

## DRUMSTICK TREE

Horseradish Tree, Marango Tree, Murunga, Kelor, Shobhanjan, Ben Tree, Moringa Tree  
*Moringa oleifera* syn. *M. pterygosperma* F. Moringaceae

**Description** A handsome, multi-purpose, small legume tree, 3-8 metres tall, fast growing and drought hardy, with a shady, leaf canopy of very attractive tripinnate ferny foliage, making its presence appealing wherever it is planted. Small, waxy, creamy-white flowers resembling miniature orchids, form in clusters on terminal stems, followed by 20-30cm long round pods. Pods look very much like drumsticks, a good reason for the plant's common name. The shell of the pod splits into 3 sections revealing a row of neatly packed, wing-edged, round, brown seeds.

Propagation is by seed. Seed must be relatively fresh to give a good germination. Warm temperatures are important for germination. Keep planted seeds well out of reach of mice and wood lizards, as the seed is nutty and considered a tasty morsel by these little scavengers. Stem cuttings, 10-60cm long can also be struck in spring and summer.

Plant young trees in well-drained soil in a sunny, frost-free position. Trees are grown extensively in tropical, sub-tropical and warm temperature areas, including Africa, India, South East Asia and tropical islands. Young tree can be trimmed, and pruned regularly to keep to bush height of 1-3 meters, and this can be practical in a garden is limited in space. Often the trees are planted closely to serve as living fences or used as living stakes for climbing vegetables. Trees grown in temperate climates (particularly when small), need to be protected from strong winds and frost. Once trees have had 1-2 winters in cold climates, they do adapt, but may still go dormant in winter. Recently I had a phone call from a man in South Australia who said he has grown the trees in Adelaide for many years.

**Constituents:** deic, palmitic and stearic acid, saponins, glycoside, gum, protein

**Vitamins:** A (8855 IU per 100g), B1, B2, B3, C

**Minerals:** calcium, iron, phosphorus, magnesium

**Actions:** tonic, digestive, vermifuge, diuretic, aphrodisiac, anti-inflammatory

**Medicinal uses** A folk remedy for stomach complaints, catarrh, hay fever, impotence, edema, cramps, hemorrhoids, headaches, sore gums; to strengthen the eyes and the brain, liver, gall, digestive, respiratory and immune system, as a blood cleanser and blood builder, and for cancer treatment. A traditional folk remedy was to use the leaves as a poultice on the abdomen to expel intestinal worms. Oil from the seed, called Oil of Ben, is used for earache and in ointments for skin conditions. The oil rubbed on the skin is said to prevent mosquitoes from biting. Flowers infused in honey are used as a cough remedy.

**Culinary uses** Research has shown the drumstick tree to be of exceptional nutritional value. The leaves are 38% protein with all essential amino acids, which will be of interest to vegetarians, or people who wish to cut back on meat and dairy products, or regions where protein is lacking. On a recent 'Good Medicine' TV program filmed in Africa, drumstick trees were grown in close rows, regularly cut when growth was 1 metre high, and the leaves dried and crushed. Two tablespoons of the high protein powder was given in the daily diet, to help overcome malnutrition.

Amino acids in green leaf vegetables vary considerably, and many that are staples, are low in the sulphur bearing amino acids methionine and cystine, whereas in the drumstick tree it is an extremely rich source in comparison to other greens and vegetables. The drumstick tree is

listed as the highest protein ratio of any plant on earth. The calcium content is very high at 297mg per 100g of leaves.

Leaves can be eaten fresh in hand, steamed, pickled, added to salads, stir-fries, curries, and soups. Leaves can be dried, and stored, for using in cooked dishes as required. Flavour of the pods are similar to peas with a mild mustard taste. Sliced, young green pods can be used in savory and meat dishes. Seeds can be fried or roasted and taste like peanuts. When seeds are abundant they can be sprouted like wheat grass, eaten as tender nutritious greens.

Roots of young seedlings taste similar to the herb horseradish, and are often grated and used as a substitute. Oil of Ben, a by-product of the seed, is an inodorous fine-grade oil used in salads, cooking, perfumery, lubricating watches and fine machinery. The oil does not go rancid. Flowers can be eaten or used as a garnish, and look most decorative in salads. Value the tree for its high nutritional value and as a survival food.

**Other uses** Seeds crushed to a powder are used to *clarify turbid, dirty water*. The cleansing takes place by a process of electrical charges established between the muddy particles suspended in the water and the pulverised seeds, and gradually, after about an hour, the muddy particles are pulled to the bottom of the water by the force of gravity. Research shows that the seed not only settles the mud, but can carry with it over 90% of bacteria and viruses. A report published in New Scientist, December 1983, said that the seeds have been used in Sudan and Peru to purify muddy river water. It was also reported that seeds have antimicrobial activity. The seeds also have potential for treating sewerage water.