



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

**EPA Reg. Number:**

91197-3

**Date of Issuance:**

8/7/2017

**NOTICE OF PESTICIDE:**

Registration  
 Reregistration  
 (under FIFRA, as amended)

**Term of Issuance:**

Unconditional

**Name of Pesticide Product:**

Howler

**Name and Address of Registrant (include ZIP Code):**

AFS009 Plant Protection, Inc.  
 104 T.W. Alexander Drive, Building 18  
 Research Triangle Park, NC 27709

**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 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 U.S. Environmental Protection Agency (EPA). 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 the 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 product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration or registration review of your product when the EPA requires all registrants of similar products to submit such data.

**Signature of Approving Office:**

Jeannine Kausch, Product Manager 92  
 Microbial Pesticides Branch  
 Biopesticides and Pollution Prevention Division (7511P)  
 Office of Pesticide Programs

**Date:**

8/7/2017

2. Submit one (1) copy of the final printed labeling for the record before you release this product for shipment.

Should you wish to add/retain a reference to your company's website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the EPA. If the website is false or misleading, the product will be considered to be misbranded and sale or distribution of the product is unlawful under FIFRA section 12(a)(1)(E). 40 CFR § 156.10(a)(5) lists examples of statements the EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the EPA find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA-approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance Assurance.

Your release for shipment of this product constitutes acceptance of these terms. If these terms are not complied with, this registration will be subject to cancellation in accordance with FIFRA section 6. A stamped copy of the labeling is enclosed for your records. Please also note that the record for this product currently contains the following acceptable Confidential Statements of Formula (CSFs):

- Basic CSF dated 10/31/2016
- Alternate CSF #1 dated 10/31/2016
- Alternate CSF #2 dated 10/31/2016
- Alternate CSF #3 dated 10/31/2016
- Alternate CSF #4 dated 10/31/2016

Any CSFs other than those listed above are superseded.

If you have any questions, please contact Susanne Cerrelli by phone at (703) 308-8077 or via email at [cerrelli.susanne@epa.gov](mailto:cerrelli.susanne@epa.gov).

Sincerely,



Jeannine Kausch, Product Manager 92  
Microbial Pesticides Branch  
Biopesticides and Pollution  
Prevention Division (7511P)  
Office of Pesticide Programs

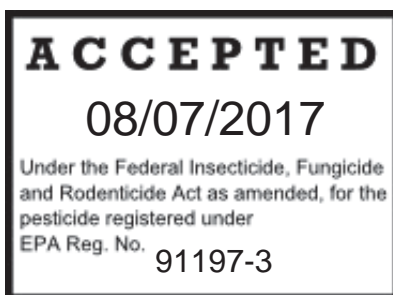
Enclosure

MASTER LABEL

# Howler™


<b>Sublabel A: Agricultural Crop Use</b>
<b>Sublabel B: Turf and Ornamental Uses</b>
<b>Sublabel C: Home &amp; Garden Use</b>
<b>Optional Label Claims</b>

EPA Registration No. 91197-3



**Sublabel A: Agricultural Crop Use**

# Howler™

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

**Active Ingredient:** *Pseudomonas chlororaphis* strain AFS009\* ..... 50.0%  
**Other Ingredients:** ..... 50.0%  
**Total:** ..... 100.0%

\* Contains not less than 1 X 10<sup>6</sup> cfu/g of product.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

FIRST AID	
<b>If inhaled</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li><li>• Call poison control center or doctor for further treatment advice.</li></ul>
<b>If in eyes</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15 – 20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If swallowed</b>	<ul style="list-style-type: none"><li>• Call poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>HOT LINE NUMBER</b> 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.:** 91197-3  
**Net Weight:** XX  
**(Batch)(Lot) No:** XXXX

**EPA Est. No.:** XXXXX-XX-XXX

**Manufactured by:**  
AFS009 Plant Protection, Inc.  
104 T.W. Alexander Drive, Building 18  
Research Triangle Park, NC 27709

## PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS - CAUTION:** Harmful if inhaled, absorbed through the skin, or swallowed. Causes moderate eye irritation. Avoid breathing dust or spray mist. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

### PERSONAL PROTECTIVE EQUIPMENT (PPE):

Applicators and other handlers must wear:

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

Mixer/loaders and applicators must wear a NIOSH-approved particulate respirator with any N, R, or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization. Follow 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 or enclosed cabs 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 may be toxic to bees and other pollinating insects exposed to direct treatment. Do not apply this product while bees or other pollinating insects are actively visiting the treatment area. This product may be toxic to certain nontarget terrestrial arthropods. Minimize spray drift away from target area to reduce effects to nontarget insects. 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. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

### **Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on the 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
- Protective eyewear

**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**

Howler is a biological fungicide containing the active ingredient *Pseudomonas chlororaphis strain* AFS009 for use on growing plants and crops to control plant diseases including *Rhizoctonia*, *Pythium*, *Fusarium*, *Phytophthora*, *Sclerotinia*, *Colletotrichum* and *Botrytis*. Howler may be mixed with water and applied as a foliar spray, soil drench, in furrow spray, transplant spray or dip, cuttings or bare root dip, hydroponic or chemigation application in field or greenhouse use sites. It may also be mixed with potting mix or applied dry in furrow.

### **USE INSTRUCTIONS**

Do not apply by aerial application.

Howler 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.

**Mixing directions - Important** –Do not add Howler to the mix tank before introducing the correct amount of water. Add water to the mix tank. Start the mechanical or hydraulic agitation to provide moderate circulation before adding Howler. Maintain circulation while loading and spraying. Do not mix more Howler than can be used in 24 hours.

### **Spray volume**

For in furrow spray applications, use at least 5 gallons of total volume per acre in water-based sprays.

### **Tank mixing**

Do not combine Howler 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.

## **CHEMIGATION USE DIRECTIONS**

### **Spray preparation**

First, prepare a suspension of Howler 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 Howler, and then the remaining volume of water (See Application Rates Table). 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 Howler into the irrigation water line so as to deliver the correct rate of Howler per acre. Inject the suspension of Howler with a positive displacement pump into the main line ahead of a right angle turn to ensure adequate mixing. Howler is to be metered continuously for the duration of the water application.

Do not combine Howler 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 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 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 that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being filled 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.

### TARGET PLANT DISEASES

*Rhizoctonia, Pythium, Fusarium, Phytophthora, Sclerotinia, Colletotrichum, Botrytis*

### APPLICATION RATES

Repeat at 7- to 21-day intervals as needed. Thoroughly cover plant foliage and soil surfaces with spray solution. Pre-harvest Interval (PHI) = 0 days.

CROPS	APPLICATION METHOD	APPLICATION RATE
<b>Berries and Small Fruits:</b> including Blackberries, Blueberries, Currants, Elderberries, Gooseberries, Huckleberries, Loganberries, Raspberries, Strawberries, Grapes	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water
	Nursery soil drench	67 – 100 oz Howler/100 gal water
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler/acre or 67 – 100 oz Howler/100 gal water
	Greenhouse Chemigation	67 – 100 oz Howler/100 gal water
	Foliar Spray	5 – 15 pounds Howler/acre
	Field Chemigation or Drench	5 – 15 pounds Howler /acre
<b>Citrus Fruits:</b> including Citrus Hybrids, Grapefruit, Kumquat, Lemons, Limes, Oranges, Pummelos	Cuttings or bare root	0.5 - 2.5 lbs Howler / 5 gal water or dip into dry powder
	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water
	Nursery soil drench	67 – 100 oz Howler/100 gal water
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler /acre or 67 – 100 oz Howler/100 gal water
	Greenhouse Chemigation	67 – 100 oz Howler/100 gal water
	Foliar Spray	5 – 15 pounds Howler/acre
	Field Chemigation or Drench	5 – 15 pounds Howler/acre

<b>CROPS</b>	<b>APPLICATION METHOD</b>	<b>APPLICATION RATE</b>
<b><i>Cucurbit Vegetables:</i></b> including Cucumbers, Cantaloupe, Melons, Gourds, Pumpkins, Winter Squash, Squash, Zucchini	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler/acre or 67 – 100 oz Howler/100 gal water
	Greenhouse Chemigation	67 – 100 oz Howler/100 gal water
	Foliar Spray	5 – 15 pounds Howler/acre
	Field Chemigation or Drench	5 – 15 pounds Howler /acre
	Greenhouse soil incorporation	1.75 – 8.5 pounds Howler/cubic yard
<b><i>Flowers, Bedding Plants, and Ornamentals.</i></b>	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water
	Nursery Soil Drench	67 – 100 oz Howler/100 gal water
	Greenhouse Chemigation	67 – 100 oz Howler/100 gal water
	Foliar Spray	5 – 15 pounds Howler/acre
	Field Chemigation or Drench	5 – 15 pounds Howler/acre
	Greenhouse soil incorporation	1.75 – 8.5 pounds Howler/cubic yard
<b><i>Fruiting Vegetables:</i></b> including Eggplant, Bell Peppers, Sweet and Hot Peppers, Okra, Tomatillos, Tomatoes	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler /acre or 67 – 100 oz Howler/100 gal water
	Greenhouse Chemigation	67 – 100 oz Howler/100 gal water
	Foliar Spray	5 – 15 pounds Howler /acre
	Field Chemigation or Drench	5 – 15 pounds Howler /acre
	Greenhouse soil incorporation	1.75 – 8.5 pounds Howler/cubic yard
<b><i>Herbs, Spices, and Mints.</i></b>	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler/acre or 67 – 100 oz Howler/100 gal water

<b>CROPS</b>	<b>APPLICATION METHOD</b>	<b>APPLICATION RATE</b>
	Greenhouse Chemigation	67 – 100 oz Howler/100 gal water
	Foliar Spray	5 – 15 pounds Howler /acre
	Field Chemigation or Drench	5 – 15 pounds Howler /acre
	Greenhouse soil incorporation	1.75 – 8.5 pounds Howler/cubic yard soil
<b>Hydroponic Crops:</b> including Cucumbers, Tomatoes, Lettuce, Strawberries, Herbs and Spices.	Inject into the hydroponic system with each water change or every 5 to 7 days. Pre-soak transplants in the same solution mix.	1.8 – 6 oz Howler/1000 sq. ft.
<b>Leafy Vegetables and Cole Crops:</b> including Arugula, Chervil, Endive, Lettuce (head and leaf), Parsley, Radicchio, Spinach, Swiss Chard, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Collards, Kale, Mustard Greens,	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler/acre or 67 – 100 oz Howler/100 gal water
	Foliar Spray	5 – 15 pounds Howler/acre
	Field Chemigation or Drench	5 – 15 pounds Howler/acre
<b>Beans, Peas, and Dry Pulses</b>	Foliar or Directed Spray	5 – 15 pounds Howler/acre
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler /acre or 67 – 100 oz Howler/100 gal water
<b>Peanut</b>	Foliar Spray	5 – 15 pounds Howler/acre
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler /acre or 67 – 100 oz Howler/100 gal water
	Field Chemigation or Drench	5 – 15 pounds Howler /acre
<b>Pome Fruit:</b> including	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water

<b>CROPS</b>	<b>APPLICATION METHOD</b>	<b>APPLICATION RATE</b>
Apple, Pear, Quince.	Nursery Soil Drench	67 – 100 oz Howler/100 gal water
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler/acre or 67 – 100 oz Howler/100 gal water
	Greenhouse Chemigation	67 – 100 oz Howler/100 gal water
	Field Chemigation or Drench	5 – 15 pounds Howler/acre
<b>Shadehouse and Outdoor Nursery Crops:</b> including Deciduous trees (Maple, Oak, etc.), Ornamentals, Grapes, Citrus, Pine.	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water
	Nursery soil drench	67 – 100 oz Howler/100 gal water
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler/acre or 67 – 100 oz Howler/100 gal water
	Greenhouse Chemigation	67 – 100 oz Howler/100 gal water
	Foliar Spray	5 – 15 pounds Howler /acre
	Field Chemigation or Drench	5 – 15 pounds Howler/acre
<b>Stone Fruit:</b> including Apricots, Cherries, Nectarines, Peaches, Plums, Prunes.	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water
	Nursery Soil Drench	67 – 100 oz Howler/100 gal water
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler/acre or 67 – 100 oz Howler/100 gal water
	Greenhouse Chemigation	67 – 100 oz Howler/100 gal water
	Foliar Spray	5 – 15 pounds Howler/acre
	Field Chemigation or Drench	5 – 15 pounds Howler /acre
<b>Stalk, Stem and Leaf Petiole Vegetables:</b> Including Asparagus, Celery, Fennel, Kohlrabi, Rhubarb	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler/acre or 67 – 100 oz Howler/100 gal water
	Foliar Spray	5 – 15 pounds Howler/acre
	Field Chemigation or Drench	5 – 15 pounds Howler/acre

<b>CROPS</b>	<b>APPLICATION METHOD</b>	<b>APPLICATION RATE</b>
<b>Tobacco and other specialty crops:</b> Tobacco**, Buckwheat, Guar, Plantago, Ovata, Ginseng, Sapodilla, Guayule and Meadowfoam	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water
	Nursery soil drench	67 – 100 oz Howler/100 gal water
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler /acre or 67 – 100 oz Howler/100 gal water
	Greenhouse Chemigation	67 – 100 oz Howler/100 gal water
	Foliar or Directed Spray	5 – 15 pounds Howler /acre
	Field Chemigation or Drench	5 – 15 pounds Howler/acre
<b>Tree Nuts:</b> including Almonds, Beech Nuts, Brazil Nuts, Butternuts, Cashews, Chestnuts, Filberts, Hickory Nuts, Macadamia Nuts, Pecans, Pistachios, Walnuts	Greenhouse Soil Drench	67 – 100 oz Howler/100 gal water
	Nursery soil drench	67 – 100 oz Howler/100 gal water
	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler/acre or 67 – 100 oz Howler/100 gal water
	Greenhouse Chemigation	67 – 100 oz Howler/100 gal water
	Foliar Spray	5 – 15 pounds Howler/acre
	Field Chemigation or Drench	5 – 15 pounds Howler/acre
<b>Tuber and Root Crops:</b> including Potatoes, Sweet Potatoes, Yams, Jerusalem Artichoke, Cassava, Ginger, Carrots, Parsnips	Field Chemigation or Drench	5 – 15 pounds Howler/acre
<b>Bulb Vegetable Crops:</b> Including Onion, Garlic, Shallot, Chive	In Furrow Spray or Transplant Starter Solution	5 – 15 pounds Howler/acre or 67 – 100 oz Howler/100 gal water
	Foliar Spray	5 – 15 pounds Howler/acre
	Field Chemigation or Drench	5 – 15 pounds Howler/acre
<b>Cotton</b>	In furrow	5 – 15 pounds Howler/acre

CROPS	APPLICATION METHOD	APPLICATION RATE
	Foliar Spray	5 – 15 pounds Howler/acre
<b>Corn</b>	In furrow	5 – 15 pounds Howler/acre
	Foliar Spray	5 – 15 pounds Howler /acre
<b>Soybean</b>	In furrow	5 – 15 pounds Howler/acre
	Foliar Spray	5 – 15 pounds Howler/acre
<b>Rice</b>	Foliar Spray	5 – 15 pounds Howler/acre
<b>Wheat</b>	Foliar Spray	5 – 15 pounds Howler/acre

\*\* Apply preventatively for Black Shank and other Tobacco fungal pathogens.

### **STORAGE AND DISPOSAL**

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

**Pesticide Storage:** Store in original container in a cool, dry place. Avoid overheating.

**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.

Uses of Howler other than those specified on this label are not licensed or otherwise authorized through the purchase of this product and the use of this product for other purposes including research and/or experimental uses are expressly prohibited without the written consent of AFS009 Plant Protection, Inc.

### **CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the unopened product at once, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risk inherently associated with the use of this product. Plant injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, plant conditions, presence of other materials or other influencing factors in the use of this product, which are beyond the control of AgBiome Innovations LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold AgBiome Innovations LLC and Seller harmless for any claims relating to such factors.

AgBiome Innovations LLC warrants that this product conforms to the description on this label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with the directions under normal use conditions. To the extent permitted by applicable law, (1) this warranty does not extend to the use of this product contrary to this label or under conditions not reasonably foreseeable to or beyond the control of the Seller or AgBiome Innovations LLC, and (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, AGBIOME INNOVATIONS LLC MAKES NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL.


TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER AND THE EXCLUSIVE LIABILITY OF AGBIOME INNOVATIONS LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF AGBIOME INNOVATIONS LLC OR SELLER, THE REPLACEMENT OF PRODUCT.

AgBiome Innovations LLC and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by the written agreement signed by a duly authorized representative of AgBiome Innovations LLC.



**Sublabel B: Turf and Ornamental Uses**

# Howler™

 (For Use in Organic Lawn Care) (Can be used in organic lawn care) (OMRI Listed™ (logo))

**Active Ingredient:** *Pseudomonas chlororaphis* strain AFS009\* ..... 50.0%  
**Other Ingredients:** ..... 50.0%  
**Total:** ..... 100.0%

\* Contains not less than 1 X 10<sup>6</sup> cfu/g of product.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

<b>FIRST AID</b>	
<b>If inhaled</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If in eyes</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15 – 20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If swallowed</b>	<ul style="list-style-type: none"><li>• Call poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>HOT LINE NUMBER</b> 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.:** 91197-3

**EPA Est. No.:** XXXXX-XX-XXX

**Net Weight:** XX

**(Batch)(Lot) No:** XXXX

**Manufactured by:**

AFS009 Plant Protection, Inc.  
104 T.W. Alexander Drive, Building 18  
Research Triangle Park, NC 27709

## PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS - CAUTION:** Harmful if inhaled, absorbed through the skin, or swallowed. Causes moderate eye irritation. Avoid breathing dust or spray mist. Avoid contact with skin, eyes, or clothing. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

### PERSONAL PROTECTIVE EQUIPMENT (PPE):

Applicators and other handlers must wear:

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

Mixer/loaders and applicators must wear a NIOSH-approved particulate respirator with any N, R, or P filter with NIOSH approval number prefix TC-84A; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization. Follow 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 or enclosed cabs 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 may be toxic to bees and other pollinating insects exposed to direct treatment. Do not apply this product while bees or other pollinating insects are actively visiting the treatment area. This product may be toxic to certain nontarget terrestrial arthropods. Minimize spray drift away from target area to reduce effects to nontarget insects. 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. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements

specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

### **Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on the 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
- Protective eyewear

**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**

Howler is a biological fungicide containing the active ingredient *Pseudomonas chlororaphis strain* AFS009 for use on growing plants and crops to control plant diseases including Dollar Spot, Rhizoctonia, Phythium, Phytophthora, Botrytis, Anthracnose, Fusarium, Brown Patch and Pythium Blight. Howler may be mixed with water and applied as a foliar spray, soil drench, in furrow spray, transplant spray or dip, cuttings or bare root dip, hydroponic or chemigation application in field, greenhouse, interiorscape, lathhouse, nursery, or shadehouse use sites. It may also be mixed with potting mix or applied dry in furrow.

### **USE INSTRUCTIONS**

Do not apply by aerial application.

Howler 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.

### **Mixing directions**

**Important** –Do not add Howler to the mix tank before introducing the correct amount of water. Add water to the mix tank. Start the mechanical or hydraulic agitation to provide moderate circulation before adding Howler. Maintain circulation while loading and spraying. Do not mix more Howler than can be used in 24 hours.

### **Spray volume**

For in furrow spray applications, use at least 5 gallons of total volume per acre in water-based sprays.

### **Tank mixing**

Do not combine Howler 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.

## **CHEMIGATION USE DIRECTIONS**

### **Spray preparation**

First, prepare a suspension of Howler 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 Howler, and then the remaining volume of water (See Ornamental (Production) (Plants) (Crop) (Greenhouse, Lathhouse, Shadehouse, Nursery, Field) Table). Then set the system to deliver a minimum of 0.1 to 0.3 inch of water per acre. Start system and uniformly inject the suspension of Howler into the irrigation water line so as to deliver the correct rate of Howler per acre. Inject the suspension of Howler with a positive displacement pump into the main line ahead of a right angle turn to ensure adequate mixing. Howler is to be metered continuously for the duration of the water application.

(Do not combine Howler 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 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 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 that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being filled 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.

**Ornamental (Production) (Plants) (Crops) (Greenhouse, Lathhouse, Shadehouse, Nursery, Field):**

## **TARGET PLANT DISEASES**

### **Aerial Blight**

*(Rhizoctonia spp., Sclerotinia)*

### **Anthracnose**

*(Colletotrichum graminicola)*

### **Botrytis Blight**

### **Brown Patch**

*(Rhizoctonia spp.)*

### **Damping Off**

*(Fusarium nivale)*

### **Dollar Spot\***

*(Sclerotinia)*

### **Fusarium Patch**

*(Fusarium nivale)*

### **Gray Mold**

*(Botrytis spp.)*

### **Pythium Blight**

### **Pythium Root Rot**

### **Pythium Crown Rot**

*(Pythium spp.)*

### **Stem and Root Rot**

*(Phytophthora)*

\*Suppression of Dollar Spot requires preventative applications and better suppression is noted in moderate to low disease pressure.

## APPLICATION RATES

Repeat at 7- to 21-day intervals as needed. Thoroughly cover plant foliage until runoff and soil surfaces with spray solution. Pre-harvest Interval (PHI) = 0 days.

ORNAMENTALS	APPLICATION METHOD	APPLICATION RATE
<b>Flowers, Bedding Plants, and Ornamentals.</b>	Greenhouse Soil Drench	67 – 100 oz Howler /100 gal water
	Nursery Soil Drench	67 – 100 oz Howler / 100 gal water
	Greenhouse Chemigation	6.7 – 10 oz Howler / gal water Apply diluted solution at 1000-8000 gal/acre
	Foliar Spray	6.7 – 10 oz Howler /gal water Apply diluted solution at 200-400 gal/acre
	Field Chemigation	6.7 – 10 oz Howler/gal water Apply diluted solution at 1000-8000 gal/acre
	Greenhouse soil incorporation	1.75 to 8.5 lb Howler/ cubic yard soil
	In-Furrow Spray or Transplant Starter Solution	5-15 lbs Howler/acre OR 67 – 100 oz Howler/100 gal water
	<b>Shadehouse and Outdoor Nursery Crops:</b> Deciduous trees (Maple, Oak, etc.), Ornamentals, Pine.	Greenhouse Soil Drench
Nursery soil drench		67 – 100 oz Howler/100 gal water
In-Furrow Spray or Transplant Starter Solution		5 – 15 pounds Howler/acre OR 67-100 oz Howler/100 gal water
Greenhouse Chemigation		6.7 – 10 oz Howler/gal water Apply diluted solution at 1000-8000 gal/acre
Foliar Spray		5 – 15 pounds /acre OR 6.7 – 10 oz Howler/gal water Apply diluted solution at 200-500 gal/acre
Field Chemigation		5 – 15 pounds /acre OR 6.7-10 oz Howler/gal water Apply diluted solution at 1000-8000 gal/acre



**Established Turf and Turf Production Applications:**

Use on all cool and warm season turf grass varieties including Bentgrass, Bluegrass, Bermudagrass (common and hybrid), Fescue, Ryegrass, St. Augustine, Zoysia, Paspalum and Poa Annua. Use on Greens, Tees, Fairways and Roughs, Sports Turf, Parks, Cemeteries, Commercial Turf, Roadsides, (Residential) Lawns, Sod Farms, Seed Production Grasses and all ornamental grass varieties.

**Turf Application Timing:**

Apply Howler throughout the growing season on all types of soils and turfgrass varieties. Apply when ground temperature has reached 45° F (7° C) or above until late fall prior to light frost. Begin applications prior to when environmental conditions are conducive to disease development and throughout periods of disease and stress.

TURF APPLICATIONS				
Target Diseases	Application Rate (oz. product per 1,000 sq. ft.)	Application Interval	Application Volume	Remarks
<b>Anthracnose</b> <i>(Colletotrichum graminicola)</i> <b>Brown Patch</b> <i>(Rhizoctonia spp.)</i> <b>Dollar Spot*</b> <i>(Sclerotinia)</i> <b>Fusarium Patch</b> <i>(Fusarium nivale)</i> <b>Pythium Blight</b> <b>Pythium Root Rot</b> <b>Pythium Crown Rot</b> <i>(Pythium spp.)</i>	1.8 to 6 oz (per 1000 sq. ft.)	7-21 days	<b>Root Diseases:</b> Spray at a rate of 2 - 4 gallons (7 ½ - 15 liters per 100 m <sup>2</sup> ) of tank mix per 1,000 sq. ft. of turf to ensure soil penetration.  <b>Foliar Diseases:</b> Spray at a rate of 1-6 gallons (3.78 – 22.7 liters per 100 m <sup>2</sup> ) of tank mix per 1,000 sq. ft. of turf to provide thorough coverage.	Begin applications prior to when conditions are conducive to disease development. Continue applications throughout periods of disease and stress.

\*Suppression of Dollar Spot requires preventative applications and better suppression is noted in moderate to low disease pressure.

TURF ESTABLISHMENT APPLICATIONS FOR PATHOGEN/DISEASE CONTROL		
Application	Rate	Frequency
<b>New Seeding, Over Seeding, Hydro Seeding</b>	1.8 to 6 oz. per 1000 sq. ft.	Apply at time of seed germination. Repeat every 14 days during grow-in period.
<b>Sod Installation</b>	1.8 to 6 oz. per 1000 sq. ft.	Apply at time of installation and repeat in 14 - 28 days. Continue during disease and stress period.
<b>Sod Production</b>	1.8 to 6 oz. per 1000 sq. ft.	Begin applications at time of seeding, plugging, or newly cut

		ribbons. Continue monthly during disease and stress periods.
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**Established Landscape Applications:**

Use Howler on all ornamentals (i.e. landscape plants, trees, shrubs, annuals, perennials, ground covers, tropical plants) outdoors and in interiorscapes for control of a broad spectrum of plant diseases.

**Landscape Application Timing:**

Apply Howler throughout the growing season on all types of soils, turfgrass, lawns, woody ornamentals, trees, perennials and other landscape and horticultural materials. Apply when ground temperature has reached 45° F (7° C) or above until late fall prior to light frost. Begin applications prior to when environmental conditions are conducive to disease development and throughout periods of disease and stress.

ORNAMENTAL APPLICATIONS			
Plant Material	Target Diseases	Application Rate	Application Interval
<b>All Types of Ornamentals, Trees, Shrubs, And Flowering Plants</b>  Annuals Perennials Bedding Plants Ground Covers Potted Flowers Foliage Plants Woody Ornamentals Deciduous Trees & Shrubs Evergreen Trees & Shrubs Tropical Foliage Palms Container Grown Plants  <i>(Indoors, Outdoors, Fields, Landscape areas)</i>	<b>Anthracnose</b> <i>(Colletotrichum graminicola)</i>  <b>Aerial blight</b> <i>(Rhizoctonia spp.)</i> <i>(Sclerotinia)</i>  <b>Damping off</b> <i>(Fusarium nivale)</i>  <b>Pythium Blight</b> <b>Pythium Root Rot</b> <b>Pythium Crown Rot</b> <i>(Pythium spp.)</i>  <b>Stem &amp; Root Rot</b> <i>(Phytophthora)</i>  <b>Botrytis blight and Grey Mold</b> <i>(Botrytis spp.)</i>	<b>Soil Drench:</b> 67 to 100 oz. Howler per 100 gallons of water. Thoroughly drench soil around plug, planting hole, tree canopy, root ball, or container.  <b>Foliar Spray:</b> 67 to 100 oz. Howler per 100 gallons of water. Thoroughly spray foliage until run-off.	<b>New Plantings and Transplants:</b> Apply at time of planting to prevent disease. Reapply 7-14 days through growing season.  <b>Established Plantings:</b> Apply prior to disease pressure at 7-14 day intervals while disease conditions persist.

## **STORAGE AND DISPOSAL**

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

**Pesticide Storage:** Store in original container in a cool, dry place. Avoid overheating.

**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.

Uses of Howler other than those specified on this label are not licensed or otherwise authorized through the purchase of this product and the use of this product for other purposes including research and/or experimental uses are expressly prohibited without the written consent of AFS009 Plant Protection, Inc.

## **CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the unopened product at once, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risk inherently associated with the use of this product. Plant injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, plant conditions, presence of other materials or other influencing factors in the use of this product, which are beyond the control of AgBiome Innovations LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold AgBiome Innovations LLC and Seller harmless for any claims relating to such factors.

AgBiome Innovations LLC warrants that this product conforms to the description on this label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with the directions under normal use conditions. To the extent permitted by applicable law, (1) this warranty does not extend to the use of this product contrary to this label or under conditions not reasonably foreseeable to or beyond the control of the Seller or AgBiome Innovations LLC, and (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, AGBIOME INNOVATIONS LLC MAKES NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL.

TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER AND THE EXCLUSIVE LIABILITY OF AGBIOME INNOVATIONS LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS

PRODUCT SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF AGBIOME INNOVATIONS LLC OR SELLER, THE REPLACEMENT OF PRODUCT.


AgBiome Innovations LLC and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by the written agreement signed by a duly authorized representative of AgBiome Innovations LLC.

## Optional Label Claims

- Biological fungicide
- Fungicide for disease control on (turfgrass) (and) (or) (landscapes) (landscape and ornamental plants grown in greenhouses, nurseries, landscapes, interiorscapes, shadehouses and lathhouses).

**Sublabel C: Home & Garden Use**

# Howler™

 (For Use in Organic Gardening) (Can be used in organic gardening) (OMRI Listed™ (logo))

**Active Ingredient:** *Pseudomonas chlororaphis* strain AFS009\* .....50.0%  
**Other Ingredients:**.....50.0%  
**Total:** ..... 100.0%

\* Contains not less than 1 X 10<sup>6</sup> cfu/g of product.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

<b>FIRST AID</b>	
<b>If inhaled</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If in eyes</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15 – 20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15 – 20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If swallowed</b>	<ul style="list-style-type: none"><li>• Call poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>HOT LINE NUMBER</b> 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.:** 91197-3  
**Net Weight:** XX  
**(Batch)(Lot) No:** XXXX

**EPA Est. No.:** XXXXX-XX-XXX

**Manufactured by:**  
AFS009 Plant Protection, Inc.  
104 T.W. Alexander Drive, Building 18  
Research Triangle Park, NC 27709

## PRECAUTIONARY STATEMENTS

**Hazards to humans and domestic animals - CAUTION:** Harmful if inhaled, absorbed through the skin, or swallowed. Causes moderate eye irritation. Avoiding breathing dust or spray mist. Avoid contact with skin, eyes, or clothing. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

**Environmental Hazards:** This product may be toxic to bees and other pollinating insects exposed to direct treatment. Do not apply this product while bees or other pollinating insects are actively visiting the treatment area. This product may be toxic certain nontarget terrestrial arthropods. 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

Howler is a biological fungicide for use to control diseases in bedding plants, annuals and perennials, home gardens, and ornamental trees and shrubs. Diseases controlled or suppressed include: Anthracnose (*Colletotrichum* spp.), Botrytis (*Botrytis* spp.), Early blight (*Alternaria solani*), Gray mold (*Botrytis cinerea*), Late blight (*Phytophthora infestans*), *Pythium*, *Fusarium*, and *Rhizoctonia*. Howler may be mixed with water and applied as a soil drench or foliar spray.

### WHEN TO USE

For best results, apply Howler at the time of planting and at the first sign of disease. Repeat applications for plant diseases every 7-14 days.

### 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, spray trigger bottles, or hose-end sprayers..

Howler 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

Fill sprayer or bottle with appropriate amount of water and Howler.

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

3.5 - 5 tablespoons of Howler per gallon of water

### STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store in a cool, dry place. Avoid overheating.

**Pesticide Disposal and Container Handling:** Nonrefillable container. Do not reuse or refill this container. **If empty:** Place in trash or 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 outdoor drain.

Uses of Howler other than those specified on this label are not licensed or otherwise authorized through the purchase of this product and the use of this product for other purposes including research and/or experimental uses are expressly prohibited without the written consent of AFS009 Plant Protection Inc.

### CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risk inherently associated with the use of this product. Plant injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather, plant conditions, presence of other materials or other influencing factors in the use of this product, which are beyond the control of AgBiome Innovations LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold AgBiome Innovations LLC and Seller harmless for any claims relating to such factors.

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## Optional Label Claims

- Biological fungicide