

**Pure
Neem Oil**

DYNA-GROTM
The Nutrition Solution®

All Natural Leaf Polish

Use Dyna-Gro Pure Neem Oil for shiny leaves on most plants. Just spray on, no rubbing or wiping needed.

Source

Neem oil is pressed from the seed of the neem tree (*Azadiracta indica* Juss.). This tree, native to eastern India and Burma, is known by several names including "village pharmacy," "cornucopia," "wonder tree," and "the veritable gold mine". Neem leaves, stems, seeds and oil have been used for medicinal purposes and pest control in India for more than 4,000 years. In fact, its Sanskrit name, arishta, means "reliever of sickness".

Product Safety

Because neem products are used for human consumption and medication, exposure to neem in the process of treating plants with neem oil poses no threat to humans or other higher animals. Moreover, neem is not harmful to beneficial insects, affecting only those insects feeding on plants treated with neem. Since most predator insects do not also feed on plants, they are not harmed by the presence of neem. Neem biodegrades in a matter of weeks when exposed to sunlight or in soil.

In EPA testing, establishment of an LD-50 proved impossible as azadirachtin, one of numerous organic compounds present in neem oil, was asymptomatic at all levels tested. Accordingly, there are no reentry or residual restrictions associated with the use of neem oil.

Horticultural Benefits

Numerous tests have shown neem oil to be effective as an insecticide, miticide, fungicide, nematocide, and as an insect antifeedant and repellent. An insect antifeedant is a substance that discourages insect feeding but does not directly kill the insect. Azadirachtin is a potent insect antifeedant and disrupts the molting cycle of the ingesting insect leading to its death. As an antifeedant, neem oil is so effective that in tests desert locusts, voracious herbivores, will starve to death before eating plants treated with neem oil.

Insects rapidly evolve, developing resistance to conventional pesticides which directly and nonselectively kill them. As a result, existing chemical insecticides are becoming less effective for the control of the pests. Moreover, widespread use of chemical insecticides indiscriminately kills both harmful and beneficial insects creating the need to use more pesticides! Because neem extracts disrupt the growth of insects in a variety of ways, insects are not likely to develop resistance to neem insecticides. Naturally occurring compounds in neem have been shown to be an effective antifeedant and growth regulator for more than 200 species of insect pests and yet are surprisingly nontoxic to birds, mammals and beneficial predators like ladybugs, spiders, bees & wasps.

In addition to the above-mentioned effects, neem inhibits normal insect mating, ovipositing and larval development as well as reducing female fertility. These effects reduce the risk of harm to beneficial insects, birds and other predators, which prey on harmful insects. Neem's antifeedant properties even effect snails. Neem extracts inhibit the action of denitrifying bacteria in the ground which reduce nitrate, ammonia and urea to molecular nitrogen (N₂) and nitrous oxide, both volatile gasses. In the absence of controls, the action of these bacteria result in not only the loss of an important macronutrient, nitrogen, from the soil but also in the release of ozone depleting, greenhouse gases to the atmosphere.

Neem extracts have shown incredible success in combating not only fungal problems on leaves but also many forms of root rot. Neem is effective in both contact and systemic roles. Accordingly, for optimum benefits it should be sprayed on all sides of foliage and watered into the root zone.

Implementation of environmentally friendly horticultural practices is essential to the preservation of the quality of life on Earth. Ecologically sound practices, which rely less upon synthetic chemical pesticides and more upon integrated pest management (IPM) practices including the use of naturally occurring pest controls like neem oil, are imperative to maintain soil productivity and reduce ancillary poisoning of people and animals.

For more extensive information on neem, visit the website for the Neem Foundation at <http://www.neemfoundation.org> or the Neem Association at <http://hometown.aol.com/neemassoc>. Additional websites can be found, which cite scientific research and anecdotal information on the benefits of neem for both human and plant health.

For information on the full line of Dyna-Gro Nutrition Solutions, visit our website at www.dyna-gro.com or call 800-Dyna-Gro (396-2476) for a free catalog.