



ECOBIOCIDES & BOTANICALS PVT . LTD

**NATURAL RESISTANCE PAR EXCELENCE  
NEEM AT SOLUTION FOR GLOBAL PROBLEMS**



## About Us



KARNA OIL MILL was established by Mr. M. Karunakaran two decades ago for the production of neem oil and neem cake. With his expertise of 25 years he had started Ecobiocides & Botanical Pvt. Ltd. with an objective to be largest manufacture of Azadirachtin from kernel seeds of *Azadirachta indica* (Neem tree), an eco friendly Botanical insecticide for Agri and horticulture, considering the growing awareness for organic produce. Mr. Karunakaran was been awarded by Tamil Nadu state government for his excellence in year 2008 and 2009.

Our experience in manufacturing Bio pesticide over the years earned us a reputation and made us leading suppliers of Neem cake, Neem oil, Cold pressed Neem oil and Azagro. Our Azadirachtin manufacturing unit is established with a capital outlay of USD 10 million to produce Azagro, a bio pesticide formulated using an active bio ingredient Azadirachtin technical Azagro.



We are glad to inform that we got ISO 9001: 2008 Certification & Ecocert attestation of all organic products that we manufacture.

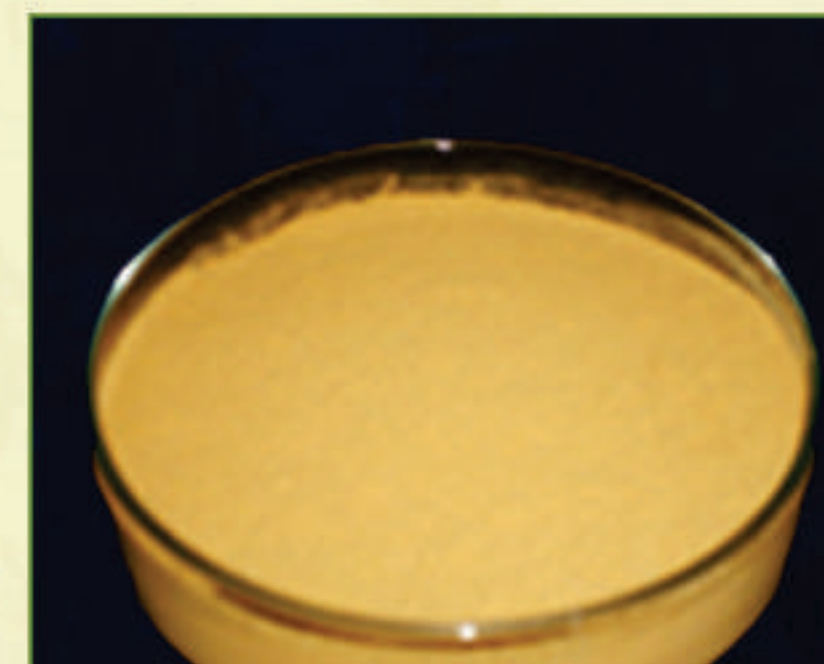


## PRODUCTS LIST

- Azagro Technical powder (with purity range of 10% to 25%)
- **Azagro EC formulations:**
  - Azagro 300 ppm EC
  - Azagro 1500 ppm EC
  - Azagro 3000 ppm EC
  - Azagro 10000 ppm EC
  - Azagro 30000 ppm EC
  - Azagro 50000 ppm EC
- Azagro Cold Pressed Neem Oil (with Aza Content 1500-2500 ppm)
- Azagro Neem Oil (with Aza content 100-1000ppm)
- Neem Kernel Cake
- Neem Seed Cake

## AZADIRACTIN TECHNICAL

Azadirachtin Technical powder is extracted from kernel seeds of Neem tree *Azadirachtin indica* A.Juss.m. It is brownish Yellow free flowing Powder. The Active ingredients are Azadirachtin A, B and contain other bioactive limonoids fractions of Neem seed Kernels. Limonoid group present in the neem seed have insect repellent properties. The Limonoids include Azadirachtin A-L, Salanin, Nimbin, Nimbidin and Meliantriol etc. It is used as active ingredient in producing Organic Neem Insecticide that controls over 400 various Insects. It is Bio- degradable thus leaving no toxic residues.



Azadirachtin, the insecticidal principal of AZAGRO, isolated from the seeds of the tree, *Azadirachtin indica* is a potent insect growth regulator effective on the larval and nymphal stages in the insect's life cycle. It also effectively controls spider mites, ereophyid mites, termites, plant nematodes and powdery mildews. It is harmless to adult beneficial insects like honeybees, spiders, ladybird, beetles etc.

Azadirachtin is non toxic to rat, guinea pigs, rabbit, birds and aquatic organisms at the recommended rates. It is also non hazardous to non target and beneficial organisms. It does not affect the soil fertility.

# Mode of Action

The Pest insect's takes up the active ingredient in Azagro orally either by sucking or biting that is penetrated in to crop after application. The Azadirachtin is structurally similar to insect hormone "ecdysones" that controls metamorphosis. Azagro interferes with pest insect's hormonal activity and acts as ecdysones blocker. Pests show feeding and moulting inhibition and mortality. It results in disruption of insect development. In few hours after application of Azagro the pest become inactive. Treated insects die during metamorphosis and it prevents the development of the next generation of pests. It helps the crop from damaging.

Being an endocrine disrupter, should be applied soon after egg hatching since the early instar and nymphal stages are most susceptible. Azagro are formulated with specially treated neem oil by removing Azadirachtin destabilizing factors.

Duration between sprays 7 to 15 days, in case of severe infection 3 to 5 days till minimum threshold limits is reached. Azagro works systemically as well and is suitable for tree injection, Root injection where roots are exposed and as soil drench to control terminates.



## List Of Target Pests On Various Crops

Azalea leaf miners birch leafminers, western tentiform leafminers of Dipteran, Citrus Leaf miner and Lepidopteran families.	lemons, limes, grapefruit, kumquat , Calamondin, Apple, Apricot and Ornamental Plants
<b>Nematodes</b> - burrowing nematodes, Dagger nematodes, golden nematodes, Root Knot nematode, ring nematodes, sting nematodes soil dwelling nematodes	Banana, melons, strawberries, tomota, berries, bulb vegetables, cotton, tobacco, fruit vegetables such as ground cherries, egg plant, peppers, all type of herbs and spices crops
<b>Psyllids</b> - pear psylla, Indigo payllid, Asiatic citrus psyllid, Euglyptoneura robusta Psyllids, Psylla trimaculata Psyllid	Indigo, potato, tomato, citrus Plants, pepper, eggplant, plum, cardamom, cucumber, Papaya, sugarcane, Beet root
<b>Saw flies</b> - yellow and red headed pine saw flies, Mustard Saw fly,	Pear, carrot, mustard , Pomegranate , Safflower , Singhara or Water-nut ,Cucurbits(cucumber, gourds, pumpkinetc)
<b>Scales</b> - brown soft scales, califonia red scales , san jose scales, black scales , Coconut scales, Pepper scales, Scale insects	Coffee, olives, Coconut, Tobacco, Pepper, Cardamom, Pepper, Beet root, Cashewnut, Arecanut
<b>Thrips</b> - Blossom thrip, Loquat thrip, Chilli thrip, Onion thrip Cocoa thrip, Tea Mosquito Thrips	Citrus, onion, Loquat, Cocoa, Turmeric, Cumin & Coriander
<b>Weevils</b> - Grey Weevils, Gujhia Weevil, Paddy root weevil, Gujhia Weevil, Apricot Weevil, White spotted weevil, Red Palm weevil, Jute stem weevil	Rice, strawberry, Beet root , pepper, GramPea, Apricot, Indigo, Coconut, Jute, Cardamom, Coffee
<b>Whiteflies</b> - , silver leaf white flies, woolly white flies, green house white flies, phorid flies, Castor whitefly	Sweet potatos, mushroom, Carrot, Tobacco , Sesamum, Rape, Castor, Pomegranate,

## List Of Target Pests On Various Crops

<p><b>Aphids</b>- Peach green aphid, Ground nut aphid, Mustard aphid, Cotton aphid, Banana aphid, Woolly aphid,</p>	<p>Apple, cotton, green peach, grape, cabbage, pea, grape, rose, potato, Banana, Safflower, Cucurbits, Cluster bean, Spinach.</p>
<p><b>Beetles</b> - bark, boll weevils, Japanese, twig girdlers, plum curculio, pepper weevils leaf beetles, Tamarind beetles, Cockchafer beetle</p>	<p>Blue berry, potato, Dry fruit Crops, Banana, Elephant foot yam , Spinach and other vegetables.</p>
<p><b>Borers</b>- dogwood , girdlers, Root &amp; Stem borer ,Cabbage borer, Stem-borer, Shot-hole borers, Top-borer Early shoot borer, Pink borer, Green borer, Gurdaspur borer, Internode borer, Stalk borer,</p>	<p>Peach twig , peach tree, cranberry, Safflower ,Cabbage, Groundnut, coffee, Tea, SugarCane, Beet root</p>
<p><b>Bugs</b> – stink bug, box elder bugs , chinch bug, lace bug, spittlebug, sting bugs , mealy bug, Phalsa bugs, Mealy bugs, Mango mealy bug, Mulberry bug, Painted bug, Lace wing bug, Stink bugs, Assassin bug, Pod Sucking bug, Black bug, Coconut bug, Fulgorid bug ,Capsid bug</p>	<p>Apple, citrus, grapes, Phalsa, Jamun or Blackplums, Carrot, Colocasia, Cucurbits, Sweet potato, Paddy, Sesamum, Sugarcane, Coconut, Cocoa, Turmeric, Tamarind, Sunhemp, Groundnut, Betelvine ,Cumin &amp; Coriander</p>
<p><b>Caterpillars</b> - diamond back moths, fireworms, green fruit worms, eastern tent caterpillars, gypsy moths, hickory shuckworms, leaf perforators, army worms, azalea caterpillars, Tomato caterpillars, lucerne caterpillar, Hairy caterpillars</p>	<p>Soya bean, cabbage, Sweet potato, Tomato, Linseed, Fibre crops, Safflower, Groundnut, Sesamum, Linseed, Drumstick tree, Onion</p>
<p><b>Files</b> – fruit files, fungus gnats, maggot flies, tip worms husk flies, , Sesamum gallfly, Safflower stem fly, Gall fly, Melon fruit fly, Agromyzid fly, Safflower fly</p>	<p>Onion, Bhendi or Okra or Ladiesfinger, Blueberry, cherry, Pear, Carrot, Safflower, Cucurbits (cucumber, gourds, Pumpkin etc)</p>
<p><b>Leaf Hoppers</b> – beet leaf hoppers, variegated leaf hoppers , Grasshoppers, Black leaf hopper</p>	<p>Potato, grape, apple, Maize, Bajra, Sugarcane, Groundnut</p>
<p><b>Leaf Miners</b> – includes species such as</p>	<p>Groundnut, Castor, oranges, mandarins,</p>

# Azagro 300 ppm

It is Neem oil based Ec containing Azadirachtin of 0.03%. the major composition of this product is Cold pressed neem oil . Neem oil itself has anti-feedant property against pest which will prevent the pest from contacting the crops. Azagro 300 ppm has a permanent registration from CIB ( Reg No: CIR -46, 596/2003- Azadirachtin (EC) (238)-647. This product is certified by Bureau of Indian Standard (BIS) accreditation

## Dosage

Dilution of Azagro 300 ppm depends on infection stage of the pest, crop stage and the total area of infection.

## Usage Rates:

### Foliar application

2.5 to 3 liters of Azagro 0.03% EC formulation dissolved in 200 - 250 liters of water / Acre



## Composition

Azadirachtin – 0.03 %  
Neem oil - 90.570 %  
Other ingredients – 9.40 %

## Root spray and Soil Drench application

(Concentrate of Azadirachtin in Water should be 20- 30 ppm)  
Dissolve 65 ml of Azagro 0.03% EC to 1 liter

## Packing size

This product is available in 100 ml, 250 ml, 500 ml, 1000 ml and in 200 liter capacity HDPE drum





## Azagro 1500 ppm

This product is a neem seed kernel based anti feedant and a repellent for the control of pest. It is emulsifiable concentrate containing 0.15 % of Active ingredient. Azagro 1500ppm has a permanent registration from CIB ( Reg No: CIR -46, 595/2003- Azadirachtin (EC) (238)-646. This product is certified by Bureau of Indian Standard (BIS) accreditation.

### Dosage

Dilution of Azagro 1500 ppm depends on infection stage of the pest, crop stage and the total area of infection.

### Usage Rates:

#### Foliar application

0.75 to 1.5 liters EC formulation / 200- 250 litre water of Azagro .15 % EC formulation dissolved in 200 - 250 liters of water / Acre application.



### Composition

Azadirachtin – 0.15 %

Other ingredients – 99.85 %

### Root spray and Soil Drench application

(Concentrate of Azadirachtin in water should be 20- 30 ppm)

Dissolve 3.25 ml of Azagro 0.15% EC to 1 liter of water.

### Packing size

This product is available in 100 ml, 250 ml, 500 ml, 1000 ml and in 200 liter capacity HDPE drum

## Azagro 3000 ppm

This product is a neem seed kernel based emulsifiable concentrate containing 0.30 % of Active ingredient. Azagro 3000 ppm has a permanent registration from CIB ( Reg No: CIR -46, 597/2003- Azadirachtin (EC) (238)-648. This product is certified by Bureau of Indian Standard (BIS) accreditation.

### Dosage

Dilution of Azagro 3000 ppm depends on infection stage of the pest, crop stage and the total area of infection.

### Usage Rates:

#### Foliar application

0.75 to 1.5 liters of Azagro 0.3% EC formulation dissolved in 200 - 250 liters of water / Acre Application.



### Composition

Azadirachtin – 0.30 %  
Other ingredients – 99.70 %

### Root spray and Soil Drench application

(Concentrate of Azadirachtin in water should be 20- 30 ppm)  
Dissolve 6.5 ml of Azagro 0.3% EC to 1 liter of water.

### Packing size

This product is available in 100 ml, 250 ml, 500 ml, 1000 ml and in 200 liter capacity HDPE drum.

## Azagro 10000 ppm

Azagro 10000 ppm is a neem seed kernel based EC containing Azadirachtin - 1 % (10000 ppm) min. Azadirachtin the active ingredient along with other neem limonoids is effective against both sucking and chewing pests. It is environmentally friendly product. It is 100 % emulsifiable concentrate. Azagro 10000 ppm has a permanent registration from CIB ( Reg No: CIR -46, 598/2003- Azadirachtin (EC) (238)-649. This product is certified by Bureau of Indian Standard (BIS) accreditation.

### Dosage

Dilution of Azagro 10000ppm depends on infection stage of the pest, crop stage and the total area of infection.

### Usage Rates:

#### Root spray and Soil Drench application

(Concentrate of Azadirachtin in water should be 20- 30 ppm)

Dissolve 25 ml of Azagro 1% EC to 1 liter of water to 1 liter of water.

#### Tree injection

Once in 3 month the 100 ml injection can be done. 50 ml each to be injected at the xylem level from opposite side.



### Composition

Azadirachtin – 1.00 %  
Other ingredients – 99.0 %

### Foliar application

0.25 to 0.75 liters of Azagro 1% EC formulation dissolved in 200 - 250 liters of water / Acre application

### Packing size

This product is available in 100 ml, 250 ml, 500 ml, 1000 ml and in 200 liter capacity HDPE drum.



## Azagro 30000 ppm

This product is a neem seed kernel based emulsifiable concentrate containing 0.30 % of Active ingredient. Azagro 30000 ppm has a permanent registration from CIB ( Reg No: CIR -46, 597/2003- Azadirachtin (EC) (238)-648.

This product is certified by Bureau of Indian Standard (BIS) accreditation from CIB ( Reg No: CIR -46, 598/2003- Azadirachtin (EC) (238)-649. This product is certified by Bureau of Indian Standard (BIS) accreditation.

### Dosage

Dilution of Azagro 30000ppm depends on infection stage of the pest, crop stage and the total area of infection.

### Usage Rates:

#### Foliar application

0.20 to 0.70 liters of Azagro 3% EC formulation dissolved in 200 - 250 liters of water / Acre



### Composition

Azadirachtin – 0.30 %  
Other ingredients – 99.70%

### Tree injection

Once in 3 month the 35 ml injection can be done. each ratio of Azagro 3% EC to be injected at the xylem level from opposite side.

### Packing size

This product is available in 100 ml, 250 ml, 500 ml, 1000 ml and in 200 liter capacity HDPE drum.



## Azagro 50000 ppm

Azagro 50000 ppm is neem extract containing containing Azadirachtin 5 %. Azagro 50000 ppm has a permanent registration from CIB (Reg No: CIR -46, 594/2003- Azadirachtin (EC) (238)-645. This product is certified by Bureau of Indian Standard (BIS) accreditation

## Dosage

Dilution of Azagro 50000 ppm depends on infection stage of the pest, crop stage and the total area of infection.

## Usage Rates:

### Foliar application

0.10 to 0.15 liters of Azagro 5% EC formulation dissolved in 200 - 250 liters of water / Acre Application.



## Composition

Azadirachtin – 5.0 %  
Other ingredients – 95.0 %

### Tree injection

Once in 3 month the 20 ml injection can be done. Each ratio of Azagro 5 % EC to be injected at the xylem level from opposite side.

### Packing size

This product is available in 100 ml, 250 ml, 500 ml, 1000 ml and in 200 liter capacity HDPE drum.



## Salient Features

- A single Bio-pesticides that targets over 400 pest on various crops
- Azagro is an effective Repellent, antiovipositant and insect growth regulator
- The Limonoids spectrum in Azagro prevents pests from developing resistance.
- Kills early larval and nymphal stages in the insect life cycle.
- It is Antifeedent, hence on ingestion, larvae stop feeding thereby prevents crop damage.
- Repels adults thus restricting egg laying.
- High flash point hence no fire hazards or harmful vapour ingestion.
- Formulated with specially treated neem oil, having shelf stability of more than 15 months.
- It proves no evidence to acute toxicity or reproductive effect.
- The pesticide is bio-degradable and an active ingredient leaves no residues.
- Azagro is compatible with other pesticides and fungicides in the pH range 5.5 to 6.5.
- Harmless to beneficial Insects.

# Azagro Neem oil

Neem oil is extracted from selected Neem kernels by cold crushing Method. Neem oil acts as insecticide and pest resistant at board spectrum yet does not harm beneficial insects. Neem oil is Bio degradable pesticide thus does not leave any residue. Neem oil disturbs the hormonal activity of the insect. The benefit of the neem oil is that it is highly harmless to warm – blooded animals. neem oil acts anti fungal and anti bacterial agent. Cold Pressed Neem oil contains 0.2-0.3 % of Azadirachtin, 0.5-0.6 % of Salanin and 0.4 – 0.5% of Nimbin.



## Other uses

Cold Pressed Neem oil apart from being used as agriculture pesticide, it has medicinal values in treating diabetics, skin disorders, Stomach ulcers, Psoriasis and many other disease in human. it is also used as Veterinary medicine for pets and used to manufacture cosmetic products and toiletries such as shampoo, soap, tooth paste, hair oils & creams.

## Application

Neem oil is insoluble in water thus it has to be mixed with organic emulsifier or eco friendly detergents such as soap nut powder before spraying .

## Composition to prepare Eco friendly Organic pesticide

Emulsifer- 0.15 %

Neem oil – 0.5 %

To prepare 100 liters of organic pesticide, Add 150 ml of emulsifier to 1 liter of water and stir for equal mixing and to this mixture, add 500 ml of neem oil. Finally add the entire mixing to the remaining water .

### **We offer following range of Neem oil**

- Cold Pressed Neem oil with Azadirachtin Content range 2500 – 3000 ppm
- Neem oil with an Azadirachtin content range 100 – 1000 ppm.

## SPECIFICATIONS FOR COLD PRESSED NEEM OIL

Colour	Dark Greenish Brown
Odour Garlic,	Repulsive.
pH	6.5 to 7
Azadirachtin Content	1500-2500 ppm
boiling point	more than 200 C
freezing point	13 C
flash point	above 180 C
Specific Density	0.84 g/ml
Solubility in water	slightly soluble
Moisture & Insoluble Impurities	< 0.5%
Total Aflatoxin ( B1, B2, G1, G2)	less than 5 ppm
Toxicology	Non-Toxic to Plants & Soil, Eco friendly, Biodegradable

## SPECIFICATIONS FOR NEEM KERNEL OIL

Physical Appearance	Clear Yellowish Liquid
Viscosity	(at 40 deg C ) 40 to 55 CST
Density	In the range of 0.9100 to 0.9425
Azadirachtin	500 – 1000 ppm
Moisture & Insoluble Impurities	< 0.5%
Total Aflatoxin ( B1, B2, G1, G2)	less than 5 ppm
Toxicology	Non-Toxic to Plants & Soil, Eco friendly, Biodegradable





# Neem Cake

Neem Cake is an organic manure. Neem Cake is an by- product of Neem seed oil production. It has more nitrogen, phosphorus, potassium, calcium and magnesium than the farmyard manure. It is rich in sulphur compound as well as bitter limonoids. Neem Cake can be applied safely in all cultures, fruit – bearing, garden product, melon, cotton, tobacco, Vineyard and flowers. Neem cake is either used directly or it is blend with urea or seaweed, farm yard manure on various crops for high yields.

The physical form of the neem cake is in powder, flakes or pellet form.



## Benefits of Neem cake:

- Acts as pest repellent
- Acts as natural fertilizers
- Protects plant root from nematodes, soil grubs and white ants.
- Increase the efficiency of nitrogen fertilizer use.
- Improves the condition of the soil and also protects the soil during drought.
- Increase crop yield considerably.

## We offer following range of Neem Cake

- Neem Kernal Cake
- Neem seed Cake

### Neem Kernel Cake Specification

Sl. No.	Neem Kernel Cake	
1.	Azadirachtin	1200 PPM
2.	Nimbin	800 PPM
3.	Salanin	1600 PPM
4.	Nitrogen	4-5 %
5.	Phosphorus	1 - 2.5 %
6.	Potassium	1- 2 %
7.	Sulphur	1.5 % Min
8.	Moisture	NMT 8%
9.	Silica	< 1.5 %

### Neem Seed Cake Specification

Sl. No.	Neem Seed Cake	
1.	Azadirachtin	850 PPM
2.	Nitrogen	1.5 - 3 %
3.	Phosphorus	0.5-1.55 %
4.	Potassium	0.5-1.0 %
5.	Sulphur	1.0 % Min
6.	Neem Oil	8 %
7.	Moisture content	NMT 8 %
8.	Silica	< 1.5 %

### **Packing :**

25/40/ 50 kg in HDPE Bags.

## **Quality Assurance**

We are committed our motto quality assurance and customer satisfaction. A laboratory is in place with requisite imported instruments for the purpose.

**NATURAL RESISTANCE PAR EXCELENCE  
NEEM AT SOLUTION FOR GLOBAL PROBLEMS**

ECOBIOCIDES & BOTANICALS PVT. LTD  
27 EAST MARKET STREET, PERIYAKULAM ROAD,  
THENI 625 531 - TAMIL NADU, INDIA

TEL: 91 4546 252020

FAX: 91 4546 251010

Email -: [info@ecobiocides.com](mailto:info@ecobiocides.com)

[bhuvana@ecobiocides.com](mailto:bhuvana@ecobiocides.com)

[ecobiocides@gmail.com](mailto:ecobiocides@gmail.com)

Website : [www.ecobiocides.com](http://www.ecobiocides.com)

**CONTACT PERSON**

**M. KARUNAKARAN M.A**

Managing Director

+91 9443352020

**K. BHUVANESWARI M.SC, M.B.A**

Executive Manager

+91 9443342020

