



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:

93505-1

Date of Issuance:

10/18/2018

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
 (under FIFRA, as amended)

Term of Issuance:

Unconditional, Time-Limited

Name of Pesticide Product:

Bacix

Name and Address of Registrant (include ZIP Code):

Quimicas Meristem S.L.  
 CV-315, km. 7  
 46113 Moncada (Valencia)  
 Spain

**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 you comply with the following terms:

1. The subject registration will automatically expire on February 4, 2020.

Signature of Approving Official:

Seiichi Murasaki, Senior Regulatory Advisor  
 Microbial Pesticides Branch  
 Biopesticides and Pollution Prevention Division (7511P)  
 Office of Pesticide Programs

Date:

10/18/2018

2. 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.
3. Submit storage stability and corrosion characteristics (Guidelines 830.6317 and 830.6320) data as these data requirements are not satisfied. A one-year study is required to satisfy these data requirements. You have 18 months from the date of this registration to provide these data to the EPA.
4. Make the following labeling change before you release this product for shipment:
  - Revise the EPA Registration Number to read, “EPA Reg. No. 93505-1.”
5. 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 statements or claims substantially differing from statements or claims made in connection with obtaining a FIFRA section 3 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 Statement of Formula (CSF):

- Basic CSF dated 09/18/2018

If you have any questions, please contact Cody Kendrick by phone at (703) 347-0468 or via email at [kendrick.cody@epa.gov](mailto:kendrick.cody@epa.gov).

Enclosure: Stamped Label

# BACIX

**MASTER LABEL, containing:**

**Sublabel A: Greenhouse and Field Use**

**Sublabel B: Home & Garden Use**

EPA Reg. No.: 93505-R

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

Oct 18, 2018

Under the Federal Insecticide, Fungicide  
and Rodenticide Act as amended, for the  
pesticide registered under  
EPA Reg. No. 93505-1

## Sublabel A: Greenhouse and Field Use

# BACIX

**ACTIVE INGREDIENT:**

*Bacillus subtilis* strain IAB/BS03\* .....2.0%

**OTHER INGREDIENTS:** .....98.0%

**TOTAL:** .....100.0%

\*Contains not less than  $2 \times 10^8$  cfu/g of active ingredient.

### KEEP OUT OF REACH OF CHILDREN

#### CAUTION

FIRST AID	
<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>HOTLINE 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.	

See (back) (side) panel for additional precautionary statements and directions for use.

EPA Reg. No.: 93505-R

EPA Est. No.: 93505-XX-XX

Batch No. / Lot No.: XXX

Net Weight: XX lbs. (XX kg)

**Manufactured by:** QUIMICAS MERISTEM S.L.  
CV-315, km. 7  
46113 Moncada (Valencia), SPAIN

**Distributed by:**

(U.S. name and address –to be determined)

Not for sale or use after [date stamped is 6 months after the date of manufacture].

## PRECAUTIONARY STATEMENTS

**Hazards to Humans and Domestic Animals - CAUTION.** Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes, or clothing. 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. Wear long-sleeved shirt and long pants, gloves, and shoes plus socks.

**Personal Protective Equipment (PPE):** Applicators and other handlers must wear a long-sleeved shirt, long pants, waterproof gloves, shoes, and 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.

**Environmental Hazards:** This product may harm beneficial insects and honey bees. Do not apply this product when bees or other pollinating insects are actively foraging.

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.

## 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 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.

**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.

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, and socks.

**Product Information:** BACIX is a broad-spectrum biological fungicide for the prevention, control or suppression of soil-borne and foliar diseases on labeled agricultural crops. BACIX contains the active ingredient *Bacillus subtilis* IAB/BS03 which is a plant growth-promoting rhizobacteria 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. BACIX is non-selective. BACIX is most effective when applied prior to the onset of disease. Use BACIX in combination and/or rotation with chemical fungicides to enhance disease control. For use on labeled outdoor field grown food crops, such as vegetables, herbs, small fruits, berries and fruit and nut trees. Also for use in greenhouse plug production and hydroponics operations.

**Modes of Action:** BACIX has multiple modes of action in preventing, controlling or 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. It is non-selective to plant materials.

**Integrated Pest Management:** Integrating BACIX 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 BACIX with water and apply in conventional spray equipment or through sprinkler irrigation. Partially fill the spray tank with clean water and begin agitation. Add the specified amount of BACIX 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.

Apply BACIX using conventional spray equipment 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:** BACIX may be tank mixed with some fungicides. Do not tank mix BACIX 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.

BACIX 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 BACIX as a foliar spray by ground or by air. Mix 0.25 – 1 pound BACIX in 15 to 100 gallons of water for ground applications and in 5 gallons of water for aerial applications and apply at a sufficient spray volume to ensure complete coverage. Refer to the application table below for more information.

## **AERIAL DRIFT REDUCTION INFORMATION**

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

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

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

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

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

**SWATH ADJUSTMENT:** When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must



compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

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

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

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

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

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

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

#### Soil Drench Applications

Apply BACIX at a concentration of 0.25 - 1 pound 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 BACIX at a concentration of 0.25 – 1 pound per 100 gallons of water into the soil alone, or with most types of liquid nutrients.



### In-Furrow Applications

Apply BACIX at planting as an in-furrow spray. Mix 0.25 – 1 pound of BACIX 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 BACIX 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:**

#### **General Requirements -**

- 1) Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move: 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 BACIX 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	Use Rate per 100 Gallons of water	Notes
Artichoke	Powdery Mildew ( <i>Erysiphe cichoracearum</i> ) ( <i>Leveillula taurica</i> )  Ramularia Leaf Spot ( <i>Ramularia cynarae</i> )	Foliar (Ground)	0.25 – 1 lb.	For ground applications, apply in 50 – 100 gallons of water per acre.  Apply this product preventatively or at the first sign of disease symptoms are visible. Reapply every 7 – 14 days.
		Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
	Chemigation	0.25 – 1 lb.	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)	0.25 – 1 lb.	For ground applications, apply this product in 50 – 100 gallons of water per acre.  Apply preventatively or when the first disease symptoms are visible and apply every 7 – 14 days.
	Rust ( <i>Puccinia asparagi</i> )	Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
<b>Berries and Small Fruits (Except Grape and Strawberry), including:</b>  Blackberry Blueberry Bushberry Caneberry Cranberry Currants Elderberry Gooseberry Huckleberry Loganberry Raspberry Kiwifruit	Botrytis Blight ( <i>Botrytis cinerea</i> )	Foliar (Ground)	0.25 – 1 lb.	Apply in 50 – 100 gallons per acre.
	Mummy Berry ( <i>Monilinia vaccinii-corymbosi</i> )			Mummy Berry – Begin applications at bud break stage of development. Apply preventatively and repeat on a 7 - 10 day interval or as needed.
	Alternaria Fruit Rot ( <i>Alternaria</i> spp.)	Foliar (Ground)	0.25 – 1 lb.	Apply preventatively and repeat on a 7 - 10 day interval or as needed.
	Anthracnose Fruit Rot ( <i>Colletotrichum acutatum</i> )			Botrytis Blight – Apply this product preventatively prior to or at first sign of disease symptoms. Reapply every 7 – 14 days or as needed.
	Bacterial Canker ( <i>Pseudomonas syringae</i> )	Foliar (Ground)	0.25 – 1 lb.	Bacterial Canker – Apply prior to Fall rains and repeat applications during dormancy before Spring growth. This product can be tank mixed with another registered fungicide for improved control of bacterial canker.
	Leaf Rust ( <i>Pucciniastrum vaccinii</i> )			Anthracnose Fruit Rot and Alternaria Fruit Rot on blueberries – Apply at green tip and continue on a 7 – 10 interval.
	Leaf Spot and Blotch ( <i>Mycosphaerella</i> spp.) ( <i>Septoria</i> spp.)	Foliar (Ground)	0.25 – 1 lb.	Apply preventatively and repeat on a 7 - 10 day interval or as needed.
	Phomopsis Leaf Spot, Twig Blight and Fruit Rot ( <i>Phomopsis</i> spp.)			For aerial applications, apply this product in a minimum of 5 gallons of water per acre.
	Powdery Mildew ( <i>Microsphaera alni</i> )	Foliar (Aerial)	0.25 – 1 lb.	Apply preventatively or when the first disease
	Spur Blight ( <i>Didymella</i> spp.) ( <i>Phoma</i> spp.)			Apply preventatively or when the first disease

				symptoms are visible and reapply every 7 – 14 days.
<b>Bulb Vegetables, including:</b>  Garlic Leeks Onions (Bulb and Green) Shallots	Botrytis Leaf Blight ( <i>Botrytis squamosa</i> )	Foliar	0.25 – 1 lb.	Apply preventively in 50 – 100 gallons of water per acre.
	Botrytis Neck Rot ( <i>Botrytis</i> spp.)			Repeat applications at 7 – 14 day intervals.
	Onion Purple Blotch ( <i>Alternaria porri</i> )			
	Downy Mildew ( <i>Peronospora</i> spp.)			
	Powdery Mildew ( <i>Erysiphe</i> spp.)			
	Rust ( <i>Puccinia porri</i> )			
	Stemphyllium Leaf Blight ( <i>Stemphyllium vesicarium</i> )			
	<i>Fusarium</i> spp.	Soil Drench	0.25 – 1 lb.	Apply at a concentration of 0.25 - 1 pound 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.
	<i>Pythium</i> spp.			
	<i>Rhizoctonia</i> spp.			
		In-Furrow	0.25 – 1 lb.	Mix 0.25 – 1 pound of BACIX 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	0.25 – 1 lb.	Mix 0.25 - 1 pound of BACIX in 100 gallons of water and use as a pre-plant dip immediately prior to transplant.
		Chemigation	0.25 – 1 lb.	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 (Except Corn), including:</b>  Barley Buckwheat Sorghum (Milo) Oats Millet	Powdery Mildew ( <i>Erysiphe graminis</i> )	Foliar (Ground)	0.25 – 1 lb.	To optimize disease control and to maximize yields, apply in 15 – 40 gallons of water per acre.
	Bacterial Blight and Streak ( <i>Xanthomonas</i> spp.)			Apply preventatively or when disease symptoms first appear. Repeat applications on a 7 – 14 day
	Brown Rot, Leaf Spots & Smuts ( <i>Ceratobasidium</i> spp.)			

Rice Rye Triticale Wheat	( <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> )			interval depending upon crop growth and disease pressure.  When plants are under high disease pressure, tank mix this product with another registered fungicide for more effective control.
		Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
<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.)  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> )  Melanose ( <i>Diaporthe citri</i> )  Postbloom Fruit Drop ( <i>Colletotrichum acutatum</i> )  Scab ( <i>Elsinoe australis</i> ) ( <i>Elsinoe fawcetti</i> )	Foliar (Ground)	0.25 – 1 lb.	Apply in 50 – 100 gallons per acre.  Begin application when conditions are conducive to disease development. Repeat on 7 to 10 day intervals or as needed.  To treat Bacterial Canker ( <i>Xanthomonas</i> spp.), tank mix this product with another registered fungicide for more effective control.
		Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  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>Brassica (Cole) Leafy Vegetables, including:</b>  Broccoli Broccoli Raab Brussels Sprouts Cabbage	Powdery Mildew ( <i>Erysiphe cruciferarum</i> ) ( <i>Erysiphe polygoni</i> )  Alternaria Leaf Spot ( <i>Alternaria</i> spp.)  Downy Mildew	Foliar (Ground)	0.25 – 1 lb.	Apply in 50 – 100 gallons per acre.  Begin application when conditions are conducive to disease development. Repeat on 7 to 10 day intervals or as needed.



Chinese Broccoli Chinese Cabbage (Bok Choy) Chinese Cabbage (Napa) Chinese Mustard Cabbage (Gai Choy) Cauliflower Cavalo Broccolo Collards Kale Kohlrabi Mizuna Mustard Greens Mustard Spinach Rape Greens	( <i>Peronospora parasitica</i> )  Pin Rot Complex ( <i>Alternaria, Xanthomonas</i> )  Xanthomonas Leaf Spot ( <i>Xanthomonas campestris</i> )	Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
<b>Corn, including:</b>  Sweet Corn Field Corn Popcorn Silage Corn Seed Corn	Anthracnose Leaf Blight ( <i>Colletotrichum graminicola</i> )	Foliar (Ground)	0.25 – 1 lb.	Apply in 15 – 40 gallons per acre.  Begin application when conditions are conducive to disease development. Repeat on 7 to 10 day intervals or as needed.
	Eye Spot ( <i>Aureobasidium zeae</i> )  Gray Leafspot ( <i>Cercospora zeae-maydis</i> )  Rusts ( <i>Puccinia</i> spp.)  Northern Leaf Blight ( <i>Cochliobus carbonum</i> )  Southern Leaf Blight ( <i>Cochliobus heterostrophus</i> )	Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  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>Anthracoze</i> spp.)  Ascochyta Blight, Boll Rot ( <i>Ascochyta</i> spp.)	Foliar (Ground)	0.25 – 1 lb.	Apply in 15 – 40 gallons per acre.  Begin application when conditions are conducive to disease development. Repeat on 7 to 10 day intervals or as needed.
	Cercospora Blight and Leaf Spot ( <i>Cercospora</i> spp.)  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.)	Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.





<b>Fruiting Vegetables, including:</b>  Eggplant Okra Pepper Tomato Tomatillo Groundcherry	Bacterial Blight ( <i>Xanthomonas</i> spp.)	Foliar (Ground)	0.25 – 1 lb.	Apply preventatively in 25 – 100 gallons of water per acre or at first sign of disease symptoms. Increase water volume as plant size increases.
	Bacterial Spot ( <i>Xanthomonas</i> spp.)			Reapply on a 7 - 10 day interval depending on plant growth and disease pressure. Use shorter spray intervals for greenhouse cucurbits when under high disease pressure.
	Bacterial Speck ( <i>Pseudomonas syringae</i> )			
	Black Mold ( <i>Alternaria alternata</i> )			
	Early Blight ( <i>Alternaria solani</i> )			
	Gray Mold ( <i>Botrytis cinerea</i> )	Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.
	Late Blight ( <i>Phytophthora capsici</i> )			Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
	Powdery Mildew ( <i>Erysiphe</i> spp.) ( <i>Leveillula taurica</i> ) ( <i>Oidopsis taurica</i> ) ( <i>Sphaerotheca</i> spp.)			
	Target Spot ( <i>Corynespora cassiicola</i> )			
	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	Soil Drench	0.25 – 1 lb.	Apply at a concentration of 0.25 - 1 pound 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.
	In-Furrow	0.25 – 1 lb.	Mix 0.25 – 1 pound of BACIX 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	0.25 – 1 lb.	Mix 0.25 - 1 pound of BACIX in 100 gallons of water and use as a pre-plant dip immediately prior to transplant.	
	Chemigation	0.25 – 1 lb.	Apply through irrigation immediately after transplant and at 14- day intervals or begin 14 days after transplant when soil drench applications are used.	
<b>Grapes</b>	Powdery Mildew	Foliar	0.25 – 1 lb.	Apply preventively in 50 –

	<p>(<i>Uncinula necator</i>)</p> <p>Angular Leaf Spot (<i>Mycosphaerella angulata</i>)</p> <p>Anthrachnose (<i>Elsinoe ampelina</i>)</p> <p>Botrytis Bunch Rot (<i>Botrytis cinerea</i>)</p> <p>Black Rot (<i>Guignardia bidwellii</i>)</p> <p>Downy Mildew (<i>Plasmopara viticola</i>)</p> <p>Eutypa (<i>Eutypa lata</i>)</p> <p>Leaf Blight (<i>Pseudocercospora vitis</i>)</p> <p>Phomopsis Fruit Rot (<i>Phomopsis viticola</i>)</p> <p>Ripe Rot (<i>Colletotrichum gloeosporioides</i>)</p> <p>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>)</p>			<p>100 gallons of water per acre or the first signs of disease symptoms.</p> <p>Repeat applications at 7 – 14 day intervals depending on crop growth and disease pressure.</p>
<b>Grass Grown for Seed</b>	<p>Powdery Mildew (<i>Erysiphe graminis</i>) (<i>Oidium</i> spp.) (<i>Podosphaera</i> spp.) (<i>Sphaerotheca</i> spp.)</p> <p>Rust (<i>Puccinia</i> spp.)</p>	Foliar (Ground)	0.25 – 1 lb.	Apply preventatively in 25 – 100 gallons of water per acre when disease symptoms are first visible or when environmental conditions are conducive to rapid disease development. Reapply on a 7-day interval or as needed.
<b>Hops</b>	<p>Downy Mildew (<i>Pseudoperonospora humilii</i>)</p> <p>Powdery Mildew (<i>Sphaerotheca macularis</i>)</p>	Foliar (Ground)	0.25 – 1 lb.	Apply preventatively in 50 – 100 gallons of water or when environmental conditions are conducive to rapid disease development. Reapply on a 7-day interval or as needed.
<b>Leafy Vegetables (Except Brassica Vegetables), including:</b>	<p>Downy Mildew (<i>Bremia lactuca</i>) (<i>Peronospora</i> spp.)</p> <p>Bacterial Blight/Rot</p>	Foliar (Ground)	0.25 – 1 lb.	Apply preventatively in 50 – 100 gallons of water or when environmental conditions are conducive to rapid disease development.

Arugula Celery Chervil Corn Salad Garden Cress Dandelion Dock Edible-leaved Chrysanthemum Endive Fennel Head Lettuce Leaf Lettuce Parsley Purslane Radicchio Rhubarb Spinach Swiss Chard Watercress	( <i>Xanthomonas</i> spp.)			Reapply on a 7- 14 day interval or as needed.
	Cercospora Leafspot ( <i>Cercospora</i> spp.)  Late Blight ( <i>Septoria apiicola</i> )  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 ( <i>Albugo occidentalis</i> )	In-Furrow	0.25 – 1 lb.	For concentrated ground applications, apply this product at 0.25 – 0.5 quart per acre in a minimum of 10 gallons of water per acre.  Mix 0.25 – 1 pound of BACIX 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>Legume Vegetables (Succulent or Dried) (Except Soybean), including:</b>  Chickpea Dry Beans Garbanzo Beans Green Beans Lentils Lima Beans Peas Shell Beans Snap Beans	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)	0.25 – 1 lb.	Apply preventatively in 50 – 100 gallons of water or when environmental conditions are conducive to rapid 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	0.25 – 1 lb.	Mix 0.25 – 1 pound of BACIX 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 Camomile Catnip Chervil Chive Clary Coriander Costmary Culantro Curry Dillweed Horehound Hyssop Lavender Lemongrass Lovage Marjoram Nasturtium Parsley (dried) Rosemary Sage Savory (summer and winter) Sweet Bay Tansy Tarragon Thyme Wintergreen Woodruff Wormwood	Downy Mildew ( <i>Peronospora</i> spp.)  Powdery Mildew ( <i>Erysiphe</i> spp.)  Rust ( <i>Puccinia menthae</i> )	Foliar (Ground)	0.25 – 1 lb.	Apply preventatively in 50 – 100 gallons of water per acre or at first sign of disease symptoms. Reapply on a 7 - 10 day interval depending on plant growth and disease pressure.
		Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
<b>Oilseeds (Except Cotton), including:</b> Canola Castor Oil Plant Flax Seed Rapeseed Safflower Sesame Sunflower	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.)	Foliar (Ground)	0.25 – 1 lb.	To optimize disease control and maximize yields, apply this product preventatively in 15 – 40 gallons of water per acre.  Consult your local Extension Specialist or Crop Consultant regarding the optimum timing of fungicide applications.
	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 (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  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	0.25 – 1 lb.	Apply preventatively in 50 – 100 gallons of water per acre.  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	Anthracnose ( <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.) ( <i>Cercospora</i> spp.) ( <i>Entomosporium</i> spp.) ( <i>Myrothecium</i> spp.) ( <i>Septoria</i> spp.)  Powdery Mildew ( <i>Erysiphe</i> spp.) ( <i>Oidium</i> spp.) ( <i>Podosphaera</i> spp.) ( <i>Sphaerotheca</i> spp.)  Rust ( <i>Puccinia</i> spp.)  Scab ( <i>Venturia</i> spp.)	Foliar	0.25 – 1 lb.	Apply preventatively in 50 – 100 gallons of water and 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.
	<i>Fusarium</i> spp.  <i>Phytophthora</i> spp.  <i>Pythium</i> spp.  <i>Rhizoctonia</i> spp.  <i>Verticillium</i> spp.	Soil Drench	0.25 – 1 lb.	Apply at a concentration of 0.25 - 1 pound 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	0.25 – 1 lb.	Mix 0.25 - 1 pound of BACIX in 100 gallons of water and use as a pre-plant dip immediately prior

				to transplant.
		Chemigation	0.25 – 1 lb.	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>	Aspergillus Crown Rot ( <i>Aspergillus niger</i> )	Foliar	0.25 – 1 lb.	Apply preventatively in 50 – 100 gallons of water and repeat on 7 – 14 day intervals, or as needed.
	Rhizoctonia Foliar Blight, Peg, and Root Rot ( <i>Rhizoctonia solani</i> )			
	White Mold ( <i>Sclerotium rolfsii</i> )			
	Aspergillus Crown Rot ( <i>Aspergillus niger</i> )	Soil Drench	0.25 – 1 lb.	Apply at a concentration of 0.25 - 1 pound 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.
<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.				
White Mold ( <i>Sclerotium rolfsii</i> )	In-Furrow	0.25 – 1 lb.	Mix 0.25 – 1 pound of BACIX 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.)  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.)	Foliar	0.25 – 1 lb.	Apply in 50 – 100 gallons of water per acre. Begin applications 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.



	<p>Cedar-Apple Rust (<i>Gymnosporangium juniper-virginianae</i>)</p> <p>Fire Blight (<i>Erwinia amylovora</i>)</p> <p>Flyspeck (<i>Zygophiala jamaicensis</i>)</p> <p>Sooty Blotch (<i>Geastrumia polystigmati</i>) Leptodontium elatius (<i>Peltaster fructicola</i>)</p> <p>White Rot (<i>Botryosphaeria dothidea</i>)</p>			
<p><b>Root and Tuber Vegetables (Except Sugar Beets), including:</b></p> <p>Garden Beets Carrots Cassava Ginger Ginseng Horseradish Potato Radish Sweet potato Yams Turnip</p>	<p>Bacterial Leaf Blight (<i>Xanthomonas campestris</i>)</p> <p>Black Root Rot / Black Crown Rot (<i>Alternaria</i> spp.)</p> <p>Downy Mildew (<i>Peronospora</i> spp.)</p> <p>Early Blight (<i>Alternaria</i> spp.)</p> <p>Gray Mold (<i>Botrytis cinerea</i>)</p>	Foliar	0.25 – 1 lb.	<p>Apply preventatively in 25 – 100 gallons of water and repeat on 5 – 10 day intervals, or as needed.</p> <p>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.</p>
	<p>Late Blight (<i>Phytophthora infestans</i>)</p> <p>Powdery Mildew (<i>Erysiphe</i> spp.)</p> <p>White Mold (<i>Sclerotinia sclerotiorum</i>)</p>	Soil Drench	0.25 – 1 lb.	<p>Apply at a concentration of 0.25 - 1 pound 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.</p>
	<p>Clubroot (<i>Plasmodiophora brassicae</i>)</p> <p>Common Scab (<i>Streptomyces scabies</i>)</p> <p><i>Fusarium</i> spp.</p> <p><i>Phytophthora</i> spp.</p>	In-Furrow	0.25 – 1 lb.	<p>Mix 0.25 – 1 pound of BACIX 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>
	<p><i>Pythium</i> spp.</p> <p><i>Rhizoctonia</i> spp.</p> <p><i>Verticillium</i> spp.</p>	Chemigation	0.25 – 1 lb.	<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>Soybean</b>	Aerial Web Blight ( <i>Rhizoctonia solani</i> )	Foliar (Ground)	0.25 – 1 lb.	To optimize disease control and maximize yields, apply this product preventatively in 15 – 40 gallons of water per acre.  Consult your local Extension Specialist or Crop Consultant regarding the optimum timing of fungicide applications.  To treat Asian Soybean Rust ( <i>Phakopsora pachyrhizi</i> ), tank mix this product with another registered fungicide for more effective control.
	Alternaria Leafspot ( <i>Alternaria</i> spp.)			
	Anthracnose ( <i>Colletotrichum truncatum</i> )			
	Asian Soybean Rust ( <i>Phakopsora pachyrhizi</i> )			
	Brown Spot ( <i>Septoria glycines</i> )	Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.  To treat Asian Soybean Rust ( <i>Phakopsora pachyrhizi</i> ), tank mix this product with another registered fungicide for more effective control.
	Cercospora Blight ( <i>Cercospora kikuchii</i> )			
	Frog-eyed Leaf spot ( <i>Cercospora sojina</i> )			
	Pod and Stem Blight ( <i>Diaporthe</i> spp.)			
	Septoria Brown Spot ( <i>Septoria glycines</i> )	In-Furrow	0.25 – 1 lb.	Mix 0.25 – 1 pound of BACIX 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.
	White Mold ( <i>Sclerotinia sclerotiorum</i> )			
	<i>Fusarium</i> spp.			
	<i>Phytophthora</i> spp.			
<b>Stone Fruits, including:</b>  Apricot Cherry, sweet and tart Nectarine Peach Plum Plumcot Prune (fresh)	<i>Pythium</i> spp.	Foliar	0.25 – 1 lb.	Apply preventatively in 50 – 100 gallons of water when conditions are conducive to disease development. Apply on a 7 – 10 day spray interval or as needed.  Bacterial Blight – Apply postharvest before Fall rains. Brown Rot Blossom Blight – Apply at early bloom and repeat on a 7-day schedule through petal fall or as needed.  Powdery Mildew – Begin applications at popcorn stage and repeat on a 7- interval or as needed.
	<i>Rhizoctonia</i> spp.			
	Alternaria Spot/Fruit Rot ( <i>Alternaria alternata</i> )			
	Anthracnose ( <i>Colletotrichum</i> spp.)			
	Bacterial Canker ( <i>Pseudomonas</i> spp.)			
	Bacterial Spot ( <i>Pseudomonas</i> spp.)			
	Brown Rot Blossom Blight and Fruit Rot ( <i>Monilinia</i> spp.)			
	Cercospora Leaf Spot ( <i>Cercospora</i> spp.)			
Cherry Leaf Rot ( <i>Blumeriella jaapii</i> )				

	<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 leucotricha</i>)</p> <p>Scab (<i>Cladosporium carpophilum</i>)</p> <p>Shot Hole (<i>Wilsonomyces carpophilus</i>)</p>			Scab- Begin applications at petal fall and repeat on a 7 – 10 day interval or as needed.
<b>Strawberry</b>	<p>Anthrachnose (<i>Colletotrichum</i> spp.)</p> <p>Botrytis (<i>Botrytis cinerea</i>)</p> <p>Leaf Spot (<i>Mycosphaerella fragariae</i>)</p> <p>Phomopsis Leaf Blight (<i>Phomopsis obscurans</i>)</p> <p>Powdery Mildew (<i>Sphaerotheca macularis</i>)</p>	Foliar	0.25 – 1 lb.	Apply preventively in 50 – 100 gallons of water when conditions are conducive to disease development. Apply on a 7 – 10 day spray interval or as needed.
	<p>Black Root Rot (<i>Rhizoctonia</i> spp.) (<i>Pythium</i> spp.) (<i>Fusarium</i> spp.) (<i>Cylindrocarpon</i> spp.)</p> <p>Phytophthora Root Rot and Crown Rot (<i>Phytophthora</i> spp.)</p> <p>Verticillium Wilt (<i>Verticillium</i> spp.) <i>Fusarium</i> spp.</p> <p><i>Pythium</i> spp.</p> <p><i>Rhizoctonia</i> spp.</p>	Soil Drench	0.25 – 1 lb.	Apply at a concentration of 0.25 - 1 pound 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	0.25 – 1 lb.	Mix 0.25 - 1 pound of BACIX in 100 gallons of water and use as a pre-plant dip immediately prior to transplant.
		Chemigation	0.25 – 1 lb.	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> )	Foliar	0.25 – 1 lb.	Apply preventatively in 15 – 40 gallons of water per acre by ground or air.
	Leaf Spot ( <i>Cercospora beticola</i> )			Consult your local Extension Specialist or Crop Consultant for optimum timing of fungicide applications.
	Ramularia ( <i>Ramularia</i> spp.)			
	Rust ( <i>Uromyces betae</i> )			
<b>Sugarcane</b>	Brown Rust ( <i>Puccinia melanocephala</i> )	Foliar (Ground)	0.25 – 1 lb.	Apply preventatively in 15 – 40 gallons of water per acre by ground or air.
	Orange Rust ( <i>Puccinia kuehnii</i> )			Consult your local Extension Specialist or Crop Consultant for optimum timing of fungicide applications
		Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  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	0.25 – 1 lb.	Apply preventatively in a minimum of 50 gallons of water per acre.  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	0.25 – 1 lb.	Mix 0.25 - 1 pound of BACIX 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	Walnut Blight ( <i>Xanthomonas campestris</i> )	Foliar (Ground)	0.25 – 1 lb.	Apply preventatively in 50 – 100 gallons of water 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</i>	Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.

Macadamia nut Pecan Walnut, Black and English	<i>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> )  Eastern Filbert Blight ( <i>Anisogramma anomala</i> )  Leaf Rust ( <i>Tranzschelia discolor</i> )  Scab ( <i>Cladosporium</i> <i>carpophilium</i> ) ( <i>Sphaceloma perseae</i> )  Shot Hole ( <i>Wilsonomyces</i> <i>carpophilus</i> )			Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.
<b>Tropical and Subtropical Fruit, Inedible Peel Group, including:</b>  Avocado Banana Mango Papaya Plantain Pineapple Pomegranate	Anthrachnose ( <i>Colletotrichum</i> <i>gloeosporioides</i> )  Bacterial Blight ( <i>Pseudomonas syringae</i> ) ( <i>Pseudomonas viridiflava</i> )	Foliar (Ground)	0.25 – 1 lb.	Apply preventively in 50 – 100 gallons of water when conditions are conducive to disease development. Apply on a 7 – 10 day spray interval or as needed.
	Bacterial Canker ( <i>Xanthomonas campestris</i> )  Botrytis Fruit Rot ( <i>Botrytis cinerea</i> )  Scab ( <i>Elsinoe mangiferae</i> )  Sigatoka ( <i>Mycosphaerella</i> <i>fijiensis</i> )	Foliar (Aerial)	0.25 – 1 lb.	For aerial applications, apply this product in a minimum of 5 gallons of water per acre.  Apply preventatively or when the first disease symptoms are visible and reapply every 7 – 14 days.

### Application Rates for Seed Treatment:

Type of seed	Disease	Lbs. of product/100 Gallons of water	Notes
True seed crops	<i>Fusarium</i> spp.  <i>Phytophthora</i> spp.	0.25 – 1 lb.	Apply sufficient diluted product to soak seeds. Apply directly to seeds. Do not rinse. Allow to dry and/or plant soaked

	<i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.		seeds.
<b>In-furrow seed treatment at planting</b>	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	0.25 – 1 lb.	Apply sufficient diluted product to wet the soil covering seeds. Apply by spray, furrow and/or in-furrow irrigation.
<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.	0.25 – 1 lb.	Pre-dip tubers prior to planting. Apply sufficient product to 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. Store in original container only. Keep container tightly closed when not in use.

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

**Container Handling:** Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment, then offer for recycling, if available or dispose of empty bag in a sanitary landfill or by incineration or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

#### WARRANTY STATEMENT

QUIMICAS MERISTEM S.L. warrants that this product conforms to its description and is 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

# BACIX

**ACTIVE INGREDIENT:**

*Bacillus subtilis* strain IAB/BS03\* .....2.0%

**OTHER INGREDIENTS:** .....98.0%

**TOTAL:** .....100.0%

\*Contains not less than  $2 \times 10^8$  cfu/g of active ingredient.

### KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID	
<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>HOTLINE 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.	

See (back) (side) panel for additional precautionary statements and directions for use.

EPA Reg. No.: 93505-R

Net Weight: XX lbs. (XX kg)

EPA Establishment No.: 93505-XX-XX

Batch No. / Lot No.: XXX

**Manufactured by:** QUIMICAS MERISTEM S.L.  
CV-315, km. 7  
46113 Moncada (Valencia), SPAIN

**Distributed by:**

(U.S. name and address –to be determined)

Not for sale or use after [date stamped is 6 months after the date of manufacture].



## PRECAUTIONARY STATEMENTS

**Hazards to humans and domestic animals - CAUTION.** Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes, or clothing. 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. Wear long sleeved shirt and long pants, gloves, and shoes plus socks.

**Environmental Hazards:** This product may harm beneficial insects and honey bees. Do not apply this product when bees or other pollinating insects are actively foraging.

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.

## PRODUCT INFORMATION

BACIX is a broad-spectrum biological fungicide for the prevention, control or suppression of soil borne and foliar diseases on labeled home and garden plants. BACIX 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. BACIX is non-selective. BACIX is most effective when applied prior to the onset of disease. Use BACIX in combination and/or rotation with chemical fungicides to enhance disease control. For use on labeled outdoor grown home and garden plants including vegetables, herbs, small fruits, berries and fruit and nut trees.

## HOW TO APPLY

**RATE:** Mix 1/2 teaspoon of BACIX per gallon of water.

**MIXING:** Dilute BACIX 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 BACIX 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 BACIX to the point of saturation of the treated foliage. Good coverage and wetting is required. The amount of spray solution to apply will vary depending on the type of plant. 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 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

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

### WARRANTY STATEMENT

QUIMICAS MERISTEM S.L. warrants that this product conforms to its description and is 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.