



Miraculous, Multipurpose and Medicinal *Moringa Oleifera*

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There are fourteen species existing in the genus *Moringa*. *M. oleifera* is native to Northern India, now it is widely dispersed in Asia, South America, Africa and Europa. *Moringa* has been popular from very ancient times. This tree's leaves, blooms, pods, and seeds are edible and used as nutritious food sources mainly in Africa, India, and in Philippines countries.

The two most commonly used colloquial terms for this tree are "drumstick," which derived from the form of its pods, and "horseradish," which describes the flavor of its roots. *Moringa* requires less or no horticultural care and grows quickly from seed and cuttings and it is hardy enough to withstand drought condition. It has been traditionally used as a food because of its nutritional and health curative properties. This crop can be grown on marginal and inferior soils where other crops are difficult to grow due to high temperatures and limited water availability.

Miraculous and Multipurpose Properties of *Moringa oleifera* Plant Parts

This tree can be grown in farm as live fences and also used as wind breaker. In alley cropping, and agroforestry, it can be planted as tree fences on inferior soils with high temperatures and low water availability, where it is challenging to grow other crops.

- ❖ **Leaves:** Leaves can be eaten as raw or cooked, and they can be kept, for longer time as a dry powder with same nutritional quality without refrigeration. The dried leaves of *Moringa oleifera* contain (30.3%) crude protein, phosphorus (0.3%), magnesium (0.5%), Calcium (3.65%), potassium (1.5%), sodium (0.164%), sulphur (0.63%), zinc (13.03 mg/kg), copper (8.25%), manganese (86.8 mg/kg), iron (490 mg/kg), and selenium (363 mg/kg) with 19 amino acids.
- ❖ **Leaves of *Moringa oleifera* is a good alternative of fodder for livestock:** Leaves and oil presscake are used as fodder for livestock. High nutritional quality and biomass production of moringa in marginal soil with low water and nutrient requirement it is a good alternative for livestock fodder. *Moringa oleifera* leaves are rich in magnesium, potassium, calcium, vitamins and micronutrient essential for livestock weight gaining, milk production, building tissues and balancing the physiological and metabolic process.
- ❖ **Pods:** Green pods of *Moringa* used as fresh vegetable in daily diet.
- ❖ **Seed:** Seeds contain 40% oil which is used for cooking, soap manufacturing and in cosmetics also. Runoff water from fields and other surfaces delivers solid debris, bacteria, and other microorganisms into the river, churning silt into suspension. It is crucial to get rid of this suspended particles as much as possible before consuming it. Coagulants are added to raw water during a regulated treatment process in order to accomplish this. In many developing countries where chemical coagulants are not available at considerable

cost. An best and economic alternative option is the use of natural and plant origin coagulant for coagulation. After oil extraction from seeds remaining presscake has effective coagulation properties. crushed seeds of *M.oleifera* tree are a perfect replacement of aluminium sulphate and used as a natural coagulant for water and wastewater treatment in underdeveloped countries. Seed oil of *M.oleifera* has more market value because it is high in oleic acid and thus also used for soap manufacturing.

- ❖ **Seed oil of *Moringa oleifera* used as source of biodiesel :** Biodiesel is an alternative to petroleum-based fuel. *Moringa oleifera* seed oil used as source of biodiesel After reducing acid value of oil by acid pre-treatment and biodiesel was prepared by process called alkali-catalyzed transesterification with methanol at 60⁰ C. *Moringa oleifera* oil has a high content of oleic acid with saturated fatty acids and biodiesel obtained from this oil has a high cetane number, kinematic viscosity and oxidative stability of *Moringa oleifera* oil based biodiesel is higher as compared to other.

Medicinal Properties of Moringa

Moringa tree have antidiabetic, anticancer, antiulcer, antimicrobial and antioxidant properties.

Leaves of *Moringa oleifera* is used in eye care, to reduce body weight and cholesterol, to improve fertility in womens, to reduce blood pressure, to cure jaundice, constipation and beneficial for diabetic patient due to antihyperglycemic properties.

Seed extract of *Moringa oleifera* has antibacterial and antiinflammatory activity. Seeds also have anthelmintic activity which remove intestinal worms from digestive systems. Gum from bark is used to reduce head ache and Roots of *moringa oleifera* are used to reduce spinal cord pain.

- ❖ ***Moringa oleifera* used for treating malnutrition:** *oleifera* provides significant health benefits where starvation is an issue. Pregnant women who consume moringa will make more milk and give birth to kids that weigh more. Moringa based products are available to mothers at very low or no cost and there is not any negative impact or side effects have been recorded to even daily consumption of moringa.it is successfully used to treat malnourished in children. It is greatest tropical legumes because it has high iron and vitamin A. It also contains very large amounts of calcium, protein, potassium, magnesium, selenium, zinc, vitamin C, and B-complex. Furthermore, it is excellent balance of all the important amino acids. Utilization of leaf powder of *Moringa oleifera* is simple and readily available solution to eliminate micronutrient deficiency and treat malnutrition problem.

References

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