



DRUMSTICK – AN OUTSTANDING SOURCE OF NUTRITIONAL COMPONENTS

Popular
Article

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ABSTRACT

Drumstick or *Moringa* is an underutilized tree vegetable crop but an outstanding source of nutritional components. An untapped potential exists in this vegetable crop. Its leaves, immature pods (drumstick), seeds and flowers and oil pressed from mature seeds are generally used as or in food. For example, flowers of *M. oleifera* are rich in calcium, potassium and antioxidants and are used in various dishes. Appropriate attempt should be made to popularize the potential of economically viable vegetable crop like drumstick.

Introduction

Moringa oleifera is the botanical name for the so very popular drumstick tree. It is grown in almost all tropical and sub-tropical regions; this fast-growing, drought-resistant tree is native to southern foothills of the Himalayas in northwestern India. According to the *Sushruta Samhita*, cultivation of this tree in India dates back many thousands of years. Drumstick is grown for its nutrient rich tender, but full grown pods, leaves and flowers which are used for culinary preparations. The tree grows rapidly even in poor soils; it is well adapted to droughts, and is able to reach up to 15 m in height. The flowers and the fruits appear twice each year, and seeds or cuttings are used to propagate the tree. All parts of 'Drumstick' are used in some form or the other.

Varieties / cultivars:

A number of local cultivars are known by the place of their cultivation. Details of local cultivars are given:

- **Jaffna Moringa** - A perennial type which bares 60-90 cm long pods with soft flesh and good taste.
- **Chavakacheri Muringa** - A perennial type producing 90-120 cm long pods.
- **Chemmuringa** - This perennial type flowers throughout year and bears red tipped fruits.
- **Yazhpanam Muringa** – Same as Jaffna type
- **Pal Muringai** – Pods having thicker pulp and better taste
- **Puna Muringa** – Thinner fruits.
- **Kodikal Muringa** – Produces short pods of 15-20 cm long and is used as support for betel vine plants. Propagated by seeds.
- **KM-1 (Kudumianmalai 1)** – Bushy variety propagated through seeds.

- **PKM – 1** – This “seed moringa”, propagated through seeds is developed at Horticultural Research Station, TNAU, Periyakulam.
- **PKM 2** – This “seed moringa”, propagated through seeds, is also developed at Horticultural Research Station, TNAU, Periyakulam.

Climate and soil

Drumstick is predominantly a crop of dry and arid tracts. The plant put forth luxuriant growth at 25-30°C. Higher temperature results in heavy flower shedding and also injured severely by frost. Performance of crop is better in sandy loam rich in organic matter. A pH range of 6.0 – 6.72 is most ideal.

Land preparation

Field is well prepared and ploughed 3-4 times. Apply FYM @ 20 t/ha at last ploughing. Take pits of size 45 x 45 x 45 cm at a spacing of 6.0 x 6.0 m for perennial types and 2.5 x 2.5 m for annual types, apply 10 kg FYM and fill up pits.

Propagation

Annual types are propagated by seeds and perennial types are propagated through limb cutting of 90-100 cm length and 5-8 cm diameter. Average seed weight is 0.288 g and 10 g contain 35 seeds. Seeds @ 625 g/ ha can be either sown in pits or transplanted after raising seedlings in polythene bags. Transplanting of seedlings can be made one month after sowing.

Interculture, manuring and harvesting

To facilitate side branches, shoot may be nipped off when the seedlings are at 75 cm height. Apply 100 g Urea, 100 g Super phosphate and 50 g Muriate of Potash and irrigate heavily. Top dress plants with 100 g Urea again 3 months after first application. Provide light irrigation for early emergence of seedlings for annual type.

After harvest of main crop, annual types are cut back one meter height from ground level for ratooning. These ratooned trees develop new

shoots and start bearing four to five months after ratooning. Likewise, about three ratoon crops can be taken. At each and every ratoon crop, trees are supplied with N, P and K nutrients as already mentioned along with 20-35 kg of FYM and irrigate.

Health benefits of drumstick

- Leaves are an excellent source of protein with 100 g of fresh raw leaves providing 9.8 g of protein.
- *Moringa* leaf is best known as an excellent source of nutrition and natural energy booster. This energy boost is not based on sugar, and so it is sustained.
- Leaf juice is used as a skin antiseptic.
- Fresh pods and seeds are a good source of a mono-unsaturated fatty acid, oleic acid.
- The seeds are used to treat allergies, inflammation, bacteria, neuralgia, abdominal tumors, and fever. This multipurpose tree is one of those plants that are compatible for sustainable agriculture.
- *Moringa* is used as forage for livestock.
- The tree parts are used as adjuvant (agent that enhances the immune response to an antigen) in modern medicine.
- Many parts and extracts of *M. oleifera*, including root bark, are used for treating various ailments such as diabetes, hypertension, inflammation and infectious diseases.
- In traditional medicine it is used as anthelmintic, and also for treatment of diabetes, cardiovascular disease, ulcers, and gastrointestinal problems.
- *Moringa* leaf can increase breast milk production in the early period after childbirth.
- The leaves are rich in iron and therefore highly recommended for expected mother.

- *Moringa* oil is used in traditional medicine in treating snakebites or wounds. It is also used in hair care products and also as machine lubricants.
 - The seed cake left after oil extraction is used as fertilizer.
 - *Moringa* tree has been referred to as the 'Miracle tree' for its versatility and experts all over the world believe *Moringa* to be an ideal plant to combat under-nutrition because of its nutritional benefits and availability.
- It has been estimated that fresh leaves of *Moringa* tree contains –
- 4 times the vitamin A of carrots
 - 7 times the vitamin C of oranges
 - 4 times the calcium of milk
 - 3 times the potassium of bananas
 - 2 times the protein of yogurt

- It is also a rich source of iron having almost three-fourth of the amount present in spinach leaves.

Conclusion

Thus, *Moringa oleifera* provides a variety of vitamins, minerals and protein amino acids with significantly less fat, less carbohydrate and fewer calories. Uses of every part of the drumstick tree, considers it as one of the most valuable and useful plant. Therefore, *Moringa* is no wonder called the Tree of Life.

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