



ENNOBLE™

BIOFUMIGANT

For control or suppression of the labeled plant-parasitic nematodes and soil-borne plants diseases. Biofumigant Soil Treatment

Active ingredient:

Muscodor albus strain SA-13 and spent and unspent fermentation media* 100 %

*Contains a minimum of 1.0×10^3 cfu/g of product.

EPA Reg. No.: 84059-26

EPA Est. No.: 86458-PA-001

KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID	
IF SWALLOWED	<ul style="list-style-type: none"> • Call poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by a poison control center doctor. • Do not give anything by mouth to an unconscious person.
IF IN EYES	<ul style="list-style-type: none"> • 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.
HOTLINE 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.	

Manufactured by:



1540 Drew Ave, Davis, CA 95618 USA

FOR ORGANIC PRODUCTION



For Organic Use

601_EM0518_0618_V1

LOT#: PRINTED ON CONTAINER

PN61538

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Job 123415

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- long-sleeved shirt and long pants,
- waterproof gloves,
- shoes plus socks,
- Protective eyewear.
- A NIOSH-approved particulate respirator with any N, R or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. (repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.)

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS: 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 [40 CFR 170.240(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 breakdown.

USER SAFETY RECOMMENDATIONS: Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should 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 uses: 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 rinseate. This pesticide is toxic to nontarget insects inhabiting treated soil.

DIRECTIONS FOR USE

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

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

EXCEPTION: If the product is soil incorporated or soil injected, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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
- Waterproof gloves
- Shoes plus socks
- A NIOSH-approved particulate respirator with any N, R or P filter with NIOSH approval number prefix TC-84A; or a NIOSH approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. (Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.)

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are **not** within the scope of the Worker Protection Standard 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.

Keep unprotected persons out of treated areas until 4 hours after the product has been applied and activated with water.

PRODUCT INFORMATION

ENNOBLE™ Biofumigant controls or suppresses labeled soil-borne plant diseases and plant-parasitic nematodes in horticultural and agricultural soils. The active ingredient, *Muscodor albus* strain SA-13 and spent and unspent fermentation media, which is made by inoculating sterile grain with *Muscodor albus* strain SA-13, when properly activated, produces volatile organic compounds that inhibit the growth of or kill target pests. ENNOBLE™ Biofumigant is incorporated into the soil with discs or other similar equipment before planting, or applied in furrow or post planting along the planting rows, and watered in to activate the volatile compounds.

APPLICATION AND MIXING INSTRUCTIONS

Incorporate ENNOBLE™ Biofumigant into soil as a pre-plant, or in-furrow soil treatment. Do not mix with water prior to application as the microbe will activate and become degraded when wetted. At the broadcast rate, incorporate the product into the top 6 inches of soil by discing or using similar equipment according to the chart below. If applied in furrows, apply the product at rates based on row spacing. See the chart below for typical 22" row spacing. Treatment area must be watered immediately after application. If rain is not expected following planting and soil is dry, water until the top one inch of soil has a moisture content of 20-50%. Keep the soil moisture at 20-50% capacity for 5-7 days before planting. Use higher application rates for heavy clay soils or soils with high pest pressure. Use lower application rates in loose, sandy soils or soils with low pest pressure.

NOTE: Application rates may exceed individual package size. Acquire sufficient product for intended application rate.

ENNOBLE™ Biofumigant Application Rates for 22" row spacing			
Heavy clay soil or high pest pressure		Loose, sandy soil or low pest pressure	
Pounds/Acre	Pounds/1000 feet of row	Pounds/Acre	Pounds/1000 feet of row
500-1000	21-42	125-500	5-21

Cubic Foot Rates: Mix ENNOBLE™ Biofumigant into the soil at a rate of 0.6 to 1.2 pounds per cubic foot. Incorporate the product throughout the soil with a shovel, rototiller or similar equipment. Activate ENNOBLE™ Biofumigant by uniformly moistening the soil with water. Keep the soil moisture at 20-50% capacity for 5-7 days before planting.

APPLICATION RATES FOR SELECTED CROPS

Apply ENNOBLE™ Biofumigant to the soils of the listed agricultural crops at the following rates based on row spacing ENNOBLE™ Biofumigant can be used in either the field or greenhouse for the prevention of any labeled disease or nematode.

Crops	Target Pests	Product Use Rate per Application	Application Instructions
Root* and Tuber* Vegetables	<i>Fusarium oxysporum</i> (Fusarium root rot) <i>Macrophomina phaseolina</i> (Charcoal rot) <i>Sclerotinia minor</i> (Sclerotinia blight) <i>Sclerotium rolfsii</i> (Southern blight) <i>Verticillium dahliae</i> (Verticillium wilt)	125-500 pounds per acre	Mix into planting soil.

* Not labeled for this use in California

Crops	Target Pests	Product Use Rate per Application	Application Instructions
Leaves of Root* and Tuber* Vegetables (Human Food or Animal Feed)	<i>Sclerotinia minor</i> (Sclerotinia blight) <i>Sclerotium rolfsii</i> (Southern blight) <i>Verticillium dahliae</i> (Verticillium wilt)	125-500 pounds per acre	Mix into planting soil.

Crops	Target Pests	Product Use Rate per Application	Application Instructions
Bulb Vegetables* (<i>Allium</i> spp.)	<i>Fusarium oxysporum</i> (Fusarium root rot) <i>Macrophomina phaseolina</i> (Charcoal rot) <i>Sclerotinia minor</i> (Sclerotinia blight) <i>Sclerotium rolfsii</i> (Southern blight) <i>Verticillium dahliae</i> (Verticillium wilt)	125-500 pounds per acre	Mix into planting soil.

Crops	Target Pests	Product Use Rate per Application	Application Instructions
Celery*, Lettuce: Head, Leaf	<i>Fusarium oxysporum</i> * (Fusarium root rot) <i>Sclerotinia minor</i> (Sclerotinia blight) <i>Verticillium dahliae</i> (Verticillium wilt)	125-500 pounds per acre	Mix into planting soil.

Crops	Target Pests	Product Use Rate per Application	Application Instructions
Brassica (Cole) Leafy Vegetables*	<i>Fusarium oxysporum</i> (Fusarium root rot) <i>Macrophomina phaseolina</i> (Charcoal rot) <i>Sclerotinia minor</i> (Sclerotinia blight) <i>Sclerotium rolfsii</i> (Southern blight) <i>Verticillium dahliae</i> (Verticillium wilt)	125-500 pounds per acre	Mix into planting soil.

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Crops	Target Pests	Product Use Rate per Application	Application Instructions
Legume Vegetables* (Succulent or Dried)	<i>Fusarium oxysporum</i> (Fusarium root rot) <i>Sclerotinia minor</i> (Sclerotinia blight) <i>Sclerotium rolfsii</i> (Southern blight) <i>Verticillium dahliae</i> (Verticillium wilt)	125-500 pounds per acre	Mix into planting soil.

Crops	Target Pests	Product Use Rate per Application	Application Instructions
Fruiting Vegetables* (Except Cucurbit Vegetables)	<i>Fusarium oxysporum</i> (Fusarium root rot) <i>Sclerotinia minor</i> (Sclerotinia blight) <i>Sclerotium rolfsii</i> (Southern blight) <i>Verticillium dahliae</i> (Verticillium wilt)	125-500 pounds per acre	Mix into planting soil.

Crops	Target Pests	Product Use Rate per Application	Application Instructions
Cucurbit Vegetables*	<i>Fusarium oxysporum</i> (Fusarium root rot) <i>Sclerotinia minor</i> (Sclerotinia blight) <i>Sclerotium rolfsii</i> (Southern blight) <i>Verticillium dahliae</i> (Verticillium wilt)	125-500 pounds per acre	Mix into planting soil.

Crops	Target Pests	Product Use Rate per Application	Application Instructions
Blackberries* Raspberries*: Black, Red, and Cultivars and Hybrids. Strawberries	<i>Fusarium sporum*</i> (Fusarium root rot) <i>Macrophomina phaseolina</i> (Charcoal rot) <i>Verticillium kahliae</i> (Verticillium wilt)	125-500 pounds per acre	Mix into planting soil.

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Crops	Target Pests	Product Use Rate per Application	Application Instructions
Herbs*, Spices*, and Mints*	<i>Fusarium oxysporum</i> (Fusarium root rot) <i>Macrophomina phaseolina</i> (Charcoal rot) <i>Sclerotinia minor</i> (Sclerotinia blight) <i>Sclerotium rolfsii</i> (Southern blight) <i>Verticillium dahliae</i> (Verticillium wilt)	125-500 pounds per acre	Mix into planting soil.

Crops	Target Pests	Product Use Rate per Application	Application Instructions
Tobacco*	<i>Heterodera</i> spp. and <i>Globodera</i> spp. (cyst nematodes) <i>Meloidogyne</i> spp. (root-knot nematodes)	125-500 pounds per acre	Mix into planting soil.

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STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Pesticide Storage: Refrigerate at 39°F (4°C) or lower. Keep container closed when not in use.

Store for up to one year after the date of purchase. After storage time under the specified conditions has been exceeded, do not use and dispose of product in accordance with the instructions below.

Pesticide Disposal: To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, or product is past specified storage time, 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 Handling: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling if available, or dispose of empty bag in a sanitary landfill or by incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Marrone Bio Innovations is a member of the Ag Container Recycling Council.
223 South Main Street, Lexington, VA 24450 Visit <http://www.acrecycle.org/>
Contact for information on how to arrange pick-up of this empty pesticide container.



MARRONE BIO INNOVATIONS WARRANTY

To the extent consistent with applicable law, the seller makes no warranty, expressed or implied, of merchantability, fitness or otherwise concerning use of this product. The user assumes all risks of use, storage or handling that are not in strict accordance with the accompanying directions.

Repackaging or relabeling of this product without express written permission from Marrone Bio Innovations, Inc. is prohibited.



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- NET WEIGHT:**
- 15 pounds
 - 25 pounds
 - 50 pounds
 - _____

PF-123415