Manihot esculenta

Common name(s)
Cassava, Manioc, Tapioca,

Edible portion:
Root, Leaves, Flowers, Vegetable,

Distribution
A tropical plant. Plants grow from sea level up to about 1650 m. In Fiji they grow to 900 m. They can grow in poor soil. They can survive drought. It is native to tropical America. It grows between 25°N and 25°S. It needs a rainfall above 750 mm. It suits hardiness zones 10-12. In Yunnan.

Description
A plant which can re-grow year after year from the thickened roots. It has several stems. The stems are woody and have some branches. Plants grow up to 2 or 3 metres high. Stalks have distinct scars where leaves have fallen. The leaves tend to be near the ends of branches. The leaves are divided like the fingers on a hand. The leaves have long leaf stalks. The leaves have 3-7 long lobes which can be 20 cm long. These are widest about 1/3 of the distance from the tip and taper towards the base. The colour varies. It produces several long tubers. These can be 50 cm long by 10 cm across. The flowers are on short stalks around a central stalk. They are produced near the ends of branches. The female flowers are near the base of the flower stalk and the male flowers higher up.

Use
The tubers are eaten after thorough cooking. They are boiled, roasted or made into flour. The starch is used in puddings, soups and dumplings.
Young leaves are edible after cooking. They are also sometimes dried and stored.
Seeds are also eaten.
CAUTION Bitter kinds of cassava contain poison but this is destroyed on heating. This kind of cassava should be cooked, sun dried, soaked and cooked again.

Cultivation
Cassava is planted from sections of the stalk. Sections about 15-20 cm long of the more mature woody stem are cut and stuck into the ground. They can be completely buried or put at almost any angle and it affects the growth little. Soon roots form and leaves start to sprout from the stalk. Cassava seeds need a soil temperature of 30°C for their germination. Flower and fruit production is more common under lower temperatures such as in highland or less equatorial conditions.

It is not necessary to dig a hole to plant cassava and on many soils where the soil is loose it can be planted without digging the soil first. Cassava does not suit waterlogged soils and preferably they should not be too shallow or stony.

Cassava can be planted at any time of the year but to get started it needs moisture so is often planted near the beginning of the wet season. The crop once established can survive for several months without rain. The ability to tolerate drought varies significantly with cultivar. During drought less and smaller leaves are produced and leaves die off more quickly but storage roots can be increased in the short term.

Because cassava can still grow satisfactorily in poorer soils it is often put last in a rotation after others crops have already been grown on the piece of land. Cassava is more responsive to nitrogen and potassium than phosphorus under many field situations. Nitrogen

Production
Plants can be harvested after 10 months in the lowlands. There are some faster growing varieties. Yields in the range of 20-45 t/ha have been recorded for 12-14 month crops.

Nutritional values

Edible Part	Moisture %	Energy kJ	Energy kcal	Protein g	Provit A µg	Vit C mg	Iron mg	Zinc mg
	(per 100 grams of edible portion)							
Tuber	62.8	625	150	1.4	30	15	0.23	0.48
Leaves	82.0	382	91	7.1	57	275	7.6	

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Africa, Amazon, American Samoa, Andamans, Angola, Antigua and Barbuda, Argentina, Asia, Australia, Bangladesh, Barbados, Belize, Benin, Bolivia, Bougainville, Brazil*, Brunei, Burkina Faso, Cambodia, Central Africa, Central African Republic, CAR, Central America, China, Colombia, Congo DR, Congo R, Cook Islands, Costa Rica, Côte d'Ivoire, Cuba, Curacao, Dominican Republic, East Africa, East Timor, Easter Island, Ecuador, Eswatini, Fiji, French Guiana, FSM, Gabon, Gambia, Ghana, Grenada, Guam, Guatemala, Guianas, Guinea, Guinée, Guinea-Bissau, Guyana, Haiti, Hawaii, Himalayas, Honduras, India, Indochina, Indonesia, Ivory Coast, Jamaica, Japan, Kenya, Kiribati, Laos, Liberia, Madagascar, Malawi, Malaysia, Maldives, Mali, Mariana Islands, Marquesas, Mexico, Micronesia, Mozambique, Myanmar, Namibia, Nauru, Nepal, New Caledonia, Nicaragua, Niger, Nigeria, North America, Northeastern India, Pacific, Pakistan, Palau, Papua New Guinea, PNG, Paraguay, Peru, Philippines, Pohnpei, Puerto Rico, Rotuma, Sahel, Samoa, Sao Tome and Principe, SE Asia, Senegal, Sierra Leone, Sikkim, Singapore, Slovenia, Solomon Islands, Somalia, South Africa, Southern Africa, South America*, South Sudan, Sri Lanka, St Lucia, St. Vincent and Grenadines, Sudan, Suriname, Swaziland, Taiwan, Tanzania, Thailand, Timor-Leste, Togo, Tonga, Torres Strait, Tuvalu, Uganda, USA, Vanuatu, Venezuela, Vietnam, Wallis and Futuna, West Africa, West Indies, West Papua, West Timor, Yap, Zambia, Zimbabwe,

Synonyms

Jatropha dulcis J. F. Gmel.;
Jatropha manihot L.;
Manihot aipi Pohl;
Manihot dulcis (J. F. Gmel.) Pax;
Manihot manihot (L.) Cockerell;
Manihot melanobasis Mull. Arg.;
Manihot utilissima Pohl;
Manihot palmata Muell.-Arg.;

Other common names

Agbedexatou, Agbeli kute, Ai farina, Akbo, Akpu, 'akuy, Aloti, Atsa, Bafra, Bandaradji, Bankye, Bantara, Ba thing, Biska, Chombe, Damloong chhe, Dapiohka, Daun singkong, Dhandi aluvi, Duade, Ege, Empasak, Emwogo, Etodia sana, E-yoka, Ezhalai kizhangu, Gari, Gbandabi, Huwi dangdeur, Ingwese, Ira agira, Irepuye, Isaburu, Isiapuru, Jian lui, Kala-marauk, Kamoteng kahoy, Kappa, K'araza, Karrapendalamu, Kasada, Kasapen, Kasava, Kasawe, Kasera, Katapa, Katela budin, Katera pohon, Kehp tuhke, Kevera bira, Kisambu, Kizhangu, Kpaki, La bi mu, Malei, Manicoba, Manita, Man sam parang, Mandioca, Manduka, Manioco, Maniok, Manioka, Maniokku, Mansampalang, Marachini, Maragenasu, Maravalli kizhangu, Mattu gamwogo, Mendioka, Men niu, Mihoko, Muhogo, Muhoko, Mu shu, Muk-shu, Mwanja, Napire abo, Niambi, Nie-thir-hti, Nimake, Oporaiyo, Oprai, Ore marihi, Palaw-pi-nan-u-pin, Potmogo, Pucuk ubi, Pulox, Rama blanca, Rogo, Rui pharkong, Ruthi, Saka-saka, Sampalang, Sampeu, Sappo, Shingjoktang, Sikong, Simal alu, Simal aru, Simal tarul, Simei alu shak, Singkawkai, Soutigbanda, Tanga, Tapik, Tapiok, Tavioka, Te tabioka, Thiogang, Tifoonyaouti, Tikhoor, Tunglu-buk, Ubi kayu, Ubi paranchih, Yuca, Yucca, Yuka,

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