



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

June 10, 2022

Rebecca Wilken  
Regulatory Specialist  
Grupo Agrotecnología, S.L.  
c/o SciReg, Inc.  
2733 Director's Loop  
Woodbridge, VA 22192

Subject: Non-PRIA (Pesticide Registration Improvement Act) Labeling Amendment –Adding the OMRI Logo  
Product Name: Shielder  
EPA Registration Number: 91154-2  
Application Date: 3/9/22  
Salesforce Case Number: 00345260

Dear Ms. Wilken:

The amended labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable.

This approval does not affect any terms or conditions that were previously imposed on this registration. You continue to be subject to existing terms or conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one (1) copy of the final printed labeling before you release this product for shipment with the new labeling. In accordance with 40 CFR § 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. “To distribute or sell” is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR § 152.3.

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 U.S. Environmental Protection Agency (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

Page 2 of 2

EPA Reg. No. 91154-2

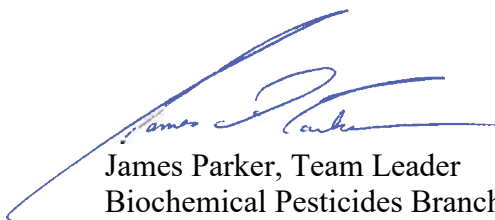
Salesforce Case No. 00345260

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.

If you have any questions, please contact Chris Pfeifer of my team by phone at (703) 244-7991 or via email at [pfeifer.chris@epa.gov](mailto:pfeifer.chris@epa.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "James Parker", is written over a horizontal line.

James Parker, Team Leader  
Biochemical Pesticides Branch  
Biopesticides and Pollution  
Prevention Division (7511P)  
Office of Pesticide Programs

Enclosure

**A C C E P T E D**

Jun 10, 2022

Under the Federal Insecticide, Fungicide  
and Rodenticide Act as amended, for the  
pesticide registered under  
EPA Reg. No. 91554-2

# Shielder

**MASTER LABEL, containing:  
Sublabel A: Greenhouse and Field Use  
Sublabel B: Home and Garden Use**

EPA Reg. No. 91554-2

# Sublabel A: Greenhouse and Field Use

# Shielder

## Greenhouse and Field Use

A broad-spectrum biological fungicide that controls fungal diseases via induced systemic resistance and increased alkalinity.

[ FOR USE IN ORGANIC PRODUCTION][OMRI Listed™ (insert logo)\*]

(\*Note to Reviewer – see Optional Logos Section for OMRI seals.)

**ACTIVE INGREDIENTS:**

*Bacillus subtilis* strain IAB/BS03\* ..... 0.01%  
 Sodium bicarbonate.....99.66%

**OTHER INGREDIENTS:** .....0.33%

**TOTAL**.....100.00%

\* Final product contains a minimum of 1 X 10<sup>6</sup> CFU/gram

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

<b>FIRST AID</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Call a 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>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 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 center or doctor for treatment advice.</li> </ul>
<b>HOTLINE NUMBER</b>	
<p>Have the product container or label with you when calling a poison control center or doctor or going for treatment. For medical emergencies, call the poison control center at 1-800-222-1222. For general information on this product, call +34 96 673 82 32 [may include hours of service], or contact the National Pesticides Information Center (NPIC) at 1-800-858-7378, Monday through Friday, 8 AM to 12 PM PST, or at <a href="http://npic.orst.edu">http://npic.orst.edu</a>.</p>	

**See back panel for [additional precautionary statements] [and] [directions for use].**

**EPA Reg. No.:** 91554-2

**Net Contents:** XX Lbs.

**EPA Est. No.:** 91554-ESP-1  
**(Batch No./Lot No.:** XXX)

**Manufactured by:** Grupo Agrotecnología S.L.  
Poligono Puente alto, Parcela 57  
03300 Orihuela (Alicante) Spain

**Distributed by:**  
(U.S. name and address-to be determined)

**(OPTIONAL LOGOS:**



## PRECAUTIONARY STATEMENTS

**Hazards to Humans and Domestic Animals - CAUTION.** Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wear safety glasses or goggles. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

### Environmental Hazards

For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean highwater mark. Do not contaminate water when disposing of equipment washwater or rinsate.

### Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Goggles
- 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 a 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 exist, 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. Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

### Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval (REI). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

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

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water is: coveralls, waterproof gloves, shoes plus socks.

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

**Product Information:** Shielder is a broad-spectrum biological fungicide that acts against different fungal diseases. *Bacillus subtilis* strain IAB/BS03 is known to stimulate phytohormones, which trigger the plant's systemic resistance to disease (Induced Systemic Resistance), the defence mechanisms of the plant for prolonged periods of time. Also, the active ingredient sodium bicarbonate by a variation of PH, makes it more alkaline, which leads to inhibit the development of hyphae and spores. It is non-selective to plant materials. Its unique formula provides maximum efficiency without leaving any type of waste or pre-harvest interval. In addition, the product does not generate resistance problems due to its natural origin. Shielder also has the ability to rebalance the plant's ecosystem, preventing future pathogen attacks.

**Mode of Action:** Shielder has multiple modes of action in preventing, controlling and suppressing plant diseases. It produces a broad-spectrum group of lipopeptides that disrupts pathogen cell-wall formation. It is a competitive and fast colonizing rhizosphere bacterium, which occupies the plant's root hairs and leaves and prevents the growth and antagonistic effects of soil borne and foliar pathogens. *Bacillus subtilis* strain IAB/BS03 is known to stimulate phytohormones, which trigger the plant's systemic resistance to disease (Induced Systemic Resistance), the defense mechanisms of the plant for prolonged periods of time. *Bacillus subtilis* strain IAB/BS03 is classified as a Plant Growth-Promoting Rhizobacteria (PGPR). PGPR are free-living bacteria that have beneficial effects on plants as they increase plant productivity, enhance crop fertility, growth and root development. Also, the active ingredient sodium bicarbonate by a variation of PH, makes it more alkaline, which leads to inhibit the development of hyphae and spores. It is non-selective to plant materials.

**Integrated Pest Management:** Integrating Shielder into an overall pest management strategy and following best management practices (or practices known to reduce disease development) makes it less likely that disease will be established. Specific IPM strategies developed for your crop and location may be available from the Extension Service or other local agricultural authorities.

#### **Mixing and Application Instructions:**

**MIXING:** Dilute Shielder with water and apply with conventional spray equipment or through sprinkler irrigation. Partially fill the spray tank with clean water and begin agitation. Add the specified amount of Shielder to the tank. Finish filling the tank to the desired volume to obtain the proper spray concentration. Use spray mixture immediately. Do not allow spray mixture to stand overnight or for prolonged periods.

**APPLICATION:** Apply Shielder using conventional spray equipment or through sprinkler irrigation to the point of saturation of the soil or growing media. Good coverage and wetting is required. The amount of spray solution to apply will vary depending on the type of crop. Most row crops will require up to 100 gallons of spray per acre. Apply in sufficient water to achieve thorough coverage.

**COMPATIBILITY:** Shielder may be tank mixed with some fungicides. Do not tank mix Shielder with more than one product. Consult specific product labels for additional information or restrictions concerning tank mixing. Observe the most restrictive of the labeling limitations and precautions of all products used in mixtures. It is always advisable to conduct a spray compatibility test when you plan to mix this product with another product. 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 approximately one quart of water with agitation. Add dry formulations first, then flowables, and then emulsifiable concentrates last. After thorough mixing, allow this mixture to 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 products to the spray tank.

Shielder 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.

**Foliar Application Use Directions – Ground and Aerial:** Apply Shielder as a foliar spray by ground or by air. Mix 4 pounds Shielder in 100 gallons of water and apply at a sufficient spray volume to ensure complete coverage.

## **AERIAL DRIFT REDUCTION INFORMATION**

**GENERAL:** Avoiding spray drift at the application site is the responsibility of the applicator (specifically, see **SENSITIVE AREAS** section for the requirement regarding spray drift and honeybees). The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. Where states have more stringent regulations, they should be observed. Do not apply directly to aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, streams, marshes, ponds, estuaries, and commercial fish ponds).

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



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

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

**APPLICATION HEIGHT:** Do not make application at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure to droplets to evaporation and wind. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground or crop canopy.

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

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

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

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

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

**Soil Treatment Use Directions:** Apply Shielder by soil drench, in-furrow spray, or soil injection to improve plant health and to protect against certain soil-borne diseases.

In general, Shielder can be applied by the following methods, unless specified differently in the Application Rates for Selected Crops section:

#### Soil Drench Applications

Apply Shielder at a concentration of 4 pounds per 100 gallons of water, and at a sufficient rate to thoroughly soak the growing media and root zone. Make an initial application during or shortly after transplant to control soil-borne diseases, reduce transplant shock, induce disease resistance, and to promote root growth. Multiple drench applications can be made on a 10 – 14-day schedule.

#### Shanked-In and Injected Applications

Shank or inject Shielder at a concentration of 4 pounds per 100 gallons of water into the soil alone, or with most types of liquid nutrients.

#### In-Furrow Applications

Apply Shielder at planting as an in-furrow spray. Mix 4 pounds of Shielder in 100 gallons of water and apply at 5 – 15 gallons per acre, directing the spray into the seed furrow just before the seeds are covered.

**Seed Treatment Use Directions:** Apply Shielder as a seed dressing, seed soak or tuber dip at plant. Do not use treated seed for food or feed purposes or process for oil. Treat only those seeds needed for immediate use, minimizing the interval between treatment and planting. Do not store excess treated seeds beyond planting time.

**Chemigation Use Directions:** Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation systems. Do not connect an irrigation system (including greenhouse systems) used for pesticide applications to a public water system.

#### **Spray preparation**

First prepare a suspension of Shielder in a mix tank. Fill tank  $\frac{1}{2}$  to  $\frac{3}{4}$  the desired amount of water. Start mechanical or hydraulic agitation. Add the required amount of Shielder, and then the remaining volume of water. Then set the sprinkler to deliver a minimum of 0.1 to 0.3 inch of water per acre. Start sprinkler and uniformly inject Shielder into the irrigation water line so as to deliver the desired rate per acre. Inject Shielder with a positive displacement pump into the main line

ahead of a right angle turn to insure adequate mixing. Direct any questions on calibration to your State Extension Service Specialists, to equipment manufacturers or other experts.

Do not combine Shielder with pesticides, surfactants or fertilizers for application through chemigation equipment unless prior experience has shown the combination physically compatible, effective and non-injurious under conditions of use. Shielder has not been fully evaluated for compatibility with all adjuvants or surfactants. It is advisable to conduct a spray compatibility test if a mixture with adjuvants or surfactants is planned.

## **CHEMIGATION USE DIRECTIONS:**

### **General Requirements -**

- 1) Apply this product only through a drip system or sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, hand move, flood (basin), furrow, border or drip (trickle) irrigation systems. Do not apply this product through any other type of irrigation system.
- 2) Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- 3) If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- 4) Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- 5) A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

### **Specific Requirements for Chemigation Systems Connected to Public Water Systems -**

- 1) Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
- 2) Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- 3) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 4) The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 5) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **Specific Requirements for Sprinkler Chemigation -**

- 1) The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- 2) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being filled with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **Specific Requirements for Flood (Basin), Furrow and 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 for water source contamination from backflow if water flow stops.
- 2) The 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 which 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 (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being filled with a system interlock.

**Specific Requirements for Drip (Trickle) Chemigation -**

- 1) The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- 2) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being 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. Product can be applied continuously or at any time during the water application.
- 3) Prepare a solution in the chemical tank by filling the tank with the required water and then adding product as required. The product will immediately go into suspension without any required agitation.

**Application Rates for Selected Crops:** Use Shielder to prevent, control and suppress a broad range of plant diseases, as well as induce the natural defense system of the treated plants listed below.

Crops	Target Disease	Application Method	Application rate of Shielder	Notes

<b>Artichoke</b>	Powdery Mildew ( <i>Erysiphe cichoracearum</i> ) ( <i>Leveillula taurica</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Apply this product preventatively or at the first sign of disease symptoms are visible. Reapply every 7 – 14 days.
	Ramularia Leaf Spot ( <i>Ramularia cynarae</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
		Chemigation	4 lbs.	Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant when soil drench applications are used.
<b>Asparagus</b>	Botrytis Blight ( <i>Botrytis cinerea</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Apply preventatively or when the first disease symptoms are visible and apply every 7 – 14 days.
	Rust ( <i>Puccinia asparagi</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
<b>Berries, including:</b> Blackberry Blueberry Bushberry Caneberry Cranberry Currants Elderberry Gooseberry Huckleberry Loganberry	Botrytis Blight ( <i>Botrytis cinerea</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.
	Mummy Berry ( <i>Monilinia vaccinii-corymbosi</i> )  Alternaria Fruit Rot ( <i>Alternaria</i> spp.)  Anthracnose Fruit Rot ( <i>Colletotrichum acutatum</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.

Raspberry	<p>Bacterial Canker (<i>Pseudomonas syringae</i>)</p> <p>Leaf Rust (<i>Pucciniastrum vaccinii</i>)</p> <p>Leaf Spot and Blotch (<i>Mycosphaerella</i> spp.) (<i>Septoria</i> spp.)</p> <p>Phomopsis Leaf Spot, Twig Blight and Fruit Rot (<i>Phomopsis</i> spp.)</p> <p>Powdery Mildew (<i>Microsphaera alni</i>)</p> <p>Spur Blight (<i>Didymella</i> spp.) (<i>Phoma</i> spp.)</p>			Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
<p><b>Bulb Vegetables, including:</b></p> <p>Garlic Leeks Onions (Bulb and Green) Shallots</p> <p>And other bulb vegetable crops</p>	<p>Botrytis Leaf Blight (<i>Botrytis squamosa</i>)</p> <p>Botrytis Neck Rot (<i>Botrytis</i> spp.)</p> <p>Brown spot (<i>Stemphylium vesicarium</i>)</p> <p>Onion Purple Blotch (<i>Alternaria porri</i>)</p> <p>Downy Mildew (<i>Peronospora</i> spp.)</p> <p>Powdery Mildew (<i>Erysiphe</i> spp.)</p> <p>Rust (<i>Puccinia porri</i>)</p> <p>Stemphyllium Leaf Blight (<i>Stemphylium vesicarium</i>)</p>	Foliar (ground, aerial)	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.</p> <p>Repeat applications at 7 – 14-day intervals.</p>
	<p><i>Fusarium</i> spp.</p> <p><i>Pythium</i> spp.</p> <p><i>Rhizoctonia</i> spp.</p>	Soil Drench	4 lbs.	<p>Apply at a concentration of 4 pounds of Shielder per 100 gallons of water, thoroughly soaking the growing media and root zone.</p> <p>Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth.</p> <p>Multiple drench applications can be made on a 10 – 14-day interval.</p>
		In-Furrow	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water and apply at 5 – 15 gallons per acre, directing

				the spray into the seed furrow just before the seeds are covered.
		Plant Dip	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water and use as a pre-plant dip immediately prior to transplant.
		Chemigation	4 lbs.	Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant when soil drench applications are used.
<b>Cereal Grains, including:</b> Amaranth Barley Buckwheat Grain Milo Oat Millets Rice Rye Sorghum Triticale Wheat	Powdery Mildew ( <i>Erysiphe graminis</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.
	Bacterial Blight and Streak ( <i>Xanthomonas</i> spp.)  Brown Rot, Leaf Spots & Smuts ( <i>Ceratobasidium</i> spp.) ( <i>Cercospora</i> spp.) ( <i>Drechslera</i> spp.)  Rice Blast ( <i>Pyricularia grisea</i> )  Rust ( <i>Puccinia</i> spp.)  Septoria Leaf Spot ( <i>Septoria</i> spp.)  Sheath Spot and Blight ( <i>Rhizoctonia oryzae</i> ) ( <i>Thanatephorus cucumeris</i> )  Stem Rot ( <i>Sclerotium oryzae</i> )  Smut ( <i>Tilletia barclayana</i> )			Foliar (ground, aerial)
<b>Citrus Fruits, including:</b> Calamondin Citrus citron Citrus hybrids Grapefruit Kumquat Lemon Lime Mandarin Orange, sour and sweet Pummelo Satsuma mandarin	Bacterial Canker ( <i>Xanthomonas</i> spp.)	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.
	Alternaria Brown Spot ( <i>Alternaria alternata</i> )  Bacterial Blast ( <i>Pseudomonas syringae</i> )  Black Spot ( <i>Guignardia citricarpa</i> ) ( <i>Phyllosticta citricarpa</i> )  Greasy Spot ( <i>Mycosphaerella citri</i> )			Foliar (ground, aerial)



	Melanose ( <i>Diaporthe citri</i> )			fungicide for more effective control.
	Postbloom Fruit Drop ( <i>Colletotrichum acutatum</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.
	Scab ( <i>Elsinoe australis</i> ) ( <i>Elsinoe fawcettii</i> )			Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
				To treat Bacterial Canker ( <i>Xanthomonas</i> spp.), tank mix this product with another registered fungicide for more effective control.
<b>Cole Crops (Brassicas), including:</b>	Powdery Mildew ( <i>Erysiphe cruciferarum</i> ) ( <i>Erysiphe polygoni</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.
Broccoli	Alternaria Leaf Spot ( <i>Alternaria</i> spp.)			Begin application when conditions are conducive to disease development.
Broccoli Rabe				Repeat on 7 to 10-day intervals or as needed.
Brussels Sprouts	Downy Mildew ( <i>Peronospora parasitica</i> )			
Cabbage	Pin Rot Complex ( <i>Alternaria, Xanthomonas</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.
Chinese Broccoli	Xanthomonas Leaf Spot ( <i>Xanthomonas campestris</i> )			Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
Chinese Cabbage (Bok Choy)				
Chinese Cabbage (Napa)				
Chinese Mustard Cabbage (Gai Choy)				
Cauliflower				
Cavalo				
Collards				
Kale				
Kohlrabi				
Mizuna				
Mustard Greens				
Mustard Spinach				
Rape Greens				
Turnip				
<b>Corn, including:</b>	Anthrachnose Leaf Blight ( <i>Colletotrichum graminicola</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.
Sweet Corn	Eye Spot ( <i>Aureobasidium zeae</i> )			Begin application when conditions are conducive to disease development.
Field Corn	Gray Leafspot ( <i>Cercospora zeae-maydis</i> )			Repeat on 7 to 10-day intervals or as needed.
Popcorn	Rusts ( <i>Puccinia</i> spp.)			
Silage Corn		Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease
Seed Corn	Northern Leaf Blight ( <i>Cochliobus carbonum</i> )			

	Southern Leaf Blight ( <i>Cochliobus heterostrophus</i> )			development.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
<b>Cotton</b>	Alternaria Leaf Spot, Boll Rot ( <i>Alternaria</i> spp.) Anthracnose, Boll Rot ( <i>Anthracnose</i> spp.)  Ascochyta Blight, Boll Rot ( <i>Ascochyta</i> spp.)  Cercospora Blight and Leaf Spot ( <i>Cercospora</i> spp.)	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Begin application when conditions are conducive to disease development. Repeat on 7 to 10-day intervals or as needed.
	Diplodia Boll Rot ( <i>Diplodia</i> spp.)  Hard Lock, Boll Rot ( <i>Fusarium</i> spp.)  Leaf Spot ( <i>Corynespora cassicola</i> )  Phoma Blight, Boll Rot ( <i>Phoma</i> spp.)  Rust ( <i>Puccinia</i> spp.) ( <i>Phytophthora</i> spp.)  Stemphyllium Leaf Spot ( <i>Stemphyllium</i> spp.)	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
<b>Cucurbits</b>  <b>Includes all types and hybrids of:</b> Chayote Chinese Waxgourd Cucumber Citron Melon Gherkin Pumpkin Watermelon  <b>Edible Gourd:</b> Chinese Okra Cucuzza Hytan	Powdery Mildew ( <i>Erysiphe cichoracearum</i> ) ( <i>Sphaerotheca fuliginea</i> )  Anthracnose ( <i>Colletotrichum lagenarium</i> )  Alternaria Leaf Spot ( <i>Cercospora citrulina</i> )  Downy Mildew ( <i>Pseudoperonospora cubensis</i> )  Gummy Stem Blight	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development. Increase water volume as plant size increases.  Reapply on 7 -14-day intervals depending on plant growth and disease pressure. Use shorter spray intervals for greenhouse cucurbits when under high disease pressure.

<p><b>Mormordica spp.</b> Balsam Apple Balsam Pear Bitter Melon Chinese Cucumber</p> <p><b>Muskmelon:</b> Cantaloupe Casaba Crenshaw Melon Golden Pershaw Melon Honeydew Melon Honey Balls Mango Melon Persian Melon Pineapple Melon Santa Clause Melon Snake Melon</p> <p><b>Summer Squash:</b> Crookneck Squash Scallop Squash Straightneck Squash Vegetable Marrow Zucchini</p> <p><b>Winter Squash:</b> Acorn Squash Butternut Squash Calabaza Gubbard Squash Spaghetti Squash</p> <p>And other cucurbit crops</p>	<p>(<i>Didymella bryoniae</i>) Phytophthora Blight (<i>Phytophthora capsici</i>)</p>	Foliar (ground, aerial)	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.</p> <p>Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.</p>
	<p><i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.</p>	Soil Drench	4 lbs.	<p>Apply at a concentration of 4 pounds of Shielder per 100 gallons of water, thoroughly soaking the growing media and root zone.</p> <p>Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made on a 10 – 14-day interval.</p>
		In-Furrow	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water and apply at 5 – 15 gallons per acre, directing the spray into the seed furrow just before the seeds are covered.</p>
		Plant Dip	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water and use as a pre-plant dip immediately prior to transplant.</p>
		Chemigation	4 lbs.	<p>Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant when soil drench applications are used.</p>
<p><b>Fruiting Vegetables, including:</b> Eggplant Okra Pepper Tomato Tomatillo Ground Cherry</p>	<p>Bacterial Blight (<i>Xanthomonas</i> spp.)  Bacterial Spot (<i>Xanthomonas</i> spp.)  Bacterial Speck (<i>Pseudomonas syringae</i>)  Black Mold (<i>Alternaria alternata</i>)  Early Blight (<i>Alternaria solani</i>)  Gray Mold</p>	Foliar (ground, aerial)	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development. Increase water volume as plant size increases.</p> <p>Reapply on a 7 - 10-day intervals depending on plant growth and disease pressure. Use shorter spray intervals for greenhouse vegetables when under high disease pressure.</p>

	<p><i>(Botrytis cinerea)</i></p> <p>Late Blight <i>(Phytophthora capsici)</i></p> <p>Powdery Mildew <i>(Erysiphe spp.)</i> <i>(Leveillula taurica)</i> <i>(Oidopsis taurica)</i> <i>(Sphaerotheca spp.)</i></p> <p>Target Spot <i>(Corynespora cassiicola)</i></p>	Foliar (ground, aerial)	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.</p> <p>Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.</p>
	<p><i>Fusarium spp.</i></p> <p><i>Phytophthora spp.</i></p> <p><i>Rhizoctonia spp.</i></p> <p><i>Verticillium spp.</i></p>	Soil Drench	4 lbs.	<p>Apply at a concentration of 4 pounds of Shielder per 100 gallons of water, thoroughly soaking the growing media and root zone.</p> <p>Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made on a 10 – 14-day interval.</p>
		In-Furrow	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water and apply at 5 – 15 gallons per acre, directing the spray into the seed furrow just before the seeds are covered.</p>
		Plant Dip	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water and use as a pre-plant dip immediately prior to transplant.</p>
		Chemigation	4 lbs.	<p>Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant when soil drench applications are used.</p>
<b>Grapes</b>	<p>Powdery Mildew <i>(Uncinula necator)</i></p> <p>Angular Leaf Spot <i>(Mycosphaerella angulata)</i></p> <p>Anthraco-nose <i>(Elsinoe ampelina)</i></p> <p>Botrytis Bunch Rot <i>(Botrytis cinerea)</i></p> <p>Black Rot <i>(Guignardia bidwellii)</i></p>	Foliar (ground, aerial)	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.</p> <p>Repeat applications at 7 – 14-day intervals depending on crop growth and disease pressure.</p>

	Downy Mildew ( <i>Plasmopara viticola</i> )  Eutypa ( <i>Eutypa lata</i> )  Leaf Blight ( <i>Pseudocercospora vitis</i> )  Phomopsis Fruit Rot ( <i>Phomopsis viticola</i> )  Ripe Rot ( <i>Colletotrichum gloeosporioides</i> )  Sour Rot ( <i>Alternaria tenuis</i> ) ( <i>Aspergillus</i> spp.) ( <i>Botrytis cinerea</i> ) ( <i>Cladosporium herbarum</i> ) ( <i>Penicillium</i> spp.) ( <i>Rhizopus arrhizus</i> )			
<b>Grass Seed</b>	Powdery Mildew ( <i>Erysiphe graminis</i> ) ( <i>Oidium</i> spp.) ( <i>Podosphaera</i> spp.) ( <i>Sphaerotheca</i> spp.)  Rust ( <i>Puccinia</i> spp.)	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Reapply on a 7-day interval or as needed.
<b>Hops</b>	Downy Mildew ( <i>Pseudoperonospora humuli</i> )  Powdery Mildew ( <i>Sphaerotheca macularis</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Reapply on a 7- day interval or as needed.
<b>Leafy Vegetables, including:</b>  Arugula Beet Celery Chervil Cilantro Corn Salad Cress Dandelion Dock Edible Chrysanthemum Endive Fennel Garden Peas Head Lettuce Leaf Lettuce Parsley Purslane Radicchio Rhubarb Spinach	Downy Mildew ( <i>Bremia lactuca</i> ) ( <i>Peronospora</i> spp.) Bacterial Blight/Rot ( <i>Xanthomonas</i> spp.)  Cercospora Leafspot ( <i>Cercospora</i> spp.)  Late Blight ( <i>Septoria apiicola</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Reapply on a 7 - 14-day interval or as needed.
	Pink Rot ( <i>Sclerotinia sclerotiorum</i> )  Powdery Mildew ( <i>Erysiphe cichoracearum</i> )  Sclerotinia Had and Leaf Drop ( <i>Sclerotinia minor</i> ) ( <i>Sclerotinia sclerotiorum</i> )  White Rust	In-Furrow	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water and apply at 5 – 15 gallons per acre, directing the spray into the seed furrow just before the seeds are covered.

Swiss Chard Watercress	( <i>Albugo occidentalis</i> )			
<b>Legumes, succulent and dried,</b> (not including soybeans and peanuts):  Chick Peas Dry Beans Garbanzo Beans Green Beans Lentils Lima Beans Peas Shell Beans Snap Beans Split Peas  And other legume crops	Bacterial Blight ( <i>Xanthomonas campestris</i> )  Gray Mold ( <i>Botrytis cinerea</i> )  Pythium (aerial blight phase) ( <i>Pythium</i> spp.)  Powdery Mildew ( <i>Erysiphe</i> spp.)  Rust ( <i>Puccinia</i> spp.) ( <i>Uromyces appendiculatus</i> )  White Mold ( <i>Sclerotinia sclerotiorum</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Reapply on a 7-day interval or as needed.
	<i>Fusarium</i> spp.  <i>Phytophthora</i> spp.  <i>Pythium</i> spp.  <i>Rhizoctonia</i> spp.	In-Furrow	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water and apply at 5 – 15 gallons per acre, directing the spray into the seed furrow just before the seeds are covered.
<b>Mint and other Herbs/Spices, including:</b>  Angelica Balm Basil Borage Burnet Chamomile Catnip Chervil Chive Clary Coriander Costmary Cilantro Curry Dillweed Horehound Hyssop Lavender Lemongrass Lovage Marjoram Nasturtium Parsley (dried) Peppermint Rosemary Sage Savory (summer and winter)	Downy Mildew ( <i>Peronospora</i> spp.)  Powdery Mildew ( <i>Erysiphe</i> spp.)  Rust ( <i>Puccinia menthae</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Reapply on a 7 - 10-day interval depending on plant growth and disease pressure.
		Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.

Sweet Bay Tansy Tarragon Thyme Wintergreen Woodruff Wormwood				
<b>Oil Seed Crops, including:</b>  Canola Castor Flax Rapeseed Safflower Sesame Sunflower  (does not include cotton, peanut or soybean)	Bacterial Pustule ( <i>Xanthomonas</i> spp.)  Bacterial Speck ( <i>Pseudomonas syringae</i> pv. <i>glycinea</i> )  Brown Spot ( <i>Septoria glycines</i> )  Cercospora Leaf Spot ( <i>Cercospora</i> spp.)  Downy Mildew ( <i>Peronospora mansherica</i> )  Pod and Stem Blight ( <i>Diaporthe phaseolorum</i> var. <i>sojae</i> ) ( <i>Phomopsis longicola</i> )  White Mold/Sclerotinia Stem Rot ( <i>Sclerotinia sclerotiorum</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Consult your local Extension Specialist or Crop Consultant regarding the optimum timing of fungicide applications.
		Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
<b>Olive</b>	Olive Knot ( <i>Pseudomonas savastanoi</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Repeat application at 7 – 14-day intervals or as needed.
<b>Ornamental Plants</b>  <b>Herbaceous Ornamentals</b>  Flowering Plants Foliage Plants  <b>Woody Ornamentals</b> Broadleaves, Shrubs and trees Conifers, Shrubs and trees	Anthrachnose ( <i>Colletotrichum</i> spp.)  Bacteria ( <i>Erwinia</i> spp.) ( <i>Pseudomonas</i> spp.) ( <i>Xanthomonas</i> spp.)  Black Spot of Rose ( <i>Diplocarpon rosae</i> )  Blossom Blight ( <i>Monilinia</i> spp.)  Downy Mildew ( <i>Peronospora</i> spp.) ( <i>Plasmopara viburni</i> )  Gray Mold ( <i>Botrytis cinerea</i> )  Leaf Spot ( <i>Alternaria</i> spp.)	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Repeat on 7 – 14-day intervals, or as needed.  Use this product to control certain diseases of container, bench, flat, plug, bed, or field-grown ornamentals in greenhouses, shade houses, outdoor nurseries, retail nurseries, and other landscape areas.

	<p>(<i>Cercospora</i> spp.)  (<i>Entomosporium</i> spp.)  (<i>Myrothecium</i> spp.)  (<i>Septoria</i> spp.)</p> <p>Powdery Mildew  (<i>Erysiphe</i> spp.)  (<i>Oidium</i> spp.)  (<i>Podosphaera</i> spp.)  (<i>Sphaerotheca</i> spp.)</p> <p>Rust  (<i>Puccinia</i> spp.)</p> <p>Scab  (<i>Venturia</i> spp.)</p>			
	<p><i>Fusarium</i> spp.</p> <p><i>Phytophthora</i> spp.</p> <p><i>Pythium</i> spp.</p> <p><i>Rhizoctonia</i> spp.</p> <p><i>Verticillium</i> spp.</p>	Soil Drench	4 lbs.	Apply at a concentration of 4 pounds of Shielder per 100 gallons of water, thoroughly soaking the growing media and root zone. Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made on a 10 – 14-day interval.
		Plant Dip	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water and use as a pre-plant dip immediately prior to transplant.
		Chemigation	4 lbs.	Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant when soil drench applications are used.
<b>Peanut</b>	<p>Aspergillus Crown Rot  (<i>Aspergillus niger</i>)</p> <p>Rhizoctonia Foliar Blight, Peg, and Root Rot  (<i>Rhizoctonia solani</i>)</p> <p>White Mold  (<i>Sclerotium rolfsii</i>)</p>	Foliar (ground, aerial)	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.</p> <p>Repeat on 7 – 14-day intervals, or as needed.</p>
	<p>Aspergillus Crown Rot  (<i>Aspergillus niger</i>)</p> <p><i>Fusarium</i> spp.</p> <p><i>Phytophthora</i> spp.</p> <p><i>Pythium</i> spp.</p> <p><i>Rhizoctonia</i> spp.</p> <p><i>Verticillium</i> spp.</p>	Soil Drench	4 lbs.	Apply at a concentration of 4 pounds of Shielder per 100 gallons of water, thoroughly soaking the growing media and root zone. Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made



	White Mold ( <i>Sclerotium rolfsii</i> )			on a 10 – 14-day interval.
		In-Furrow	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water and apply at 5 – 15 gallons per acre, directing the spray into the seed furrow just before the seeds are covered.
<b>Pome Fruits, including:</b>  Apple Crabapple Loquat Mayhaw Pear Pear, oriental Quince	Powdery Mildew ( <i>Podosphaera leucotricha</i> )  Alternaria Blotch ( <i>Alternaria mali</i> )  Apple Scab ( <i>Venturia inaequalis</i> )  Bitter Rot ( <i>Colletotrichum</i> spp.)  Brown spot ( <i>Stemphylium vesicarium</i> )  Black Rot/ Frogeye Leaf Spot ( <i>Botryosphaeria obtusa</i> )  Bot Rot ( <i>Botryosphaeria dothidea</i> )  Brooks Spot ( <i>Mycosphaerella pomi</i> )  Bull's Eye Rot ( <i>Neofabraea</i> spp.)  Cedar-Apple Rust ( <i>Gymnosporangium juniper-virginianae</i> )  Fire Blight ( <i>Erwinia amylovora</i> ) Flyspeck ( <i>Zygophiala jamaicensis</i> )  Sooty Blotch ( <i>Geastrumia polystigmati</i> ) Leptodontium elatius ( <i>Peltaster fructicola</i> )  White Rot ( <i>Botryosphaeria dothidea</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Repeat applications on 3 – 10-day intervals or as needed.  Use high label rate and shorter spray intervals when conditions are conducive to rapid disease development.  To treat Fire Blight ( <i>Erwinia amylovora</i> ), tank mix this product with another registered fungicide for more effective control.
<b>Root, Tuber and Corm Vegetables, including:</b>  Beets Carrots Cassava Ginger	Bacterial Leaf Blight ( <i>Xanthomonas campestris</i> )  Black Root Rot / Black Crown Rot ( <i>Alternaria</i> spp.)  Downy Mildew	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Repeat on 5 – 10-day intervals, or as needed.

Ginseng Horseradish Potato Radish Sugar beets Sweet potato Yams Turnip	( <i>Peronospora</i> spp.)			Begin applications soon after emergence or transplant and when conditions are conducive to disease development. Use higher rates and shorter intervals when conditions favor rapid disease development.
	Early Blight ( <i>Alternaria</i> spp.)			
	Gray Mold ( <i>Botrytis cinerea</i> )			
	Late Blight ( <i>Phytophthora infestans</i> )			
	Powdery Mildew ( <i>Erysiphe</i> spp.)	Soil Drench	4 lbs.	Apply at a concentration of 4 pounds of Shielder per 100 gallons of water, thoroughly soaking the growing media and root zone. Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made on a 10 – 14-day interval.
	White Mold ( <i>Sclerotinia sclerotiorum</i> )			
	Clubroot ( <i>Plasmodiophora brassicae</i> )			
	Common Scab ( <i>Streptomyces scabies</i> )			
	<i>Fusarium</i> spp.	In-Furrow	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water and apply at 5 – 15 gallons per acre, directing the spray into the seed furrow just before the seeds are covered.
	<i>Phytophthora</i> spp.			
	<i>Pythium</i> spp.			
	<i>Rhizoctonia</i> spp.			
	<i>Verticillium</i> spp.	Chemigation	4 lbs.	Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant when soil drench applications are used.
<b>Soybean</b>	Aerial Web Blight ( <i>Rhizoctonia solani</i> )	Foliar (ground, aerial)	4 lbs.	To optimize disease control and maximize yields. Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.
	Alternaria Leafspot ( <i>Alternaria</i> spp.)			
	Anthrachnose ( <i>Colletotrichum truncatum</i> )			
	Asian Soybean Rust ( <i>Phakopsora pachyrhizi</i> )			Consult your local Extension Specialist or Crop Consultant regarding the optimum timing of fungicide applications.
	Brown Spot ( <i>Septoria glycines</i> )			
	Cercospora Blight ( <i>Cercospora kikuchii</i> )			To treat Asian Soybean Rust ( <i>Phakopsora pachyrhizi</i> ), tank mix this product with another registered fungicide for more effective control.
	Frog-eyed Leaf spot ( <i>Cercospora sojina</i> )			

	<p>Pod and Stem Blight (<i>Diaporthe</i> spp.)</p> <p>Septoria Brown Spot (<i>Septoria glycines</i>)</p> <p>White Mold (<i>Sclerotinia sclerotiorum</i>)</p> <p>.</p>	Foliar (ground, aerial)	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.</p> <p>Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.</p> <p>To treat Asian Soybean Rust (<i>Phakopsora pachyrhizi</i>), tank mix this product with another registered fungicide for more effective control.</p>
	<p><i>Fusarium</i> spp.</p> <p><i>Phytophthora</i> spp.</p> <p><i>Pythium</i> spp.</p> <p><i>Rhizoctonia</i> spp</p>	In-Furrow	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water and apply at 5 – 15 gallons per acre, directing the spray into the seed furrow just before the seeds are covered.
<p><b>Stone Fruits, including:</b></p> <p>Apricot</p> <p>Cherry, sweet and tart</p> <p>Nectarine</p> <p>Peach</p> <p>Plum</p> <p>Plumcot</p> <p>Prune (fresh)</p>	<p>Alternaria Spot/Fruit Rot (<i>Alternaria alternata</i>)</p> <p>Anthracnose (<i>Colletotrichum</i> spp.)</p> <p>Bacterial Canker (<i>Pseudomonas</i> spp.)</p> <p>Bacterial Spot (<i>Pseudomonas</i> spp.)</p> <p>Brown Rot Blossom Blight and Fruit Rot (<i>Monilinia</i> spp.)</p> <p>Cercospora Leaf Spot (<i>Cercospora</i> spp.)</p> <p>Cherry Leaf Rot (<i>Blumeriella jaapii</i>)</p> <p>Gray Mold (<i>Botrytis cinerea</i>)</p> <p>Jacket Rot, Green Fruit Rot (<i>Botrytis cinerea</i>, <i>Monilinia</i> spp., <i>Sclerotinia sclerotiorum</i>)</p> <p>Powdery Mildew (<i>Podosphaera</i> spp.) (<i>Sphaerotheca pannosa</i>)</p> <p>Rust (<i>Tranzschelia discolor</i>)</p> <p>Rusty Spot (<i>Podosphaera</i></p>	Foliar (ground, aerial)	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.</p> <p>Apply on a 7 – 10 day spray interval or as needed.</p> <p>Bacterial Blight – Apply postharvest before Fall rains.</p> <p>Brown Rot Blossom Blight – Apply at early bloom and repeat on a 7-day schedule through petal fall or as needed.</p> <p>Powdery Mildew – Begin applications at popcorn stage and repeat on a 7-day interval or as needed.</p> <p>Scab - Begin applications at petal fall and repeat on a 7 – 10-day interval or as needed.</p>

	<i>leucotricha</i> Scab ( <i>Cladosporium carpophilum</i> ) Shot Hole ( <i>Wilsonomyces carpophilus</i> )			
<b>Strawberry</b>	Anthrachnose ( <i>Colletotrichum</i> spp.) Botrytis ( <i>Botrytis cinerea</i> ) Leaf Spot ( <i>Mycosphaerella fragariae</i> ) Phomopsis Leaf Blight ( <i>Phomopsis obscurans</i> ) Powdery Mildew ( <i>Sphaerotheca macularis</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Apply on a 7 – 10 day spray interval or as needed.
	Black Root Rot ( <i>Rhizoctonia</i> spp.) ( <i>Pythium</i> spp.) ( <i>Fusarium</i> spp.) ( <i>Cylindrocarpon</i> spp.) Phytophthora Root Rot and Crown Rot ( <i>Phytophthora</i> spp.) Verticillium Wilt ( <i>Verticillium</i> spp.) <i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	Soil Drench	4 lbs.	Apply at a concentration of 4 pounds of Shielder per 100 gallons of water, thoroughly soaking the growing media and root zone. Apply during or shortly after transplant to reduce transplant shock, suppress soilborne disease and improve root growth. Multiple drench applications can be made on a 10 – 14 day interval.
		Plant Dip	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water and use as a pre-plant dip immediately prior to transplant.
		Chemigation	4 lbs.	Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant when soil drench applications are used.
<b>Sugar Beets</b>	Powdery Mildew ( <i>Erysiphe betae</i> ) ( <i>Erysiphe polygoni</i> ) Leaf Spot ( <i>Cercospora beticola</i> ) Ramularia ( <i>Ramularia</i> spp.) Rust ( <i>Uromyces betae</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Consult your local Extension Specialist or Crop Consultant for optimum timing of fungicide applications.
<b>Sugarcane</b>	Brown Rust ( <i>Puccinia melanocephala</i> ) Orange Rust ( <i>Puccinia kuehnii</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.

				Consult your local Extension Specialist or Crop Consultant for optimum timing of fungicide applications
		Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
<b>Tobacco</b>	Blue Mold ( <i>Peronospora tabacina</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Consult your local Extension Specialist or Crop Consultant for optimum timing of fungicide applications.
	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	Plant Dip	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water and use as a pre-plant dip immediately prior to transplant.
<b>Tree nuts, including:</b>  Almond Beech nut Brazil nut Butternut Cashew Chestnut Chinquapin Filbert (hazelnut) Hickory nut Macadamia nut Pecan Walnut, Black and English	Walnut Blight ( <i>Xanthomonas campestris</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Apply on a 7 – 10 day spray interval or as needed.
	Alternaria Late Blight, Alternaria Leaf Spot ( <i>Alternaria</i> spp.)  Anthracnose ( <i>Colletotrichum</i> spp.) ( <i>Gnomonia leptostyla</i> )  Bacterial Canker ( <i>Erwinia nigrifluens</i> )  Botryosphaeria Blight ( <i>Botryosphaeria dothidea</i> )  Brown Rot ( <i>Monilinia</i> spp.)  Jacket Rot, Green Fruit Rot ( <i>Botrytis cinerea</i> , <i>Monilinia</i> spp., <i>Sclerotinia sclerotiorum</i> )	Foliar (ground, aerial)	4 lbs.	Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.

	<p>Eastern Filbert Blight (<i>Anisogramma anomala</i>)</p> <p>Leaf Rust (<i>Tranzschelia discolor</i>)</p> <p>Scab (<i>Cladosporium carpophilum</i>) (<i>Sphaceloma perseae</i>)</p> <p>Shot Hole (<i>Wilsonomyces carpophilus</i>)</p>			
<p><b>Tropical Fruits, including:</b></p> <p>Avocado Banana Kiwi Mango Papaya Plantain Pineapple Pomegranate</p>	<p>Anthrachnose (<i>Colletotrichum gloeosporioides</i>)</p> <p>Bacterial Blight (<i>Pseudomonas syringae</i>) (<i>Pseudomonas viridiflava</i>)</p> <p>Bacterial Canker (<i>Xanthomonas campestris</i>)</p>	Foliar (ground, aerial)	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.</p> <p>Apply on a 7 – 10-day spray interval or as needed.</p>
	<p>Botrytis Fruit Rot (<i>Botrytis cinerea</i>)</p> <p>Scab (<i>Elsinoe mangiferae</i>)</p> <p>Sigatoka (<i>Mycosphaerella fijiensis</i>)</p>	Foliar (ground, aerial)	4 lbs.	<p>Mix 4 pounds of Shielder in 100 gallons of water per acre when conditions are conducive to disease development.</p> <p>Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.</p>

**Application Rates for Seed Treatment:**

Type of seed	Disease	Pounds of Shielder per 100 Gallons of Water	Notes
<b>True seed crops</b>	<p><i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.</p>	4 pounds	Apply sufficient diluted product to soak seeds. Apply directly to seeds. Do not rinse. Allow to dry and/or plant-soaked seeds.
<b>In-furrow seed treatment at planting</b>	<p><i>Fusarium</i> spp. <i>Phytophthora</i> spp.</p>	4 pounds	Apply sufficient diluted product to wet the soil covering seeds. Apply

	<i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.		by spray, furrow and/or in-furrow irritation.
<b>Dip treatment for tubers at planting</b>	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	4 pounds	Pre-dip tubers prior to planting. Apply sufficient product to web tubers before planting.

### STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store in a cool, dry place. Protect from excessive heat. Do not store or transport near food or feed.

**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. 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. If burned, stay out of smoke.

### WARRANTY STATEMENT

GRUPO AGROTECNOLOGIA S.L. warrants that this product conformed to its description and was reasonably fit for the purposes stated on the label when used in accordance with Seller's directions. Buyers and users of this product assume the risk of any use contrary to such directions. SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OR GUARANTEE, INCLUDING ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY AND NO AGENT OF SELLER IS AUTHORIZED TO DO SO. To the extent consistent with applicable law, the Seller's liability for any breach of warranty shall not exceed the purchase price of the material as to which a claim is made.

To the extent consistent with applicable law, Buyers and users of this product are responsible for all loss or damage from use or handling of this product which results from conditions beyond the control of Seller, or without the fault or negligence of the Seller, or from failure to follow the label.

## Sublabel B: Home and Garden Use

# Shielder

## Home and Garden Use

A broad-spectrum biological fungicide that controls fungal diseases via induced systemic resistance and increased alkalinity.

[ FOR [USE IN] ORGANIC GARDENING] [OMRI Listed™ (insert logo)\*]

(\*Note to Reviewer – see Optional Logos Section for OMRI seals.)

### ACTIVE INGREDIENTS:

*Bacillus subtilis* strain IAB/BS03\* ..... 0.01%  
Sodium bicarbonate.....99.66%

**OTHER INGREDIENTS:** .....0.33%

**TOTAL**.....100.00%

\* Final product contains a minimum of  $1 \times 10^6$  CFU/gram

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

<b>FIRST AID</b>	
<b>If swallowed</b>	<ul style="list-style-type: none"><li>• Call a 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>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 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>HOTLINE NUMBER</b>	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. For medical emergencies, call the poison control center at 1-800-222-1222. For general information on this product, call +34 96 673 82 32 may include hours of service], or contact the National Pesticides Information Center (NPIC) at 1-800-858-7378, Monday through Friday, 8 AM to 12 PM PST, or at <a href="http://npic.orst.edu">http://npic.orst.edu</a> .	

**EPA Reg. No.:** 91554-2  
**EPA Est. No.:** 91554-ESP-1  
**(Batch No./Lot No.:** XXX)

**Net Contents:** XX Lbs.

**Manufactured by:** Grupo Agrotecnología S.L.  
Poligono Puente alto, Parcela 57  
03300 Orihuela (Alicante) Spain



**Distributed by:**  
(U.S. name and address-to be determined)

**(OPTIONAL LOGOS:**



## PRECAUTIONARY STATEMENTS

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

**Environmental Hazards:** 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. Rinsing application equipment over the treated area will help avoid runoff to water bodies or drainage systems.

## DIRECTIONS FOR USE

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

## HOW IT WORKS

Shielder is a broad-spectrum biological fungicide for the prevention, control and suppression of soil borne and foliar diseases on all labeled home and garden plants. Shielder contains the active ingredient *Bacillus subtilis* IAB/BS03 which is a rhizosphere bacterium that quickly establishes beneficial colonies on the plant's roots and leaves. It stimulates healthier roots, accelerates plant growth and activates the defense system of the plant. Also, the active ingredient sodium bicarbonate by a variation of PH, makes it more alkaline, which leads to inhibit the development of hyphae and spores. Shielder is non-selective. Shielder is most effective when applied prior to the onset of disease. Use Shielder in combination and/or rotation with chemical fungicides to enhance disease control. For use on all labeled home and garden plants including vegetables, herbs, small fruits, berries and fruit and nut trees. Also, for use in greenhouse plug production and hydroponics operations.

## HOW TO APPLY

**RATE:** Mix 1 + 1/4 teaspoons of Shielder per gallon of water.

**MIXING:** Dilute Shielder with water and apply in pressurized hand-held sprayers, spray trigger bottles or hose-end sprayers. Partially fill the spray tank with clean water. Add the specified amount of Shielder to the tank. Finish filling the tank to the desired volume to obtain the proper spray concentration. Shake the spray tank and use spray mixture immediately. Do not allow spray mixture to stand overnight or for prolonged periods.

Apply Shielder to the point of saturation of the treated foliage. Good coverage and wetting are required. The amount of spray solution to apply will vary depending on the type of crop. Apply in sufficient water to achieve thorough coverage. Apply at the first sign of disease and repeat at 7 – 14-day intervals as needed.

## WHERE TO APPLY

### Apply to the following types of home and garden plants:

Asparagus, beets, broccoli, Brussels sprouts, cabbage, carrots, cane fruit (raspberry, blackberry, etc.) cauliflower, celery, collards, cucumbers, edible-podded legume vegetables including: snap bean, wax bean, yard long bean, jack bean, edible-pod pea, snow pea, sugar snap pea; dried shelled beans and peas including: field bean, kidney bean, lima bean (dry), navy bean, pinto bean, adzuki bean, black-eyed pea, cowpea, mung bean, southern pea, lentil (dry); eggplant, grapes, herbs, horseradish, kale, lettuce, melons, mustard greens, onions, parsnips, pepper, potatoes, radish, rutabaga, salsify, squash (winter and summer), sweet potato, strawberry, tomatoes, turnip greens, and turnips.

Ornamentals-including annuals and perennials

Fruit and Nut Trees

Turf

### To control the following

Downy Mildew

Powdery Mildew

Black, Stem, Crown and Root Rot

Blight

Damping-off Fungus

Gray Mold

Shielder controls a variety of the most common plant root rot and foliar diseases when used on a preventative schedule.

### STORAGE AND DISPOSAL

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

**Pesticide Storage:** Store in a cool dry place inaccessible to children.

**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 partly filled: Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.