

# NimBioSys™



**BIOLOGICAL INSECTICIDE**  
**Anti-Feedant, Insect Repellent, Insect Growth Regulator**  
For Non-Crop and Crop Uses  
including vegetables, fruits, nuts, ornamentals and other  
non-crop plants

## NEEM OIL

### DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Read entire label. Use strictly in accordance with precautionary statements and directions, and with applicable state and Federal regulations. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers can be in the area during product application. For any requirements specific to your state or tribe, consult the state or tribal agency responsible for pesticide regulation.

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### PRODUCT MODE OF ACTION

NimBioSys™ Neem Oil controls target pests on contact or by ingestion. The product acts on pests by way of repellence, anti-feedant action and interference with the molting process. The buyer or user is reminded that the degree of efficacy of the product is largely dependent on weather conditions, intensity of pest population, area of application, type of pest, and physical stages of pests and crops.

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### GENERAL INFORMATION

Read all directions before using this product.

Apply NimBioSys™ Neem Oil as directed to any food or non-food crop up to and including the day of harvest, at a maximum rate of 3½ Pints (56 ozs.) per acre for row crops. Refer to the Use Site Section for a complete listing of crops. Do not use a concentration above 1.1%.

Do not store this product above 104°F or below 20°F for extended periods of time. Keep containers tightly closed and in original containers when not in use. Do not store exposed to ultraviolet light (sunlight) or moisture. Neem oil clouds and solidifies at temperatures below 59°F. If oil has solidified, gently thaw by exposing

to temps over 80°F. REFER TO THAWING INSTRUCTIONS BELOW.

Avoid spraying under conditions of high humidity and high temperature (>90°F).

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## THAWING INSTRUCTIONS

1-Gallon bottles and smaller If oil has solidified, thaw by standing bottle in warm water. Make sure cap is tightly closed. Avoid direct exposure to temperatures over 104°F.

**Alternatively, follow instructions #1 or 2 for the 55-gallon drums.**

55-Gallon Drums 1. Set the drum (cap tightly closed) out in the sun in 80°F and over until melted.

Do not expose to temps over 104°F. Move to a cool place after oil has melted.

OR 2. Set the drum (cap tightly closed) in a heated room, 80°F and over until melted. Do not expose to temps over 104°F. Move to a cool place after oil has melted.

OR 3. Strap drum heating bands around the drum, either one in the middle or one on top and one below. Set thermostat between 80-90°F.

**DO NOT INTRODUCE ANY KIND OF HEATING ELEMENT INTO THE DRUM & OIL. THIS WILL DESTROY ALL THE ACTIVE INGREDIENTS IN THE OIL.**

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## MIXING INSTRUCTIONS

NimBioSys™ Neem Oil contains cold pressed Neem Oil and requires a surfactant/emulsifier, such as soap (hand or dish soap), a non-ionic surfactant/emulsifier or other emulsifier for dilution with water.

***NOTE: Do not attempt application without adding adequate quantity of soap, emulsifier, or surfactant as improper emulsification will result in phytotoxicity such as leaf burn.***

◆ Use a concentration of 0.5% (1 part of NimBioSys™ Neem Oil to approximately 200 parts of water).

◆ In cases of severe infestation or for aerial spraying applications, the concentration of NimBioSys™ Neem Oil can be increased to 1.1% (1.1 parts of NimBioSys™ Neem Oil to approximately 100 parts of water). Do not use a concentration above 1.1% NimBioSys™ Neem Oil.

Add the soap/emulsifier/surfactant and NimBioSys™ Neem Oil to a mixing tank with a little water and agitate. Then add remaining water to the spray tank with continuous agitation. Use warm water if water temperature is below 60°F. **There should not be oil floating on top.**

Complete filling the tank with water. To prevent separation of the emulsion, mix thoroughly and continue agitation while spraying. Non-uniform mixing can cause crop injury or result in lowered effectiveness. For tank mixtures add components to the tank containing the NimBioSys™ Neem Oil spray mixture and agitate

thoroughly. If tank mixture is allowed to sit, agitation is necessary prior to application. Adjusting the spray mixture pH between 5.5 and 7 will provide optimal performance. Always use this product promptly after mixing with water and do not let tank mix sit for any extended period. For optimal efficacy, use within 8 hours of mixing.

If the water is cold, use a little warm water to premix the oil and soap in a small container. Shake or stir well till milky and then add to the remaining water in the spray tank. Agitate or mix well to make sure the oil is completely emulsified before spraying. Add more soap/surfactant/emulsifier if needed.

### **TANK MIX COMBINATIONS**

NimBioSys™ Neem Oil in combination with the proper surfactant or emulsifier has been found to be compatible with most other tank mixes including fertilizers such as seaweed, kelp, fish emulsion and adjuvants like karanja oil, cottonseed oil and castor oil.

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Check compatibility by using the correct proportion of the products in a small test container. Test the tank-mix combinations for possible adverse effects (such as settling out, flocculation, etc.) and for phytotoxic effects on a small sample of plants prior to use. As environmental conditions can alter the interactions between compounds, in order to test for compatibility a test shall be conducted for both new and previously used combinations. Avoid mixtures of several materials and very concentrated spray mixtures.

Always read and follow the directions for use, precautions and limitations for use on all product labels used in combination. Applications must follow the precautions and limitations of the most restrictive product label in the mixture. Do not exceed the dosage rates of any product.

Do not use if this oil does not form a uniform, milky emulsion. Adjust with addition of warm water or more emulsifier and agitate before use.

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### **PHYTOTOXICITY (LEAF BURN)**

When used according to label instructions, NimBioSys™ Neem Oil has been evaluated for phytotoxicity potential on a wide range of crops and ornamentals. However, in order to test for any potential phytotoxicity, test a small portion of the area to be treated for phytotoxicity before treating the entire area. Further, all possible mixtures of pesticide sprays, other fertilizers, surfactants, adjuvants, have not been tested. Therefore testing for phytotoxicity of spray mixtures shall be conducted. Spray equipment used to apply NimBioSys™ Neem Oil must be thoroughly cleaned before use. Tank mix combinations of NimBioSys™ Neem Oil can be incompatible with oil-based formulations.

## USE SITES

### CROP USES

Use NimBioSys™ Neem Oil on the following crops:  
Alfalfa, Beans, Berries, Bulb Vegetables, Cereal Grains, Citrus fruits, Cole Crops, Cotton, Cucurbits, Fruits, Herbs, Legumes, Leafy and Fruiting Vegetables, Peanuts, Roots and Tubers, Pome and Stone Fruits, Tree Nuts and Tropical Fruits.

### NON-CROP USES

NimBioSys™ Neem Oil on non-crop use sites including:  
ornamentals, nurseries, and around fencerows.

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## PESTS

NimBioSys™ Neem Oil can be used against the following pests:

Aphids	Cotton Aphid, Cowpea Aphid, Mustard Aphid, Okra Aphid, Pea Aphid, Rice Aphid
Beetles	Brinjal (Egg Plant) Spotted Leaf Beetle, Chick Pea Beetle, Cow Pea Beetle, Colorado Potato Beetle, Cucumber Beetle, Mexican Bean Beetle, Radish Flea Beetle, Red Pumpkin Beetle, Spotted Cucumber Beetle, Soybean Japanese Beetle
Stink Bugs	Tomato Stink Bugs
Caterpillars	Black Headed Caterpillar, Cabbage Caterpillar, Ear Cutting Caterpillar, Tobacco Caterpillar, Yellow Hairy Caterpillar
Leafhoppers	Brown Plant Hopper, Carolina Grasshopper, Leafhopper, Potato Leafhopper, Rice Brown Plant Hopper, Rice Grasshopper, Rice Green Leafhopper
Leafminers	Leafminers of Ornamental Plants, Tomato Leafminer
Whiteflies	Cotton Whitefly, Sugarcane Whitefly, Banded Wing Whitefly, Citrus Whitefly
Mealy Bugs	Mealy Bugs of Ornamental Plants
Midges	Brassica Pod Midge
Mites	Spider Mites
Weevils	Black Vine Weevil
Scales	California Red Scale, Yellow Scale, Coffee Green Scale
Thrips	Peanut Thrip

## **APPLICATION INSTRUCTIONS**

Spray when the onset of pests (see Pest List) is expected or soon after pests are noticed. When used as a foliar application, spray NimBioSys™ Neem Oil in a suitable high volume sprayer with adequate spray pressure to ensure complete and thorough coverage of the plant surfaces. Ensure that both the top and bottom of leaves are wetted. For optimum results, repeat the applications at intervals of 7-10 days. NimBioSys™ Neem Oil is most effective when applied before insects or eggs are present in large numbers. Repeat application based on pest pressure and field scouting for best results. Use higher rates and increase spray frequency when pest pressure is high. Spray early in the morning or in the evening for best results. Repeat application if it rains within four hours of spraying.

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## **SPRAY DIRECTIONS**

Apply NimBioSys™ Neem Oil as a foliar spray or as soil drench to control insects. When needed, soil drenches can also be used to control soil borne pests and larvae of pests. When applied as a soil drench, avoid excessive run off. NimBioSys™ Neem Oil can also be applied through sub-surface soil treatment equipment. Always follow equipment manufacturer's use directions. NimBioSys™ Neem Oil can be applied using any powered or manual pesticide application equipment which includes high volume, low volume, ultra-low volume, electrostatic and fogging. Follow the original manufacturer's instructions when using these types of equipment.

## **RATES**

For most pest and crop conditions, use NimBioSys™ Neem Oil at 1-2 pints/acre using a 0.5% concentration of NimBioSys™ Neem Oil in water. Use at least 3 - 6 ½ fl. oz. of surfactant for emulsification.  
(1 pint of NimBioSys™ Neem Oil + 3 fl. oz. of surfactant + 25 gallons of water)  
(2 pints of NimBioSys™ Neem Oil + 6 1/2 fl. oz. of surfactant + 50 gallons of water)

In the case of very heavy pest pressure, use up to 3½ pints per acre in a 1.1% concentration of NimBioSys™ Neem Oil in water. Use at least 11 fl. oz. of surfactant for emulsification.  
(3 ½ pints of NimBioSys™ Neem Oil + 11 fl. oz. of surfactant + 40 gallons of water)

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## **Specific Instructions:**

For Insects: For best results, apply Nim-Bio-Sys Neem Oil at 0.5-1.1% (1.1% only for aerial and trees, other applications 0.5% to 1.0%) plus soap, surfactant or emulsifier in sufficient amounts of in water to achieve complete coverage. NimBioSys Neem Oil is most effective when applied before insects or eggs are present in large numbers. Repeat application based on pest pressure and field scouting for best results.

## APPLICATION INSTRUCTIONS - Agricultural Insect Control

Spray Target	% Concentration(Neem Oil to Water Ratio)	Spray Intervals
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Citrus, Pome, Stone and Tropical Fruits	0.5% to 1.1(1:200 to 2.2:200)	7 to 14 days
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Cucurbits	0.5% to 1.0%(1:200 to 1:100)	7 to 14 days
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Small Fruits And Berries	0.5% to 1.0%(1:200 to 1:100)	7 to 14 days
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Nuts	0.5% to 1.1%(1:200 to 2.2:200)	7 to 14 days
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Legumes and Fruiting Vegetables	0.5% to 1.0%(1:200 to 1:100)	7 to 14 days
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Roots and Tuber Vegetables	0.5% to 1.0%(1:200 to 1:100)	7 to 14 days
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Vegetable , Cereal Grains & Other Misc. Crops	0.5% to 1.0%(1:200 to 1:100)	7 to 14 days
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Avoid spraying under conditions of high humidity and high temperature (>90°F).

### STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by pesticide storage or disposal. Open dumping is prohibited. Do not reuse container.

**PESTICIDE STORAGE** Do not store this product above 104°F or below 20°F for extended periods of time. Keep containers tightly closed and in original containers when not in use. Do not store exposed to ultraviolet light (sunlight) or moisture. Neem oil clouds and solidifies at temperatures below 59°F. If oil has solidified, gently thaw by exposing to temperatures over 80°F. Store in such a manner to prevent cross contamination with other pesticides, fertilizers, food and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Keep container closed when not in use.

**PESTICIDAL DISPOSAL** To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

**CONTAINER DISPOSAL** Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
CAUTION**

Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

**Route of Entry**

**First Aid**

If inhaled

Move the person to fresh air. If person is not breathing, call 911 or an ambulance and then give artificial respiration, preferably mouth-to-mouth if possible. Call a doctor or poison control center for treatment advice.

If on skin or clothing

Remove contaminated clothing. Rinse skin immediately with plenty of water for about 15 minutes. Call a doctor or poison control center for treatment advice.

If in eyes

Hold eye open and rinse slowly and gently with water for about 15 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing eyes. Call a doctor or poison control center for treatment advice.

If swallowed

Call a poison control center or doctor immediately for treatment. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless instructed to do so by a poison control center or doctor.

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

FOR MEDICAL EMERGENCIES INVOLVING THIS PRODUCT, CALL TOLL FREE 1-800-859-7115

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Applicators and other handlers must wear:

- ◆ Long sleeved shirt and long pants ◆ Chemical resistant gloves ◆ Shoes with socks

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions are available, wash with detergent and hot water. Keep and store PPE separately from other laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. When handlers use closed systems, enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40CFR170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS. **IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment break-down.

## ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water bodies. Do not contaminate water when cleaning equipment or disposing wash water. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate.

## USER SAFETY RECOMMENDATIONS

- ◆ Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- ◆ Remove clothing immediately if contaminated with pesticide. Wash thoroughly and put on clean clothing.
- ◆ Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard (WPS).

Do not enter or allow entry into treated areas during the restricted entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- ◆ Coveralls
- ◆ Chemical resistant gloves
- ◆ Shoes plus socks

## NON-AGRICULTURAL USE REQUIREMENTS

These requirements apply to uses of this product that are NOT within the scope of the WPS for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses. For other uses, including golf courses and other non-agricultural uses, do not enter treated areas without protective clothing until sprays have dried.

## NOTICE ON CONDITIONS OF SALE

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

**CONDITIONS** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Seller. All such risks shall be assumed by the user or buyer.

**DISCLAIMER OF WARRANTIES** To the extent consistent with applicable law, Seller makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label. No agent of Seller is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, Seller disclaims any liability whatsoever for special, incidental or consequential damages resulting from the use or handling of this product.

**LIMITATIONS OF LIABILITY** To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use or handling of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid or at Seller election, the replacement of product.

**NimBioSys™ Neem Oil is the trademark of The Ahimsa Alternative, Inc. USA.**