped vertical leaves and large coarse corms. It is the main root crop of atolls as it can grow in sandy saline soil and can withstand high winds. Like *Colocasia*, giant swamp taro plays an important role in many social occasions. *Alocasia*, or giant taro, is a hardy plant that can grow in a wide range of soil types. It also has vertical leaves, but has long corms that rise above the ground. *Xanthosoma* is an easily grown taro from tropical America that was brought to the Pacific about 100 years ago. It does better than *Colocasia* in dry conditions. Unlike the other taro, the cormels (small corms growing out of the central corm) are eaten rather than the central corm. Like *Alocasia*, it is a hardy plant that will grow in less fertile soil that is unsuited to growing *Colocasia*. Most taro have the irritating acidity factor; that is, all parts of the plant can irritate the skin, mouth and throat. Some types are worse than others. In particular, if *Alocasia* corms are not prepared properly, they can irritate the throat.



*Colocasia*

*Cyrtosperma*

*Alocasia*

*Xanthosoma*

The many types and varieties of taro vary greatly in appearance, use, taste and other properties. It is important to conserve these varieties and the knowledge associated with them so they can be handed on to future generations.

Taro was almost wiped out in Samoa in the early 1990s due to a fungal disease (taro leaf blight) to which Samoan varieties had no resistance. However, as a result of introducing resistant varieties from other countries and an excellent breeding program that has developed further resistant varieties, taro is again being cultivated successfully in Samoa.

## Nutrient content

Taro, like other staple food crops in the Pacific, is rich in nutrients, particularly compared to white rice.

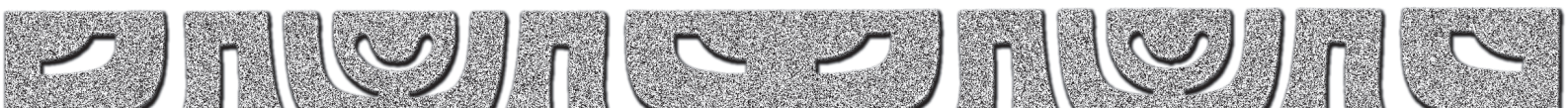
Comparison of nutrients in 100 gram (g) edible portions of boiled taro and white rice.

Food item	Kcal*	Fibre (g)	Calcium (mg)	Iron (mg)	Zinc (mg)	β-carotene equiv.† (μg)	Thiamin (mg)	Vitamin C (mg)
Taro corm, <i>Colocasia</i> , white <sup>1</sup>	99	0.8	34	1.0	0.8	38	0.08	5
Taro corm, <i>Colocasia</i> , yellow <sup>1</sup>	126	1.0	44	1.3	1.0	38	0.11	7
Giant swamp taro corm, <i>Cyrtosperma</i> , <sup>1</sup> colour unspec. <sup>1</sup>	72	2.5	165	0.6	1.9	27	0.02	7.9
-white/creamcoloured <sup>3,4</sup>	na	na	na	na	na	55-300	na	na
-yellow-coloured <sup>3,5</sup>	na	na	240-1440	1.4-3.6	4.1-63	460-4486	na	na
Taro corm, <i>Alocasia</i> <sup>2</sup>	79	1.8	169	0.9	na	na	0.10	1.1
Taro leaves, <i>Colocasia</i> <sup>1</sup>	28	2.5	214	1.7	0.3	4973	0.06	20
Taro stalk, <i>Colocasia</i> <sup>1</sup>	26	0.7	114	1.9	0.4	94	0.00	2
Rice, white <sup>1</sup>	123	0.8	4	0.3	0.6	0	0.03	0

<sup>1</sup>Dignan et al. 2004; <sup>2</sup>Murai et al. 1958; <sup>3</sup>Englberger et al. 2003a; <sup>4</sup>Englberger et al. 2003b; <sup>5</sup>Englberger et al. (unpublished); na= not available.

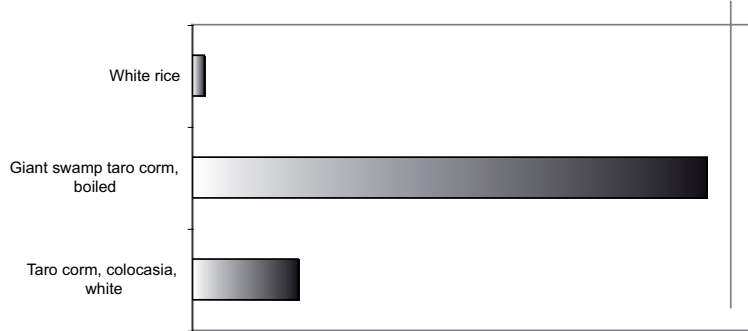
\*Energy expressed as kilocalories; †provitamin A carotenoids expressed as the sum of the β-carotene plus half of the β-carotene.

Note: one heaped cup of cooked taro corm or rice weighs ~250 g.

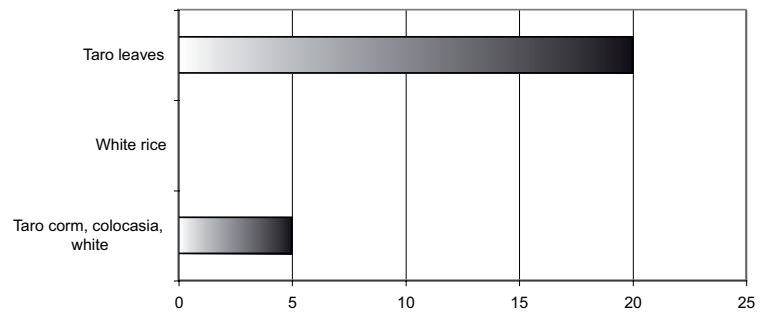




Calcium (mg)/100g



Vitamin C (mg)/100g



Taro corm is an excellent source of the energy that the body needs for warmth, work and play. The corms, particularly of giant swamp taro (*Cyrtosperma*) and taro leaves (*Colocasia*) are rich in fibre, which is needed to make the intestines and bowels work properly. Fibre also helps to control blood sugar in diabetics and reduce blood lipids, which are a risk factor for heart disease. People who eat foods rich in fibre are less likely to be overweight.

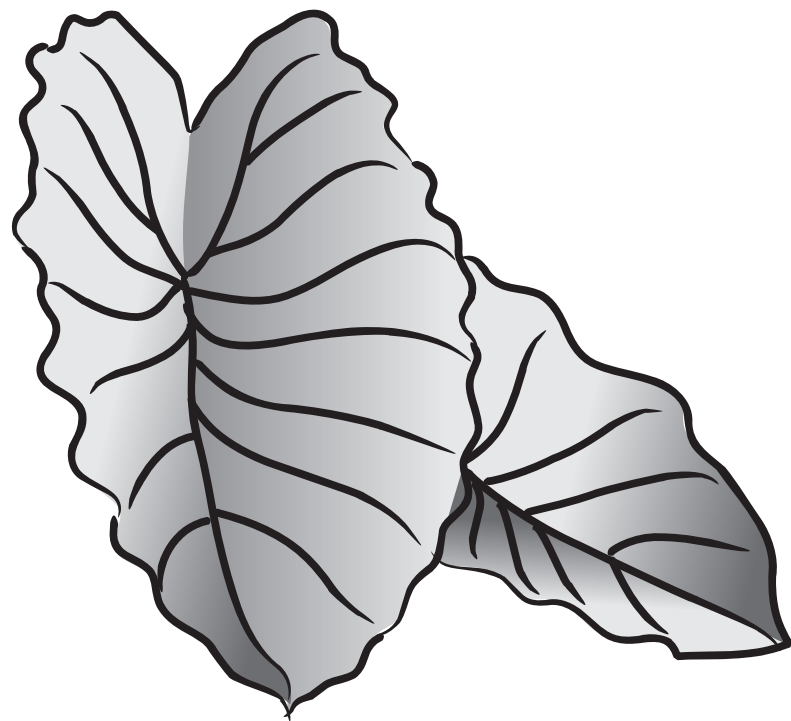
Taro corms are good sources of the essential minerals, calcium and iron. Calcium helps to make strong bones and teeth, and iron helps keep the blood healthy. Women and growing children, in particular, need lots of iron in their diet.

Some giant swamp taro (*Cyrtosperma*) varieties are also a rich source of zinc, which is an essential mineral that protects against infection, builds the blood and protects against vitamin A deficiency. Taro is one of the few non-animal sources of zinc.

### Benefits of yellow-fleshed varieties

New findings show that varieties of giant swamp taro with yellow-fleshed corms contain significant amounts of provitamin A carotenoids, which are changed in the body to vitamin A. The most important of these carotenoids is  $\beta$ -carotene.

Vitamin A is important for good vision and eye health and helps to fight against infection and build blood. Consuming two cups of yellow-fleshed giant swamp taro a day may provide over 100% of the estimated daily requirements for vitamin A. Eating carotenoid-rich food may also help protect against diabetes, heart disease and cancer. Cooking food at moderate temperatures and for a reasonable period does not destroy carotenoids and may even enable the body to use the carotenoids more easily.



### Leaves

*Colocasia* taro leaves are excellent sources of provitamin A carotenoids, calcium and fibre. The leaves are also excellent sources of vitamin C, which is important for protecting against infection and helps the body absorb iron for building strong blood.

Taro leaves can be made into tasty dishes and are popular on some islands. However, they must be prepared and cooked properly to get rid of the acidity that can make the throat itchy. Part of this irritation is thought to be due to needle-like crystals of oxalate in taro, which may also contain other chemical irritants.







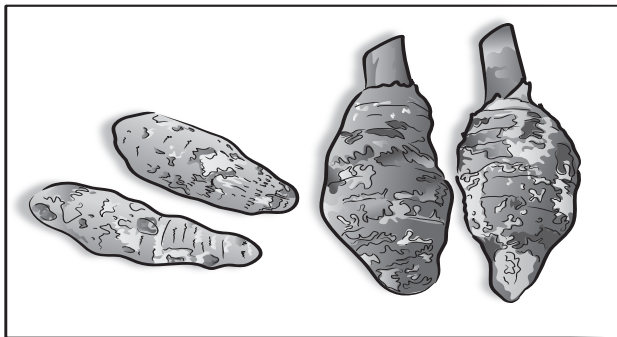
## Storage and preservation

### Corms

After harvesting, most varieties do not keep well. They are best left growing in the ground until ready to be used. However, if *Xanthosoma* is kept in a cool, dark, dry place, it will stay fresh for several weeks.

One traditional method of preserving *Colocasia* corms is to store them in a pit lined with coconut husks or banana leaves, cover them with the same material and then seal the pit with soil. Taro will keep about one month when stored like this. Another method is to bake *Colocasia* corms in an earth oven until a crust is formed. These will keep for about a week. Yet another method is to partly boil the corm, slice it thinly and then dry the pieces in the sun.

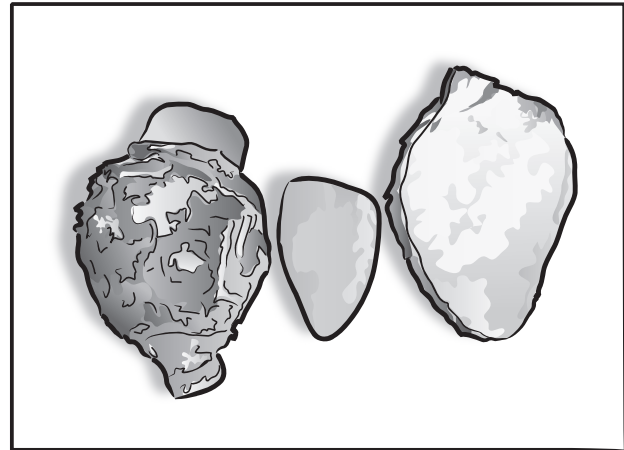
Freezing is a very good method of preserving *Cyrtosperma* corms. The corm can be grated and then frozen in clean plastic bags. This is useful for some recipes and also cooks quickly. Grated frozen taro is marketed in several areas of the Pacific.



### Leaves

Taro leaves are best if picked fresh. If you need to keep the leaves for a short period, it is important to make sure that they do not get too warm or dry. They should be picked with the stalks, then put in a bowl of water and kept in a cool place. They will then keep for a few days. Taro leaves can also be kept in a refrigerator or cooler, using a clear plastic bag with a few holes in it.

## Cooking taro



### Corms

Cooking taro whole and unpeeled will help preserve important nutrients. Taro may be roasted on hot stones, baked in an earth oven or boiled. However, as mentioned before, different types of taro, including *Colocasia* and *Alocasia* varieties, have varying levels of acidity and can cause uncomfortable itchiness in the mouth and throat when eaten. To avoid this problem, the corms must be peeled carefully.

Giant swamp taro can also be prepared by grinding the raw corm, mixing it with coconut cream and ripe mashed banana or pulp from pandanus fruit and then baking.

### Leaves

When choosing leaves of *Colocasia* taro to eat, pick young leaves with green or pink (not brown or purple) stalks. The leaves of all varieties of *Xanthosoma* can be used.

The leaves as well as the root can make the mouth itch if they are not prepared and cooked properly. To make certain this does not happen, the leaves should be boiled quickly for a few minutes in water, drained and then cooked further in water or coconut cream.

### Stalks

The green stalks of *Colocasia* taro make a delicious addition to any meal, although they are eaten in only a few areas in the Pacific (see the recipe for Taro salad (Baseisei) on page 6).





## Recipes

### Stir-fried taro with vegetables

Four servings

- ➔ 2 medium-sized taro corms (*Colocasia*)
- ➔ 2 cups washed green leaves or other vegetable
- ➔ 1 large onion, chopped
- ➔ 2 small spring onions, chopped
- ➔ 1 teaspoon cooking oil

1. Peel taro and cut into serving-size pieces.
2. Arrange in a saucepan and add enough water to cover.
3. Boil for around 30 minutes or until cooked.
4. Boil vegetables separately for a few minutes until cooked and drain off the water.
5. Stir-fry the taro, vegetables, onion, and spring onion for 1 to 2 minutes and serve.

### Taro salad (*Baseisei* from Fiji)

Four servings

- ➔ 20 taro stalks (*Colocasia*)
- ➔ 2 tablespoons lemon juice
- ➔ 1 cup thin coconut cream
- ➔ 1 tablespoon chopped spring onion
- ➔ Chopped chilli to taste

1. Choose only taro stalks that are pinkish and white. Peel off the outside skin of the stalk.
2. Cut the stalks into pieces 10 cm (4 in) long.
3. Drop the stalks into a saucepan of boiling water, cover with a lid and boil for 2 minutes.
4. Strain the stalks and throw out the cooking water. Put the cooked stalks into a bowl of cold water. When they cool, drain the water off.
5. Shred the stalks lengthways into thin strips, using a fork.
6. Mix together the lemon juice, coconut cream, spring onion and chilli and pour the mixture over the taro stalks.

Fresh or tinned fish can be added to this recipe. This makes a tasty dish to serve with cooked taro root, sweet potato, yam or other root vegetable.

### Taro leaves in coconut cream (*Palusami*

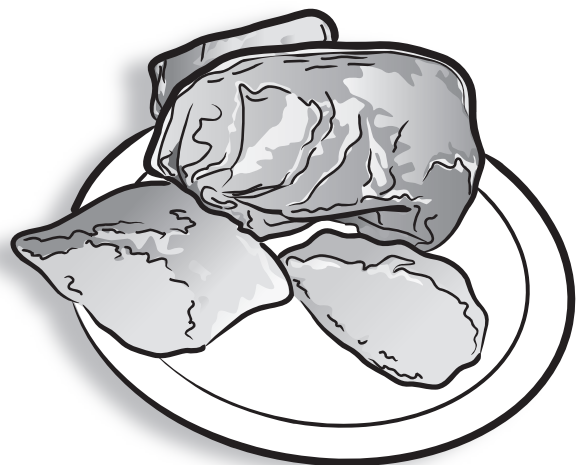
from Samoa)

Makes 28 parcels

- ➔ 12 coconuts
- ➔ 4 bundles *Colocasia* taro leaves – about 120 leaves
- ➔ 5 onions, chopped
- ➔ 7 banana leaves
- ➔ 28 breadfruit leaves

1. Grate the coconuts. Using fine cheese cloth or coconut fibre, squeeze out the coconut cream.
2. Choose firm, clean banana and breadfruit leaves.
3. Hold each banana leaf over a flame to soften it. Carefully remove the back of the centre stalks from all the banana leaves, taking care not to tear the leaves. Divide each banana leaf into 4 pieces.
4. Take 4–6 clean, washed taro leaves and shape them into a cup. Into the centre, put a half tablespoon of chopped onion and one cup of coconut cream. Fold the leaves in carefully, without spilling the coconut cream.
5. Wrap each taro leaf bundle in a piece of softened banana leaf, then cover with a breadfruit leaf. Make a secure parcel by tucking the stem underneath the leaf.
6. Cook the parcels in an earth oven or steam for 30 minutes.

Chopped pieces of meat or fish may be added to the chopped onion before the coconut cream is added to the parcel. If this is done, the cooking time must be increased to at least 1 hour. Aluminium foil can be used to wrap the taro leaf parcels instead of banana and breadfruit leaves.





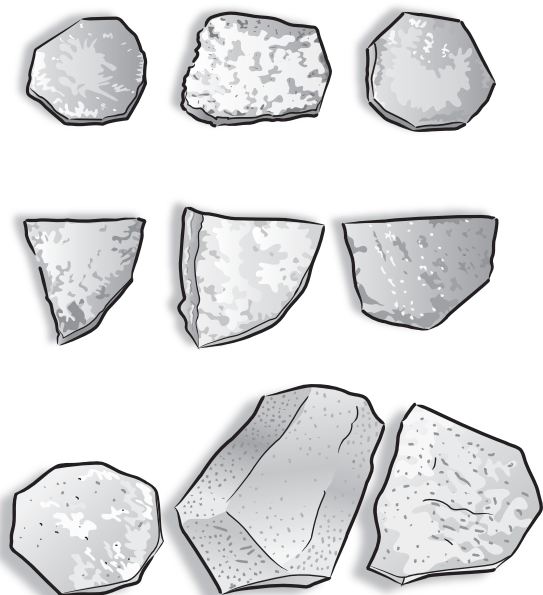
## Taro with seafood

*Two servings*

- ➔ 2 cups peeled *Colocasia* taro cut into cubes
- ➔ 1 cup shellfish or small fresh fish
- ➔ 1 ½ cups coconut cream
- ➔ ½ cup water
- ➔ 1 onion, chopped
- ➔ 1 tablespoon butter, margarine or oil
- ➔ Taro leaves
- ➔ Pepper, optional

1. Cook the taro cubes in boiling water until soft. Drain the taro.
2. Remove the shells from the shellfish or wash and prepare the small, fresh fish for cooking.
3. Heat the butter, margarine or oil in a saucepan. Fry the onion for 4 to 5 minutes.
4. Add the water and coconut cream and stir the mixture until it boils. Add the shellfish or fresh fish and cook gently for 5 minutes.
5. Add the chopped green leaves and cooked taro and cook gently for 5 to 10 minutes.
6. Add pepper to taste and serve hot.

Note: It is best to limit the use of salt for health reasons.



**Deeper shades of yellow and orange provide an increased amount of caroteneids and thus greater health benefits.**

## References

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