

Moringa oleifera medicinal uses



Introduction

The plants assigned to this group were Moringa oleifera which is also known as saijan which has many medicinal and non medicinal uses such as decreasing blood pressure and diabetes, reliving back pain and arthritis etc, non- medicinally it is even used to purify contaminated water making it safe to drink. Momordica charantia which is known as corailla which also has many uses.

Taxonomic description

Kingdom - Plantae - Plants

All plants are placed into this kingdom both flowering and non flowering.

Division - Magnoliophyta - Flowering plants

All flowering plants are placed into this division.

Order - Capparales

Capparales, the caper order of flowering plants, consists of five families, four hundred and twenty seven (427) genera, and four thousand (4, 000) species. (Encyclopedia Britannica 1995)

Family - Moringaceae - Horseradish family

Contains one genus and thirteen species of plants

Genus - Moringa

Contains thirteen species of plants

Species – Moringa oleifera – horseradish tree

Moringa oleifera Lam. is the most widely cultivated species of the monogeneric family Moringaceae (order Brassicales), that includes thirteen species of trees and shrubs distributed in sub Himalayan ranges of India, Sri Lanka, North Eastern and South Western Africa, Madagascar and Arabia. Today it has become naturalized in many locations in the tropics and is widely cultivated in Africa, Ceylon, Thailand, Burma, Singapore, West Indies, Sri Lanka, India, Mexico, Malabar, Malaysia and the Philippines. (Hsu, Midcap, Arbainsyah, De Witte 2006)

Biogeographic origin of Moringa oleifera

Moringa oleifera Lam (synonym: Moringa Pterygosperma Gaertner) belongs to a monogeneric family of shrubs and tree, Moringaceae and is considered to have its origin in Agra and Oudh, in the northwest region of India, south of the Himalayan Mountains. (Foidl, Makkar and Becker 2001)

Medicinal uses and Properties of Moringa oleifera

The Moringa tree is a multi-function plant. It has been cultivated in tropical regions all over the world for the following characteristics: 1) high protein, vitamins, mineral and carbohydrate content of entire plants; high value of nutrition for both humans and livestock; 2) high oil content (42%) of the seed which is edible (Hsu, Midcap, Arbainsyah, De Witte 2006), and with medicinal uses such as treating dyspepsia, anorexia, verminosis, diarrhoea, colic, flatulence, paralysis, inflammations, amenorrhoea, dysmenorrhoea, fever, strangury, vesical and renal calculi. It is used in cough, asthma, bronchitis, pectoral diseases, splenomegaly, epilepsy and cardiopathy, also used for

poor circulation, to increase appetite, stimulate digestive system and to relieve rheumatism and muscular pains (Amina Herbal Health Care Ltd 2011)

Plant parts used for medicinal purposes and for which illness

Table 1 showing the parts Moringa oleifera used and for which illness they are used for. (Hsu, Midcap, Arbainsyah, De Witte 2006, Fahey 2005 and Anwar, Latif, Ashraf and Gilani 2007)

Plant parts	Medicinal uses
	Anti-bacterial, Infection, Urinary Tract Infection, Epstein-Bar Virus (EBV), Herpes Simplex Virus (HSV-1), HIV-AIDS, Helminthes, Trypanosomes, Bronchitis, External Sores/Ulcers, Fever, Hepatic, Anti-Tumor, Prostate, Radio protective, Anti-Anemic, Antihypertensive,
Leaves	Diabetes/hypoglycemia, Diuretic, Hypocholestemia, Thyroid, Hepatorenal, Colitis, Diarrhea, Dysentery, Ulcer/Gastritis, Rheumatism, Headache, Antioxidant, Carotenoids, Energy, Iron deficiency, Protein, Vitamin/mineral deficiency, Lactation Enhancer, Antiseptic, Catarrh, Lactation, Scurvy.
Bark	Dental Caries/Toothache, Common cold,

External Sores/Ulcer, Anti-Tumor,
Snakebite, Scorpion bite, Colitis, Digestive,
Epilepsy, Hysteria, Headache,
Antinutritional factors, Abortifacient,
Aphrodisiac, Birth Control and scurvy.

Dental Caries/Toothache, Common cold,
Trypanosomes, External Sores/Ulcers,
Fever, Asthma, Cardiotonic, Diuretic,
Hepatorenal, Diarrhea, Flatulence, Anti-

Roots spasmodic, Epilepsy, Hysteria, Headache,
Abortifacient, Aphrodisiac, Rubefacient,
Vesicant, Gout, Hepatomegaly, Low
back/Kidney Pain, Scurvy and
Splenomegaly.

Dental Caries/Toothache, Syphilis, Typhoid,

Exudat Earache, Fever, Asthma, Diuretic,
e Dysentery, Rheumatism, Headache,
Abortifacient and Rubefacient.

Flower Throat infection, common cold,
s anthelmintic, anti-tumor, rheumatism,
diuretic, tonic, hysteria, abortion

Pods Anthelmintic, skin cancer, anti-
hypertensive, diabetes, joint pain

Anthelmintic, Warts, anti-tumor, Ulcer,
Seeds rheumatism, arthritis, antispasmodic,
goitrogen, mineral/vitamin deficiency

Medicinal uses of plants obtained from interviews

According to the interviewees the leaves are the only parts of the Moringa tree used medicinally and are used to boost the body's immunity also used to reduce hypertension and manage diabetes. It can also be used to cure back pain

Method of preparation for medicinal use obtained from interviews

Leaves

- The leaves are placed into water and boiled to make tea which is drunk to boost the immune system, manage diabetes and to cure back pain
- Leaves rubbed against the temple can relieve headaches.
- To stop bleeding from a shallow cut, apply a poultice of fresh leaves.
- There is an anti-bacterial and anti-inflammatory effect when applied to wounds or insect bites.
- Extracts can be used against bacterial or fungal skin complaints.
- Leaf tea treats gastric ulcers and diarrhoea.
- Eating Moringa food products is good for those suffering from malnutrition due to the highprotein and fibre content.

Flowers

- Flower juice improves the quality and flow of mothers' milk when breast feeding.
- Flower juice is useful for urinary problems as it encourages urination.

Pods

- If eaten raw, pods act as a de-wormer and treat liver and spleen problems and pains of the joints.
- Due to high protein and fibre content they can play a useful part in treating malnutrition and diarrhea.

Seeds

- Used for their antibiotic and anti-inflammatory properties to treat arthritis, rheumatism, gout, cramp, sexually transmitted diseases and boils. The seeds are roasted, pounded, mixed with coconut oil and applied to the problem area. Seed oil can be used for the same ailments.
- Roasted seeds and oil can encourage urination. They can also be used as a relaxant for epilepsy.

Roots, bark and gum

- Root bark is ground and mixed with salt to form a poultice which is administered for rheumatism and muscular pains.
- The bark is applied on the snake or scorpion bite in order to prevent the venom from spreading in the body.

Natural products, Phytochemicals and Active ingredients

Table 2 Summarizing the Natural Products, Phytochemicals and Active Ingredients found in Moringa oleifera

Natural Phytochemic
products als Active ingredients

Pterygospermin	Gallic tannins	Nitrile
Moringine	Catechol tannins	Mustard oil glycosides
Moringinine	Coumarins	Thiocarbamate glycosides
Spirochin	Steroids and triterpenoids	4(α -L-rhamnosyloxy)-benzyl isothiocyanate
behenic acid	Flavonoids	Niazimicin
Moringic acid	Saponins	Niazinin A + B
Niazinin A & B	Anthraquinones	Thiocarbamate and Isothiocyanate glycosides
Niazimicin	Alkaloids	3-O-(6'-O-oleoyl- β -D-glucopyranosyl)-b-sitosterol
Campesterol	Glucosinolates	Methyl phydroxybenzoate
Stigmasterol	Isothiocyanate	b-sitosterol

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	4-[α -(L-rhamnosyloxy)
	benzyl]-
b-sitosterol	Tannins
	o-methyl thiocarbamate
	(trans)
	O-Ethyl-
Amino acids	4-(α -L-
	rhamnosyloxy)benzyl
	carbamate

Non- medicinal uses of Moringa oleifera

The fruits of *Moringa oleifera* are used to make curry, the leaves are eaten raw in salads or made into a soup. The seeds which are found within the fruits are crushed and used as a water purifier and also made into oil (Ben oil) which is used as a lubricant for watches and other delicate machinery and this oil is also used to make perfume, while the trees are used as fences. (Hsu, Midcap, Arbainsyah, De Witte 2006, Fahey 2005 and Anwar, Latif, Ashraf and Gilani 2007) The seed cake, which is produced by pressing the seeds to extract oil, cannot be eaten as it contains harmful substances. However, it contains high levels of protein and makes a good fertilizer for use in agriculture also by digging *Moringa* leaves into the soil before planting prevents damping off disease (*Pythiumdebaryanum*) among seedlings. Crushed leaves are used to clean cooking utensils or even walls. The wood is light and is a good fuel for cooking. However, it is not suitable for building.

The bark can be beaten into a fiber that can be used to make rope or mats and the wood produces a blue dye. Chippings of wood can be used to make a good quality paper. The tree also produces viscose resin that is used in the textile industry. (Taken from Moringa oleifera a multi-purpose tree)

Pharmacological effects and risks of using Moringa oleifera

- Alkaloids in Moringa oleifera have hypotensive and bradycardiac effects.
- The bark of the Moringa oleifera can cause uterine contractions.
- Phenylacetonitrile isolated from roasted Moringa oleifera seeds has mutagenic activity.
- Moringa oleifera extracts have anti-fertility properties.

Interviewees - Date of interviews 29th April, 2011 for Moringa oleifera.

Table showing the herbs vendors along with their contact information

Lyndon	Sharmila	Mayaba
Garnett	Mohamad	Jawazna