



U.S. ENVIRONMENTAL PROTECTION AGENCY
 Office of Pesticide Programs
 Biopesticides and Pollution Prevention Division (7511P)
 1200 Pennsylvania Avenue NW
 Washington, D.C. 20460

EPA
 Registration
 Number:
 84059-17

Date of Issuance:
 MAY 01 2012

NOTICE OF PESTICIDE:

Registration
 Reregistration
 (under FIFRA, as amended)

Term of
 Issuance: Unconditional

Name of Pesticide Product:
 Grandevo

Name and Address of Registrant (include ZIP Code):

Marrone Bio Innovations
 2121 Second Street, Suite B-107
 Davis, CA 95618

Note: Changes in labeling, differing in substance from that accepted in connection with this registration, must be submitted to and accepted by the Biopesticides and Pollution Prevention Division prior to use of the label in commerce. In any correspondence on this product, always refer to the above EPA Registration Number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA or the Act). Registration is in no way to be construed as an endorsement or recommendation of this product by the Environmental Protection Agency (EPA or the Agency). In order to protect health and the environment, the Administrator, on his or her motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This registration does not eliminate the need for continual reassessment of the pesticide. If EPA determines at any time that additional data are required to maintain in effect an existing registration, the Agency will require submission of such data under section 3(c)(2)(B) of FIFRA.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) and is subject to the following terms:

1. On the accepted labeling, revise the EPA Registration Number as follows: "EPA Reg. No. 84059-17."
2. Submit two (2) copies of the final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for further description of final printed labeling.

Signature of Approving Official:

Keith A. Matthews, Director
 Biopesticides and Pollution Prevention Division

Date:

01 May 2012

Marrone Bio Innovations
EPA Reg. No. 84059-17

3. Submit the following data on Grandevo by the due dates specified below. These data must be determined by EPA to be acceptable.

Study Type	Required Data/Information	Due Date
Storage Stability (Guideline Number 830.6317)	Provide the results of a two-year storage stability study.	May 1, 2013
Corrosion Characteristics (Guideline Number 830.6320)	Provide the results of a two-year corrosion characteristics study.	May 1, 2013

4. By June 15, 2012, submit revised confidential statements of formula (basic and alternate), updating the following information:
- In box #3 (both basic and alternate), replace "MBI-203 DF1" or "MBI-203 DF2" with "Grandevo."
 - In box #4 (both basic and alternate), replace "84059" with "84059-17."

A stamped copy of the label is enclosed for your records.

Sincerely,



Keith A. Matthews, Director
Biopesticides and Pollution
Prevention Division (7511P)

Enclosures (2):
- Grandevo "Accepted" Label
- A-79 Enclosure

2/42

MASTER LABEL

GRANDEVOTM ®

Alternate Brand Names MBI 203 DF1 MBI 203 DF2

Sublabel A Agricultural Crops
Sublabel B Turf & Professional Landscape Use
Sublabel C Home & Garden Use

EPA Registration No 84059

ACCEPTED

MAY 0 1 2012

Under the Federal Insecticide Fungicide
and Rodenticide Act, as amended for
the pesticide registered under
EPA Reg No 84059-17

Sublabel A Agricultural Crops

GRANDEVO™ ®

Alternate Brand Names MBI 203 DF1 MBI 203 DF2

 (For Organic Production) (For Use in Organic Production) (Can be used in organic production)
[OMRI Listed™ (logo)]

Active Ingredient *Chromobacterium subtsugae* strain PRAA4 1^T and spent fermentation media

30 0%

Other Ingredients

70 0%

Total

100 0%

Contains not less than 1000 Cabbage Looper Killing Units (CLKU)/mg Note The percent active ingredient does not indicate product performance and potency measurements are not federally standardized

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FIRST AID	
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
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air • If person is not breathing call 911 or an ambulance then give artificial respiration preferably mouth to mouth if possible • Call a poison control center or doctor for further treatment advice
If swallowed	<ul style="list-style-type: none"> • Call a 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 the poison control center or doctor • Do not give anything by mouth to an unconscious person
If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing • Rinse skin immediately with plenty of water for 15 – 20 minutes • 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	

EPA Reg No (pending as File Symbol 84059)

EPA Est No XXXXX XX XXX

Net Weight 5 lbs

(Batch)(Lot) No XXXX

Manufactured by Marrone Bio Innovations Inc
2121 Second St Suite B 107
Davis CA 95618 USA

1 877 664 4476 www.marronebioinnovations.com info@marronebio.com

US Patents No 7 244 607

GRANDEVO is a trademark of Marrone Bio Innovations Inc

Marrone Bio Innovations name and logo are registered trademarks of Marrone Bio Innovations Inc

PRECAUTIONARY STATEMENTS

Hazards to humans and domestic animals **CAUTION** Causes moderate eye irritation Harmful if inhaled swallowed or absorbed through the skin Avoid contact with skin eyes or clothing Avoid breathing dust or spray mist 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

Personal Protective Equipment (PPE)

Applicators and other handlers must wear

- long sleeved shirt and long pants
- waterproof gloves
- shoes plus socks

Mixer/loaders and applicators must wear a dust/mist filtering respirator meeting NIOSH standards of at least N 95 R 95 or P 95 Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization Follow the manufacturer's instructions for cleaning/maintaining PPE If no such instructions for washables are available 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
- 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 This product is toxic to bees exposed to direct treatment or residues on blooming crops or weeds Do not apply this product if bees are visiting the treatment area This product is toxic to certain nontarget terrestrial arthropods Minimize spray drift away from target area to reduce effects to nontarget insects This product is toxic to aquatic invertebrates Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas

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 rinsate

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

- Coveralls
- Waterproof gloves
- Shoes plus socks

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

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 sprays have dried

PRODUCT INFORMATION

GRANDEVO is a biological insecticide/miticide/nematicide containing fermentation solids of *Chromobacterium subtsugae* strain PRAA4 1^T for use on ornamental plants turf edible crops and poultry houses against the pests listed in the Directions for Use section GRANDEVO functions primarily as a stomach poison for use in the control or suppression of many foliar feeding pests including caterpillars foliage feeding coleopteran aphids whiteflies plant sucking mites nematodes flies beetles and stinkbugs infesting labeled crops or use sites GRANDEVO must be mixed with water and applied as a foliar spray with ground or aerial equipment equipped for conventional insecticide spraying chemigation by soil treatment by seed treatment or by direct spray to surfaces in poultry houses

GRANDEVO can be used in either the field or greenhouse or in poultry houses for the control of any labeled pest

USE INSTRUCTIONS

GRANDEVO is a highly selective insecticide/miticide/nematicide for use against listed insects mites and nematodes. Close scouting and early attention to infestations is highly recommended. For insects and mites, proper timing of application targeting newly hatched larvae is important for optimal results.

For insects and mites, thorough coverage of infested plant parts is necessary for effective control. GRANDEVO does not have systemic activity. For some crops, directed drop nozzles by ground machine are required. Under heavy pest populations, use the higher label rates, shorten the spray interval, and/or increase the spray volume to improve coverage. Repeat applications at an interval sufficient to maintain control, usually 3-10 days depending upon plant growth rate, insect and mite activity, and other factors. If attempting to control an insect population with a single application, make the treatment when egg hatch is essentially complete but before economic damage occurs.

To enhance control, consider tank mixing with contact insecticides/miticides/nematicides. Use the lower label rates of GRANDEVO when populations are low and when tank mixing with other insecticides/miticides/nematicides. Use the higher rates of GRANDEVO when applied stand alone when populations are high or when egg numbers are high.

For hard to wet crops, consider using a spreader/sticker or adjuvant which has been approved for targeted crop use to enhance adhesion of GRANDEVO to the crop.

GRANDEVO has been evaluated for phytotoxicity on a variety of crops under various normal growing conditions. However, testing all crop varieties in all mixtures and combinations is not feasible. Prior to treating entire crop, test a small portion of the crop for sensitivity.

GROUND AND AERIAL APPLICATIONS

Apply GRANDEVO in ground and aerial equipment with quantities of water sufficient to provide thorough coverage of infested plant parts. The amount of water needed per acre will depend upon crop development, weather, application equipment, and local experience. Do not spray when wind speed favors drift beyond the area intended for use. Avoiding spray drift is the responsibility of the applicator.

Mixing directions

Important – Do not add GRANDEVO to the mix tank before introducing the desired amount of water. Add water to the mix tank. Start the mechanical or hydraulic agitation to provide moderate circulation before adding GRANDEVO. Add the desired volume of GRANDEVO to the mix tank and continue circulation. Maintain circulation while loading and spraying. Do not mix more GRANDEVO than can be used in 24 hours. Use a strainer no finer than 50 mesh in conventional spray systems.

Spray volume

For conventional air and ground applications, use at least 10 gallons of total volume per acre in water based sprays.

Tank mixing

Do not combine GRANDEVO 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 and non injurious under your use conditions Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures

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 and then emulsifiable concentrates last After thoroughly mixing let this mixture stand for 5 minutes If the combination remains mixed or can be readily remixed it is physically compatible Once compatibility has been proven use the same procedure for adding required ingredients to the spray tank

AERIAL DRIFT REDUCTION INFORMATION

GENERAL Avoiding spray drift at the application site is the responsibility of the applicator (specifically see **SENSITIVE AREAS** section for the requirement regarding spray drift and honey bees) The interaction of many equipment and weather related factors determine the potential for spray drift The applicator and the grower are responsible for considering all these factors when making decisions Where states have more stringent regulations they should be observed

Do not apply directly to aquatic habitats (such as but not limited to lakes reservoirs rivers streams marshes ponds estuaries and commercial fish ponds)

INFORMATION ON DROPLET SIZE Use only medium or coarser spray nozzles according to ASAE (S572) definition for standard nozzles In conditions of low humidity and high temperatures applicators should use a coarser droplet size The most effective way to reduce drift potential is to apply large droplets The best drift management strategy is to apply the largest droplets that will provide sufficient coverage and control Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (see Wind Temperature and Humidity and Temperature Inversions)

CONTROLLING DROPLET SIZE Volume Use high flow rate nozzles to apply the highest practical spray volume Nozzles with higher rated flows produce larger droplets Pressure Do not exceed the nozzle manufacturer's specified pressures For many nozzle types lower pressure produces larger droplets When high flow rates are needed use higher flow rate nozzles instead of increasing pressure Number of Nozzles Use the minimum number of nozzles that provide uniform coverage Nozzle Orientation Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice Significant deflection from horizontal will reduce droplet size and increase drift potential Nozzle Type Use a nozzle type that is designed for the intended application With most nozzle types narrower spray angles produce larger droplets Consider using low drift nozzles Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift

BOOM WIDTH For aerial applications the boom width must not exceed 75% of the wingspan or 90% of the rotary blade

APPLICATION HEIGHT Do not make application at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety Making applications at the lowest height that is safe reduces exposure to droplets to evaporation and wind If

application includes a no spray zone do not release spray at a height greater than 10 feet above the ground or crop canopy

SWATH ADJUSTMENT When applications are made with a crosswind the swath will be displaced downward Therefore on the up and downwind edges of the field the applicator must compensate for this displacement by adjusting the path of the aircraft upwind Swath adjustment distance should increase with increasing drift potential (higher wind smaller drops etc)

WIND Only apply this product if the wind direction favors on target deposition Do not apply when the wind velocity exceeds 15 mph Drift potential is lowest between wind speeds of 2 10 mph However many factors including droplet size and equipment type determine drift potential at any given speed Application should be avoided below 2 mph due to variable wind direction and high inversion potential NOTE Local terrain can influence wind patterns Every applicator should be familiar with local wind patterns and how they affect spray drift

TEMPERATURE AND HUMIDITY When making applications in low relative humidity set up equipment to produce larger droplets to compensate for evaporation Droplet evaporation is most severe when conditions are both hot and dry

TEMPERATURE INVERSIONS Do not apply during a temperature inversion because drift potential is high Temperature inversions restrict vertical air mixing which causes small suspended droplets to remain in a concentrated cloud This cloud can move in unpredictable directions due to the light variable winds common during inversions Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind They begin to form as the sun sets and often continue into the morning Their presence can be indicated by ground fog however if fog is not present inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion while smoke that moves upward and rapidly dissipates indicates good vertical air mixing

SENSITIVE AREAS The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g residential areas bodies of water known habitat for threatened or endangered species non target crops) is minimal (e.g when wind is blowing away from the sensitive areas) Do not allow spray to drift from the application site and contact people structures people occupy at any time and the associated property parks and recreation areas non target crops blooming crops or weeds that bees are visiting aquatic and wetland areas woodlands pastures rangelands or animals

CHEMIGATION USE DIRECTIONS

Spray preparation

First prepare a suspension of GRANDEVO in a mix tank Fill tank $\frac{1}{2}$ to $\frac{3}{4}$ of the amount of water for the area to be treated Start mechanical or hydraulic agitation Add the required amount of GRANDEVO and then the remaining volume of water Then set the sprinkler to deliver a minimum of 0.1 to 0.3 inch of water per acre Start sprinkler and uniformly inject the suspension of GRANDEVO into the irrigation water line so as to deliver the desired rate of GRANDEVO per acre Inject the suspension of GRANDEVO with a positive displacement pump into the main line ahead of a right angle turn to ensure adequate mixing GRANDEVO is to be metered continuously for the duration of the water application If you have questions about calibration you should contact State Extension Service specialists equipment manufacturers or other experts

Do not combine GRANDEVO with other pesticides surfactants adjuvants or fertilizers for application through chemigation equipment unless prior experience has shown the combination to be physically compatible effective and non injurious under conditions of use

General Requirements

- 1) Apply this product only through sprinkler including center pivot lateral move end tow side (wheel) roll traveler big gun solid set or hand move or drip (trickle) irrigation systems Do not apply this product through any other type of irrigation system
- 2) Crop injury lack of effectiveness or illegal pesticide residues in the crop can result from non uniform distribution of treated water
- 3) If you have questions about calibration you should contact State Extension Service specialists equipment manufacturers or other experts
- 4) 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
- 5) 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

Specific 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 backflow 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 pump
- 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

Specific Requirements for Sprinkler Chemigation

- 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 backflow

10/42

- 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 which 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

Specific Requirements for Drip (Trickle) Chemigation

- 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 backflow
- 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 which 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

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 product to lose effectiveness or strength
- 2) Determine the treatment rates as indicated in the directions for use and make proper dilutions
- 3) Prepare a solution in the chemical tank by filling the tank with the required water and then adding product as required. Utilize agitation to keep solution in suspension

Application Instructions for Drip Chemigation

- 1) Check to be sure that the system provides a uniform waterflow
- 2) Irrigate crop with sufficient water to wet the root zone. Then begin flow of the solution containing product solution from the chemical tank for a period to uniformly distribute the material. Discontinue flow of the GRANDEVO mixture and let the system continue to run only as necessary to purge the line with fresh water. Let the GRANDEVO solution remain in the root zone of the crop

11/4²

SEED TREATMENT USE DIRECTIONS

GRANDEVO can be applied as a seed dressing at plant or in commercial seed treatments for suppression of insect damage. GRANDEVO™ may be applied as a water based slurry with other registered seed treatment insecticides and fungicides through standard slurry or mist type commercial seed treatment equipment.

Mixing instructions Prepare no more mixture than is required for the immediate operation. Agitate the solution continuously during mixing and application. Mechanical mixing is recommended for proper mixing of GRANDEVO™ mixtures.

GRANDEVO alone Add ½ of the required amount of water to the mix tank. With the agitator running, add the GRANDEVO to the mix tank. Continue agitation while adding the remainder of the water. Begin application of the solution after the GRANDEVO has completely dispersed into the mix water. Maintain agitation until all the mixture has been applied.

GRANDEVO + tank mixtures Add ½ of the required amount of water to the mix tank. Start the agitation before adding any tank mix partners. In general, tank mix partners should be added in this order: wettable powders, dry flowable formulations, liquid flowable formulations, and emulsifiable formulations. Always allow each tank mix partner to become completely dispersed before adding the next component. Maintain continuous agitation until all components have been dispersed and throughout the application process.

Note When using GRANDEVO in tank mixtures, all products in water soluble packaging should be added to the tank before any other tank mix partner, including GRANDEVO. Allow the water soluble packaging to completely dissolve and the product(s) to completely disperse before adding any other tank mix partner to the tank.

If using GRANDEVO in a tank mixture with other seed treatment products, observe all directions for use, crops/sites, use rates, dilution ratios, precautions, and limitations that appear on the tank mix partner label. No label dosage may be exceeded and the most restrictive label precautions and limitations must be followed. This product should not be mixed with any product which prohibits such mixing.

For Pre plant Seed Treatment Do not use treated seed for food or feed purposes or process for oil. Treat only those seeds needed for immediate use, minimizing the interval between treatment and planting. Do not store excess treated seeds beyond planting time.

For Commercial Seed Treatment This product does not contain dye and is not covered by an appropriate tolerance, tolerance exemption, or other clearance under the Federal Food, Drug, and Cosmetic Act. To comply with 40 CFR 153.155, therefore, all seeds treated commercially with this product must be colored with an EPA approved dye or colorant of a suitable color to prevent accidental use as food for man or feed for animals. The Federal Seed Act requires that bags containing seed treated with this product shall be labeled with the following information: This seed has been treated with *Chromobacterium subtsugae* strain PRAA4 1^T. Do not use for food, feed or oil purposes.

SOIL TREATMENT USE DIRECTIONS

GRANDEVO can be applied by soil drench in furrow spray or soil injection to protect against certain soil borne insects or nematodes

In general GRANDEVO can be applied by the following methods unless specified differently in the SELECTED CROPS section

Soil Drench Applications Apply GRANDEVO at a concentration of 1.3 pounds per 50 to 75 gallons of water (2.6 pounds per 100 to 150 gallons of water) and at a sufficient rate to thoroughly soak the growing media and root zone. Multiple drench applications can be made on a 10-14 day interval for insect control treatments. Nematode control treatments are limited to pre-plant or at-plant soil drench applications.

Shanked In and Injected Applications GRANDEVO at a concentration of 1.3 pounds per 50 to 75 gallons of water (2.6 pounds per 100 to 150 gallons of water) can be shanked in or injected into the soil alone or with most types of liquid nutrients.

In Furrow Applications At planting apply GRANDEVO as an in furrow spray or as a 5.7 inch band (T band) over an open furrow at the rate of 1.3 pounds per 1/2 acre (2.6 pounds per acre or 1.8735 ounces per 1000 feet of row) according to the chart below. Apply GRANDEVO in 20 to 50 gallons of water so as the spray is directed over the seed furrow just before the seeds are covered.

Rate	In Furrow and T band Application Rates Product per Acre (in oz)					
	30 Rows	32 Rows	34 Rows	36 Rows	38 Rows	40 Rows
Ounces per 1000 ft row	1.855	2.060	2.1625	2.266	2.3-7.0	2.45735

30 = 17 424 row ft /acre 32 = 16 315 row ft /acre 34 = 15 374 row ft /acre 36 = 14 520 row ft /acre 38 = 13 754 row ft /acre 40 = 13 068 row ft /acre

APPLICATION RATES FOR SELECTED CROPS

For greenhouse application on the crops and pests listed use 1 3 pounds of GRANDEVO in 100 gallons of water sprayed until just before point of runoff

Repeat at 7 to 14 day intervals as needed See specific application rates for each crop for additional details on greenhouse applications and for all other application types

FOR USE ON THE FOLLOWING CROPS FOR CONTROL OF SPECIFIED INSECTS AND MITES

Pre harvest Interval (PHI) = 0 days

Alfalfa (Hay and Seed) Hay and Other Forage Crops

1 3 pounds of GRANDEVO per acre

Alfalfa webworm alfalfa caterpillar armyworms cutworms European skipper sod webworm

2 3 pounds of GRANDEVO per acre

Plant bugs spittle bugs aphids billbugs chinch bug mites (such as clover Bermuda grass stunt two spotted winter grain) leafhoppers

Asparagus

2 3 pounds of GRANDEVO acre

Asparagus beetle and spotted asparagus beetle Apply when adults or larvae are seen feeding on new spears and during the fern stage when field counts or crop injury indicates damaging populations

Armyworms cutworms aphids stink bugs

Bananas

2 3 pounds of GRANDEVO per acre

Banana skipper stink bugs

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

1 3 pounds of GRANDEVO per acre

Diamondback moth cabbage looper imported cabbageworm cabbage webworm cross striped cabbageworm beet armyworm armyworms light brown apple moth cutworms

2 3 pounds of GRANDEVO per acre

Yellow margined leaf beetle larvae – apply to newly hatched to 2nd instar If adult beetles are also present tank mix with a knockdown insecticide

Whiteflies thrips aphids leafhoppers stink bugs plant bugs mites billbugs

1 3 pounds GRANDEVO per ½ acre (2 6 pounds of GRANDEVO per acre)

For control of low to medium infestation levels of soil insects use a pre plant or at plant in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary

Supplemental control with drip applications where available may be necessary on a 10 to 14 day schedule for soil insect control Please refer to drip chemigation instructions

Cutworms seed corn maggot symphylans wireworms

Bulb Vegetables**Leek Garlic Onion (Bulb and Green) and Shallot****1 3 pounds of GRANDEVO per acre**

Loopers omnivorous leafroller hornworm imported cabbageworm diamondback moth green cloverworm webworms saltmarsh caterpillar armyworms cutworms cross striped cabbageworm *Heliothis* European corn borer leek moth

2 3 pounds of GRANDEVO per acre

aphids thrips

1 3 pounds GRANDEVO per ½ acre (2 6 pounds of GRANDEVO per acre)

For control of low to medium infestation levels of soil insects use a pre plant or at plant in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary

Cutworms seed corn maggot symphylans wireworms onion maggot seed corn maggot

Bushberries**Blueberry Currant Gooseberry Huckleberry Elderberry Juneberry Ligonberry and Salal****1 3 pounds of GRANDEVO per acre**

Armyworms cherry fruitworm cranberry fruitworm fireworms leafrollers loopers

2 3 pounds of GRANDEVO per acre

Aphids thrips stink bugs spotted wing drosophila fruit flies flea beetles adult Japanese beetles

157#2

Caneberries Blackberry, Loganberry, Red and Black Raspberry and Cultivars Varieties and/or Hybrids of These

1 3 pounds of GRANDEVO per acre

Beet armyworm bertha armyworm green fruitworm leafrollers loopers western raspberry fruitworm armyworms

2 3 pounds of GRANDEVO per acre

Aphids thrips stink bugs spotted wing drosophila fruit flies flea beetles adult Japanese beetles

Cereal Grains

Barley Buckwheat Oats Pearl Millet Proso Millet Rye Sorghum (Milo) Triticale and Wheat

1 3 pounds of GRANDEVO per acre

Armyworms corn earworm (headworm) southwestern corn borer web worms

2 3 pounds of GRANDEVO per acre

Aphids (including greenbug) thrips cereal leaf beetle adults and larvae chinch bugs mites

Citrus Fruit

Grapefruit Lemons Limes Oranges, and Tangerines

1 3 pounds of GRANDEVO per acre

Fruit tree leafroller orangedog citrus cutworm citrus leafminer

2 3 pounds of GRANDEVO per acre

Aphids California red scale Florida red scale two spotted spider mite Texas citrus mite citrus red mite citrus rust mite six spotted spider mite Asian citrus psyllid citrus whitefly cloudy winged whitefly citrus blackfly citrus thrips mealybugs stink bugs spotted wing drosophila fruit flies flea beetles adult Japanese beetles glassy winged sharpshooter

Corn (Field Corn Sweet Corn Popcorn and Corn Grown for Seed)

1 3 pounds of GRANDEVO per acre

Armyworms European corn borer southwestern corn borer western bean cutworm corn earworm webworms common stalk borer lesser cornstalk borer

2 3 pounds of GRANDEVO per acre

Corn leaf aphid stink bugs thrips mites chinch bugs corn rootworm beetles

1 3 pounds GRANDEVO per ½ acre (2 6 pounds of GRANDEVO per acre)

For control of low to medium infestation levels of soil insects use a pre plant or at plant in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water

per acre) or as an in furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered, other effective soil treatments may be necessary.

Cutworms, seed corn beetle, seed corn maggot, symphylans, wireworms

Seed Treatment for Corn

For suppression of soil dwelling pests, including seed corn maggot, corn rootworm larvae, and wireworms, apply 5 pounds of GRANDEVO per 100 pounds of seed in accordance with the instructions presented in the SEED TREATMENT USE DIRECTIONS.

Cotton

1 3 pounds of GRANDEVO per acre

European corn borer, cotton bollworm, tobacco budworm, loopers (soybean and cabbage), saltmarsh caterpillar, fall armyworm, yellow striped armyworm

2 3 pounds of GRANDEVO per acre

Cotton aphid, *Lygus*, leafhoppers, thrips, cotton fleahopper, silverleaf whitefly, mites

1 3 pounds GRANDEVO per ½ acre (2 6 pounds of GRANDEVO per acre)

For control of low to medium infestation levels of soil insects, use a pre-plant or at-plant in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered, other effective soil treatments may be necessary.

Cutworms, seed corn maggot, wireworms

Seed Treatment for Cotton

For suppression of soil dwelling pests, including seed maggots and wireworms, apply 5 pounds of GRANDEVO per 50 pounds of seed in accordance with the instructions presented in the SEED TREATMENT USE DIRECTIONS.

Cranberry

2 3 pounds of GRANDEVO per acre

Do not apply to flooded fields. Armyworms, brown spanworm, cranberry fruitworm, cutworms, leafrollers, fireworms, loopers, sparganothis fruitworm

Aphids, thrips, mites, spotted wing drosophila, fruit flies, flea beetles, adult Japanese beetles, cranberry blossom weevil

Cucurbit Vegetables

Cucumber, Edible Gourds, Muskmelon, Cantaloupe, Pumpkin, Watermelon, and Winter and Summer Squash

1 3 pounds of GRANDEVO per acre

Armyworms cabbage looper melonworm pickleworm rindworm complex corn earworm cutworms cucumber beetle

2 3 pounds of GRANDEVO per acre

Whiteflies aphids thrips stink bugs mites spotted wing drosophila fruit flies flea beetles adult Japanese beetles

3 pounds GRANDEVO per 1/2 acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of soil insects use a pre plant or at plant in furrow drench application in 50 to 75 gallons of water per 1/2 acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary Cutworms seed corn maggot symphylans wireworms

Fig

1 3 pounds of GRANDEVO per acre

Navel orangeworm

2 3 pounds of GRANDEVO per acre

Aphids thrips stink bugs spotted wing drosophila fruit flies flea beetles adult Japanese beetles

Flowers Bedding Plants and Ornamentals – ground application only to non blooming plants

1 3 pounds of GRANDEVO per acre or 2 4 pounds of GRANDEVO™ per 100 gallons of water

Loopers tobacco budworm omnivorous looper omnivorous leafroller diamondback moth Armyworm ello moth lo moth oleander moth azalea caterpillar

2 3 pounds of GRANDEVO per acre

Whiteflies aphids thrips azalea lace bug *Lygus* mites

Fruiting Vegetables

Tomato, Tomatillo, Pepper Groundcherry Pepino, Okra and Eggplant

1 3 pounds of GRANDEVO per acre

Loopers hornworms tomato fruitworm variegated cutworm saltmarsh caterpillar armyworms (including beet and yellow striped) tomato pinworm European corn borer

2 3 pounds of GRANDEVO per acre

Colorado potato beetle larvae – apply to newly hatched to 2nd instar larvae If adult beetles are also present tank mix with a knockdown insecticide

18/42

Aphids mites stink bugs *Lygus* pepper weevil whiteflies plant bugs psyllids thrips spotted wing drosophila fruit flies flea beetles adult Japanese beetles

3 pounds GRANDEVO per ½ acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of soil insects use a pre plant or at plant in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary.

Supplemental control with drip applications where available may be necessary on a 10 to 14 day schedule for soil insect control. Please refer to drip chemigation instructions.

Cutworms seed corn maggot symphylans wireworms

Grape, Amur River Grape, Gooseberry, Kiwifruit Maypop Schisandra Berry

1 3 pounds of GRANDEVO per acre

Grape leaf skeletonizer grape leafroller omnivorous leafroller orange tortrix oblique banded leafroller grape berry moth light brown apple moth

2 3 pounds of GRANDEVO per acre

Pacific spider mite Willamette spider mite two spotted spider mite mites mealybugs stink bugs glassy winged sharpshooter whiteflies thrips spotted wing drosophila fruit flies flea beetles adult Japanese beetles

Herbs and Spices

Angelica, Balm Basil, Borage Burnet Chamomile Catnip Chervil, Chive Clary, Coriander Costmary, Cilantro Curry Dillweed Horehound Hyssop, Lavender Lemongrass, Lovage, Marjoram Nasturtium, Parsley (Dried) Rosemary Sage Savory (Summer and Winter), Sweet Bay, Tansy, Tarragon Thyme, Wintergreen, Woodruff and Wormwood

1 3 pounds of GRANDEVO per acre

Loopers saltmarsh caterpillar armyworms

2 3 pounds of GRANDEVO per acre

Aphids thrips whiteflies mites

Hops and Dried Cones

1 3 pounds of GRANDEVO per acre

Armyworms loopers

2 3 pounds of GRANDEVO per acre

Hops aphid thrips whiteflies mites

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

1 3 pounds of GRANDEVO per acre

Cabbage looper diamondback moth armyworms loopers cutworm species green cloverworm tobacco budworm

2 3 pounds of GRANDEVO per acre

Aphids whiteflies thrips psyllids stink bugs mites

3 pounds GRANDEVO per 1/2 acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of soil insects use a pre plant or at plant in furrow drench application in 50 to 75 gallons of water per 1/2 acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary

Cutworms seed corn maggot symphylans wireworms

Leaves of Root and Tuber Vegetables

Beets and Turnips

1 3 pounds of GRANDEVO per acre

Cabbage looper diamondback moth armyworms

2 3 pounds of GRANDEVO per acre

Aphids whiteflies psyllids stink bugs

Legume Vegetables (Succulent or Dried) and Grain Crops

Adzuki Bean Blackeyed Pea Beans Chickpea Cowpea Crowder Pea, Edible Pod Pea English Pea Fava Bean Field Bean, Field Pea, Garbanzo Bean, Garden Pea, Green Pea, Kidney Bean, Lentils, Lima Bean, Lupins Mung Bean, Navy Bean, Peas Pigeon Pea Pinto Bean, Runner Bean, Snap Bean, Snow Pea Soybean, Sugar Snap Pea, Tepary Bean, Wax Bean and Yardlong Bean

1 3 pounds of GRANDEVO per acre

Armyworms corn earworm green cloverworm loopers podworms cabbage looper soybean looper velvetbean caterpillar

2 3 pounds of GRANDEVO per acre

Aphids stink bugs mites leafhoppers whiteflies thrips bean leaf beetle Mexican bean beetle spotted wing drosophila fruit flies flea beetles adult Japanese beetles

SEED TREATMENT FOR LEGUMES

For suppression of soil dwelling pests including cutworms seed maggots symphylans and wireworms apply 2 pounds of GRANDEVO per 100 pounds of seed in accordance with the instructions presented in the SEED TREATMENT USE DIRECTIONS

Oilseed Crops

Canola, Safflower, Sunflower (including Sunflower Grown for Seed)

1 3 pounds of GRANDEVO per acre

Armyworms diamondback moth loopers saltmarsh caterpillar *Heliothis* headworms

2 3 pounds of GRANDEVO per acre

Aphids thrips whiteflies mites

Peanut

1 3 pounds of GRANDEVO per acre

Armyworms cabbage looper corn earworm soybean looper green cloverworm European corn borer podworms red necked peanut worm saltmarsh caterpillar velvetbean caterpillar

2 3 pounds of GRANDEVO^M per acre

Aphids thrips whiteflies mites

3 pounds GRANDEVO per 1/2 acre (6 pounds of GRANDEVOTM per acre)

For control of low to medium infestation levels of soil insects use a pre plant or at plant in furrow drench application in 50 to 75 gallons of water per 1/2 acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary Burrowing bug cutworms seed corn maggot wireworms

Peppermint

1 3 pounds of GRANDEVO per acre

Loopers saltmarsh caterpillar armyworms

Pineapple

1 3 pounds of GRANDEVO per acre

Gummosos Batracheda Comosae (Hodges) *Thecla Thecla Basilides* (Geyr)(Fruitborer)

Pome Fruit

Apples Crabapple Loquat Mayhaw Pears and Quince

1 3 pounds of GRANDEVO per acre

Leafrollers (including fruittree oblique banded red banded variegated) codling moth oriental fruit moth tufted apple budmoth light brown apple moth

2 3 pounds of GRANDEVO per acre

Aphids mealybugs pear psylla San Jose scale stink bugs thrips whiteflies mites plum curculio spotted wing drosophila fruit flies flea beetles adult Japanese beetles

Application timing optimal timing for leafrollers codling moth and oriental fruit moth can vary between species and geographic locations Monitor moth flights with pheromone traps and scout regularly to determine larval populations Use a 7 10 day re treatment schedule to maintain control if the crop is growing rapidly or if there is heavy pest pressure GRANDEVO™ can be used to supplement mating disruption programs

Pomegranate

1 3 pounds of GRANDEVO per acre

Armyworms cankerworms codling moth cutworms filbert leafroller fruittree leafroller gypsy moth oblique banded leafroller oriental fruit moth red banded leafroller tufted apple budmoth twig borer variegated leafroller walnut caterpillar

European red mite McDaniel spider mite Pacific spider mite two spotted red mite stink bugs spotted wing drosophila fruit flies flea beetles adult Japanese beetles

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

1 3 pounds of GRANDEVO per acre

Armyworms artichoke plume moth European corn borer loopers

Colorado potato beetle larvae – apply to newly hatched to 2nd instar larvae If adult beetles are also present tank mix with a knockdown insecticide Heavy infestations require repeat application

2 3 pounds of GRANDEVO per acre

Aphids potato aphid potato leafhopper stink bugs psyllids whiteflies

3 pounds GRANDEVO per ½ acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of soil insects use a pre plant or at plant in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary Cutworms seed corn maggot symphylans wireworms

Shade and Ornamental Trees

1 3 pounds of GRANDEVO per acre or 1 3 pounds of GRANDEVO per 100 gallons of water

Blackheaded budworm California oakworm Douglas fir tussock moth elm spanworm fruittree leafroller greenstriped mapleworm hemlock looper Jack Pine Budworm Mimosa Webworm pine butterfly saddleback caterpillar saddle prominent caterpillar spruce budworm tent caterpillar western tussock moth gypsy moth

2 3 pounds of GRANDEVO per acre

Elm leaf beetle imported willow leaf beetle viburnum beetle – apply to newly hatched to 2nd instar If adult beetles are also present tank mix with a knockdown insecticide Heavy infestations may require repeat applications

Aphids lace bugs mites whiteflies wooly adelgid

Stone Fruits

Apricots Cherry Nectarine, Peach, Plum and Prune

1 3 pounds of GRANDEVO per acre

Green fruitworm leafrollers (including oblique banded fruit tree pandemic red banded and variegated) oriental fruit moth redhumped caterpillar tent caterpillar peach twig borer

Application timing optimal timing for peach twig borer and leafrollers can vary between species and geographic locations Monitor moth flights with pheromone traps and scout regularly to determine larval populations Use a 7 10 day re treatment schedule to maintain control if the crop is growing rapidly or if there is heavy pest pressure Use a 3 to 4 day re treatment schedule at flowering GRANDEVO can be used to supplement mating disruption programs

2 3 pounds of GRANDEVO per acre

Aphids mealybugs San Jose scale stink bugs white peach scale thrips whiteflies mites spotted wing drosophila fruit flies flea beetles adult Japanese beetles

Strawberry

1 3 pounds of GRANDEVO per acre

Armyworms leafrollers cutworms

2 3 pounds of GRANDEVO per acre

Aphids *Lygus* mites thrips whiteflies stink bugs spotted wing drosophila fruit flies flea beetles adult Japanese beetles

3 pounds GRANDEVO per ½ acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of soil insects use a pre plant or at plant in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary Cutworms symphylans wireworms

Sugar Cane

1 3 pounds GRANDEVO per ½ acre (2 6 pounds of GRANDEVO per acre)

White grubs wireworms

Apply 1 3 pounds GRANDEVO (2 6 pounds of GRANDEVO per acre) or 1 8 – 7 35 ounces per 1000 foot row in a 5 7 inch band (T band) directly on the seed piece and surrounding soil in the open furrows immediately before covering with soil

Tobacco

1 3 pounds of GRANDEVO per acre

Hornworms tobacco budworm loopers

2 3 pounds of GRANDEVO per acre

Aphids thrips whiteflies mites

3 pounds GRANDEVO per ½ acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of soil insects use a pre plant or at plant in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary
Cutworms seed corn maggot symphylans wireworms

Tree Farms and Plantations

Conifers Including Christmas Trees and Deciduous Trees

1 3 pounds of GRANDEVO per acre or 1 3 pounds of GRANDEVO™ per 100 gallons of water

Bagworm fall webworm gypsy moth hemlock looper jackpine budworm pine tip moth redhumped caterpillar spruce budworm tent caterpillar tussock moths

2 3 pounds of GRANDEVO per acre

Cottonwood leaf beetle apply to newly hatched to 2nd instar larvae If adult beetles are also present tank mix with a knockdown insecticide Heavy infestations may require repeat application

Tree Nuts and Pistachios

Almonds, Cashew Chestnut Filbert (Hazelnut), Macadamia Nut Pecan Pistachios and Walnut

1 3 pounds of GRANDEVO per acre

Fall webworm filbert worm hickory shuckworm navel orange worm oblique banded leafroller peach twig borer pecan nut casebearer redhumped caterpillar

2 3 pounds of GRANDEVO per acre

Aphids mealybugs San Jose scale walnut scale whiteflies Pecan weevil mites

Tropical and Subtropical Fruit

Acerola, Atemoya, Avocado, Biriba, Black Sapote, Canistel, Cherimoya, Custard Apple, Feijoa, Guava, Ilama, Jaboticaba, Kiwi, Longan, Lychee, Mamey Sapote, Mango, Papaya, Passionfruit, Pulasan, Rambutan, Sapodilla, Soursop, Spanish Lime, Star Apple, Starfruit, Sugar Apple, T1 Palm Leaves, Wax Jambu (Wax Apple) and White Sapote

1 3 pounds of GRANDEVO per acre

Avocado leafroller citrus peelminer cutworms fruittree leafroller omnivorous leafroller orange tortrix western tussock moth

Aphids thrips whiteflies stink bugs spotted wing drosophila fruit flies flea beetles adult Japanese beetles

Turf Including Turf Grown for Seed, Lawns and Recreational Turf**2 4 pounds of GRANDEVO per acre or 0 75 – 1 5 ounces per 1000 sq ft**

Armyworms cutworms sod webworms

3 pounds GRANDEVO per ½ acre (6 pounds of GRANDEVO per acre) or 2 25 ounces per 1000 sq ft

Chinch bug leafhoppers

2 4 pounds GRANDEVO per 1/5 acre (10 20 pounds of GRANDEVO per acre) or 4 8 ounces per 1000 sq ft

White grubs (such as larvae of Asiatic garden beetle black turfgrass ataenius European chafer green June beetle *Aphodius* spp May or June beetles (*Phyllophaga* spp) northern and southern masked chafers (*Cyclocephala* spp) sugarcane grub (*Tomarus* spp) and Oriental beetle)

Mix specified dosage of GRANDEVO in sufficient water to provide thorough coverage of turf. For control of white grubs and annual bluegrass weevils a minimum of 100 gallons of water per acre or 300 fluid ounces per 1000 square feet is recommended. For best control thoroughly irrigate following application to moisten the top inch of soil. There should be no more than ½ inch of thatch present at the time of application. Under dry conditions where thatch is present prewatering is recommended prior to application for grub or weevil control.

For control of armyworms cutworms webworms chinch bugs or leafhoppers it is not necessary to irrigate following application.

Poultry Houses**1 pound of GRANDEVO per 12 gallons of water**

Flies poultry litter beetle

Treat when litter is totally replaced Apply to walls ceiling and floors of the poultry house
Replace litter only after the surfaces are totally dry

FOR USE ON THE FOLLOWING CROPS FOR CONTROL OF SPECIFIED NEMATODES

Pre harvest Interval (PHI) = 0 days

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

1 3 pounds GRANDEVO per ½ acre (2 6 pounds of GRANDEVO per acre)

For control of low to medium infestation levels of nematodes use a pre plant or at plant only in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary.

Root Knot Lesion Ring Sting and Stunt Nematodes

Bulb Vegetables

Leek Garlic Onion (Bulb and Green) and Shallot

1 3 pounds GRANDEVO per ½ acre (2 6 pounds of GRANDEVO per acre)

For control of low to medium infestation levels of nematodes use a pre plant or at plant only in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary.

Root Knot Lesion Ring Sting and Stunt Nematodes

Corn (Field Corn, Sweet Corn Popcorn and Corn Grown for Seed)

1 3 pounds GRANDEVO per ½ acre (2 6 pounds of GRANDEVO per acre)

For control of low to medium infestation levels of nematodes use a pre plant or at plant only in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary.

Root Knot Lesion Ring Sting and Stunt Nematodes

Seed Treatment for Corn

For suppression of plant parasitic nematodes apply 5 pounds of GRANDEVO per 100 pounds of seed in accordance with the instructions presented in the SEED TREATMENT USE DIRECTIONS

Cotton

27/42

1 3 pounds GRANDEVO per ½ acre (2 6 pounds of GRANDEVO per acre)

For control of low to medium infestation levels of nematodes use a pre plant or at plant only in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary.

Root Knot Nematodes

Seed treatment for Cotton

For suppression of plant parasitic nematodes apply 5 pounds of GRANDEVO per 50 pounds of seed in accordance with the instructions presented in the SEED TREATMENT USE

DIRECTIONS

Cucurbit Vegetables

Cucumber Edible Gourds Muskmelon, Cantaloupe Pumpkin Watermelon and Winter and Summer Squash

3 pounds GRANDEVO per ½ acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of nematodes use a pre plant or at plant only in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary.

Root Knot Lesion Ring Sting and Stunt Nematodes

Fruiting Vegetables

Tomato, Tomatillo, Pepper Groundcherry, Pepino, Okra and Eggplant

3 pounds GRANDEVO per ½ acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of nematodes use a pre plant or at plant only in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary.

Root Knot Lesion Ring Sting and Stunt Nematodes

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

3 pounds GRANDEVO per ½ acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of nematodes use a pre plant or at plant only in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water

per acre) or as an in furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered, other effective soil treatments may be necessary.

Root Knot, Lesion, Ring, Sting and Stunt Nematodes

Legume Vegetables (Succulent or Dried) and Grain Crops

Adzuki Bean, Blackeyed Pea, Beans, Chickpea, Cowpea, Crowder Pea, Edible Pod Pea, English Pea, Fava Bean, Field Bean, Field Pea, Garbanzo Bean, Garden Pea, Green Pea, Kidney Bean, Lentils, Lima Bean, Lupins, Mung Bean, Navy Bean, Peas, Pigeon Pea, Pinto Bean, Runner Bean, Snap Bean, Snow Pea, Soybean, Sugar Snap Pea, Tepary Bean, Wax Bean, and Yardlong Bean

Seed Treatment for Legumes

For suppression of plant parasitic nematodes, apply 2 pounds of GRANDEVO per 100 pounds of seed in accordance with the instructions presented in the SEED TREATMENT USE DIRECTIONS.

Peanut

3 pounds GRANDEVO per ½ acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of nematodes, use a pre-plant or at-plant only in-furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in-furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered, other effective soil treatments may be necessary.

Root Knot, Lesion, Ring, Sting and Stunt Nematodes

Supplemental control with a layby application at pegging stage may be necessary for additional suppression of nematodes.

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, Turmeric, Turnip, Turnip-rooted Chervil, Turnip-rooted Parsley and Yams

3 pounds GRANDEVO per ½ acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of nematodes, use a pre-plant or at-plant only in-furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in-furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered, other effective soil treatments may be necessary.

Root Knot, Lesion, Ring, Sting and Stunt Nematodes

Strawberry

29/42

3 pounds GRANDEVO per ½ acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of nematodes use a pre plant or at plant only in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary.

Root Knot Lesion Ring Sting and Stunt Nematodes

Tobacco

3 pounds GRANDEVO per ½ acre (6 pounds of GRANDEVO™ per acre)

For control of low to medium infestation levels of nematodes use a pre plant or at plant only in furrow drench application in 50 to 75 gallons of water per ½ acre (100 to 150 gallons of water per acre) or as an in furrow spray in 20 to 50 gallons per acre. When very high pest infestation levels are anticipated or encountered other effective soil treatments may be necessary.

Root Knot Lesion Ring Sting and Stunt Nematodes

STORAGE AND DISPOSAL

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

Pesticide Storage Store in original container in a cool, dry place.

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 (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. Do not burn, unless allowed by state and local ordinances. (For instances where state and local ordinances do allow burning) If burned, stay out of smoke.

**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. To the extent consistent with applicable law, the user assumes all risks of use, storage or handling that are not in accordance with the accompanying directions.

OPTIONAL LABEL CLAIMS

Biological Insecticide

Dry flowable


[OMRI Listed® (logo)]
NOP logo

31/42

Sublabel B Turf & Professional Landscape Use

GRANDEVO™®

Alternate Brand Names MBI 203 DF1 MBI 203 DF2

 (For Organic Production) (For Use in Organic Production) (Can be used in organic production)
[OMRI Listed™ (logo)]

Active Ingredient <i>Chromobacterium subtsugae</i> strain PRAA4 1 ^T and spent fermentation media	30 0%
Other Ingredients	<u>70 0%</u>
Total	100 0%

Contains not less than 1000 Cabbage Looper Killing Units (CLKU)/mg Note The percent active ingredient does not indicate product performance and potency measurements are not federally standardized

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FIRST AID	
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.
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth to mouth if possible. • Call a poison control center or doctor for further treatment advice.
If swallowed	<ul style="list-style-type: none"> • Call a 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 the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If on skin or clothing	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 – 20 minutes. • 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.	

EPA Reg No (pending as File Symbol 84059)
Net Weight 5 lbs
(Batch)(Lot) No XXXX

EPA Est No XXXXX XX XXX

Manufactured by Marrone Bio Innovations Inc
2121 Second St Suite B 107
Davis CA 95618 USA
1 877 664 4476 www.marronebioinnovations.com info@marronebio.com

US Patents No 7 244 607
GRANDEVO is a trademark of Marrone Bio Innovations Inc
Marrone Bio Innovations name and logo are registered trademarks of Marrone Bio Innovations Inc

PRECAUTIONARY STATEMENTS

Hazards to humans and domestic animals **CAUTION** Causes moderate eye irritation Harmful if inhaled swallowed or absorbed through the skin Avoid contact with skin eyes or clothing Avoid breathing dust or spray mist 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

Personal Protective Equipment (PPE)

Applicators and other handlers must wear

- long sleeved shirt and long pants
- waterproof gloves
- shoes plus socks

Mixer/loaders and applicators must wear a dust/mist filtering respirator meeting NIOSH standards of at least N 95 R 95 or P 95 Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization Follow the manufacturer's instructions for cleaning/maintaining PPE If no such instructions for washables are available 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
- 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 This product is toxic to bees exposed to direct treatment or residues on blooming crops or weeds Do not apply this product if bees are visiting the treatment area This product is toxic to certain nontarget terrestrial arthropods Minimize spray drift away from target area to reduce effects to nontarget insects This product is toxic to aquatic invertebrates Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas

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 rinsate

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

33/42

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

- Coveralls
- Waterproof gloves
- Shoes plus socks

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

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 sprays have dried

PRODUCT INFORMATION

GRANDEVO is a biological insecticide/miticide containing fermentation solids of *Chromobacterium subtsugae* strain PRAA4 1^T for use on ornamental plants turf and edible crops against the pests listed in the Directions for Use section GRANDEVO functions primarily as a stomach poison for use in the control or suppression of many foliar feeding pests including caterpillars foliage feeding coleopteran aphids whiteflies and plant sucking mites infesting labeled crops GRANDEVO must be mixed with water and applied as a foliar spray with ground equipment

GRANDEVO can be used in either the field or greenhouse for the control of any labeled pest

USE INSTRUCTIONS

GRANDEVO is a highly selective insecticide/miticide for use against listed insects and mites Close scouting and early attention to infestations is highly recommended Proper timing of

application targeting newly hatched larvae and nymphs is important for optimal results. Repeat applications at an interval sufficient to maintain control usually 3-10 days depending upon plant growth rate, insect and mite activity, and other factors. If attempting to control an insect population with a single application, make the treatment when egg hatch is essentially complete but before economic damage occurs.

Under heavy pest populations, use the higher label rates, shorten the spray interval, and/or increase the spray volume to improve coverage. To enhance control, consider tank mixing with contact insecticides/miticides.

Thorough coverage of infested plant parts is necessary for effective control. GRANDEVO does not have systemic activity. For some crops, directed drop nozzles by ground machine are required.

For hard to wet crops, consider using a spreader/sticker or adjuvant which has been approved for targeted crop use to enhance coverage and adhesion of GRANDEVO to the crop.

GRANDEVO has been evaluated for phytotoxicity on a variety of crops under various normal growing conditions. However, testing all crop varieties in all mixtures and combinations is not feasible. Prior to treating entire crop, test a small portion of the crop for sensitivity.

GROUND APPLICATIONS

Apply GRANDEVO in ground equipment with quantities of water sufficient to provide thorough coverage of infested plant parts. The amount of water needed per acre will depend upon crop development, weather, application equipment, and local experience.

Do not spray when wind speed favors drift beyond the area intended for use.

Avoiding spray drift is the responsibility of the applicator.

Mixing instructions

GRANDEVO alone Add ½ of the required amount of water to the mix tank. With the agitator running, add the GRANDEVO to the mix tank. Continue agitation while adding the remainder of the water. Begin application of the solution after the GRANDEVO has completely dispersed into the mix water. Maintain agitation until all the mixture has been applied.

GRANDEVO + tank mixtures Add ½ - ¾ of the required amount of water to the mix tank. Start the agitation before adding any tank mix partners. In general, tank mix partners should be added in this order: wettable powders, dry flowable formulations such as GRANDEVO, liquid flowable formulations, and emulsifiable formulations. Always allow each tank mix partner to become completely dispersed before adding the next component. Maintain continuous agitation until all components have been dispersed and throughout the application process. After all components are completely dispersed, add the remainder of the water. GRANDEVO cannot be mixed with another product with a prohibition against mixing. Use of the tank mix must be in accordance with the more restrictive label limitations and precautions. **Do not pre mix GRANDEVO with any other tank mix component prior to adding to the spray tank.**

Compatibility

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

GRANDEVO is compatible with many commonly used pesticides fertilizers adjuvants and surfactants but has not been evaluated with all potential combinations To ensure compatibility of the tank mix combinations evaluate prior to use as follows Using a suitable container add the proportional amounts of product to water Add wettable powders first then water dispersible granules then liquid flowables and lastly emulsifiable concentrates Mix thoroughly and let stand for at least five minutes If the combination stays mixed or can be remixed it is physically compatible Test the mix on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of the application

Crop	Target Insect	Application Method	Product Use Rate per Application	Application Instructions
<p>Ornamentals</p> <p>Herbaceous Ornamentals Flowering Plants Foliage Plants</p> <p>Woody Ornamentals Broadleaves Shrubs and Trees Conifers Shrubs and Trees</p>	<p>Loopers tobacco budworm omnivorous looper omnivorous leafroller diamondback moth Armyworm ello moth lo moth oleander moth azalea caterpillar</p> <p>Whiteflies aphids thrips mites mealybugs and scales Blackheaded budworm California oakworm Douglas fir tussock moth elm spanworm fruittree leafroller greenstriped mapleworm hemlock looper Jack Pine Budworm Mimosa Webworm pine butterfly</p>	<p>Foliar</p>	<p>1 – 3 pounds of GRANDEVO per acre or 1 – 3 pounds of GRANDEVO per 100 gallons of water</p>	<p>Apply in sufficient water to provide complete coverage but not excessive to the point of run off</p>

saddleback caterpillar saddle prominent caterpillar spruce budworm tent caterpillar western tussock moth			
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Crop	Target Disease	Application Method	Product Use Rate per Application (Ounces per 1 000 sq ft)	Product Use Rate per Application (per Acre)	Application Instructions
Turfgrass Bluegrass Bentgrass Bermudagrass Dichondra Fescue Orchardgrass <i>Poa annua</i> Ryegrass St Augustine Zoysia mixtures and other grasses including grasses grown for seed	Armyworms cutworms sod webworm Chinch bug and leafhoppers	Foliar	0.75 – 1.5	2 – 4 pounds of GRANDEVO per acre	Mix specified dosage of GRANDEVO in sufficient water to provide thorough coverage of turf For control of white grubs and annual bluegrass weevils use a minimum of 100 gallons of water per acre or 300 fluid ounces per 1000 square feet
	White grubs (such as larvae of Asiatic garden beetle black turfgrass ateniuss European chafer green June beetle Aphodius spp May or June beetles (Phyllophaga spp) northern and southern masked chafers (Cyclocephala spp) sugarcane grub (Tomarus spp) and Oriental beetle) Annual bluegrass billbug adults and larvae	Foliar followed by irrigation	4 – 8	2 – 4 lbs of GRANDEVO per 1/5 acre	For control of grubs thoroughly irrigate to moisten the top inch of soil There should be no more than 1/2 inch of thatch present at the time of application Under dry conditions where thatch is present prewatering is
Ornamental Grasses					

37/42

					<p>recommended prior to application for grub or weevil control</p> <p>For control of armyworms cutworms webworms chinch bugs or leafhoppers it is not necessary to irrigate following application</p>
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STORAGE AND DISPOSAL

Do not contaminate water food or feed by storage and disposal

Pesticide Storage Store in original container in a cool dry place

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 (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 Do not burn unless allowed by state and local ordinances (For instances where state and local ordinances do allow burning) If burned stay out of smoke

WARRANTY

To the extent permitted by 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 accordance with the accompanying directions

Label date

Made in the U S A

38/42

Sublabel C Home & Garden Use

GRANDEVO™®

Alternate Brand Names MBI 203 DF1 MBI 203 DF2

 (For Organic Gardening) (For Use in Organic Gardening) [OMRI Listed™ (logo)]

Active Ingredient *Chromobacterium subtsugae* strain PRAA4 1^T and spent fermentation media

30 0%

Other Ingredients

70 0%

Total

100 0%

Contains not less than 1000 Cabbage Looper Killing Units (CLKU)/mg Note The percent active ingredient does not indicate product performance and potency measurements are not federally standardized

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FIRST AID	
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.
If inhaled	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth to mouth if possible. • Call a poison control center or doctor for further treatment advice.
If swallowed	<ul style="list-style-type: none"> • Call a 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 the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
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PRECAUTIONARY STATEMENTS

Hazards to humans and domestic animals **CAUTION** Causes moderate eye irritation Harmful if inhaled swallowed or absorbed through the skin Avoid contact with skin eyes or clothing Avoid breathing dust or spray mist 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

Environmental Hazards This product is toxic to bees exposed to direct treatment or residues on blooming crops or weeds Do not apply this product if bees are visiting the treatment area This product is toxic to certain nontarget terrestrial arthropods Minimize spray drift away from target area to reduce effects to nontarget insects This product is toxic to aquatic invertebrates Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas

To protect the environment do not allow pesticide to enter or run off into storm drains drainage ditches gutters or surface waters Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area

DIRECTIONS FOR USE

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

HOME AND GARDEN USE DIRECTIONS

GRANDEVO is a biological insecticide/miticide containing fermentation solids of *Chromobacterium subtsugae* strain PRAA4 1^T for use on ornamental plants turf and edible crops against the pests listed in the Directions for Use section GRANDEVO functions primarily as an insect antifeedant and insect stomach disrupter for use in the control or suppression of many foliar feeding pests including caterpillars foliage feeding coleopteran aphids whiteflies and plant sucking mites infesting labeled crops GRANDEVO must be mixed with water and applied as a foliar spray for control of above ground pests or applied as a soil drench for control of below ground pests

DIRECTIONS FOR CONTROL OF FOLIAR PESTS

WHEN TO USE

For best results apply GRANDEVO before populations reach damaging levels or when egg deposition is observed

BEFORE YOU USE

Read and follow these directions when using

Do not allow spray to drift from application site

Use only with pressurized hand held sprayers or spray trigger bottles

Do not allow spray mixture to stand overnight or for prolonged periods

GRANDEVO can be applied in commonly used pressurized hand held sprayers spray trigger bottles and hose end sprayers

HOW TO USE FOR HAND HELD SPRAYERS AND SPRAY TRIGGER BOTTLES

40/42

Fill sprayer or bottle with appropriate amount of water and concentrate

Mix the spray solution thoroughly

Keep the spray solution agitated during application

HOW TO USE FOR HOSE END SPRAYERS

Follow hose end sprayer instructions to determine how to fill set dial clean and disconnect from hose

Set dial on sprayer to deliver rate as directed below

HOW MUCH TO USE FOR ALL APPLICATIONS

2 tablespoons of GRANDEVO per gallon of water

Some pesticides can cause phytotoxic effects ranging from slight burning or browning of leaves to distorted leaves fruit flowers or stems Damage symptoms may vary with the type of plant that has been treated It is impossible to test all plant species for phytotoxicity To assure that the plants to be treated are not sensitive to the treatment apply a small amount of the product to a few leaves or the above ground portion of the plant and check back in 2 4 days for signs of phytotoxicity Use product according to label directions

INSECTS CONTROLLED OR SUPPRESSED ON VEGETABLES FRUITS NUTS, ORNAMENTAL PLANTS TREES SHRUBS FLOWERS FOLIAGE AND TROPICAL PLANTS

Adult Japanese beetles
Alfalfa caterpillar
Alfalfa webworm
Adelgids
Aphids
Armyworms
Cabbage looper
Chinch bugs
Codling moth
Corn earworm
Diamondback moth
Fruit flies
Hornworms
Imported cabbageworm
Lace bugs
Leaf rollers
Leafhoppers
Light brown apple moth
Loopers
Mealybugs
Mites
Plant bugs
Psyllids
Scales
Sharpshooters
Spittle bugs

41/42

Stink bugs
Tent caterpillars
Thrips
Tufted apple budworm
Webworms
Whiteflies

DIRECTIONS FOR SUPPRESSION OF SOIL BORNE PESTS (EXCLUDING TURF)

For suppression of soil borne pests including seed maggots wireworms symphylans cutworms white grubs and plant parasitic nematodes apply GRANDEVO as a soil drench directly into the seed furrow Mix GRANDEVO at rate of 3 tablespoons per gallon of water and apply the mixture at the rate of 1 quart (32 fluid ounces) per 25 feet of row For individual plants such as tomatoes and peppers apply the mixture as a soil drench at the rate of 4 fluid ounces per plant

DIRECTIONS FOR SUPPRESSION OF INSECT PESTS OF TURF

Webworms cutworms chinch bug and leafhoppers

Mix GRANDEVO at the rate of 6 tablespoons per gallon of water and apply to turf with a pressurized sprayer at the rate of 1 gallon per 250 square feet of turf

White grubs (including green June beetle *Aphodius* spp May or June beetles (*Phyllophaga* spp) northern and southern masked chafers (*Cyclocephala* spp) sugarcane grub (*Tomarus* spp) and Oriental beetle) annual bluegrass weevil adult and larvae

Mix 1/2 pound (8 ounces) GRANDEVO™ per gallon of water and apply at the rate of 1 gallon per 250 square feet of turf For best control thoroughly irrigate following irrigation to moisten the top inch of soil There should be no more than 1/2 inch of thatch present at the time of application Under dry conditions where thatch is present pre watering is recommended prior to application for grub or weevil control For best results target smaller first and second instar grubs during late summer and early fall

For control of armyworms cutworms webworms chinch bugs or leafhoppers it is not necessary to irrigate following application

CONTROL OF OUTDOOR HOUSEHOLD PESTS

1 pound of GRANDEVO per 12 gallons of water

Boxelder beetle and brown marmorated stinkbug

Harmless insects become nuisances when searching indoors for hibernation sites in the fall Treat outdoor areas where the insects congregate

STORAGE AND DISPOSAL

Do not contaminate water food or feed by storage or disposal

Pesticide Storage Store in a cool dry place

Pesticide Disposal and Container Handling **If empty** Nonrefillable container Do not reuse or refill this container **If empty** Place in trash and offer for recycling if available

If partially filled Call your local solid waste agency or (800) 858 7378 (National Pesticide Information Center) for disposal instructions Never place unused product down any indoor or

42/42

outdoor drain

WARRANTY

To the extent permitted by 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 accordance with the accompanying directions

Label date

Made in the U S A