

TerraNeem™ Oil

Biological Insecticide

Anti-Feedant, Insect Repellent, Insect Growth Regulator

For Crop and Use on Other Listed Plants
including vegetables, fruits, nuts, ornamental plants,



 FOR ORGANIC PRODUCTION

Active Ingredient:
Cold Pressed Neem Oil*..... 100%
Other Ingredients..... 0.0%
Total..... 100%

* Contains azadirachtin at 3750 ppm

KEEP OUT OF REACH OF CHILDREN

CAUTION

READ ALL DIRECTIONS BEFORE USING THIS PRODUCT

If you do not understand the label, find someone to explain it to you in detail (Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.)

See attached booklet for Additional Precautionary Statements, Directions for Use, Storage and Disposal Statements, and Warranty

Manufactured By Terramera, Inc.
6920 Salashan Pkwy D-109
Ferndale, WA 98248
1-800-597-9509

Net Contents: 55 Gal

EPA Reg. No. 88760-4
EPA Est. No. 92532-IND-1



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.

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, doctor, or going for treatment. For non-emergency information concerning this product, call the National Pesticides Information Center (NPIC) at 1-800-858-7378 (NPIC Web site: www.npic.orst.edu).

STORAGE AND DISPOSAL

DO NOT contaminate water, food or feed by pesticide storage or disposal.

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. Offer for recycling, if available. *Containers Larger than 5 Gallons:* Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

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SHAKE WELL BEFORE USE.

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CONTAINER DISPOSAL: Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. *5-Gallon or Smaller Containers:* 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 1/4 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. *Containers Larger than 5 Gallons:* Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

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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.

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.

Environmental Hazards

For terrestrial use: 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 washwater or rinsate. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

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 may 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.

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 glove
- 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.

Product Mode of Action

TerraNeem Oil controls target pests primarily by ingestion and also by contact. The modes of action are repellence, anti-feeding action and interference with the molting process.

GENERAL INFORMATION Read all directions before using this product. Apply TerraNeem 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 TerraNeem Oil /acre (emulsified by using at least 11 fl. oz. of surfactant plus 40 gallons of water). In most cases, use a concentration of 0.5% TerraNeem Oil in water plus surfactant. In case of severe infestation, use a 1.1% concentration. Do not use a concentration above 1.1% TerraNeem Oil. Refer to the Mixing and Application Instructions for mixing and rate instructions, and to Use Site Section for a complete listing of crops.

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

MIXING TerraNeem Oil is pure neem oil and requires a surfactant, such as soap, dish washing fluid, or emulsifier such as soap nut for dilution with water. Note: TerraNeem Oil must be diluted with water and a surfactant in order to form a sprayable emulsion.

- Use a concentration of 0.5% (1 part of TerraNeem Oil to approximately 200 parts of water).
- In cases of severe infestation, use 1.1% (1.1 parts of TerraNeem Oil to approximately 100 parts of water). Do not use a concentration above 1.1% TerraNeem Oil.
- Do not attempt application without adding adequate quantity of surfactant as improper emulsification will result in phytotoxicity.

Add the surfactant, such as soap, and TerraNeem Oil to a mixing tank, and stir. The ratio of surfactant to TerraNeem Oil must be in the ratio 1:5. For every pint of TerraNeem Oil, use at least 3 fl. oz. of surfactant. Then add water to the spray tank with continuous agitation. Use warm water if ambient temperature is below 60°F.

Applying the product immediately after preparation assures that it is in suspension. 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 TerraNeem 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.

COMPATIBILITY Along with the recommended quantity of surfactant or emulsifier, TerraNeem Oil is best applied independently but has been found to be compatible with tank mixes including liquid fertilizers such as a fish emulsion and adjuvants like karanja oil, cottonseed oil, sesame oil and castor oil. 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. 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. 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. TerraNeem Oil may not be compatible with deltamethrin formulations such as Decis®.

PHYTOTOXICITY When used according to label instructions, TerraNeem Oil has been evaluated for phytotoxicity on a wide range of crops and ornamentals. However, it is recommended that testing of a small portion of the area to be treated for phytotoxicity be conducted 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 is recommended. Spray equipment used to apply TerraNeem Oil must be thoroughly cleaned before use. Tank mix combinations of TerraNeem Oil may be incompatible with oil-based formulations.

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 TerraNeem 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. 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.

SPRAY DIRECTIONS Apply TerraNeem 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. TerraNeem Oil can also be applied through sub-surface soil treatment equipment. Always follow equipment manufacturer's use directions. TerraNeem Oil may 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 TerraNeem Oil at 1-2 pints/acre using a 0.5% concentration of TerraNeem Oil in water. Use at least 3 – 6 ½ fl. oz. of surfactant for emulsification.

- (1 pint of TerraNeem Oil + 3 fl.oz. of surfactant + 25 gallons of water)
- (2 pints of TerraNeem 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 TerraNeem Oil in water. Use at least 11 fl.oz. of surfactant for emulsification.

- (3 ½ pints of TerraNeem Oil + 11 fl.oz. of surfactant + 40 gallons of water)

When used alone (without fertilizers or other pesticides) for sensitive crops such as lettuce, spinach and asparagus, use 6 fluid ounces per acre of TerraNeem Oil in a 0.5% concentration of TerraNeem Oil in water. Use 1 fl.oz. of surfactant for emulsification. The amount of TerraNeem Oil may be reduced by 50% when tank mixed with other compatible products.

USE SITES

CROP USES – Use TerraNeem 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, Tobacco, Tree Nuts and Tropical Fruits.

USE on Other Plants – Use TerraNeem Oil on other sites including: ornamentals, nurseries, and fencerows

PESTS Use 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
Nematodes	Root knot nematodes
Weevils	Black Vine Weevil
Worms	Armyworms
Scales	California Red Scale, Yellow Scale, Coffee Green Scale
Thrips	Peanut Thrip

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.