



A REVIEW ON MORINGA OLEIFERA: A POTENT MEDICINAL HERB HAVING MIRACLE PROPERTIES

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ABSTRACT

Moringa oleifera, known as the miracle tree, is a small plant cultivated worldwide for several medicinal purposes. It is cultivated for its nutritious pods, edible leaves and flowers, which are very useful as food, medicine, cosmetic oil and animal feed. It is a good source of protein, oils, vitamins, fatty acids, micro-macro minerals and various phenols. Its roots, bark, gum, leaves, fruits (Pods), flowers, seeds and seed oil perform various biological functions. The most important flavonoids found in its leaves are myricetin, quercetin and kaempferol. Various parts of this plant such as leaves, roots, seeds, bark, fruits, flowers and ripe pods act as cardiac and circulatory stimulants, have antitumor, antipyretic, antiepileptic, anti-inflammatory, ulcerative, anticonvulsant, diuretic, blood pressure. Reducing, cholesterol-blocking agents. Reducing, antioxidant, antidiabetic, hepatoprotective, antibacterial and antifungal activities and are used to treat various diseases in indigenous medical systems, especially in South Asia. This review focuses on the detailed phytochemical composition of, medicinal uses and pharmacological properties of various parts of this versatile tree and multipurpose tree.

KEYWORDS: Moringa Oleifera, Antioxidant, Anti- inflammatory, Anti- tumor, Anti- microbial, Anti- diabetic, Anti- hyperglycaemic, Anti- fertility effect.

INTRODUCTION

Moringa oleifera (M. oleifera) is the widely cultivated species of the family Moringaceae, native to the Indian Subcontinent. Its common names are Moringa, Drumstick tree (due to the long, slender, triangular seed-Pods), Horseradish tree (Due to the taste of the roots that resemble horseradish), and Ben oil tree or Benz olive tree.^[2] M. oleifera has a maximum height of 10-12m (32-40 ft) and a trunk diameter of 45cm (1.5ft). The fruit is a brown capsule with three sides with a size of 20-45cm, which holds a globular, dark Brown seed diameter of about 1cm. The seeds have three whitish papery wings, which are dispersed by wind and water. Moringa oleifera Lam. Is a tree that grows widely in many tropical and subtropical countries. It is grown commercially in India, Africa, South and Central America, Mexico, Hawaii and throughout Asia and Southeast Asia. It is known as drumstick for the appearance of immature seed pods, radish for the taste of ground root preparations, and ben oil tree for its seed oils.

Common name

Hindi – Sahjan

English – Moringa, Drumstick tree, Horseradish tree

Latin – Moringa oleifera

Sanskrit – Surajana

Tamil – Amukira

Kannada – Keramaddinagaddi

Telgu – Mulakkaya

Malayalam- Muringa.

Marathi – Shevga

Gujarati – Saragvo

Bengali – Sojne danta

Oriya – Sajana or Sujuna

Punjabi – Surajana

Nepali – Sajiwan or Swejan

Assamese – Sojina

Sinhalese – Murunga

Chemical constituents

The main constituents of Moringa plant are: deic, palmitic and stearic acid, Saponins, glycoside, gum, protein Vitamins: A (8855 IU per 100g), B1, B2, B3, C Minerals: calcium, iron, Phosphorus, magnesium. The leaves, Flowers and pods are used as significant Sources of vitamins A, B and C, riboflavin, Nicotinic acid, folic acid, pyridoxine, Ascorbic acid, beta-carotene, calcium, iron, And alpha-tocopherol (Dahot, 1988). The Pods are considered good sources of the Essential amino acids. A compound found In the flowers and roots of the moringa

Tree, pterygospermin, has powerful Antibiotic and Fungicidal effects.



Medicinal uses

Anti- Oxidant properties

Key plant compounds have the ability to reduce oxidative damage in tissues by indirectly improving cellular health or by eliminating free radicals.

The leaves of the Moringa Oleifera plant have been reported to have antioxidant activity due to their high polyphenol content.

It has been stated that, in general, the higher the total polyphenols, the higher the antioxidant activity, which may be due to the combined effects of several substances present as well as the high donating capacity of hydrogen.

Furthermore, this study also used several other methods to evaluate the antioxidant activity of the obtained Moringa extract, where all other methods also showed similar antioxidant activity in terms of reducing potassium ferricyanide, scavenges superoxide radicals, d prevents peroxidation of lipid membranes. Liposomes, inhibition. Microsomal oxidation in rat liver, inhibited linoleic acid peroxidation and prevented carotenoid bleaching.

Anti-inflammatory activity

Moringa has been used practically in the medical field for decades to treat a large number of acute and chronic diseases. In vitro and in vivo studies with have shown its effectiveness in treating inflammation, hyperlipidaemia, and hyperglycaemia.

Recently, the search for dietary components that induce inflammatory responses has received particular attention due to the confirmation of a link between chronic low-grade inflammation, insulin resistance, and fat.

Anti – Tumor properties

This study shows that M. oleifera leaves may have the ability to inhibit the growth of cancer cells by improving human health and developing new food ingredients. According to in vitro studies, phytochemicals from M.

oleifera leaves can be used as primary drugs for the treatment of cancer.

Anti – Microbial activities

Moringa leaf extricate with ethanol dissolvable are able to repress the arrangement of S. aureus, and have antibacterial properties against Pseudomonas aerugenosa and E. coli.

Anti- Diabetic properties

Oleifera extract significantly reduced the high levels of these cytokines and thus affected the anti-inflammatory properties. This study showed that M. oleifera leaf extract lowers blood glucose, glucose AUC, insulin and inflammatory cytokines (IL6, IL-1 β and TNF α) in type 2 diabetic rats.

Anti- hyperglycaemic properties

The efficacy and safety of M. oleifera dry seed kernels were studied for three weeks in patients with 25 mild to moderate asthma. A spirometer was used to assess clinical efficacy in terms of symptoms and respiratory function before and after treatment. Significant improvements in forced vital capacity, forced expiratory volume per second, and peak expiratory flow rate were observed in asthmatics. None of the patients experienced adverse events. Moringine, a moringa alkaloid, relaxes the bronchial tubes. It resembles ephedrine in its action and is useful in the treatment of asthma.

Anti-Fertility effect

The estrogenic, ant estrogenic, progestational and antiprogestational properties of an aqueous extract of the roots of M.oleifera were studied in rats. In ovariectomized rats, uterine weight increased with oral treatment and stimulation of uterine histology, suggesting an estrogenic effect. When extract was co-administered with estradiol dipropionate (EDP), uterine wet weight was lower than when EDP alone was administered, and uterine histology was suppressed. In the decidome test, the highest dose of Moringa inhibited decidome formation by 50% in rats, suggesting its antiprogestational effect.

CONCLUSION

Moringa plants contain a rich and unusual combination of zeatin, quercetin, beta-sitosterol, caffeoylquinic acid, and kaempferol.

M. Oleifera is of great importance due to its proven water purifying power and high nutritional value, as well as its medicinal properties.

Various parts of this plant act as cardiac and circulatory stimulants, and have antitumor, antipyretic, antiepileptic, anti-inflammatory, antiulcer, and antispasmodic properties. It has diuretic, antihypertensive, cholesterol-lowering effects. They have antioxidant, antidiabetic.

This review focuses on the medicinal uses of different parts of this magical tree.

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