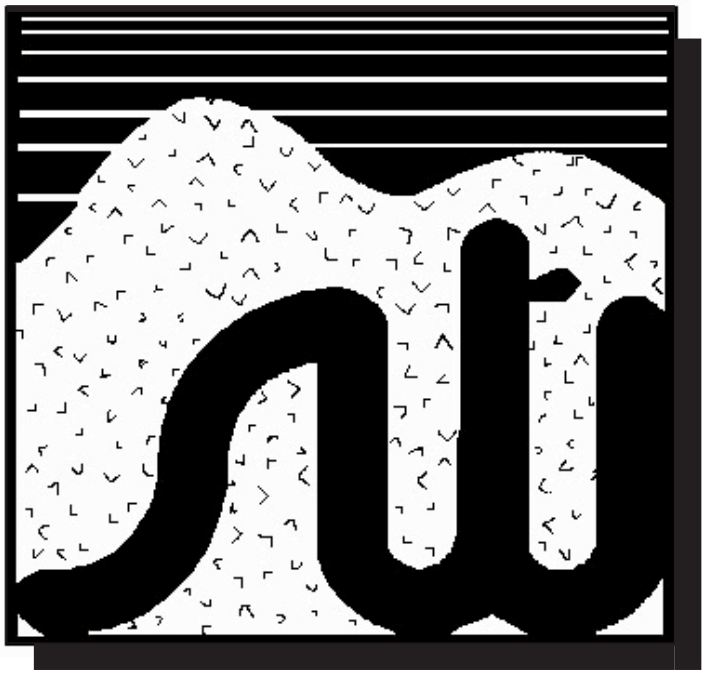
Neem Oil



"the rest of the story"

SouthWest Plantscape Products
800-333-7977

Neem: Azadirachtin indica

- Native to East India and Myanmar
- Compounds in the seed, bark and leaves are said to have antiseptic, antiviral, antipyretic, anti-inflammatory, antiulcer and antifungal properties.
- Grow a neem tree outdoors where there are no hard freezes.
- Indoors, place a neem plant near a sunny window during the winter. Move it outside during the summer.
- The oil may be a suitable spray for orchids.

Tips on Using Neem Oil

1. Pure Neem Oil will retain its potency much longer if stored at about 40 F in a low light area such as a refrigerator.

2. Do not mix anything with Neem oil until you are ready to use it. Mix only the amount of Neem oil you will use in 4 to 6 hours.

3. A new batch of Neem oil, water and a little soap (according to the label) should be mixed each time you are going to spray.

4 The soap (dishwashing detergent) is used to help emulsify the oil. If no soap is used the Neem will not mix into solution with the water and spraying will not be effective.

5. Spray the complete plant including the top of the potting media. Spray benches, walkways and any surface over which an insect might travel.

6. A mixture of 1 oz. to 1 gallon of water should be used for spraying. A weaker solution may be used as a maintenance spray. It is impossible to give a definite schedule for spraying, however a "dose eye" will help each person to adjust a timetable to maintain clean plants. You will probably not have to spray as often with Neem as with toxic insecticides.

Neem Oil Resources

Neem Association 1780 Oakhurst Avenue Winter Park, Florida 32789
WWW: http://hometown.aol.com/neemassoc/links.html

Neem Foundation 67-A Vithal Nagar, Road No.12 JVPD Scheme, Mumbai 400 049 India
Telephone 91-22-620-6367 Fax 91-22-620-7508 WWW: http://info@neemfoundation.org

Quail Roost Nursery 15100 Quail Roost Drive Miami, Florida 33187
Telephone 305-238-5202 Fax 305-251-4834 WWW: http://members.aol.com/quailroost/index.html

Dyna-Gro's Pure Neem Oil - Distributed by:

SouthWest Plantscape Products
6135 N. Rose Ave
Oxnard, CA 93030
800-333-7977

PURE NEEM OIL

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:

Dyna-Gro Nutrition Solutions is in the plant nutrition business and does not make any claims for expertise in herbal medicine. Accordingly, only information on the horticultural benefits of neem oil is presented here.

Numerous tests have shown neem oil to be effective as an insecticide, miticide, fungicide, nematacide, and as an insect antifeedant and repellant. 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, oviposition 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 not only combating 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.

Other Benefits:

For more extensive discussions on neem see the website for the Neem Foundation at *http://info@neemfoundation.org* or the Neem Association at *http://hometown.aol.com/neemassoc/links.html*. Other websites can be found which cite scientific research and anecdotal information on the benefits of neem for both human and plant health.

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Oil of Wonder
How oil from India could help what ails your orchids

By E. Shaunn Alderman

Curosity is aroused when wonder formulas are advertised - instead of remaining unconvinced when the product's benefits are touted beyond belief, we cannot wait to try it for ourselves. After reading about neem oil's seemingly boundless virtues, orchid growers may follow this natural pattern and want to investigate the benefits of this ancient oil.

Whether you are seeking an ecofriendly pest-management practice for your greenhouse, or are interested in a variety of health benefits, neem oil could provide answers. Native to East India and Myanmar, the neem tree (Azadirachtin indica) is a tropical evergreen related to mahogany. Compounds found in the seeds, bark and leaves are said to have antiseptic, antiviral, antipyretic, anti-inflammatory, antiulcer and antifungal uses.

There is documentation indicating neem was used nearly 4,500 years ago. Neem branches, bark, leaves and fruit have been employed to treat medical conditions and cure many illnesses. For centuries, extractable compounds have been incorporated into personal-hygiene products such as toothpaste, skin cream and soap. Neem twigs have been credited with preventing gum disease and other dental problems for people who chewed on the twigs or used them as toothbrushes. The list of medical benefits is long, impressive and inspiring.

Neem in the Greenhouse

Reports say extracts from neem tree leaves also have insecticidal and fungicidal properties. This biological control offers hope for growers concerned with protecting the environment while providing optimum conditions for their agricultural and horticultural crops.

Orchid grower Larry Evans, owner of Blue Pagoda Orchids in Englewood, Florida, has his own neem oil story.' “I can only tell you of my experience with neem oil. When I refer to neem oil, I mean pure neem oil pressed from the seeds of the neem tree. I have never used any product with neem oil as an ingredient. I don't know that it would be as safe to use as pure neem oil,” says Evans. He continues, “Due to a long-term illness I had, my greenhouse became a disaster area. Every January as the phalaenopsis were spiking, the mealybugs moved in by the thousands. Toxic sprays did not get rid of them completely. About 75 percent of the mature plants had fire ants in their pots. Scale was rampant. We had snails and slugs so big they looked dangerous.”

Evans experienced more difficulties because he is allergic to chemicals. He says, “Insecticides and fungicides that I had previously used were a short-term fix - lasting about two weeks. And the smell was offensive and lasted for days. It was all that was available to keep a clean, insect- free greenhouse, even if the fumes from most insecticides caused me to have allergic reactions.”

Through the horticultural grapevine, Evans heard about using neem oil in the greenhouse. Desperate, still not feeling well and ready to experiment, Evans opted to give neem oil a try. “The first time I used neem oil, I mixed a ratio of one ounce to one gallon of water and added a few drops of dishwashing liquid. I sprayed every plant, all benches, walkways and under benches. In a few days there was a definite improvement,” Evans says. To be thorough, Evans waited two weeks and sprayed again with the same solution ratio. “I kept a close eye on the plants and found no mealybugs, scale, slugs or snails. And best of all, the fire ants were gone,” says Evans. “I have never used a product in the greenhouse that had effects as efficient and long- lasting as neem oil.”

Evans did not spray again for months. He did find a snail and a slug, no other “livestock”, and he decided to spray everything again. He claims part of the beauty of using neem oil is not having to wear protective clothing or special breathing equipment to control sickening odors. Evans says neem oil does have an odor, “best described as kind of like onion soup, however, the odor only lingers for a short time.”

Used on cattleyas, dendrobiums, phalaenopsis, oncidiums, vanilla, vandas and the dove orchid (Peristeria elata), pure neem oil at Blue Pagoda Orchids product that has helped Evans tremendously. He even claims it to be cat-friendly, not harming one whisker on Panzie, the nursery's customer-greeting greenhouse cat.

How it Works

According to information from the Neem Association, the most active insecticidal chemical compound found in the azadirachtin on the leaves will not be eaten by insects. Instead the insects die of starvation. The association's educational material states, “Only insects that eat plants are affected by neem, leaving honeybees and other beneficial insects essentially unharmed.” As to the fungicidal properties, when neem oil solution covers the leaves, fungal spores are prevented from sticking to the plant. If they do not stick, the spores cannot grow, penetrate the leaves and cause disease.

Based in Winter Park, Florida, the Neem Association is a nonprofit organization that promotes neem as a source of natural healing and as a solution to many of the world's environmental problems. To become enlightened about the many uses of neem-related products, visit the Neem Associations Web site (*http://hometown.aol.com/neemassoc/links.html*). Another Web site to visit is publishers of Global Neem Update, the organization's quarterly magazine, edited by Pramila Thakkar. Internet users may find reports from the meetings held in con-junction with the World Neem Conference hosted in Vancouver, British Columbia, Canada, in May 1999.

Buying and Growing Your Own

As a tropical tree, neem needs to be grown in a climate free of hard freezes. Well-drained soil is an essential condition for the minimum-maintenance tree, which also can be grown indoors.

According to Keith Weyrick, owner of Quail Roost Nursery in Miami, Florida, if grown indoors, neem should be placed near a sunny window during the winter and moved outside during the summer.

Weyrick's wholesale and retail nursery has grown neem trees for nearly seven years. He says local customers purchase the trees to plant in their yards, and offshore customers, for instance resorts in the Caribbean, incorporate the neem trees into their lush landscapes.

Your Own Neem Story

As wonder products go, neem oil's impressive history commands recognition. The centuries of success stories prevent labeling it merely another cure-all snake oil. Neem seems to be an oil that makes you wonder about the possibilities. Orchids readers are not shy about sharing their greenhouse experiences, good and bad. If you have a neem-oil story, especially an orchid-related one, please send it to the author.

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Neem Oil Proves Popular

Ancient-oil article results in wide-reaching inquiries

By E. Shaunn Alderman

Action was sparked with the publication of an article about neem oil in the July issue of Orchids. More than 30,000 readers read a brief history of the ancient oil and became enlightened about a natural product many orchid growers find helpful in controlling a number of problems, including scale, mealybugs and slugs. Inquiries from various places such as Canada, Texas, Illinois and Missouri arrived via mail, fax, the Internet and telephone. Some readers complained about not being able to access the Web sites listed in the article. (Some sites were overloaded with hits when the article was first published, apparently causing a delay for some Internet users.) Other readers were instant believers and wanted to know where to purchase neem oil. They were directed to a neem oil advertiser in Orchids. The number of responses was amazing and they are still arriving. It seems neem oil is a topic that will not soon dissolve.

Popping Up All Over

The popularity of the article caused regional orchid societies to designate neem oil as their programs' topic of discussion. Speakers and neem-oil users were hurriedly gathered to share' their knowledge. The International Phalaenopsis Alliance, with permission, reprinted the neem article in its Volume IX, Number 2 newsletter. Assistant editor Nancy Meares says the importance to phalaenopsis growers warranted the reprinting.

Cyberspace also offered a platform for neem-oil discussions. After the July article was published, questions appeared and discussions took place on the American Orchid Society's Web site Orchid Web - concerning the use of neem oil, which is derived from Azadirachtin indica. The Orchid Forum page is ideal for discussions on numerous topics, and neem-oil was one.

Orchid chat-room discussions focused on true-life neem-oil experiences in the greenhouse. Reading the candid replies was fun and educational. It seems that not all readers interested in the benefits of neem oil grow orchids in greenhouses. Gary Hawbaker (LCC@redrose.net), secretary of the Susquehanna Orchid Society in York, Pennsylvania, was prompted to research neem-oil possibilities further after reading our article. His primary concern was with mealybugs and growing orchids indoors. Hawbaker wrote an excellent article for his society's August newsletter He relied a great deal on information provided by Larry Evans, the Engleton, Florida, orchid grower mentioned in July who actually inspired the original article.

In a recent conversation, Hawbaker said he uses a 1-gallon pump sprayer strapped on his shoulders to spray his 300 indoor orchids grown on baker's racks and in his four library windows. Hawbaker claims this mealybug control system to be more effective at coating every part of every orchid. He encourages indoor growers not to dismiss using neem oil simply because they do not have hundreds of square feet in a greenhouse.

Widespread Responses

Joseph W. Goldzieher, MD, of San Antonio, Texas, first tried neem oil a few years ago on cattleyas and then oncidiums, dendrobiums and phalaenopsis. “The nasty bacteria and fungi have disappeared, and I have not seen slugs, etc., since: says Goldziehen who also plugs the value of neem oil in controlling spots, rusts and mold on his roses. ”Considering that it is nontoxic to humans, and therefore does not require the protection required with chemical sprays, neem oil ought to be in everyone's greenhouse” he says. Floyd Rogers (rogers4@ix.netcom.com), an experienced retail-garden-center reader inquired about using neem to control slugs. He suggested that the Northern Illinois Hosta Society would be interested in learning about natural controls.

Kaneohe, Hawaii orchid grower Bill Lorimer (Wlorimer@aol.com) was impressed with the results shared by Evans in the July article and offered this story: “My problem was mites, mealybugs, aphids and a little on thrips. I specialize in Dendrobium anosmum node propagation, laying the canes on coarse peat at the end of the flowering season. Using a 1-gallon. battery- operated sprayer, I used 3 ounces of neem on the media and canes. Ten days later I sprayed again. The

bugs were gone on the trays I sprayed. but it was expensive. My orchid house is about 600 square feet, and I did not cover all pots and node-growing trays. I purchased an oil-free compressor, using a Gilmour Hand-Sand Blaster gun. Now I use 1 gallon of water with the 1 ounce of neem oil to mist the entire orchid house." Lorimer an independent orchid nurseryman who has been growing Den. anosmum and Den. Nestor for about 17 years, claims his new testing plants are his wife's African violets.

A recent cyberspace testimonial appearing on one Phalaenopsis group's Web meeting was written by Bill Tippit. owner and hybridizer of Olympia Orchids (btippit@olympiaorchids.com). He explained how in September, with the phalaenopsis starting to spike, his nursery was desperate to control mealybugs and mites. Because Tippit had read recent articles about neem oil, he was willing to try it. His concern about using stronger insecticides was valid because of the possibility of causing deformed buds and blooms during the spiking time.

"On September 13, we sprayed all the plants using a rate of 1 ounce of neem oil. plus 1 ounce liquid soap to a gallon of water. We used an entire quart (of neem oil) in the process. The only immediate noticeable effect was the unusual smell of the greenhouse. The smell was not un-bearable or even unpleasant and disappeared each day" says Tippit.

He also explained how after about 10 days he checked the area sprayed and found only one plant with live mealy bugs. He and the greenhouse foreman speculated that they could have missed the plant during the spraying process. When Tippit decided to make a second application on October 4. he used a 50 percent solution rate of the first application, including only 1/2 ounce of the liquid soap. Not one insect was found approximately 30 days after the initial spraying. He says it is too early to claim neem oil as the answer to all of their insect problems. "But I have to admit. I'm really impressed so far and am planning on making another application in about two months." he says.

Commonly Asked Questions

The most often-asked questions in the faxed letters and electronic mail were about dilution rates. Because the AOS is not able to endorse the use of neem oil. the replies usually directed the inquirer to the orchid grower in the article. Evans, owner of Blue Pagoda Orchids. says a mixture of 1 ounce of neem oil to 1 gallon of water should be used for the first spraying. He emphasizes the importance of mixing a little soap (dishwashing detergent) with the solution to help emulsify the oil. "If no soap is used, the neem oil will not mix into solution with the water and the spraying will not be effective," says Evans.

Regarding storage. Evans says. "Pure neem oil will retain its potency much longer if stored at about 40 F in a low light area such as a refrigerator" He says to mix only the amount of neem you will use in four to six hours. When discussing application, orchid-forum writer Doug Conkin (orchiddoug@earthlink.net) advised neem oil users to "wear a respirator because this stuff stinks like rotten onions." He also warned users to "never apply any oil product, neem or otherwise, when the temperatures in your growing area are likely to go above 85 F for an extended period."

If your interest is piqued and you wish to speak with someone who has had actual neem-oil experience, there is always Evans. His longtime experience as an orchid grower and his successful encounters with neem oil will enlighten you. He will most likely suggest you visit his Web site (*http://www.bporchids.com*). Also, check out neem-oil advertisers found in Orchids. There are more distributors than ever simplifying accessibility. The only obstacle distributors have encountered is a delay in shipping. After all, neem oil can only be imported from India.

Some readers implied they were disappointed the article did not go into depth regarding application and usage procedures. The purpose of the article was to inform readers and bring about awareness. The AOS will not recommend or endorse a product that is not specifically labeled for use on orchids. Feedback from the article showing interest and enthusiasm for neem oil has been educational and exciting. We are thrilled to hear the success stories, everything from eliminating snail problems to controlling mealybugs and even wiping out mounds of fire ants around greenhouses.

E. Shaunn Alderman is editor of Awards Quarterly and assistant editor of Orchids. She will be editing the 2000-2002 Orchid Source Directory formerly known as the AOS Almanac), which will mail with the July issue of Orchids.

American Orchid Society, 6000 South Olive Avenue,West Palm Beach, Florida 33405-4J99 (e-mail: TheAOS@compuserve.com).

Reproduced from the Web Site of Blue Pagoda Orchids *(http://www.bporchids.com/glovebox.html)*

Neem Oil: Facts & Practical Experiences

By: Larry Evans

I can only tell you of my experience with Neem Oil. I cannot recommend Neem oil because our government has not approved its use on orchids or on any plants. when I refer to Neem oil, I mean pure Neem Oil as pressed from the seeds of the Neem tree. I have never used any product with Neem oil in it. I don't know that it would be as safe as pure Neem oil.

Where does Neem oil come from? Originally it came from India. The Indian natives have been using Neem for about 3000 years as an internal remedy as well as an ingredient in tooth paste, soap, shampoo, cosmetics and skin creams.

I have never used a product in the greenhouse whose effects were as efficient and long lasting as Neem. Insecticides and fungicides that I had previously used were a short-term fix - about two weeks. And the smell was offensive and lasted for days. But it was what was available to keep a clean insect free greenhouse even if the fumes from most insecticides caused me to have allergic reactions.

Due to a long term illness, my greenhouse became a disaster area. In January, as the phalaenopsis were spiking, the mealy bugs moved in by the thousands. About 75% of the mature plants had fire ants in the pot. Scale was rampant. We had snails and slugs so big they looked dangerous. Toxic sprays did not get rid of them completely.

The first time I used Neem ofl (1 oz. to 1 gallon of water + few drops of dishwashing liquid), I sprayed every plant, bench, walkway and under every bench. In a few days there was a definite improvement. I waited 2 weeks and sprayed again. I kept a close eye on the plants, no mealy bugs, scale and best of all the fire ants were gone. And no more slugs and snails.

I didn't spray again for six months. I found a snail and a slug, no other “live stock”, but I decided to spray everything again. The beauty part of using Neem oil is that you don't have to wear protective clothing or special breathing equipment and there are no sickening odors. Neem oil does have an odor, best described as “kind of like onion soup”. However, odor only lingers for a short time.

How does Neem get rid of insects? Most insects die shortly after spraying. Those remaining become sterile and do not reproduce. I've heard a story of 2 desert locusts, 2 grape leaves and 2 bell jars. One grape leaf was sprayed with an insecticide, the other with Neem. One locust and one grape leaf were put under each bell jar. The locust ate the toxic leaf and died. The other locust refused to eat the Neem sprayed leaf and starved to death. From my experience the story could be true. I believe it is better if you can prevent the insect from eating the plant, than to let them eat the plant and then die. It takes years to lose the damaged leaves on most orchids. Flowers can be ruined before the critters will die from insecticide. I've not been disappointed with Neem Oil. I'm sure that many who read this will be skeptical because of the “do everything” claim.

We have a cat that has grown up in the greenhouse. Neem hasn't bothered her at all. Panzie greets all comers and we certainly would not use anything that would hurt her. We also used Neem on my daughter1s dog, a Shar-pei. The dog was biting and chewing her fur and making sores and bald spots all over her coat. The veterinarian said she had hair mites. There is a treatment for this - a series of 6 dips at $65.00 per dip and only a 50% chance of a cure. I suggested that she try using a “Neem rinse” after bathing the dog, using a 1 oz. to 1 gallon of water. This treatment was followed for three weeks. The dog has stopped chewing herself and has grown back a full glossy coat. It is also harmless on people. A lady in our orchid society has an allergy to mosquito bites. Living in Florida she had a problem working in her garden, fishing or taking an evening stroll. She had used spray repellents but it was difficult to use and not always satisfactory. She tried Neem oil and she swears by it.

When I use Neem oil I only mix the amount I will use within four hours. Neem is very biodegradable and will start to break down quickly. If it is kept in the refrigerator at approximately 40F the shelf life is extended. As any organic oil, it will turn rancid. How soon will depend on the storage temperature.

We have used pure Neem oil on cattleya, dendrobium, phaleanopsis, oncidiums, vanilla, vanda, peristeria, etc. We have detected no damage to any of these plants.

100%
Pure Neem Oil

Dyna-Gro's 100% Neem Oil - Concentrate

Quarts - $22.35 - (Makes 32 Gallons)

Gallons - $71.25 - (Makes 128 Gallons)

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