

NICO NEEM

Botanical Pesticide (300ppm, 1500ppm, 3000ppm 10,000ppm)

Chemical Composition:

NICO NEEM is an oil based emulsifiable concentrate formulation consisting of neem oil obtained from *Azadirachta indica* seeds, and Karanj oil obtained from *Pongamia glabra* seeds and surfactant/emulsifier. The insecticidal action is due to the presence of several neem liminoids of which Azadirachtin is most important. Azadirachtin concentration is maintained at a level of ~300, 1500, 3000, and 10,000 ppm in the formulation.

Mode of Action:

A very wide spectrum of phytophagous insect-pests is affected by this Neem formulation. It controls the pest population through a triple action activity - acting as a feeding deterrent, oviposition inhibitor and insect growth regulator. The Neem based bio-chemicals act as **contact** and in a **systemic** manner. Bio-chemicals from Karanj oil, pongamol and karanjin, generally act synergistically.

Salient Features:

- NICO NEEM is nontoxic to beneficial and non-target organisms.
- It is generally compatible with chemical pesticide (unless it is highly acidic or highly alkaline) so as to provide complimentary activity in integrated pest management (IPM) programmes.
- It leaves no residue in soil, crop or environment and is highly bio degradable.
- An alternative to hazardous chemical fungicides.
- Cold press extraction, therefore, retains nutrients and active ingredients.
- Effective pesticide, nematicide, insecticide, as well as miticide. Excellent for crops as well as for veterinary use.
- It is truly an environment friendly product.

Effectiveness:

Neem is effective against more than 200 species of insect-pests some of whom are resistant to chemical pesticides or are otherwise difficult to control.

It acts as a feeding and oviposition deterrent and insect growth regulator and therefore though it may not kill instantaneously, the eventual results are very effective

NICO NEEM is effective against sucking insects such as Aphids, Leaf Hopper, Mealy Bugs, Mites, White Fly and Thrips as well as chewing insects such as Stem Borer, Fruit Borer, Capsule Borer, Caterpillars, etc.

EFFECT OF NICO NEEM IN CONSERVING BENEFICIAL INSECTS (BIO AGENTS):

Experiments were conducted at Gujarat Agricultural University, Anand – India.

One such experiment was conducted at Bio-Control Project of Gujarat Agricultural University, Anand, India during 1994 to study the effect of Nico Neem in conserving beneficial insects (Bio-agents).

The results are as follows:

Population per 25 plants

Bio agent	IPM with NICO NEEM	Insecticide	Control
Lady-bird beetle	280	142	221
Chrysopa	270	92	129
Geocoris	60	21	39
Spider	92	42	66
Stephylimid	38	18	36
Schimnus	40	12	34
Anthocorid	56	31	47

There are rich communities of beneficial insects, spiders and diseases that attack insect - pests. The beneficial species often control insect-pests, especially in places where use of broad spectrum pesticides is to be avoided. Without these beneficial species, the insect - pests would multiply so quickly that they could completely ravage the crop.

Pests have high reproductive capacities to offset the naturally high mortality rate they face in nature. For example, a brown plant hopper female produces many offspring, but because of the action of predators, parasites and diseases, only about 1 or 2 survive after one generation. It is not unusual for a mortality rate to reach between 98-99%.

Natural enemies also have their own enemies. Parasites and predators, each has predators, parasites and pathogens. Most predators are cannibalistic - a behaviour which ensures that in the absence of prey, some will survive.

The natural balance between insect-pests and their natural enemies is often disrupted by indiscriminate use of chemical insecticides. Although insecticides are needed in some cases, they must be used judiciously in order to save these vulnerable natural control agents.

Usage:

NICO NEEM gives best results when used as a preventive measure. Monitor the field continuously for pest attack. When the population is low or the damage system just begins to appear, apply a spray of NICO NEEM. The spray is generally effective for fifteen days.

Application Guidelines:

The emulsifiable concentrate can easily be diluted with water to make a colloidal suspension which should be sprayed on the crop.

Being oil based, it is recommended that NICO NEEM be diluted with water in a separate container before filling into a spray pump.

In order to avoid clogging of spray pumps, do not leave any left over mixture in it. Mix a fresh batch for each application.

In case of rain after spraying of NICO NEEM, re-apply the dose.

As NICO NEEM is photodegradable, it is advisable to spray the mixture during evening hours.

For 100% organic NICO NEEM the natural emulsifier is sold separately and can be mixed with water along with NICO NEEM.

Dosage:

300 ppm -5ml to 7ml / litre of water

1500 ppm -4ml to 5ml / litre of water

3000 ppm -3ml to 4ml / litre of water

10000ppm – 2ml to 3ml/litre of water

Depending upon canopy development, 400-600 litres of this colloidal suspension can be sprayed on the crop of one hectare area.

Application guidelines: (using organic emulsifier)

70g/litre of NICO NEEM

First mix the emulsifier with NICO NEEM, and then dilute it with water according to the dosage given above

Packaging:

1000 litres tank

200 litres barrel

5 litres carboy

1 litre plastic bottle

500 ml. plastic bottle

Storage:

Store in a cool dry place away from direct sunlight.

Shelf Life:

2 years

NICO NEEM for vector control:

Vector borne infections (VBI) are common around the globe and they account for many devastating diseases like malaria, filariasis, dengue & chikungunya.

Studies conducted by us have shown NICO NEEM to be highly effective in vector control.

A spray of NICO NEEM in mosquito infested areas can greatly reduce their population.

NICO NEEM treated bed nets (ITN):

An insecticide treated net is a mosquito net that repels, disables or kills mosquitoes coming into contact with it.

There are two types of treated nets:-

1. Conventional Insecticide treated net (ITN)
2. Long lasting insecticidal nets (LLIN)

How is ITN different from LLIN?

LLIN is a factory treated net made with netting material that has insecticide incorporated within or bound around the fibers. Whereas conventional ITN is a mosquito net that the user himself can treat by dipping in a WHO recommended insecticide

To make a natural insecticide treated bed net, make a mixture of NICO NEEM and water @ 50ml/litre of water and dip the bed net into this mixture. To ensure its continued insecticidal effect the net should be re-treated after 3 washes or at least twice a year.

NICO NEEM for locust control:

NICO NEEM prevents locusts from developing into their migratory swarms which are destructive to vegetation. Although alive, they become solitary, lethargic, almost motionless and thus extremely susceptible to predators such as birds.

Grasshopper nymphs are affected by NICO NEEM in a similar way.