Ozoneem® AZA

Azadirachtin Technical

Neem Extract Concentrate
Synergy of Insecticidal Bio Compounds

Broad Spectrum Insecticide
Proven Anti-Feedant
Insect Growth Regulator
Completely Ecofriendly

EPA Reg. No. 89820-1

Approved by ECOCERT INPUTS

BY Ozone® BIOTECH

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Ozoneem Aza®

Azadirachtin: Broad Spectrum Insecticide

Category: C-Seco-limonoids.

Source: Kernels of seeds of Neem Tree
(Azadirachta Indica A. juss, a plant native to India)

Azadirachtin Technical

A Technical which contains number of Insecticidal Bio-compounds. viz.

- Azadirachtin A
- Azadirachtin B
- Nimbin
- Salanin
- Meliantrol & many others.

Features

1. Completely Organic:
Azadirachtin and other limonoids are found in nature. These are used to prepare formulations, that gives them an organic label.

2. Bio-degradable (Residue Free):
Being organic in nature, Azadirachtin and other limonoids easily degrades in soil and water and do not sustain in ecosystem. This feature make it eco-friendly.

3. Safe:
It is found to be safe for human being and many non targeted pests like beneficial predators unlike Synthetic Insecticides.

4. Non-Resistant:
Insects can't develop resistance due to synergistic effect of bio chemicals present in it.

5. Broad Spectrum:
It is found to be effective against 600 species of insects. No other synthetic and organic insecticide has been found to be equivalent to it.

Mode of Action

Azadirachtin does not kill most insects outright. It alters an insect's behavior as they stop feeding, growing and observe a change in their life cycle. Detailed view is as follows:

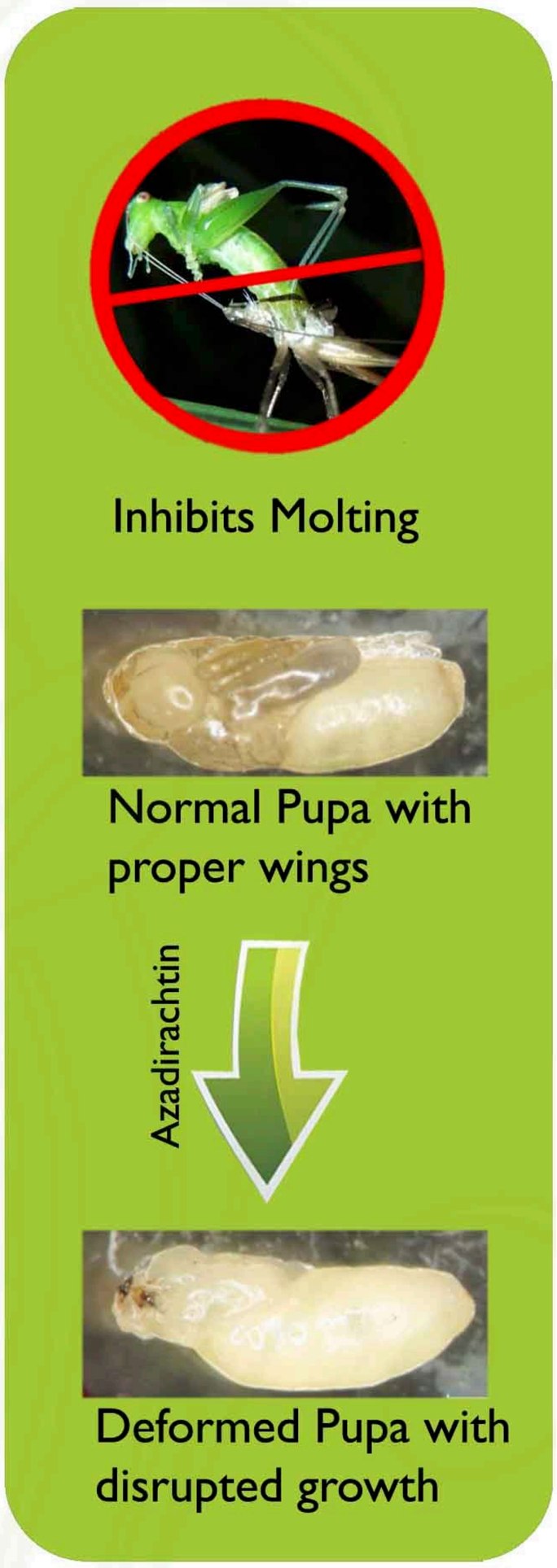
1. Repellent
   - Bitter smell of Azadirachtin and other ingredients, repels insect and they stop feeding on crops.

2. Antifeedant
   - Treated surface if consumed by insects make them stop feeding by altering their neural responses and they die eventually.

3. Oviposition Deterrent
   - Azadirachtin disturbs hormone ecdysone generation in insects and as a consequence insects stop laying eggs. This prevents insects to reproduce.

4. Molting Inhibitor
   - Molting (conversion from Pupa to Adult) of insects is prevented due to absence of same ecdysone hormone. Pupa stops molting and hence dies in this stage itself.

5. Insect Growth Regulator
   - By changing hormonal development Azadirachtin makes a remarkable difference in growth of the insect's organ. As a result they can never grow normally and hence die.



Azadirachtin affects all stages of insects be it eggs, pupa or adult insect. Hence it caters an insecticides need for proper plant growth in a much efficient way than synthetic insecticides.

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Crops

Azadirachtin Technical based insecticides are organic in nature and can be used on following crops:

1. Greenhouse Food Crops
2. Mushroom
3. Food Crops including:
    - Berries
    - Bulb Vegetables
    - Cereal Grains
    - Citrus Fruits
    - Cucurbit Vegetables
    - Fruiting Vegetables
    - Herbs and Spices
    - Leafy Vegetables
4. Miscellaneous Food and Non-Food crops
5. Nuts
6. Oilseed crops
7. Pome fruits
8. Root and Tuber Vegetables
9. Stone Fruits
10. Tropical fruits
11. Ornamental Plants
12. Trees and shrubs
13. Turf and Turf grass

Pests

Azadirachtin Technical based insecticides are effective against a broad spectrum of insects. It is found to be effective in control of following insect catgories:

- Orthoptera : Grasshoppers, crickets, locusts etc.
- Homoptera: Aphids, leafhoppers, psyllids, whiteflies, scale insects, mealybugs etc.
- Thysanoptera: Thrips.
- Coleoptera: Mexican bean beetles, cucumber beetles etc.
- Lepidoptera : Moths, armyworms, fruit borers, corn borers caterpillars, pink boll worm, cutworms, stem borers, semi loopers, diamond back moth, plume moth, leaffolders, tobacco horn worms etc.
- Diptera: Leafminer, pod fly, fruit fly, face fly, bot fly, horn fly, housefly etc.
- Hymenoptera: Sawflies (mustard saw flies).
- Heteroptera: Ear head bug, milkweed bug, rice bug, green vegetable bug, East African coffee bug, red cotton bug, lacewing bug etc.
- Mites: Carmine spider mite, citrus mite, two-spotted spider mite, seven spotted spider mite etc.

Physical and Chemical Properties

Color:	Light yellow
Physical state:	Free flowing powder
Odour:	Faint odour
Solubility:	In water (0.26 gm/l) In ethanol (260 gm/l) In methanol (200 gm/l)
Octanol-water partition coefficient: P:	12.89. Log P: 1.11 at 25°C
pH:	4.73 at 21 °C (1% w/w)
Density:	Pour density (@25°C) = 0.330 g/mL Tap density (@25°C) = 0.438 g/mL
Melting point/Melting range:	130°C
Molecular/Empirical formula:	$C_{35}H_{44}O_{16}$ (Aza A) $C_{33}H_{42}O_{14}$ (Aza B)
Molecular weight:	720 (Aza A) 662 (Aza B)
CAS Registry Number:	11141-17- 6 95507-03-2

Chemical Composition

Ozoneem Aza - Azadirachtin Technical

Chemical Name:	Azadirachtin A + B - 20% Other Ingredients - 80%
Chemical Class	C-Seco-Limonoids or Tetranortriterpenoid

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Toxicity

Laboratory studies indicate that Azadirachtin Technical based insecticides are non-toxic as per below data:

Study Type	Result	Category (OPP Criteria)
Acute oral [rat] toxicity	LD50 = >1750 mg/kg for female	III
Acute dermal [rabbits] toxicity	LD50 = >2000 mg/kg for males, females and combined	III
Acute inhalation [rat] toxicity	The inhalation LC50 for males, females and combined was > 2.53 mg/L & > 2.11 mg/L respectively, at concentrations of Azadirachtin of 0.30% & 0.15%	IV
Primary eye irritation [rabbit]	Mildly Irritating to eye	IV
Primary skin irritation [rabbit]	Non Irritating to skin	IV
Local lymph node assay [mice]	Not a contact dermal sensitizer	Not a dermal sensitizer

The four toxicity categories, from one to four are:

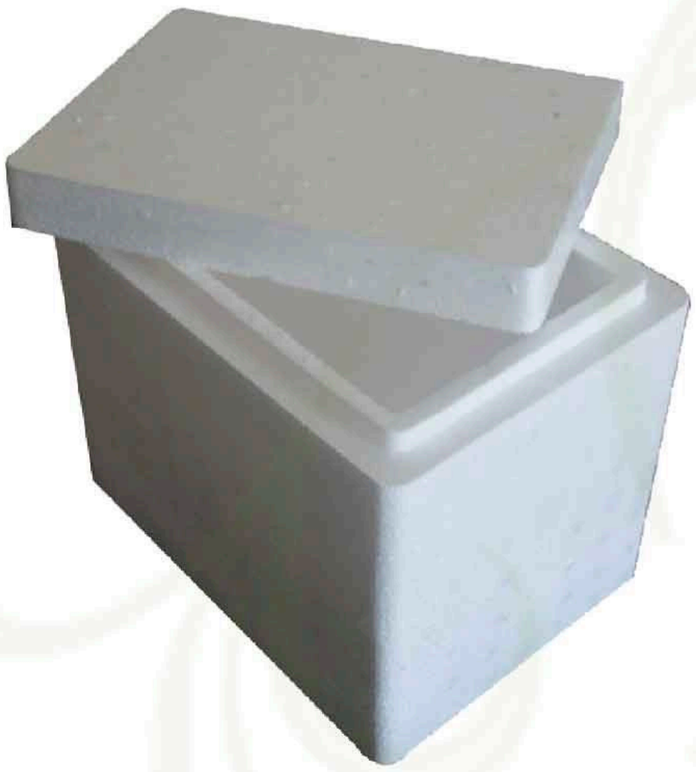
Toxicity category I is Highly toxic and Severely irritating,
Toxicity category II is Moderately toxic and Moderately irritating,
Toxicity category III is Slightly toxic and Slightly irritating,
Toxicity category IV is Practically non-toxic and not an irritant.

Packaging

Ozoneem Aza is supplied in transit safe packaging. After it is packed in plastic bags, it is placed in heat-resistant thermocol box and finally in heavy duty carton boxes. This carton box is then tightly wrapped by shrink polythene sheet and released for dispatch.

Material Used for Packaging

Heat Resistant Thermocol Box



Heavy Duty Carton Box

Wrappable Shrink Polythene Rolls

Final Packed Product

Certifications

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ORGANIC

TÜV INDIA
ISO 9001 Certified

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