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RESEARCH PAPER

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Neem: A Wonder Tree - A Brief Overview

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ABSTRACT

The neem tree has been known to Indian since time immemorial. The earliest sanskrit medical writing refers to the benefits of the neem fruit, oil, leaves and bark. Each has been extensively used in Indian Ayurvedic, Unani and Homopathic system of medicine. Native of India considered neem as 'Sacred Gift of Nature to Man'. Neem has become Important in the global context today because it offers answers to the major concern's facing mankind. Due to its excellent medicinal properties this tree is called as 'Wonder Tree'.

Key words: *Azadirachta indica, Biological activities and Medicinal use.*

INTRODUCTIION

Neem (*Azadirachta Indica*) is a fast growing evergreen tree found commonly in India and Indian sub-continent including Nepal, Pakistan, Bangladesh and Sri Lanka. (Sharma et al., 2011). Tree can reach a height of 15-20 meters, rarely to 35-40 meters. The Sanskrit name of the neem tree is 'Arishtha' meaning 'Reliever

of sickness' and hence is considered as 'Sarbaroganibarini' (Khan and Wassilew, 1987).

The number of benefits of neem is listed in ancient documents like 'Charak-samhita' and 'Susrula-samhita'. The Neem tree has been known to Indian since time immemorial. The Sanskrit medical writings refer to the benefit of neem fruit, seed, oil, leaves, and bark.

Each has been extensively used in Indian Ayurvedic, Unani, Homeopathic system of medicine. Neem has become important in the global context today because it offers answer to the major concerns facing mankind. Due to its excellent medicinal properties neem tree is also called as 'Wonder Tree'. The tree, whose benefits have been known for 4000 years, is described by the Indian as the 'Village Pharmacy.'

Biological Activities of some neem components

More than 135 compounds have been isolated from different part of neem tree and several reviews have also been published on the chemistry and structural

diversity of these compounds (Kaul et al., 1990, Chatterjee and Prakash, 1994, Mitra, 1963 and Taylor, 1984).

The compound have been divided into two major classes isoprenoid (diterpenoids and triterpenoids containing protomeliacins, limonoids, azadirone and its derivatives, gedunin and its derivative, vilasinin type of compounds and c-seco-meliacins such as nimbin, salanin and azadiachtin) and non-isoprenoids, which are proteins (amino acids) and carbohydrates (polysaccharides) sulphurous compound, polyphenolics such as flavanoids and their glycosides, dihydrochalcone, coumarin and tannins, aliphatic compounds etc. (Krous, 1995 and Kumar and Sukhdev 1996).

Table 1. Some Bioactive Activities of Neem Compounds.

	Neem Compounds		Biological activity
1.	Nimbidin		Anti-inflammatory Anti arthritic Anti pyretic Hypoglycaemic Asti gastric Ulcer Spermicidal Antifungal, Antibacterial, Diuretic
2.	Sodium Nimbidate		Anti-inflammatory
3.	Nimbin	Seed Oil	Spermicidal
4.	Nimbolide	Seed Oil	Antibacterial
5.	Gedunin	Seed Oil	Antifungal, Anti malarial
6.	Azadirachtin	Seed	Anti Malarial
7.	Manmoodin	Seed Oil	Anti Bacterial
8.	Gallic acid (-) epicatechin and catechin	Bark	Anti-inflammatory and immune modulatory
9.	Margalone, Margalonone and iso margalonone	Bark	Anti Bacterial
10.	Cyclic trisulphide and cyclic tetra sulphide	Leaf	Antifungal

MEDICINAL USES

Neem seed Oil: Neem seed oil can be obtained by processing the neem seed kernels. Kernels can contain as much as

50% oil. It is a natural insect repellent, pesticide, fertilizer, and skin care ingredient. Purified neem oil is used in nail-polish and other cosmetics

(Anonymous, 2006 and Anonymous, 1992). It is also used as a powerful spermicide (Sinha, et al., 1984). Intra vaginal application of neem oil, prior to coitus, can prevent pregnancy.

Seed cake

Neem cake is the pulp that left after extracting neem seed oil from kernels. It is indeed edible, at least for animals and is sometimes used as fodder. However, the most common and recommended use is a soil amendment and fertilizer (Girish and Bhatt, 2008). Neem Cake is widely used to fertilize cash crops, particularly sugarcane and vegetables. Ploughed into the soil, it protect plant root from nematodes and white ants, probably as it contain the residual limonoids.

Neem bark

The most common use of the neem bark is to clean the teeth the traditional method to snap off a twig of the tree and chew on it. The astringent qualities of the bark prevented bleeding gums, tooth decay and foul smell long before the advent of tooth paste (Bhoumik et al., 2010). Neem bark, leaves or seed also used in snake bite and scorpion sting because of its chelating anti poisonous and dipuritive properties.

Neem bark decoction is used as an antitussive in dry cough. Its bitter, coal, astringent useful for fever, loss of appetite, tiredness, cough, intestinal warm, infestation and helpful for healing wounds and to combat vomiting excessive thirst and skin diseases.

Neem Leaves

Leaves are used in the treatment of chicken pox and wort by directly applying to the skin in past from or by bathing in water with neem leaves. To improve the immunity system neem leave are also taken internally in the form of neem capsules or made into Tea. In ayurveda neem leaves are also used curing neuro-muscular pains. Leaf pastes and extracts

are used in skin care products, hair oils, tooth pastes and mouth washes (Bhoumik et al., 2010). Neem leaves are also reported to remove toxins, preventing damage from free radicals and purifying the blood as well as beneficial in eyes disorders and insect bite poisons. Neem leaves are useful in dermatological disorders like psoriasis, herpes, eczema and vulgaris etc.

Neem Fruit and Flower

Ointments made from neem fruits are good for the treatment of piles, small pox, Chickenpox, warts. Neem fruit is used for hemorrhoids, intestinal worms, urinary tract disorders, bloody nose, phlegm, eye disorders, diabetes, wounds and leprosy.

Neem flower is used for reducing pile, controlling and treating intestinal worms. Neem flower and oil is also used in aromatherapy and has calming and restorative effect.

CONCLUSION

Owing to its versatile characteristics neem is rightly called the 'village-pharmacy' or 'Doctor Tree' or 'Wonder Tree of India' or 'Bitter Germ'. National Research council (NRC) Washington, USA consider the neem one of the most promising of all plants and the fact is that it may eventually benefit every person on this planet. Probably no other plant yields as many strong and varied products or as many exploitable by-products.

The Neem tree contributes to human, animal health, plant nutrition and growth, environmental conservation, through these functions the neem tree products have a great potential for income generation. So we can say that because of neems excellent properties there is need to further promote awareness of the tree.

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