

# PREVENTING PESTS WITH NEEM OIL & why Einstein is simply the Best



## Neem Oil:

Neem oil is a vegetable oil pressed from the fruits and seeds of Neem (*azadirachta indica*), an evergreen tree native to tropical South-East Asia, where it is recognized as an important medicinal plant. Neem oil is generally light to dark brown, bitter, and has a rather strong odor that is said to combine the odors of peanut and garlic. It comprises mainly triglycerides and large amounts of triterpenoid compounds, which are responsible for the bitter taste. It is hydrophobic in nature and in order to emulsify it in water for application purposes, it must be formulated with appropriate surfactants.

Neem oil also contains steroids (campesterol, beta-sitosterol, stigmasterol) and a plethora of triterpenoids of which Azadirachtin is the most well known and studied. The Azadirachtin content of Neem Oil varies from 300ppm to over 2000ppm depending on the extraction technology and quality of the neem seeds crushed.

Its active compound is Azadirachtin, known to affect over 200 species of insect by acting mainly as an antifeedant and growth disruptor. Neem oil interferes with an insect's ability to molt; if a growing insect cannot molt, it will not reach sexual maturity and will therefore be unable to mate and reproduce. This means that within a few life cycles, all the insects (including beneficial insects) will die off and there will be no more eggs left to hatch.

Neem oil is widely used as a bio-pesticide for organic farming, as it repels a wide variety of pests including spider mites, thrips, whiteflies and fungus gnats. It is not known to be harmful to mammals and birds nor many beneficial insects such as honeybees and ladybugs. It also helps control black spot, powdery mildew, anthracnose, and rust (fungus). Neem oil makes a good foliar feed too; young rooted plants LIKE light showers at regular intervals, as do established plants.

The oil can be obtained through pressing (crushing) the seed kernel both through cold processing or through temperature controls. This affects the composition and quality of the oil, since they are unlikely to remove exactly the same mix of components in the same proportions. The cold-pressed oil is considered the best quality available.

Cold Expelled Neem Oil: Neem kernel used for cold expelling are expelled by simple expeller, without any control on temperature or at most it is maintained until 50 degree Celsius, that may result in loss of some important volatile ingredients. Azadirachtin content in cold expelled Neem oil is 1200 to 2000 ppm.

Solvent Extracted Neem Oil: To extract Neem oil in this process, whole Neem seed is used, seed is ground and pulverized for porosity. Neem oil manufacturers generally use Hexane as solvent and almost 100% Neem oil is recovered. After Filtration, done by filter system Neem oil is stored in tanks. This type of Neem oil have Azadirachtin in concentration of 100-200 PPM.

## Foliar Spraying with Einstein Oil

**Einstein Oil** contains the finest quality, first extraction, cold-pressed Neem oil currently on the market. It is also enhanced with several other potent herbal ingredients to keep leaves clean and plants healthy. All ingredients are 100% Organic and made with Love and Care! This is the Bomb-Daddy of Neem Oils. . .

We suggest spraying **Einstein Oil** every 2-3 days. Up the dosage starting from 1/2tsp. per Quart (or 2 tsp. per Gallon) by 1/2 tsp. each and every week you spray (Ex. from 1/2tsp. per Quart during week 1 to 1 full tsp. per Quart during week 2). **Never Spray more than 2 tsp. per Quart or 8 tsp. per Gallon!** Only Spray during ALL of Veg. & up to week 3-4 of Bloom. You will develop a waxy sheen on your leaves. Now the nasty little critters have to eat through a thick layer of Neem to get to your leaves.

### Quart size foliar application:

1/2tsp. per Quart for **Week 1** --- 1 tsp. per Quart for **Week 2** --- 1.5tsp. per Quart for **Week 3** --- 2 tsp. per Quart for **Week 4**

### Gallon size foliar application:

2 tsp. per Gallon for **Week 1** --- 4 tsp. per Gallon for **Week 2**--- 6 tsp. per Gallon for **Week 3** --- 8tsp. per Gallon for **Week 4**

**ALL SPRAYING** - All oil-based sprays need a surfactant to help spread the oil in the water; we suggest 3-5 drops of Coco Wet.

**ATTENTION!** This handout provides general information and is not to be taken as advice or a recommendation. Before using any product described in this handout, you should verify the information to determine the product's efficacy and safety, and to learn of any laws or regulations applicable to the product. The handout uses descriptions, such as "pesticide", in an informal, familiar way, and these descriptions are not intended to convey whether products are subject to particular laws or regulations.