The Value of Breadfruit as Food and Medicine

by Fred Prescod

Breadfruit as Food

Breadfruit dishes
[Photo from http://breadfruit.ntbg.org/uses/food/recipes/page2.php]

A roasted breadfruit commonly used as a substitute for bread.
Photo by Edson Huggins

Initially cultivated as a bread substitute, breadfruit is now commonly used to replace starchy vegetables, pasta, or rice. The fruit is most often consumed when it is mature, but still firm. Methods of cooking mature fruits include roasting, boiling, steaming, or baking. However immature fruits can also be cooked by boiling, pickling, or marinating, imparting a flavour that is said to be similar to that of artichoke hearts. Sliced fruit is sometimes fried to make chips, or it can be candied. Julia Morton reports that a few cultivated varieties of breadfruit can be safely eaten without cooking. However, most varieties are purgative if eaten raw, and some are boiled twice and the water thrown away, to avoid unpleasant effects. The ripe fruit is somewhat creamy and sweet and a few cultivated varieties can be eaten raw or used in dessert recipes. In addition, fruit made into cereal, or pureed ripe fruits are regarded as good baby foods. Numerous processed breadfruit products are also available including flour, chips, and sliced fruits which are available frozen, dehydrated, or canned. Candied products are made from the male flowers.

Once exploited mainly for its starch content, breadfruit is now known to contain a wide range of nutrients and, therefore, a greater overall food value. It also has certain medicinal properties.

Seeded breadfruit is considered to be higher in food value than seedless breadfruit, as evidenced in the chart below. The protein content of breadnut seeds has been shown to be higher than that of chestnuts, macadamias, Brazil nuts and pecans. Additionally breadnut seeds are lower in fat, but richer in carbohydrates than other tree nuts, except chestnuts. Breadfruit and breadnut seeds are also a good source of minerals and contain more niacin (vitamin B3) than most other tree nuts.

The carbohydrate content of the fruit itself is said to be as good as, or better than other widely used major carbohydrate foods, and it is comparable to sweet potato and banana in protein content. The fruit is also a relatively good source of iron, calcium, potassium, riboflavin (vitamin B2, the principal growth-promoting factor in the vitamin B complex) and niacin. As for the flour made from breadfruit, it is much richer than wheat flour in lysine and other essential amino acids, while it is similar to cassava flour in its carbohydrate and caloric value. Furthermore some authorities indicate that there are two enzymes in the breadfruit – *papayotin* (papain) as found in papaya (pawpaw) and *artocarpin*, which provides a yellow colouring.

The following chart indicates the food value of raw and ripe breadfruit, plus that of fresh, roasted and dried seeds:

Food Value per 100 g of Edible Portion of Breadfruit
(*A composite of analyses made in Central America, Mexico, Colombia, Africa and India.*)
[Source: Modified from, Morton, J. 1987. Breadfruit. p. 50–58. In: Fruits of warm climates. Julia F. Morton, Miami, FL.]

	Raw Fruit	***Ripe Fruit (cooked)***	***Seeds (fresh)***	***Seeds (roasted)***	***Seeds (dried)***
Calories	105-109				
Moisture	62.7-89.16 g	67.8 g	35.08-56.80 g	43.80 g	
Protein	1.3-2.24 g	1.34 g	5.25-13.3 g	7.72 g	13.8-19.96 g
Fat	0.1-0.86 g	0.31 g	2.59-5.59 g	3.30 g	5.1-12.79 g
Carbohydrates	21.5 29.49 g	27.82 g	30.83-44.03 g	41.61 g	15.95 g
Fibre	1.08 2.1 g	1.5 g	1.34-2.14g	1.67 g	3.0-3.87 g
Ash	0.56-1.2 g	1.23 g	1.50-5.58 g	1.90 g	3.42-3.5 g
Calcium	0.05 mg	0.022 g	0.11 mg	40 mg	0.12 mg
Phosphorus	0.04 mg	0.062mg	0.35 mg	178 mg	0.37 mg
Iron	0.61-2.4 mg		3.78 mg	2.66 mg	
Carotene	0.004 mg (35-40 I.U.)				
Thiamine	0.08-0.085 mg		0.25 mg	0.32 mg	180 mcg
Riboflavin	0.033-0.07 mg		0.10 mg	0.10 mg	84 mcg
Niacin	0.506 0.92 mg		3.54 mg	2.94 mg	2.6 mg
Ascorbic Acid	15 33 mg		13.70 mg	14 mg	

Breadfruit as Medicine

Young and mature breadfruit
[Photo by Edson Huggins]

Various widespread beliefs have persisted about the medicinal properties of breadfruit, and more recent studies have supported some of these views. For example, practitioners of folk medicine have used the slightly yellow leaves to brew a tea that is taken to reduce high blood pressure. It is thought that the tea also controls diabetes. Now, according to C.E. Seaforth *et al.*, it is confirmed that the tea does indeed reduce blood pressure, and it is alleged that there is actually a risk of lowering blood pressure too much if the dosage is too strong.

The leaves and other parts of the tree are also believed to cure a variety of additional ailments – leaves for liver disease and fevers (in Taiwan), crushed leaves for thrush (an oral fungus disease) and ear infections (in the Pacific Islands), a flower extract for ear oedema, the root as a purgative or used (when macerated) as a poultice for skin ailments, the bark to treat headaches (in some Pacific Islands), bark

extracts against leukemia cells in tissue culture, and root and stem bark extracts against some bacteria, plus potential use in treating tumours. In addition Julia Morton writes that a decoction of the leaf is said to relieve asthma, a powder of roasted leaves is employed as a remedy for enlarged spleen, and toasted flowers are rubbed on the gums around an aching tooth.
Even the milky latex has several traditional medicinal uses and is part of some native pharmacopoeias. Broken bones and sprains are treated by massaging the latex into the skin, and bandaging the latex on the spine is said to relieve sciatica. The latex is also used to treat skin ailments, ear infections and fungus diseases such as thrush.
Diluted, it is taken internally to treat diarrhea, stomach aches and dysentery. This use suggests that the latex has astringent properties.

Overall the breadfruit has turned out to be a much more important contribution to Caribbean culture than was originally conceived when Captain William Bligh and others brought the first plants to the Caribbean to feed the slaves.

[Except where noted, the above information was taken largely from:
Promoting the conservation and use of underutilized and neglected crops. The International Plant Genetic Resources Institute (IPGRI). Diane Ragone]

REFERENCES

Morton, J.F. 1987. Breadfruit. *Artocarpus altilis*. p. 50–58. In: Fruits of warm climates. Julia F. Morton, Miami, FL.

Ragone, D. 1997. Breadfruit. *Artocarpus altilis* (Parkinson) Fosberg. Promoting the conservation and use of underutilized and neglected crops. 10. International Plant Genetic Resources Institute (IPGRI), Rome, Italy.

Seaforth, C.E., C.D. Adams and Y. Sylvester. 1983. A Guide to the Medicinal Plants of Trinidad & Tobago. Commonwealth Secretariat, London, England.