

SoilGard®

MICROBIAL FUNGICIDE

For Control of Lettuce Drop

SoilGard® contains a naturally occurring beneficial soil fungus that is antagonistic to plant pathogenic fungi, such as *Sclerotinia*, thereby aiding in control of lettuce drop.

- Organic Materials Review Institute (OMRI) listed.
- National Organic Program (NOP) approved.

Always read and carefully follow label directions.

Lettuce drop is one of the most frequent and destructive diseases encountered by commercial lettuce growers throughout the U.S. The causal agents of lettuce drop are the fungi *Sclerotinia minor* and *S. sclerotiorum*. Both species form survival structures known as sclerotia, which are dark masses of fungal hyphae (the non-reproducing filamentous portion of fungi). Sclerotia can survive in soil for multiple seasons.

When cool, moist soil conditions prevail, *Sclerotinia* is able to infect the stems and lower leaves that are in contact with the soil. Initial symptoms are a brown soft decay of infected tissue. This infection can migrate toward and eventually kill the plant crown. Once the plant crown is infected, the plant will wilt and collapse. Plant collapse commonly occurs close to harvest when plants are at or near maturity.

Lettuce tissue that has wilted due to *Sclerotinia* infection will often have solid brown to black sclerotia present on the surface. These can be distributed into the soil profile and persist to infect future lettuce crops. Sclerotia of *S. sclerotiorum* average 1/4 inch in diameter, while those of *S. minor* are generally 0.1 inch or smaller.

Yield losses of up to 70% have been reported from heavily infested fields. If the disease is left untreated, sclerotia can build up in the soil, resulting in severe infestations of subsequent crops.

Lettuce drop is common throughout the lettuce growing regions of the U.S. Knowledge of previous crop history and presence of lettuce drop in a field can aid in choosing an effective control program.

About SoilGard

SoilGard contains a naturally occurring beneficial soil fungus which is antagonistic to plant pathogenic fungi, such as *Sclerotinia*, thereby aiding in control of lettuce drop. SoilGard is a preventive biofungicide most effective at protecting healthy plants from pathogen attack. Upon application to soil, the spores of the beneficial fungus germinate and produce an antibiotic that kills pathogenic fungi in the immediate area.

SoilGard parasitizes surviving pathogenic fungi and occupies the rhizosphere (the soil surrounding the roots), outcompeting pathogens for nutrients and space, and excluding them from reinfesting the rhizosphere.

SoilGard meets National Organic Program (NOP) standards and is listed by the Organic Materials Review Institute (OMRI) for use in organic production. It can therefore be used to control lettuce drop in both organic and conventionally grown lettuce. SoilGard also can be used to control other soilborne plant pathogenic fungi, such as *Pythium*, *Phytophthora*, *Fusarium*, *Sclerotium* and *Rhizoctonia*, which cause damping off diseases and root/crown rots. SoilGard has a 0 hour REI and 0 day PHI.

For optimal control of lettuce drop make an initial application of SoilGard and allow the treated soil to incubate for 1 day prior to planting followed by an additional post thinning application of SoilGard. Do not use other soil fungicides at the time of incorporation. Later addition of fungicides is acceptable but usually unnecessary.

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Rate info: 4 to 10 lbs. per acre

Application timing: Apply at planting and again at post thinning.

Drip Chemigation:

Apply SoilGard through drip tape up to 1 week before or immediately after planting. Inject SoilGard suspension after the filter or through a filter/screen of 50 mesh or larger and with elevated pressure. Alternatively, the suspension can be mixed thoroughly at 1 lb. SoilGard per 2 gallons water for 10 minutes, allowed to settle and the liquid phase can be poured off through a filter/screen to be injected into the drip line or added to the sprayer tank.

Bedtop banded spray:

At Planting: Apply SoilGard in a minimum of 20 gallons of water per acre as a banded spray at or immediately before planting. Apply a band of sufficient width and carrier volume to cover the seed

line and initial rooting zone. Follow immediately with irrigation sufficient to carry fungal spores to root zone.

Post Thinning: Apply SoilGard through drip, bedtop banded spray or chemigation prior to a post thinning irrigation.

Overhead Sprinkler Chemigation: SoilGard may be applied through overhead irrigation and in conjunction with an herbicide application. (For allowed tank mixes, refer to Certis Tech Bulletin: SoilGard Biological Compatibility with Agricultural Chemicals.)

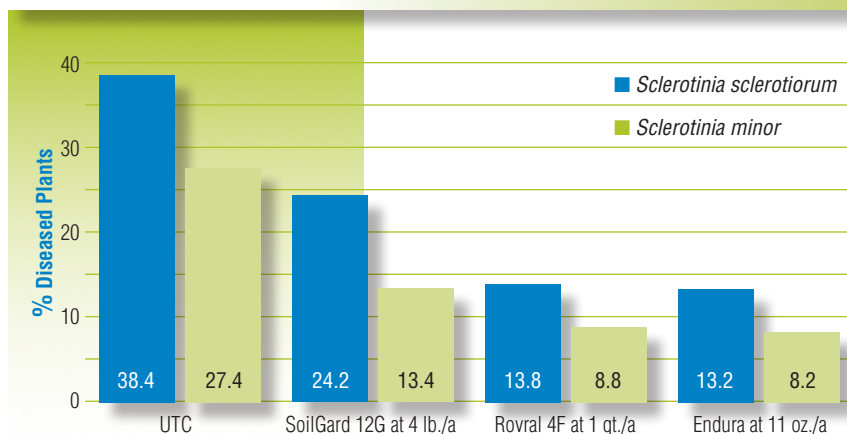
Key Elements for a Successful SoilGard Application:

1. Remove oxygen scavenger packet from SoilGard package.
2. Maintain excellent agitation.
3. Use 50 mesh or coarser screens.
4. Higher spray pressures and/or larger nozzles and/or higher carrier volumes are desirable.
5. SoilGard will remain viable for 1 year if stored unopened at room temperature (65 to 80° F), 2 years if stored unopened and refrigerated. Opened bags remain viable for 1 month if refrigerated. Do not freeze SoilGard.

Control of Lettuce Drop Disease on Lettuce

Investigator: Dr. Mike Matheron, University of Arizona

Location: Yuma, AZ



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The Biopesticide Company