

Comparing Breadfruit, Breadnut, and Jackfruit: How are they Related?

by Fred Prescod



In the first article we traced the arrival of the breadfruit plant into the New World. Now we compare **breadfruit** with its close relatives, **breadnut** and **jackfruit**, both also found in St. Vincent and the Grenadines.

These three plants all belong to the botanical genus known as *Artocarpus*. The name *Artocarpus* is applied to about 60 different trees, all members of the fig or mulberry family (Moraceae), a botanical division which at one time included *Cannabis*. Trees of this genus are native to Southeast Asia and the Pacific region. The generic name (*Artocarpus*) is derived from the Greek words 'artos' (meaning bread) and 'karpos' (meaning fruit). The name is thought to have been established by Johann Reinhold Forster and J. Georg Adam Forster, botanists aboard the HMS Resolution on James Cook's second voyage. In J.W. Pursglove's publication on tropical crops, he reports that Joseph Banks, James Cook and other early travelers brought back descriptions of the breadfruit plant using phrases such as 'bread itself is gathered as a fruit'.

Breadfruit tree at Calliaqua, St. Vincent.
[Photo by Jim Lounsberry]

Unfortunately some confusion often arises from the use of common names, where a single common name may be applied to different plants in different areas. Nevertheless **breadfruit** itself is recognized as a seedless form of the plant known botanically as *Artocarpus altilis* (also *Artocarpus communis*), while **breadnut** (often also listed as *Artocarpus altilis*) was originally thought to be simply a race or form of the same plant with fruits containing seeds. However recent literature from the Breadfruit Institute at the National Tropical Botanical Garden in Kauai, Hawaii lists *Artocarpus camansi* as the botanical name of the breadnut. As recently as 2005 Dr. Diane Ragone of the Breadfruit Institute, along with two other colleagues published a taxonomic assessment (classification indicating natural relationships) of breadfruit and its closest relatives, based on their research. The research involved molecular investigations, as well as morphological (form and structural) and geographical considerations. These researchers believe that a single derivation and thousands of years of vegetative propagation and human selection have led to a unique combination of characters that distinguish the domesticated breadfruit. These circumstances have also resulted in the development of numerous varieties. Actually the seedless breadfruit (*Artocarpus altilis*) may really have been derived from the seeded breadnut (*Artocarpus camansi*).

A close relative of the breadfruit and breadnut is the **jackfruit** (*Artocarpus heterophyllus*), known for its enormously large fruit. Not common in St. Vincent, but worth mentioning also is a tree called breadnut or African breadfruit (*Treculaia africana*) that is grown for the seeds, which are ground into flour. This tree is also in the fig family.

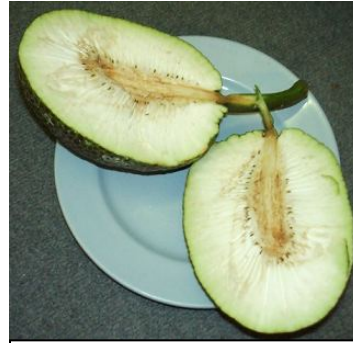
The superficial external appearance of breadfruit, breadnut and jackfruit trees is quite similar. The trees grow from 9 to 27 metres (30 to 90 feet) high with spreading branches. The leaves of breadfruit and breadnut trees are large, bright green and glossy, often with anywhere from 4 to 10 pointed lobes towards the terminal portion; but breadnut leaves are more hairy. Jackfruit leaves are usually entire (without lobes) and are much smaller than breadfruit and breadnut leaves. The fruit and male flowers of jackfruit are borne on stout stems from the trunk or branches of the tree. On breadfruit and breadnut trees they occur at the end of branches. The leaves, twigs and stems of all three trees exude sticky white latex, which is characteristic of plants in the fig family.

Some observers distinguish the jackfruit tree by the copious hairs on the heart-shaped leaves, which end in a long, sharp tip. Others note that breadnut leaves in bud are covered by a conspicuous leaf sheath. In the case of jackfruit, only the young leaves have lobes and the twigs and midrib of the young leaves generally have minute bristles. But the most distinctive feature that differentiates between breadfruit, breadnut and jackfruit is the type of fruit.

The fruits of most breadfruit varieties grown in St. Vincent generally lack seeds, but have a cream-coloured fleshy starchy interior. The shape of the mature fruit is irregularly oval to round, 9 to 45 centimetres (3 ½ to 18 inches) long and 5 to 30 centimetres (2 to 12 inches) in diameter. The outer skin is patterned with irregular 4- to 6-sided sections, more or less prominent, depending on the variety. There are numerous recipes for preparing the ripe fruits, most of which involve roasting or boiling.



Young and mature breadfruit.
[Photo by Edson Huggins]



Breadfruit opened to show fleshy interior. [Photo from www.hitchams.suffolk.sch.uk/.../breadfruit.htm]

The fruits of the breadnut are similar in size to the breadfruit. The shape is more oblong and the outer skin is rather spiny. The inside has little flesh, but contains numerous chestnut-like seeds. The seeds are eaten when boiled, steamed or roasted. Small, immature breadnut fruits can be sliced and cooked as a vegetable in soups or stews.

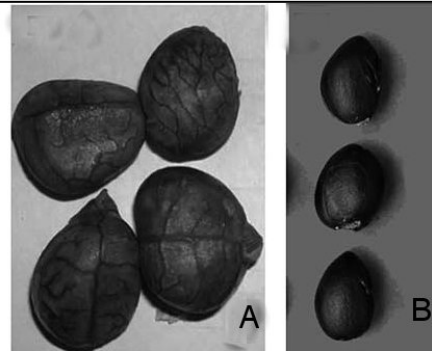


Breadnut (*Artocarpus camansi*).
[Photos from <http://breadfruit.ntbg.org/breadfruit/relatives/>]

Seeds of breadnut – seeded breadfruit:

A. *Artocarpus camansi*. B. *Artocarpus attilis*.

[Photos from Diane Ragone et. al. *Systematics and Species Limits of Breadfruit*. Systematic Botany (2005)]



The jackfruit tree produces the largest of all tree-borne fruits. Each fruit is 20 to 90 centimetres (8 inches to 3 feet) long and 15 to 50 centimetres (6 to 20 inches) in diameter, and the weight ranges from 4.5 to 36 kilograms (10 to 80 pounds). The outer skin of the ripe fruit consists of numerous hard, cone-like points. The inside has 100 to 500 light-brown seeds each 2 to 4 centimetres (3/4 to 1 1/2 inch) long and 1.25 to 2 centimetres (1/2 to 3/4 inch) thick. The seeds are enclosed in masses of yellow, banana-flavoured flesh. The unopened ripe fruit emits an odour resembling that of rotting onions, but the pulp of the opened fruit smells of pineapple and banana. The seeds can be roasted like chestnuts, and when boiled the flesh of fully grown unripe fruit can be eaten as a vegetable.

Jackfruit – whole fruit, leaves, and section showing interior details.

[Photo from http://www.hort.perdue.edu/newcrop/morton/jackfruit_ars.html]



Jackfruit.
[Photo from www.indigo.pp.fi/galleria/pages/jackfruit.html]



In future articles we will discuss some medicinal uses of breadfruit, and we will examine its food value. We will also post a few popular recipes.

Further information on breadfruit can be found in *The Breadfruit Plant of St. Vincent and the Grenadines*, First Edition, July 2004; a booklet produced by the Communications Unit of the Ministry of Agriculture and Fisheries, St. Vincent and the Grenadines.

Note: *The writer would like especially to thank Dr. Diane Ragone of the Breadfruit Institute for her input in providing valuable information for this article.*

Fred Prescod established his professional career at Royal Botanical Gardens (RBG) where he worked as a Horticultural Educator from 1975 to 1995. During that time he was also involved with horticultural activities in the Caribbean through conducting ecotours, delivering seminars, and providing labels for the plants in the Botanical Gardens and the Vermont Nature Trails in St. Vincent.

In his now established independent career, Fred continues to focus on horticultural education. He is the Horticultural Correspondent for Interiorscape magazine and is a regular contributor to Landscape Trades magazine.

Most recently Fred has been selected to write the certification training manual for the North American interior landscape industry.

Fred is a member of the Education Committee of the St. Vincent and the Grenadines Association of Toronto, the committee responsible for this presentation.