

Manihot esculenta

[Synonyms : *Janipha aipi*, *Janipha manihot*, *Jatropha aipi*, *Jatropha diffusa*, *Jatropha digitiformis*, *Jatropha dulcis*, *Jatropha flabellifolia*, *Jatropha janipha*, *Jatropha lobata* var. *richardiana*, *Jatropha loureiri*, *Jatropha manihot*, *Jatropha mitis*, *Jatropha paniculata*, *Jatropha silvestris*, *Jatropha stipulata*, *Mandioca aipi*, *Mandioca dulcis*, *Mandioca utilissima*, *Manihot aipi*, *Manihot aipi* var. *lanceolata*, *Manihot aipi* var. *latifolia*, *Manihot aipi* var. *lutescens*, *Manihot aypi*, *Manihot cannabina*, *Manihot diffusa*, *Manihot digitiformis*, *Manihot dulcis*, *Manihot dulcis* var. *aipi*, *Manihot dulcis* var. *diffusa*, *Manihot dulcis* var. *flabellifolia*, *Manihot edule*, *Manihot edulis*, *Manihot esculenta* var. *argentea*, *Manihot esculenta* var. *coalescens*, *Manihot esculenta* var. *debilis*, *Manihot esculenta* var. *digitifolia*, *Manihot esculenta* subsp. *flabellifolia*, *Manihot esculenta* var. *flavicaulis*, *Manihot esculenta* var. *fuscescens*, *Manihot esculenta* var. *grandifolia*, *Manihot esculenta* var. *nodosa*, *Manihot esculenta* var. *sprucei*, *Manihot flabellifolia*, *Manihot flexuosa*, *Manihot loureiri*, *Manihot manihot*, *Manihot melanobasis*, *Manihot palmata* var. *aipi*, *Manihot palmata* var. *diffusa*, *Manihot palmata* var. *digitiformis*, *Manihot palmata* var. *flabellifolia*, *Manihot sprucei*, *Manihot utilissima*, *Manihot utilissima* var. *castellana*, *Manihot utilissima* var. *sutinga*]

CASSAVA (English, German, Italian) is a cultivated shrub or tree. Of uncertain origin it is found in tropical and warm America and has small greenish-yellow flowers.

It is also known as *Aipim* (Brazilian, Portuguese), *Bankye* (Twi), Bitter cassava, *Bosan hot* (Vietnamese), Brazilian arrowroot, *Canabe* (Spanish), Cassada, Cassara, Cassareep, Cassaripe, Cassava flour, *Caxamote* (Guatemalan, Spanish), Common cassava, *Farinha de mandioca* (Brazilian), Common cassava, *Farinha* (Spanish), *Farinha de mandioca* (Brazilian), *Guacamote* (Ecuadorean, Spanish), *Huacamote* (Ecuadorean, Spanish), *Huwi dangdeur* (Sundanese), *Imo noki* (Japanese), *Kamotang kahoy* (Tagalog), *Kamoting-káhoi* (Filipino/Tagalog), *Kappa* (Malayalam), *Karrapendalamu* (Sanskrit, Telugu), *Kaspe* (Indonesian, Malay), *Katela budin* (Javanese), *Kyassaba* (Japanese), *Macaxeira* (Brazilian, Portuguese), *Mandioca* (Brazilian, English, Paraguayan, Portuguese, Spanish), *Maniba* (Brazilian, Portuguese), *Manioc* (English, French), *Manioca* (Italian), *Maniok* (Danish, Dutch, German, Swedish), *Manioko* (Esperanto), *Maniokku* (Japanese), *Mañoco* (Puerto Rican, Spanish), *Man sam parang* (Thai), *Man-yok* (Creole), *Manyokka* (Singhalese), *Marachini* (Hindi), *Maragenasu* (Kannada), *Marakizhangu* (Malayalam), *Maravali-kelangu* (Tamil), *Mara valle kilangu* (Hindi), *Maravalli* (Hindi), *Maravalli kizhangu* (Tamil), *Mhogo* (Swahili), *Mushu* (Chinese), *Mwanga* (Kikuyu), Parà arrowroot, Rio arrowroot, *Sakarkanda* (Hindi), *Săn* (Vietnamese), *Simal tarul* (Nepalese), *Simla aloo* (Hindi), *Simla alu* (Hindi), Tapioca (English, French), Tapioca meal, Tapioca plant, *Tapioka noki* (Japanese), *Ubi kayu* (Malay), Yuca (English, Latin American, Spanish), and Yucca.

Starch or tapioca flour, once known as Brazilian arrowroot, is extracted from the roots.

Warning – cassava is extremely poisonous if eaten raw. The poison is contained in the outer skin of the roots and can cause death. The fresh leaves can also be poisonous and can harm grazing animals.

Esculenta is Latin (edible).

The *Yucca* genus (part of a completely different family) is said to have been named after this plant (cassava) which is sometimes called Yuca or Yucca. Apparently John Gerard (1545-1612) the English barber-surgeon and herbalist (the latter as a charlatan for many authorities) is said to have confused both plants and to have thought that cassava was a member of the subsequently named *Yucca* genus.

A noted authority on the Machiguenga Indians of the Peruvian Amazon tells how these Indians who have lived in the rainforests for 1000s of years believe that the tubers and plants were the first crop plants given to man. This gift from the moon, which came to earth as a human being, was bestowed on the understanding that the plants be respected and grown with care.

For centuries and centuries American Indians assumed cassava (particularly the tuberous roots) as one of their staple foods – including according to records the North American Seminole Indians in the Florida region - and they extracted the poison for use in hunting and fishing. The leaves were eaten as a vegetable as well, a practice that travelled with the plant particularly in south-eastern Asia.) It is said that the Genoese explorer, Christopher Columbus (1451-1506) feasted on cassava in the Caribbean on his first trip to the New World in 1492 and when the Europeans eventually began to colonize the American tropics they too absorbed cassava into their diets. Not surprisingly Negro slaves embraced cassava as a part of their diet – and like local Indian tribes used it to make bread.

In the 16th Century the Portuguese introduced it to Africa from Brazil but it only took off there in the 20th Century when it was not only found to grow well in poor soil but also that it was resistant to locusts. Nutrition experts point out however that its one most important disadvantage is that the roots and tubers contain little protein. [This is especially relevant in some parts of Africa at the beginning of the 21st Century where it has become the prime if not only source of sustenance (not least in areas of Zaire) and is thus the cause of unbelievable health problems. Some aid workers (in addition to medical support) have been re-educating communities in the cultivation of other crops in order to counter the deficiency brought about by reliance on this single plant.] Apart from the root the leaves are used in some parts of Africa as a vegetable flavouring. Now in Indonesia which first saw cassava as did Malaysia in the 18th Century, the root, grown primarily for local food, rivals only rice (*Oryza*) in importance.

Today the white-fleshed tuberous cassava roots (that can weight up to 30 lb.) provide a staple root crop for the indigenous population, and the different varieties are processed in many ways to contribute to a wide range of foods and drinks. The young roots can be boiled as a vegetable and in Indonesian Java the parboiled, sliced and fermented tubers have formed the basis of a traditional local delicacy *tapé*. Dried strips of root have also been eaten as emergency rations. (Earlier in the 20th Century root strips were exported to Europe from south-eastern Asia for use as cattle fodder.) The tuberous roots have also been made into a paste which in turn has been used to make cakes. In Hawaii and Polynesia cassava tubers have been processed as an ingredient in the traditional dish *poi*. Cassava can provide various flours eg. *gari* in Africa and *farinha* in Brazil, that are used to make flat breads and other baked produce, sauces such as the traditional *cassareep* of the north-western Amazon, Guyana and the West Indies (also used for preserving meat), and fermented drinks eg. the Brazilian spirit *Cavim*. The starch has also been used commercially in Europe not only in the manufacture of various foods, including biscuits but also in brewing beer.

True tapioca ie. the rounded starch pellets familiar in the Western World, comes from the cassava tubers grown in Brazil, Guyana and the West Indies. However authorities have drawn attention to the misconceptions that can arise from a commercial name – in effect

a type of 'adulteration'. An example of this is found in the United States where a product is sold as 'native tapioca'. The word 'native' is ambiguous as in this instance it implies 'of the United States' (not 'the United States' version) – and cassava from which true tapiocais made is decidedly not native to North America. This 'native tapioca' is actually formed from potato (*Solanum tuberosum* also a foreigner as it is native to the Andean region of South America). In citing this example it should be said of course that such marketing ploys are universal and not confined to North America.

In addition to relatively conventional applications eg. food, drink, the starch extract is also used by the printing industry for thickening inks and by the textile industry for sizing cotton fabrics. It is used too in making paper and provides an ingredient in cosmetics. Various other root extracts are also used in for instance glue on postage stamps and in proprietary table sauces. In stark contrast to the foregoing cassava also began to offer a new source of fuel. In 1975 Brazil set up a National Alcohol Programme whereby cars were run on pure ethanol obtained from controlled fermentation of plant matter. Similar trials were being set up in other countries and different plants were involved. Brazil began her experiments with sugar cane but cassava came to be recognized as an alternative so she began to cultivate it on wasteland vacated by the previous sugar (*Saccharum officinarum*) crop. Unfortunately however this Programme which was meant to be bio-friendly was itself becoming a contributory factor in the devastation of rainforests and the sludge pollution of rivers as more and more land was reclaimed to accommodate the new 'fuel' crops.

The starch has been fed to pigs, poultry and other stock as well.

Medicinally, in India, western Africa and other areas the fresh underground stem has been used in a poultice to treat ulcers, sores and burns. In Polynesia a porridge made with cassava tubers, the fruit of the golden apple (*Spondias dulcis*) and coconut milk (*Cocos nucifera*) is taken by mothers before childbirth.