

SoilGard®

MICROBIAL FUNGICIDE

For the control of “Damping-Off” and Root Rot Pathogens of Ornamental, Food Crop Plants and Tobacco Grown in Greenhouses, Nurseries, Interiorscapes, and Outdoors on Agricultural and Ornamental Crops, Vegetables and Tobacco

ACTIVE INGREDIENT:

<i>Gliocladium virens</i> strain GL-21	12.0%*
OTHER INGREDIENTS	<u>88.0%</u>
TOTAL	100.0%

*Contains a minimum of 1 x 10⁶ CFU/g of product

Net Weight: 5 Pounds

EPA Reg. No. 70051-3

EPA Est. No. 70051-CA-001

Lot Number:

FOR ORGANIC PRODUCTION



Manufactured by
Certis USA LLC
9145 Guilford Road
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Columbia, MD 21046



**KEEP OUT OF REACH OF CHILDREN
CAUTION**

FIRST AID

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

Call a poison control center or doctor for treatment advice.

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

Hot Line Number: 1-800-255-3924.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear goggles and/or face shield. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Personal Protective Equipment:

Applicators and handlers must wear:

- Long-sleeved shirt and long pants.
- Shoes plus socks.
- Protective eyewear.
- Mixer/loaders and applicators must wear and use a NIOSH-approved particulate respirator with any N, R, or P filter with NIOSH approval number prefix TC-84A (if tank mixing with any oil-based adjuvants, spreaders, or spreader/stickers, use only R or P filters); 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/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

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. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or 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.

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 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.

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, and protective eyewear.

EXCEPTION: If the product is soil injected or soil incorporated, 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. For other uses including Interiorscapes, and other non-agricultural uses, do not enter treated areas without protective clothing until soil-incorporation and potting is complete.

GENERAL INFORMATION

Gliocladium virens, the active component in SOILGARD®, is a soil fungus that is antagonistic to plant pathogenic fungi such as *Pythium*, *Rhizoctonia*, *Sclerotinia* spp., *Phytophthora capsici*, *Sclerotium*, and *Fusarium* root and crown rots, thereby aiding in control of these “damping off” and root rot pathogens. SOILGARD® is a granular formulation containing a high concentration of *G. virens* spores suitable for incorporation into soil or soil-less media. SOILGARD® acts as a preventative and will protect non-infected plants. It may not, however, cure already diseased plants.

PRECAUTIONS

Where possible, allow the treated soil or media to incubate for 1 day prior to planting to achieve best results. Do not use other soil fungicides with SOILGARD® at time of incorporation. Later addition of fungicides is acceptable but usually unnecessary. Best results are achieved if the contents of an open package are used within three months. Be careful to seal out moisture from the unused material by closing the inner bag tightly.

SOILGARD® can be mixed with water for application as a soil drench, as a root dip, or through irrigation systems. The dry granules can also be mixed directly into soil or growing media. Use lower rates in sandy soils, warm soils (60°F or higher temperature at 4-inch depth), or as a preventative against low to moderate disease pressure. Use higher rates in heavy soils (high clay and/or organic matter), low temperatures (less than 60°F at 4-inch depth), as a preventative against heavy disease pressure, or as a curative for low to moderate disease pressure early in the growing season. The soil or growing medium should be moist but not wet at the time of application; the application water may be of sufficient volume to provide the necessary moisture unless the soil is extremely dry or difficult to wet. Do not apply SOILGARD® to very dry, compacted, frozen, or water-logged soils, and do not overwater or allow soil to become saturated for extended periods (>3 hours) after application.

COMPATIBILITY WITH PESTICIDES, FERTILIZERS, AND ADJUVANTS

Do not apply chemical fungicides to soil or plant media at the same time as SOILGARD®. In most cases, additional soil-applied fungicides should not be required to control seedling diseases after proper application of SOILGARD®. If additional fungicide applications are desired, wait a minimum of 2 weeks after applying SOILGARD®. The effectiveness of SOILGARD® may be decreased if soil fungicides are applied to the same area before it has become fully established in the root zone.

SOILGARD® can be applied after soil fumigation, solarization, or steam sterilization to prevent or delay reinfestation by pathogenic fungi. Do not apply SOILGARD® to fumigated soil until fumigants have dissipated to levels safe for planting the crop. Do not apply SOILGARD® to steam-sterilized soil or other planting media until it has cooled to a temperature of 100°F or lower.

Do not combine SOILGARD® with other pesticides, surfactants, or fertilizers unless prior experience has shown the combination to be physically compatible, effective, and non-injurious under the conditions of use. SOILGARD® has not been fully evaluated for compatibility with all adjuvants or surfactants. If a mixture with adjuvants or surfactants is planned, conduct a compatibility test (“jar test”) by mixing proportional quantities of SOILGARD® and these products in a small volume of water.

FOR INCORPORATION INTO GROWING MEDIA for control of *Pythium*, *Rhizoctonia*, *Sclerotinia* spp., *Phytophthora capsici*, *Sclerotium*, and *Fusarium* root and crown rots (Ornamentals, Tobacco, and Food Crop Plants Grown Indoors and Outdoors)

For incorporation into potting medium in greenhouse flats, plug trays, or pots:

- Mix 1 to 1 1/2 pounds of SOILGARD® biological fungicide per cubic yard of potting soil or other plant-growing medium. Granules must be distributed uniformly throughout the medium.
- If the potting medium has been heat sterilized, allow it to cool to 110°F or lower before adding SOILGARD®.
- Allow at least 24 hours after incorporation of SOILGARD® before planting seeds, cuttings, or other non-rooted plant material into the treated medium. Plants with established roots can be transplanted into treated soil immediately after mixing with SOILGARD®.
- Do not use SOILGARD® in media totally devoid of organic matter (such as sand). *G. virens* requires organic matter to grow and work. If the only available organic substrate is the seed, bulb, or other plant material, *G. virens* may cause injury to it.

For incorporation into seedling and planting beds (indoors and outdoors):

- Thoroughly till the soil in the planting bed prior to addition of SOILGARD®.
- Incorporate SOILGARD® granules uniformly within the plant root zone at the rate of 1 to 1 1/2 pounds per cubic yard of soil. The table below can be used to determine how much SOILGARD® to use depending on planting or rooting depth and area to be treated.
- SOILGARD® is unlikely to completely eliminate disease from soil already severely infested with pathogenic fungi. For best results, use SOILGARD® in the greenhouse at the time of planting, so that it has already colonized the root ball of the transplant.

Planting depth (inches)	Pounds* per 100 square feet	Square feet per pound
2	2/3 – 1	108 – 162
4	1 1/4 – 2	54 – 81
6	2 – 2 3/4	36 – 54
8	2 1/2 – 3 3/4	27 – 41
10	3 – 4 2/3	22 – 32
12	3 3/4 – 5 1/2	18 – 27

*NOTE: The higher rates in the range provided may require the use of more than one package.

FOR DRENCH OR SPRAY APPLICATION TO SOIL for control of *Pythium*, *Rhizoctonia*, *Sclerotinia* spp., *Phytophthora capsici*, *Sclerotium*, and *Fusarium* root and crown rots

Mix SOILGARD® in a minimum of 2 gallons of water per pound of product and apply as a drench or coarse spray to soil or other plant growth media. Stir or agitate thoroughly and maintain agitation during application to keep SOILGARD® suspended uniformly. The total amount of water required will be determined by the area to be covered. Apply SOILGARD® immediately after mixing with water; do not allow the mixture to stand overnight or for prolonged periods. The finished mix can be sprayed using low-pressure watering nozzles on a spray boom or spray wand, drenched with a watering can, injected into the soil with a water wheel or shank injector, or applied with other high-volume delivery devices. If applying with spray equipment, use flood jet or wide orifice flat fan nozzles with screens and swirl plates removed. If desired, SOILGARD® can be mixed with water and passed through a 50-mesh screen for spraying through standard orifice tee jet or flat fan nozzles.

Refer to the table below for specific rates and use instructions for different applications.

Application rates and additional instructions for drench or spray application of SOILGARD® to soil or other plant media.

CROP or USE SITE		RATE*	ADDITIONAL INSTRUCTIONS
Transplanted crops (such as fruiting and leafy vegetables, melons, strawberries, tobacco, field grown ornamental plants, and nonbearing fruit/nut trees and vines)	Before transplanting	1/2 – 2 pounds per 100 gallons of water	Apply 4 fl. oz. of finished drench per plant in flats (unit trays) or pots within 1 week before transplanting into the field (during the hardening-off phase). For densely seeded trays or flats, apply 100 gallons of finished drench per 800 square feet. SOILGARD® can also be applied in furrow immediately before transplanting as described for seed furrows in the next section.
	At transplanting	1/2 – 2 pounds per 100 gallons	Apply 4 – 8 fl. oz. of finished drench (depending on the size of the root ball) in each transplant hole using a water wheel/shank injector, watering can, or low-pressure sprayer with flood/drench nozzles.
	After transplanting	2 - 10 pounds per acre	Repeat (maintenance) applications can be made as directed through spray or drench at the base of each plant, or through the irrigation system (see "For Application Through Irrigation Systems" below). Do not apply over the top or to foliage.
Seed furrows or planting beds (such as potatoes and other tubers, bulbs, tobacco, and direct-seeded crops)		2 – 10 pounds per acre	Apply in 50 – 100 gallons of water per acre as banded drench in furrow at or immediately before planting, and before covering seed or seed pieces with soil. Apply a band of sufficient width to cover the seed furrow and initial rooting zone (usually 4 – 8 inches, centered on the furrow). Drench can also be applied as a seed line treatment using shank or other injection equipment in sufficient water to treat both the seed furrow and initial rooting zone.
Ornamental plant and flower beds (indoor and outdoor)		2 – 4 ounces per 100 gallons of water	Thoroughly till the soil in the bed prior to application. Before planting, apply the finished drench at 100 gallons per 800 square feet (if 4" deep or less) or 100 gallons per 400 square feet (more than 4" deep). Do not water the treated area for 12 hours after application. Allow at least 24 hours between drench application and planting of seeds or non-rooted cuttings. Plants with established roots can be transplanted immediately into treated beds.

(continued)

CROP or USE SITE	RATE*	ADDITIONAL INSTRUCTIONS
Turfgrass	2 – 4 ounces per 1,000 square feet	Compacted soil in high-traffic areas should be aerated before applying SOILGARD®. For best results, turf should be lightly pre-irrigated immediately before application to wet the foliage. Broadcast as a coarse spray in 1 – 2 gallons of water per 1,000 square feet. Irrigate the treated area with 1/4 – 1/2 inch of water via overhead sprinklers immediately after application to move the product into the soil profile and maintain moisture. Repeat application every 1 – 3 weeks as necessary to maintain disease control.
Greenhouse flats, plug trays, or pots (prior to planting)	2 – 4 ounces per 100 gallons of water	Apply the finished drench at 50 – 100 gallons per 800 square feet (if 4" deep or less) or 100 gallons per 400 square feet (more than 4" deep). Do not water the treated area for 12 hours after application. Allow at least 24 hours between drench application and planting of seeds or non-rooted cuttings, or transplanting seedlings without true leaves. Plants with true leaves and established roots can be transplanted immediately into treated pots.
Potted or container plants (including tobacco) with established roots (greenhouse, nurseries, interiorscapes)	2 – 8 ounces per 100 gallons of water	Apply the finished drench at the base of the plant at a rate of 4 fl. oz. per pot for shallow pots (up to 4 inches deep) or plants up to 6 inches tall. For deeper pots and/or plants, apply 8 to 16 fl. oz. per pot. May be repeated every 1 – 4 weeks as needed. Do not apply to foliage or edible crop matter.

*NOTE: The higher rates in the range provided may require the use of more than one package.

FOR APPLICATION THROUGH IRRIGATION SYSTEMS for control of *Pythium*, *Rhizoctonia*, *Sclerotinia* spp., *Phytophthora capsici*, *Sclerotium*, and *Fusarium* root and crown rots

SOILGARD® can be applied only to the base of the plant through ground-directed surface or subsurface drip (trickle) or micro-irrigation, or through flood, furrow, or border irrigation. **Do not allow irrigation water to contact foliage or edible crop matter.**

Mix SOILGARD® into a large volume (50 gallons or more) of water under continuous agitation and introduce through a filter or screen (50 mesh) into the irrigation lines. Alternatively, first suspend the product in a smaller volume of water (a minimum of 2 gallons per pound of SOILGARD®) with thorough mixing, and then pour this suspension through a filter or screen (50 mesh) into the final volume of water for addition into the irrigation system. Apply SOILGARD® immediately after mixing with water; do not allow the mixture to stand overnight or for prolonged periods. When using large pressurized systems, add SOILGARD® after the system has been fully charged with water and over sufficient time (typically 30 – 60 minutes, depending on the system) to allow uniform distribution of the product. After application, flush the system with water for an additional 10 – 20 minutes to avoid fouling of irrigation lines due to fungal growth. See "Chemigation Instructions" below for additional information about application of SOILGARD® through surface or subsurface drip (trickle) or micro-irrigation, or through flood, furrow, or border irrigation. Do not apply SOILGARD® through any other type of irrigation system.

Apply SOILGARD® up to 1 week before or immediately after planting or transplanting. Apply at 2 – 10* pounds per acre (0.75 – 3.67 ounces per 1,000 square feet). Application can be repeated every 1 – 4 weeks if necessary due to disease pressure.

*NOTE: The higher rates in the range provided may require the use of more than one package.

FOR ROOT DIP APPLICATION OR ROOT COATING for control of *Pythium*, *Rhizoctonia*, *Sclerotinia* spp., *Phytophthora capsici*, *Sclerotium*, and *Fusarium* root and crown rots

SOILGARD® can be applied as a dip or coating for bare-root plantings of crops (such as horseradish, strawberries or caneberries, tobacco, ornamental shrubs, or fruit trees) or to rooted cuttings of poinsettias and other ornamental plants. Dip or immerse roots in a suspension containing 1 – 2 pounds of SOILGARD® per gallon of water immediately before planting. Roots or planting sets can also be coated with SOILGARD® by shaking them in a sealed plastic bag containing the suspension of SOILGARD® in water, or by moistening them with water and shaking in a sealed plastic bag containing dry granules. Do not apply SOILGARD® directly to fresh (non-rooted) cuttings.

STORAGE AND DISPOSAL

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

Pesticide Storage: SOILGARD® is packaged in an airtight, foil-lined, re-sealable bag designed to protect the fungus from exposure to moisture and oxygen, which can impact storage life. For best results, store in a cool, dry place (preferably refrigerated). In an unopened bag, SOILGARD® will retain its biological activity for up to one year at room temperature (70°F). Long-term exposure to air and higher temperatures (75°F to 100°F) may accelerate loss of bioactivity. Exposure to temperatures above 100°F for extended periods can be detrimental to SOILGARD®. An open bag of SOILGARD® can be kept for up to 3 months if the bag is tightly resealed and refrigerated (40°F to 45°F). Squeeze excess air from the bag before resealing.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

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.

CHEMIGATION INSTRUCTIONS

Precautions:

Apply this product through ground-directed, pressurized irrigation systems such as surface or subsurface drip (trickle) or micro-irrigation (including micro-jets, microsprayers, spaghetti tubes, or individual tubes), or through flood, furrow, or border irrigation. **Do not allow irrigation water to contact foliage or edible crop matter.** Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Public water system chemigation:

“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.

1. 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 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.
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 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 or, in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
5. 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.
6. Do not apply when wind speed favors drift beyond the area intended for treatment.
7. Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and injector system and flush with clean water before use. Failure to provide a clean tank, free of scale or residues may reduce effectiveness of this product.

Drip (trickle) and micro-irrigation 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 that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Dilute the product in water following the label mixing directions. It may be premixed in a supply tank with water, fertilizer, or other appropriate tank-mixed agricultural chemicals. Agitation is necessary. Apply to moderately moist soils. Use volumes that thoroughly wet the soil but that do not cause significant runoff or excessive drip from treated rows, beds, or pots. Maintain continuous application in sufficient water to apply the specified rate evenly to the entire treated area.

Flood, furrow, or border chemigation:

1. Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential of water source contamination from the backflow if water flow stops.
2. Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:
 - a. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
 - b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
 - c. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
 - d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
 - e. The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

- f. Systems must use a metering pump, such as a positive displacement injection pump (i.e., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
3. Dilute the product in water following the label mixing directions. It may be premixed in a supply tank with water, fertilizer, or other appropriate tank-mixed agricultural chemicals. Agitation is necessary. Apply to moderately moist soils. Use volumes that thoroughly wet the soil but that do not cause significant runoff. Maintain continuous application in sufficient water to apply the specified rate evenly to the entire treated area.

WARRANTY

CERTIS USA LLC warrants that the material contained herein conforms to the description on the label and is reasonably fit for the purposes referred to in the directions for use. Timing and method of application, weather, watering practices, nature of soil, the disease problem, condition of the crop, incompatibility with other chemicals not specifically recommended, and other influencing factors in the use of this product are beyond the control of the seller. To the extent consistent with applicable law, buyer assumes all risks of use, storage, or handling of this material not in strict accordance with directions given herein. NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY IS MADE.

Specimen Label