

## Moringa oleifera (Horseradish or Drumstick Tree)

The moringa is a beautiful, fast growing tree (up to 15 feet in a year) with a shady, leaf canopy of very attractive ferny foliage. Small, waxy, creamy-white flowers, resembling miniature orchids, form in clusters, followed by 8-12 inches long round pods that look like drumsticks, hence one of the plant's common names. The shell of the pod contains a row of neatly packed, wing-edged, round, brown seeds. Mature Moringa trees flower year round, providing lots of nectar for honey bees and a continuous supply of drumsticks for the kitchen.

Moringa trees grow extensively in tropical, sub-tropical and warm temperature areas, including Africa, India, South East Asia where it said to grow in the sandiest, driest, most godforsaken places on earth - it is even tolerant of drought, salt and neglect! Moringa has a wondrous array of uses with virtually every part of the tree useful in the kitchen, as medicine or for industry.

**Planting:** Plant young trees in well-drained soil in a sunny, frost-free position. They need to be protected from strong winds and frost especially when young. Once trees have had 1-2 winters in colder climates, they do adapt, but may go dormant in winter. In Gainesville, moringas will freeze in the winter and resprout from the stump in the spring. Protect the base of the tree from frost to ensure resprouting. Stop apical dominance to keep tree short.

**Fertilization:** The soils of arid regions (to which moringas are adapted) are typically less weathered and therefore contain more of the soluble minerals that plants need, than the soils of humid regions. To get all that potassium, iron, and calcium from moringa leaves, the soil must have those minerals for the tree to extract (lots more potassium and calcium than Iron). For protein, they need fixed nitrogen and a bit of sulfur. For other processes they need magnesium, phosphorous, and tiny amounts of "micronutrients". Magnesium deficiency is common in North Fl soils.

**Pruning:** Young trees should be trimmed and pruned regularly otherwise they can grow 30-50 feet tall. The trunk and branches can be used as living stakes for climbing vegetables. A row of trees can be planted close together to create a living fence.

**Propagation:** By seed or cuttings.

**Nutrition:** The leaves are 38% protein with all essential amino acids. They contain 2 x the protein of milk/yoghurt (the highest protein ratio of any plant on earth), and 4 x the calcium of milk, 3 x the potassium of bananas, 4 x the vitamin A of carrots, 7 x the vitamin C of oranges and 3 x the iron of red meat. They contain omega 3, 6 and 9 fatty acids as well as antioxidants and phytonutrients. Moringa leaves are an excellent source of nutrition and a natural energy booster that is not based on sugar, and so it is sustained. Some consider Moringa protein better than soy as it is non-allergic. Moringa contains 18 of the 20 amino acids required by the human body including all eight of the essential amino acids found in meat products.

**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. Moringa (Ben) oil 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:** The leaves can be cooked in any recipe that calls for spinach. The leaflets can be pulled off stalks and boiled as any green or added to soups or rice. Tender growing tips can be cooked stem and all or they can be dried and powdered and sprinkled into soups and stews. The flowers are edible and can be sprinkled on salads: they taste deliciously sweet at first then a spicy/horseradishy finish! The young drumsticks can be cooked like asparagus - they taste like peas with a mild mustard taste. Sliced, young green pods can be used in savory and meat dishes. The young (green) seeds can be cooked and eaten like peas. Mature seeds can be fried or roasted and taste like peanuts or pressed for an oil that is healthier than olive oil. Seeds can be sprouted like wheat grass and eaten as tender nutritious greens. Roots of young seedlings taste like horseradish, and are often grated and used as a substitute.

**Other uses:** Moringa oil is the most stable oil in nature (it does not go rancid) and it is used in perfumery, lubricating watches and fine machinery. Ground moringa seeds are used for water purification.

Click here for Moringa Recipes courtesy of [www.echonet.org](http://www.echonet.org)

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