



Neem's Numerous Uses

Some Information and Historical Uses Updated 2/2011

Some information on Neem

The Neem tree (*Azadirachta Indica*), is an evergreen, native to India, that grows up to 60 ft high. It is found in the tropical dry deciduous/evergreen and thorny forests and drier parts of the country. It also grows in Indonesia, Sri Lanka, Myanmar, Pakistan, Japan, parts of Africa and tropical regions of Australia and America.

The Neem tree is extremely hardy but cannot tolerate extreme cold and frost. It can grow in most soils but too much rainfall and standing water can result in a poor harvest. It begins to fruit in 3 to 5 years. A mature tree can yield up to 100 kg of fruit; 50 kg of fruit yields 30 kg of seed. Based on seed size, 1 kg may have up to 3000 seeds.

Ancient Indian texts refer to Neem as *Sarva Roga Nivarini*, “the curer of all ailments.” The Persian name for neem is *Azad-Dirakth* or the “Free Tree”

The medicinal properties of Neem have been described in ancient Indian medical texts (4000 B.C.) such as the *Atharva Veda*, *Ghrhyasutras* and the *Sutra-granthas*. The Sanskrit name, *nimba*, is a derivative of the term *nimbati syasthy- amdadati* - meaning ‘to give good health’.

Literally, every part of the tree - the bark, leaves, flowers, seeds - has a use. In agriculture, healing and medicine, for humans and animals alike. Since it is the fruits, leaves and pruned branches that are used, it is a tree of renewable resources that also plays an important part in reforestation and wasteland restoration programs.

The products of the Neem tree are known to be antibacterial, antifungal, antiparasitic, antiviral, antieczemic, antiscabic, anti-inflammatory, antimalarial, antifeedant, antipyretic, antipyrroic, analgesic, diuretic and nematocidal to name a few. More information can be found at the excellent online resource of the Neem Foundation (India) - <http://www.neemfoundation.org>.

The leaf and bark are used in teas and medicinal preparations. In Ayurvedic literature Neem is described in the following manner: 'Neem bark is cool, bitter, astringent, acrid and refrigerant. It is useful in tiredness, cough, fever, loss of appetite, worm infestation. It heals wounds and vitiated conditions of kapha, vomiting, skin diseases, excessive thirst, and diabetes. Neem leaves are reported to be beneficial for eye disorders and insect poisons. It treats Vatik disorder. It is anti-leprotic. Its fruits are bitter, purgative, anti-hemorrhoids and anthelmintic'. (Source: The Neem Foundation).

Neem twigs are chewed and used as tooth brushes and ward against gum disease. Powdered Neem bark is used as a tooth powder and flea repellent.

Neem oil, which is extracted from the seed kernel is excellent for its healing properties and is used in creams, lotions, shampoos and soaps. It is also known to have insect repellent properties. Applied at the correct dilution it is used as a non-toxic flea, fly and tick repellent for animals. A combination of neem and karanja is a safe, natural, non-toxic cure for mange in animals and scabies in humans.

While neem oil when properly administered is non-toxic to humans & other mammals, it can be toxic to fish at high concentrations.

The best oil is cold pressed from the seed kernel of good quality fruit seeds that have been depulped, washed, dried and decorticated. Pure neem oil is rich in fatty acids with a strong garlicky peanutty smell that some people find offensive – others get used to it and even love it for its wonderful properties. It contains vitamin E and other essential amino acids. Studies have found percentages of these fatty acids - Palmitic acid 19.4%, Stearic acid 21.2%, Oleic acid 42.1%, Linoleic acid 14.9%, Arachidic acid 1.4% (Bringi). Percentages vary based on mode of pressing. Pure Neem oil also contains trace amounts of nitrogen, phosphorus, potassium, zinc, copper, iron, magnesium and manganese.

Neem Oil has a high wax content and therefore clouds at 16 C (60.8 F) and tends to solidify at 12 C (53.6 F). Gentle thawing is the best way to liquify it without harming its properties. It is sensitive to heat and UV rays. Freezing or refrigerating the oil seems to preserve its properties. However, at temperatures below 5 C (41 F), Neem Oil is solid and since it is mainly composed of glycerides of palmitin, stearin, and linolic acids it deposits stearin on thawing. This can be filtered out if needed.

It was only around 1959 that the Neem tree evoked global interest. A German entomologist Heinrich Schmutterer observed that during a plague of African migratory locusts in the Sudan, the only green things left untouched despite the devastation by the billions of winged marauders, was the Indian Neem Tree. Dr. Schmutterer noticed that though the locusts had landed on the tree and its leaves, they did not feed.

In recent years the insecticidal, growth hormone regulating and anti-feedant properties of Neem oil have prompted a considerable amount of research. The United States Department of Agriculture has been studying Neem since 1972 and Neem formulations have been approved by the EPA for insecticidal use. Neem oil is also an effective fungicide.

Laboratories around the world were quick to isolate the biologically active components of neem such as meliantriol (Lavie et. Al. 1967), azadirachtin (Butterworth and Morgan 1968), nimbin (Nakanishi 1975) and salannin (Warthen et. Al. 1978). Several other active fractions or liminoids have since then, been isolated from different parts of the Neem tree of which azadirachtin is the most potent antifeedant and hormonal growth regulator (Kraus et. Al. 1981, Morgan 1981, Schmutterer 1981).

The residue is Neem cake which is used by farmers as a soil amendment to promote the slow, controlled release of nitrogen and additionally against parasitic nematodes associated with vegetable crops, wheat and fodder crops. It is harmless to earthworms - in fact earthworm populations are known to proliferate in plots treated with neem cake. Neem cake typically contains about 6% neem oil and min. 4% nitrogen, 0.5 % phosphorus and 0.5% potassium.

An excellent online resource to learn more about the agricultural, environmental and health benefits of neem is:

The Neem Foundation (India) website - www.neemfoundation.org.

Other online resources:

www.plasmaneem.com

www.herbsandapples.com/orchard/edge.php www.colostate.edu/Depts/Entomology/courses/en570/papers_1994/sclar.html www.pubmed.com. Enter search for Neem

Using Neem (historical uses)

In Agriculture or in the Garden

NEEM & KARANJA OIL

For Vegetables, Ornamentals or Row Crop - Mix 1 oz. neem or karanja oil with

1 to 1.3 gallons water, using between 1/2 - 1 tspn soap or other emulsifier (or Soap Nut Powder solution - see last page) to mix oil and water. If the water is cold, use a little warm water to premix the oil and soap till milky and then add the remaining water. Agitate or mix well to make sure the oil is completely emulsified before spraying. Add more soap if needed. There should not be oil floating on top. Neem oil that has not dissolved could cause leaf burn. Spray with full leaf coverage for healthy plants. Repeat sprays every 7-10 days for 4 to 5 weeks if needed. Neem oil is not harmful to bees and other beneficials.

Spraying is recommended first thing in the morning or in the evening.

Avoid introducing Neem oil into bodies of water containing fish as it can be toxic to fish.

Alternately, mix 1/2 oz. neem oil + 1/2 oz. karanja oil (to make a total of 1 oz. concentrate) and use in the same way.

For Large Trees, Orchards - Use 1 oz. neem or karanja oil with 3/4 gallon to 1 gallon water.

Alternately, mix 1/2 oz. neem oil + 1/2 oz. karanja oil and use in the same way.

Important - Use within 8 hrs of mixing with soap and water for maximum efficacy.

DO NOT make the mixture too strong - it could cause leaf burn.

In Skin & Hair Care

Mix 1-10% neem oil with a fragrant & natural cream, lotion or shampoo.

Use neem oil (full strength or diluted 10-30% with coconut oil) in hair to protect against head lice. Massage into hair, wait for at least 1/2 hour. Comb out hair. Wash off with a neem shampoo. Repeat twice a day for best results.

Combine 1-10% or more neem or karanja oil with sesame oil, sweet almond oil or coconut oil & fragrant oils like lavender, rosemary, basil, sandalwood and use as a massage oil.

Use neem oil full strength or diluted (20%) with sesame oil & fragrant oils (as above, including pure citronella or eucalyptus oil) on exposed skin for outdoor protection.

Use pure Neem oil on burns, cuts and minor wounds.

In Pet & Livestock Care

For protection against fleas, ticks, flies, mites, lice, hot spots, sores.

****In all instances Neem & Karanja oil can be used together.**

DO NOT USE UNDILUTED

Mix 1 part Neem Oil with 1-2 parts Apple Cider or other undistilled vinegar. Shake well to mix. Add to 40-50 parts water and mix well. Spray on animal, getting close to the skin. Air dry or towel dry. Repeat every 2 weeks or as often as needed. Use within 24 hours of mixing.

or Mix 1 oz. neem oil with 10-20 (stronger for large animals/dogs, weaker for small ones) ounces of sesame, sweet almond or olive oil. Massage into skin and fur. Leave on for about 1/2 hour and wash with a mild shampoo. Prevent excessive licking (this could cause them to throw up) by using an Elizabethan collar.

or Add 1 ounce neem oil to 6-8 ounces mild natural (without any harsh chemicals) shampoo or Soap Nut powder solution (see last page) and bathe.

or Mix 1 oz. neem oil to 3/4 - 1 gallon water with 1/4 - 1/2 tspn soap or Soap Nut powder solution. Shake really well till oil and water are well mixed. Use as a spray or rinse. Keep away from eyes.

For Horses, Cattle & Large Animals - use 1 oz. neem oil to 1/4 or 1/2 gallon water using soap or Soap Nut powder solution. Can be used full strength if necessary.

In between baths, rub Neem Bark Powder into their fur - this acts as a de-odoriser, is soothing and also protects from fleas, lice and hot spots. Works well for all animals including cats.

Neem Bark Powder works as protection for lice on livestock in winter when it's difficult to use Neem Oil.

For parasites and inflammation - Add Neem Bark powder to animal feed, 2-3 ozs for horses, 1-3 ozs for cattle, 1/4-1/2 oz for sheep, 1/4 teaspoon - 1 teaspoon for dogs (1/8 teaspoon per 10 lbs of weight).

For moist wounds, hot spots, foot bath - Add 1/2 - 1 cup hot or boiling water to 2 tablespoons Neem leaf. Steep for 15 - 20 mins. Strain, COOL, and use as a foot bath or to wipe down face and body - protects against outdoor allergies.

For Mange, Wounds & Severe Mite Problems.

Mix 1/2 ounce neem oil with 1/2 ounce karanja oil. Add about 1/4 teaspoon turmeric

powder and make a paste (this is optional but helps in healing. Turmeric will stain). Add this to 10 ounces of sesame, sweet almond or olive oil and mix. Gently apply all over on skin and affected areas. Leave on for at least 1/2 hour. Wash off with a neem shampoo (make your own by adding 1 oz. neem oil to 6 or 8 ozs of a natural shampoo or Soap Nut powder solution).

Spot apply the mixture to the really bad areas 2-3 times a day if possible or at least once a day.

Prevent excessive licking (this will cause them to throw up) by using an Elizabethan collar.

Repeat every 5 to 7 days till wounds heal and hair grows back.

Suggested Uses & Information from The Neem Foundation

- * Mix pure, dried neem leaf powder with vaseline in the ratio of 1:5. This combination can be used to repel insects including mosquitoes. It can also be used to treat skin disorders, minor cuts, burns, wounds, etc.

- * Boil neem leaves with water and add to bath water along with rose water to cure itching, excessive perspiration, etc.

- * Boil 10 freshly cleaned neem leaves along with cotton in a litre of water for approximately 10 minutes. Keep it aside to cool. Use this to rinse your eyes in

case of conjunctivitis, itching, etc.

- * Use pure neem oil mixed with coconut and sandalwood oil for treating

hairfall, premature greying, lice, dandruff and scalp infections.

- * To treat a sore throat without antibiotics, gargle with neem leaf water to

which honey is added.

- * For acne, pimples and skin infections, apply pure neem leaf powder mixed

with water to the affected area.

- * In case of sinusitis, use pure neem oil as nasal drops. Use 1-2 drops in the

morning and evening.

- * Boil 40-50 neem leaves in 250 ml for 20 minutes. Cool, strain, bottle, refrigerate and store to use as an astringent.

- * Chewing four to five neem leaves regularly helps in cases of hyperacidity

and diabetes. It also purifies blood.

- * Neem oil has anti-fungal properties. Putting two drops of neem oil in the ear once daily, at bedtime, helps to cure fungal infection of the ear.
- * For jaundice, juice of neem leaves (15-30 ml) and half the quantity of honey taken on an empty stomach for seven days is recommended.
- * Prevent breeding of mosquitoes by adding crushed neem seeds and neem oil to all breeding areas. Neem products ensure complete inhibition of egg laying for seven days.
- * Add 30 ml of neem oil to one litre of water. Mix well. Add one ml of soap and spray immediately for plant protection.
- * To ward off mosquitoes, add five to 10 per cent neem oil to any oil and light as a oil lamp.

Therapeutic uses of neem

Medical properties of neem have been known to Indians since time immemorial. The earliest Sanskrit medical writings refer to the benefits of neem's fruits, seeds, oil, leaves, roots and bark. Each of these has been used in the Indian ayurvedic and unani systems of medicine. Traditionally, neem products have been used against heat rash, boils, wounds, jaundice, leprosy, skin disorders, stomach ulcers, chicken pox, etc. Modern research also confirms neem's curative powers in case of many diseases and provides indications that neem might in future be used much more widely.

A large number of medicines, cosmetics, toiletries and pharmaceuticals are now based on neem derivatives because of its unique properties. Here is how to put every part of the plant to good use.

Properties of neem

Bark Neem bark is cool, bitter and used as an astringent. It is useful to cure fatigue, cough, fever, loss of appetite and worm infestation. It heals wounds and is also used to stop vomiting, skin diseases and excessive thirst.

Leaves According to ayurveda, neem leaves help in the treatment of vatic disorders (neuro and muscular pains). Neem leaves are also reported to remove toxins, purify blood and prevent damage caused by free radicals in the body by neutralising them. Neem leaves are reported to be beneficial in eye disorders and insect-bite poisons.

Fruits Neem fruits are bitter, purgative, anti-haemorrhoidal and anthelmintic in nature.

Flowers Neem flowers are used in vitiated conditions of pitta (balancing body heat) and kapha (cough formation). They are astringent, anthelmintic and non-toxic.

Seeds Neem seeds are also described as anthelminthic, anti-leprotic and anti-poisonous.

Oil Neem oil derived from crushing the seeds is an anti-dermatonic and a powerful anthelmintic. It has a wide spectrum of action and is highly medicinal in nature.

Mixture The five parts of the neem tree i.e. bark, root, fruit, flower and leaves are used all together in diseases of the blood. It is also used in vitiated conditions of excess heat, itching, wound, burning sensation in the body and skin diseases.

Information courtesy Neem Foundation, Mumbai, India.

Neem Bark - Uses

- * Use as a toothpowder. Brush teeth gently & massage gums.
- * Headaches (at temples)/Stomach ache (burning sensation) - Make a hot infusion. Drink one cup in the morning & evening for 3 days.
- * Diarrhoea - Hot infusion. One cup, morning, noon & night for 3 days.
- * Worms - Make a decoction. Take 6 tspns twice daily for 7 days.
- * Scabies - Decoction. Take 1/2 cup twice daily (you can add sugar) for 10 days.

Same decoction can be used to wash the affected areas.

- * Fever (due to exertion and exposure to heat) - Hot infusion. 1 cup morning, noon & night for 3 days.

* Irregular menstruation - Hot infusion. 1 cup morning, noon & evening until cured.

* To protect animals from fleas, lice, hot spots - Add 1 part cornstarch or cosmetic

clay (to help it stick) to 4 parts neem bark powder. Mix well & rub into animal's fur. Or use neem bark powder by itself. Use as often as needed.

PREPARATIONS

INFUSION: Use leaves, flowers, stems, roots with high concentration of volatile oils. Place herbs in container, pour boiling water over, place tight fitting lid to cover, steep for 10-20 minutes. Strain. Use hot or cold.

DECOCTION: Place herbs in a container, add cold water, bring to a boil, slowly. Simmer gently for 15 to 20 minutes or longer. Some herbalists brew the same batch of herbs 2 - 3 times before moving on to a new batch. There are varying opinions on the effectiveness of this practice.

DECOCTION/INFUSION: Sometimes it is necessary to prepare a tea from both aerial parts and roots and barks. Decoct roots and barks per decoction procedure. Remove from

heat. Add aerial parts, cover and steep for required amount of time. Strain. Use hot or cold.

PROPORTIONS: Dried herb 1 teaspoon per cup of water Fresh herb 3 teaspoons per cup of water.

Disclaimer

These statements or suggestions have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease. As with using any herb, monitor your body for any signs of discomfort or allergy. If any such conditions exist, discontinue use immediately and consult with an Ayurvedic, Unani or other herbal practitioner.

These are natural products and are not registered for use as an insecticide, fungicide or for any specific herbal use.

Note: This information has been compiled from a number of sources.
