NEMASAN is a novel nematicide formulation made from specialized ingredients.

For effective control of plant-parasitic nematodes in the soil.

For application to turf, fruit, vegetables, ornamentals, and row crops.

NEMASAN®

NEMATODE SUPPRESSION / CONTROL

EPA Reg No.: 92032-1
EPA Establishment No.: 91888-LA-2
Not for sale (or use) in California

2.5 GAL
(9.464 L)

Made in U.S.A.

Manufactured exclusively for

Organisan corporation

P.O. Box 2085
Carrollton, GA 30112
337-445-3657

Lot Number

Active Ingredients:

Quillaja Extract*	8.0%
Chitosan	2.0%
Other Ingredients:	90.0%
Total:	100.0%

*Product contains 0.69% Saponins of *Quillaja saponaria*

KEEP OUT OF REACH OF CHILDREN

DANGER PELIGRO

See Booklet for Additional Information

NEMASAN®

NEMATODE SUPPRESSION / CONTROL

BIOLOGICAL NEMATICIDE

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DANGER PELIGRO

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

FIRST AID	
If in eyes:	• Hold eye open and rinse slowly and gently with water for 15–20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-222-1222** for emergency medical treatment information.

See booklet for additional information, precautionary statements and directions for use.

Net Contents:

- ☐ **1.0 GAL / 3.785 L**
- ☐ **2.5 GAL / 9.464 L**
- ☐ **5.0 GAL / 18.928 L**

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P.O. Box 2085
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PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS - DANGER. Corrosive. Causes irreversible eye damage. Do not get in eyes or on clothing. Wear goggles or face shield. After product is diluted in accordance with the directions for use, goggles or face shield is not required. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation. 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 application.

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.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 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:

- Long-sleeved shirt and long pants
- Shoes plus socks

NEMATICIDAL USE INSTRUCTIONS

Nemasan is a nematicide for use on agricultural crops against the pests listed in the table on page 3 of this label. Apply Nemasan as a soil treatment to control listed soil-borne nematodes, and apply Nemasan as a foliar spray or as a soil treatment (soil drench, in-furrow, drip-applied) to control listed nematodes. Organisan Corporation recommends its adjuvant Enhan-cer 2 and OII-YS adjuvant from the O2YS Corporation. Both adjuvants have been specifically formulated for use with Nemasan.

Mixing Directions

Follow manufacturer's guidelines for cleaning spray equipment prior to mixing. Fill tank to desired amount with water, add all other spray components and agitate as directed. Buffer the mixture to pH to 5.0 or below before adding Nemasan. Start the mechanical or hydraulic agitation to provide moderate circulation before adding Nemasan. Add the desired volume of Nemasan to the mix tank and the remaining volume of water and continue circulation. Maintain circulation while loading and spraying. (Excessive agitation may lead to foaming of spray solution.) Do not mix more Nemasan than can be used in 24 hours.

Tank Mixing

Do not combine Nemasan in the spray tank with other pesticides, surfactants, adjuvants, or fertilizers if there has been no previous experience or use of the combination to show it is physically compatible, effective, or non-injurious under your use conditions.

To ensure compatibility of tank-mix combinations they must be evaluated prior to use. To determine the physical compatibility of this product with other products use a jar test. Using a quart jar, add the proportionate amounts of the products to one quart of water with agitation. Add dry formulations first, then flowables second, then emulsifiable concentrates last. After thoroughly mixing, let this mixture stand for 5 minutes. If the combination remains mixed or can readily be remixed, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank.

Nematicide Application Instructions (Soil and Foliar)
Apply Nemasan to the soil as a pre-plant, at planting or post-plant soil treatment on annual and perennial crops (refer to Directions for Use Table) alone, or applied through drip or border irrigation systems. Best results will be obtained from pre-plant applications close to the actual planting times. The optimal application time must be determined based on the cultural practices and the nematode population dynamics. Nemasan is formulated to work in synergy with resident soil microflora to enhance an environment that is detrimental to nematodes. For application areas that have undergone recent or multi-season soil fumigant applications for sterilization, initial Nemasan effectiveness and nematode suppression/control may be impacted, For treatment areas that have recent or multi-season soil fumigant applications, more frequent Nemasan applications may be needed for optimum nematode population control.

For perennial crops, apply Nemasan just prior to a root flush to protect young roots. Multiple applications may be required for crops with multiple root flushes. Nemasan may be applied to and incorporated into the soil. Incorporation may be accomplished by mechanical equipment, irrigation or rainfall. For soil applications made at planting, the action of some planters may provide sufficient incorporation. When using planters which do not provide adequate incorporation of Nemasan into the soil, equipment designed for incorporation may be used behind the planter.

Close scouting and early attention to infestations is highly recommended. Proper timing of application targeting newly hatched larvae, eggs or immature pests is important for optimal results.

Nemasan can be applied to bare soil alone or with most types of pesticides and nutrients prior to planting, at planting, at transplant, in-season, pre- and post-harvest. Apply with a minimum of 10-30 gallons of water per acre to ensure complete coverage. Use a jar test to confirm physical compatibility prior to application. Apply 1-2 pints of Nemasan per acre. Applications can be made by following methods:

Pest	Application Timing	Application Method	Rate	Comments
Root-lesion nematode *Pratylenchus spp.* Root-knot nematode *Meloidogyne spp.* Reniform nematode *Rotylenchulus spp.* Sting nematode *Belonolaimus spp.* Stem nematode *Ditylenchus spp.* Gall nematode *Agnuina spp.* Soybean cyst nematode *Heterodera spp.* Spiral nematode *Helicotylenchus spp.* Lance nematode *Hoplolaimus spp.* Guava nematode *Meliodogyne spp.* Potato cyst nematode *Globodera spp.*	Before Planting At Planting Transplanting In Season Pre-Harvest Post-Harvest	Drenching, drip (trickle) or sprinkler application Surface spray on moist soil with 40-100 gallons water/acre Surface spray with 20-40 gallons water/acre followed by overhead irrigation. Use enough irrigation water to wet the soil into the root zone. Direct injection to anticipated root depth using shank or other soil injection equipment. Apply with 30-40 gallons water acre.	Apply 1-2 pints of product per acre	Pre-plant applications may be either broadcast over an entire field or concentrated (banded) into planting rows. Apply when soil temperature at 4-inch depth is 60°F or higher. Bioactivity of Nemasan is greatest at soil temperatures between 70° and 90°F. Apply to nematode-infested (nonfumigated) soil up to 14 days before planting or transplanting. Retreat every 7 to 21 days as needed for control.

FOR USE ON THE FOLLOWING CROPS FOR CONTROL/SUPRESSION OF SPECIFIED PLANT DISEASES
Pre-harvest Interval (PHI) = 0 days

Crop Grouping	**(including)**
Cereal Grains	Barley, Buckwheat, Corn (sweet and field), Millet, Oats, Quinoa, Rice, Rye (annual and cereal), Sorghum, Milo, Wheat, Grain Amaranth
Berries and Small Fruit	Bayberry, Bearberry, Bilberry, Blackberry, Blueberry, Buffaloberry, Che, Chilean guava, Chokeberry, Cloudberry, Cranberry, Currant, Elderberry, Gooseberry, Grape, Huckleberry, Kiwifruit, Lingonberry, Loganberry, Mulberry, Raspberry, Strawberry
Brassica (Cole) Leafy Vegetables	Broccoli, Broccoli Raab, Brussels Sprouts, Cabbage, Chinese Broccoli, Chinese Cabbage (Bok Choy), Chinese Cabbage (Napa), Chinese Mustard Cabbage (Gai Choy), Cauliflower, Cavalo Broccolo, Collards, Kale, Kohlrabi, Mizuna, Mustard Greens, Mustard Spinach, and Rape Greens
Bulb Vegetables	Leek, Garlic, Onion (Bulb and Green) and Shallot
Citrus	Lemon, Orange, Lime, Grapefruit, Kumquat, Pummelo, Mandarin, Satsuma
Cotton	
Cucurbit Vegetables	Cucumber, Edible Gourds, Muskmelon, Cantaloupe, Pumpkin, Watermelon, and Winter and Summer Squash
Fruiting Vegetables	Tomato, Tomatillo, Pepper, Ground cherry, Pepino, Okra and Eggplant
Grass Forage, Fodder and Hay	Bermuda grass; bluegrass; and bromegrass or fescue, Bahia grass (*Paspalum spp.*) Orchard grass, Timothy grass, Crested Wheat Grass, Intermediate Wheat Grass
Hemp	
Leafy Vegetables	Arugula, Celery, Corn Salad, Cress, Dandelion, Dock, Edible Chrysanthemum, Endive, Fennel, Head Lettuce, Leaf Lettuce, Parsley, Purslane, Radicchio, Rhubarb, Spinach and Swiss Chard
Legume Vegetables (Succulent or Dried)	Bean (Lupinus) (includes grain lupin, sweet lupin, white lupin, and white sweet lupin); bean (Phaseolus) (includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean); bean (Vigna) (includes adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlong bean); broad bean (fava); chickpea (garbanzo); guar; jackbean; lablab bean; lentil; pea (Pisum) (includes dwarf pea, edible-podded pea, English pea, field pea, garden pea, green pea, snowpea, sugar snap pea); pigeon pea; soybean; soybean (immature seed); sun hemp; sword bean
Oilseed Crops	Rapeseed, canola, sunflower, safflower, flax seed, cottonseed, sesame, borage, calendula, castor oil plant, crambe, cuphea, echium, euphorbia, evening primrose, gold of pleasure, hare's ear mustard, jojoba, lesquerella, lunaris, meadowfoam, milkweed, mustard seed, niger seed, rose hip, oil radish, poppy seed, stokes aster, sweet rocket, tallowwood, tea oil plant, vernonia
Ornamentals	Bare root, container bedding and landscape, shade and flowering trees, woody ornamentals
Peanut	
Pome Fruits	Apple, Crabapple, Loquat, Mayhaw, Pear, Quince
Root and Tuber Vegetables	Artichoke, Black Salsify, Carrot, Cassava, Celeriac, Chayote Root, Chicory, Chinese Artichoke, Edible Burdock, Garden Beet, Ginger, Ginseng, Horseradish, Jerusalem Artichoke, Oriental Radish, Parsnip, Potatoes, Radish, Rutabaga, Salsify, Skirret, Spanish Salsify, Sugar Beet, Sweet Potatoes, Tumeric, Turnip, Turnip-rooted Chervil, Turnip-rooted Parsley and Yams
Sugarcane	
Tobacco	
Tree Nuts	Almond, Beech nut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Coconut, Filbert (hazelnut), Hickory nut, Macadamia nut, Pecan, Pine nut, Pistachio, Walnut (black and English)
Tree Nurseries	Christmas trees, Fir, Pine, Oak, Spruce, Noble Fir, Scotch Pine, Balsam Fir, Douglas-Fir, Elm, Ash, Hickory, Poplar, Cedar, Locust, and other tree varieties for commercial use or reforestation
Turfgrass	Ornamental lawns, golf courses, sod farms

Crop Grouping (Con't)	(including)
Herbs and Spices	Allspice, Angelica, Anise, Star Anise, Annatto, Balm, Basil, Borage, Burnet, Camomile, Caper buds, Caraway, Cardamom, Cassia (buds and bark), Catnip, Celery seed, Chervil, Chive, Cinnamon, Clary, Clove buds, Coriander, Cilantro, Costmary, Culantro, Cumin, Curry, Dill, Fennel, Fenugreek, Grains of Paradise, Horehound, Hyssop, Juniper berry, Lavender, Lemongrass, Lovage, Mace, Marigold, Marjoram, Mustard, Nasturtium, Nutmeg, Parsley, Pennyroyal, Pepper (white and black), Rosemary, Rue, Saffron, Sage, Savory, Sweet bay, Tansy, Tarragon, Thyme, Vanilla, Wintergreen, Woodruff, Wormwood
Stalk, Stem, and Leaf Petiole Vegetables	Agave, Aloe Vera, Asparagus, Bamboo shoots, Cardoon, Celery, Celtuce, Fennel, Fern, Fuki, Kale, Kohlrabi, Palm hearts, Prickly pear, Rhubarb, Udo, Zuiki
Stone Fruits	Apricot, Capulin, Cherry, Jujube, Nectarine, Peach, Plum, Plumcot, Prune, Sloe
Hops	
Nongrass Animal Feeds	Alfalfa, Velvet Bean, Clover, Lespedeza, Lupin, Sainfoin, Trefoil, Vetch (crown and milk), Bahia grass (*Paspalum spp.*)

CHEMIGATION

General Requirements:

- Apply Nemasan at 1 – 2 pints per acre as a pre-plant, at planting, or post-plant soil treatment.
- Apply Nemasan only through 1) overhead boom and mist-type systems, 2) sprinklers such as center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, impact or micro-sprinklers or hand-move systems, 3) pressurized drench (flood), furrow, border, or drip (trickle) systems, 4) micro-irrigation such as spaghetti tube or individual tube irrigation, 5) hand-held calibrated irrigation equipment such as hand-held wand with injector, and 6) ebb and flow systems. Do not apply this product through any other type of irrigation system.
- Crop injury or lack of effectiveness can result from non-uniform distribution of treated water.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Application Instructions for All Types of Chemigation:

1. Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues, may cause Nemasan to lose effectiveness or strength.
2. Determine the treatment rates as indicated in the directions for use and make proper dilutions.
3. To mix in supply tank, fill tank half way with water and add Nemasan. Stir until completely dispersed. Fill tank with remaining amount of water.
4. Application of Nemasan may be made continuously for the duration of the water application or can be applied at the end or after the water application.

Requirements for Chemigation Systems Connected to Public Water Systems:

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.
8. Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.

Sprinkler Chemigation Requirements:

1. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.
8. Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.

Drip (Trickle) Chemigation Requirements:

1. The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Use of a supply tank is recommended. Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.

Floor (Basin), Furrow, and Border Chemigation Requirements:

1. Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from back flow if water flow stops.
2. Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:
   a. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
   b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
   c. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
   d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
   e. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
   f. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
3. Use of a supply tank is recommended. Continuous agitation is not required in pesticide supply tanks unless tank mixing with other products or fluid fertilizers that require it.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.
Pesticide Storage: Store in a cool dry place. Avoid freezing.
Pesticide 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.
Container Handling:
Nonrefillable container. Do not reuse or refill this container. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank and drain for 10 seconds after the flow begins to drip. 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. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn unless allowed by state and local ordinances.

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.