



## ACTIVE INGREDIENT

Copper Sulfate Pentahydrate\*

(CAS# 7758-99-8).....21.27%

**OTHER INGREDIENTS**.....78.73%

**Total**.....100.00%

\*Copper as Metallic..... 5.4%

Contains 2.18 lbs. active ingredient and 0.55 lbs. of metallic copper per gallon of product.

## KEEP OUT OF REACH OF CHILDREN WARNING AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

SEE ATTACHED LABEL BROCHURE FOR DIRECTIONS  
FOR USE AND PRECAUTIONARY STATEMENTS

## NET CONTENTS: 2.5 GALLONS

E.P.A. REG. NO. 49538-5-92632  
E.P.A. EST. NO. 49538-MN-001

^Non-Public health bacteria

## FIRST AID

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

### If in Eyes:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
- Call a poison control center or doctor for treatment advice.

### If Swallowed:

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

### If on Skin or Clothing:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

**Note to Physician:** Skin symptoms may be similar to copper allergic reactions and can be treated similarly, including the use of steroid containing lotion. If swallowed, probable mucosal damage may contraindicate the use of gastric lavage.

## PHYSICAL OR CHEMICAL HAZARDS

For spills, you may contact CHEMTREC at 1-800-424-9300.

**DO NOT  
FREEZE**



Distributed by:



**S.T. Biologicals,  
Incorporated**  
P.O. Box 385370  
Minneapolis, MN 55438  
1-800-356-8733

## NOTICE:

Our directions for use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice, including but not limited to over-fertilization or senescing plant tissue. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions, abnormal conditions, presence of other materials, the manner of application, or other factors, all of which are beyond the control of the manufacturer. All such risks shall be assumed by the buyer. To the extent consistent with applicable law the exclusive remedy is the product purchase price. INSTILL Bactericide<sup>^</sup> & Fungicide is reported compatible with many registered pesticides. However, before adopting the use of additives and/or combinations for general applications, test for physical compatibility and noninjury under your conditions of use. To the extent consistent with applicable law the buyer must assume all responsibility, including injury or damage, resulting from its misuse as such or in combination with other materials as tank mix or applied separately.

## PRECAUTIONARY STATEMENTS HAZARD TO HUMANS (& DOMESTIC ANIMALS)

**WARNING:** Causes substantial but temporary eye injury. Harmful if swallowed or absorbed through the skin. Do not get into eyes or on clothing. Avoid contact with skin.

Mixers, loaders, applicators and other handlers must wear the following:

- Long-sleeved shirt and long pants
- Chemical resistant gloves (e.g., barrier laminate, butyl rubber, neoprene rubber).
- Shoes and socks
- Goggles or face shield

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow 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

- User should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- User should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- User should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.
- Wash the outside of gloves before removing.

## DIRECTIONS FOR USE

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

## ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates and may contaminate water through runoff. This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash-waters or rinsate.

## 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 intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not allow workers to enter into treated areas during the restricted entry interval (REI) of 48 hours.

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, wear:

- Coveralls
- Shoes plus socks
- Chemical-resistant gloves made of any waterproof material.
- Protective eyewear

**Not for use in greenhouses in California**

## NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses that are NOT within the scope of the Worker Protection Standard for Agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Do not enter or allow others to enter until the sprays have dried.

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE**— Do not freeze or store below 45° F. Store in original container.

**PESTICIDE DISPOSAL**—Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, contact your state pesticide or environmental control agency, or the hazardous waste representative at the nearest EPA regional office for guidance. Open dumping is prohibited.

**CONTAINER DISPOSAL**—Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, if available, or dispose of in a sanitary landfill, or by incineration if allowed by state and local authorities. Do not reuse these containers.

## PRODUCT INFORMATION

INSTILL Bactericide<sup>^</sup> & Fungicide is a systemic bactericide & fungicide that when mixed with the appropriate volume of water, provides systemic, preventive and curative activity on a broad-spectrum of bacterial and fungal diseases listed on this label. INSTILL Bactericide<sup>^</sup> & Fungicide will not leave any visible residue when mixed and applied according to the USE DIRECTIONS listed on this label. INSTILL Bactericide<sup>^</sup> & Fungicide may be applied by spray, drench, dip or injection. Equipment must be properly calibrated before use.

## USE DIRECTIONS

1. Shake well before mixing with water. Use within 48 hours after mixing.
2. Adjust pH of solution to 5.5 - 6.5.
3. INSTILL Bactericide<sup>^</sup> & Fungicide can be applied with any type of application equipment that gives uniform coverage of all foliage, including ground, aerial, and low volume sprayers and chemigation equipment specified on this label. The volume of water needed will depend on the spray equipment and the size of the crop. Use in sufficient water to provide thorough coverage.
4. INSTILL Bactericide<sup>^</sup> & Fungicide can be used up to the time of harvest.
5. Do not apply INSTILL Bactericide<sup>^</sup> & Fungicide through any system using aluminum parts or components as damage to the system may occur.
6. Compatible with most fungal and insecticidal biopesticides when applied at least 2 days before or after application of the biopesticide.
7. Do not tank mix INSTILL Bactericide<sup>^</sup> & Fungicide with B-NINE and do not apply this product within seven (7) days either before or after applications of B-NINE, as burning of leaves may result.
8. Do not tank mix INSTILL Bactericide<sup>^</sup> & Fungicide with strongly acidic compounds such as Aliette, and do not apply INSTILL Bactericide<sup>^</sup> & Fungicide within 14 days either before or after applications of such products.
9. Phytotoxicity: INSTILL Bactericide<sup>^</sup> & Fungicide has been tested on a wide variety of agricultural and ornamental plants without phytotoxicity symptoms. However, because it is not possible to test all plant species, varieties and cultivars and because environmental factors and varietal stage of growth may affect phytotoxic expression, it is recommended that a small group of test plants be treated at the anticipated dosage rate and observed for 5 to 7 days to determine phytotoxicity before treating large numbers of those plants.
10. Crop injury may occur if applied to foliage under certain environmental conditions such as hot or prolonged moist periods.
11. Application on buds and open blooms: INSTILL Bactericide<sup>^</sup> & Fungicide is not phytotoxic at the lowest dosage rates on most buds and open blooms. It is recommended to treat a small group of test plants at the anticipated dosage rate and observe to determine phytotoxicity before treating large numbers of those plants.
12. Liquid equivalents: one fluid ounce = 29.5 milliliters = 6 teaspoons.
13. Apply specified amount of INSTILL Bactericide<sup>^</sup> & Fungicide in 100 gallons of water per acre of affected area to be treated depending on the size of the crop, disease to treat, and application equipment.



## SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and the method of application (e.g., ground, aerial, airblast, chemigation) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

**Droplet Size:** Apply only as a medium or coarser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

**Wind Speed:** Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition (approximately 3 to 10 mph), and there are no sensitive areas within 250 feet downwind.

**Temperature Inversions:** If applying at wind speeds less than 3 mph, the applicator must determine if a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or unstable atmospheric conditions.

**Other State and Local Requirements:** Applicators must follow all state and local pesticide drift requirements regarding application of copper compounds. Where states have more stringent regulations, they must be observed.

**Equipment:** All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

**For aerial application:** The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter. Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. When applications are made with a crosswind, the swath must be displaced downwind. The applicator must compensate for this displacement at the up and downwind edge of the application area by adjusting the path of the aircraft upwind.

**For groundboom application:** Do not apply with a nozzle height greater than 4 feet above the crop canopy.

## FRUIT, VEGETABLES & FIELD CROPS

Spray for thorough foliage coverage. Lower rates may be as effective as higher rates and should be tried first. Routine preventive programs may be maintained at the lower rates. Use of low volume equipment is effective against *Botrytis* and not effective against established powdery mildew and *Xanthomonas* infections.

## SPECIFIC DIRECTIONS FOR SPRAY APPLICATIONS

Field & Nursery

### Vegetables and Field Crops

CROP	DISEASE	RATE (fl. oz./100 gal)	Use instructions	†Use restrictions
<b>Carrots</b>	Alternaria and Cercospora leaf spot	15 – 20	Begin applications prior to usual disease occurrence and repeat every 7 to 10 days.	<b>For single applications:</b> Do not exceed 1.0 lbs. metallic copper/A.  <b>Annually:</b> Do not exceed 5 lbs. metallic copper/A  <b>Minimum interval:</b> 7 days
<b>Celery and Celeriac</b>	Bacterial leaf spot;  Cercospora (early) blight;  Septoria (late) blight	15 – 20	Begin applications as soon as plants are established in the field. Repeat every 7 to 10 days depending on disease severity and environmental conditions.	<b>For single applications:</b> Do not exceed 1.0 lbs. metallic copper/A.  <b>Annually:</b> Do not exceed 5 lbs. metallic copper/A.  <b>Minimum interval:</b> 7 days
<b>Chives</b>	Bacterial soft rot  Downy Mildew,  Gray Mold, ( <i>Botrytis</i> )	10 – 20	Begin applications when plants are established in the field. Repeat every 7 to 10 days depending on disease conditions.	<b>For single applications:</b> Do not exceed 0.53 lbs. metallic copper/A.  <b>Annually:</b> Do not exceed 2.65 lbs. metallic copper/A.  <b>Minimum interval:</b> 7 days

† INSTILL Bactericide<sup>A</sup> & Fungicide contains 0.55lbs of metallic copper per gallon of product.

Vegetables and Field Crops					Vegetables and Field Crops				
CROP	DISEASE	RATE (fl. oz./100 gal)	Use instructions	†Use restrictions	CROP	DISEASE	RATE (fl. oz./100 gal)	Use instructions	†Use restrictions
<b>Coriander,</b>  <b>Mint,</b>  <b>Rosemary</b>	Gray Mold ( <i>Botrytis</i> ),	10 – 20	Apply at first sign of disease or when conditions are favorable for disease development. Repeat at 10 day intervals.	<b>For single applications:</b> Do not exceed 0.53 lbs metallic copper/A.	<b>Dill</b>	Leaf spots	10 – 20	Begin applications when plants are first established in the field. Repeat every 7 to 10 days depending upon disease pressure.	<b>For single applications:</b> Do not exceed 0.79 lbs. metallic copper/A.
	Powdery mildew			<b>Annually:</b> Do not exceed 2.65 lbs metallic copper/A					<b>Annually:</b> Do not exceed 3.95 lbs. metallic copper/A.
<b>Crucifer crops</b> (broccoli, brussel sprouts, cauliflower, cabbage, kale, collard greens, mustard greens, turnip greens)	Black leaf spot ( <i>Alternaria</i> );	10 – 20	Begin applications after transplants are set in the field. Repeat every 7 days depending on disease pressure.	<b>For single applications:</b> Do not exceed 0.53 lbs. metallic copper/A.	<b>Eggplant</b>	Alternaria blight;  Anthracnose;  Gray Mold ( <i>Botrytis</i> );	15 - 20	Begin application prior to appearance of disease symptoms. Repeat every 7 to 10 days depending on disease severity.	<b>For single applications:</b> Do not exceed 0.79 lbs. metallic copper/A.
	Black rot ( <i>Xanthomonas</i> ); Downy mildew			<b>Annually:</b> Do not exceed 2.65 lbs. metallic copper/A.					<b>Annually:</b> Do not exceed 7.9 lbs. metallic copper/A.
<b>Cucurbits</b> (cucumbers, cantaloupe, squash, pumpkins, zucchini, watermelon)	Alternaria leaf spot;	15 - 25	Begin applications when disease is expected. Repeat every 5 to 7 days depending on conditions favorable for disease development.	<b>For single applications:</b> Do not exceed 1.05 lbs. metallic copper/A.	<b>Garlic,  Leek,  Onion, Shallot</b>	Bacterial soft rot;  Downy Mildew;  Gray Mold ( <i>Botrytis</i> )	10 – 20	Apply at first sign of disease or when conditions are favorable for disease development.	<b>For single applications:</b> Do not exceed 1.0 lbs. metallic copper/A.
	Angular leaf spot;			<b>Annually:</b> Do not exceed 5.25 lbs. metallic copper/A.					<b>Annually:</b> Do not exceed 6.0 lbs. metallic copper/A.
	Anthracnose; Downy Mildew;			<b>Minimum interval:</b> 7 days					<b>Minimum interval:</b> 7 days
	Gray Mold ( <i>Botrytis</i> );			<b>Minimum interval:</b> 5 days					<b>Minimum interval:</b> 7 days
	Powdery Mildew								

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Vegetables and Field Crops					Vegetables and Field Crops				
CROP	DISEASE	RATE (fl. oz./100 gal)	Use instructions	†Use restrictions	CROP	DISEASE	RATE (fl. oz./100 gal)	Use instructions	†Use restrictions
Ginseng	Alternaria leaf and stem blight	15 – 30	Begin applications as soon as plants emerge in the spring. Continue applications every 7 days until plants become dormant in the fall.	<b>For single applications:</b> Do not exceed 1.05 lbs metallic copper/A.	Peas	Powdery Mildew	15 – 25	Apply at first sign of disease or when conditions favor disease development. Repeat weekly and use higher rates when conditions are favorable for disease development.	<b>For single applications:</b> Do not exceed 0.79 lbs. metallic copper/A.
				<b>Annually:</b> Do not exceed 5.25 lbs. metallic copper/A.					<b>Annually:</b> Do not exceed 3.95 lbs. metallic copper/A.
Lettuce	Downy mildew  Gray Mold ( <i>Botrytis</i> ); Bacterial soft rot;	15 - 20	Apply at first sign of disease or when conditions favor disease development. Repeat every 7 to 10 days. Lower rates are advised for copper sensitive varieties.	<b>For single applications:</b>  Do not exceed 1.0 lbs. metallic copper/A.	Pepper	Bacterial Spot ( <i>Xanthomonas</i> );  Cercospora leaf spot  Gray Mold ( <i>Botrytis</i> );	15 – 35	Begin applications when conditions favor disease to develop. Apply every 7 to 10 days depending on disease severity and environmental conditions. Use higher rates when conditions are favorable for disease.	<b>For single applications:</b>  Do not exceed 0.79 lbs. metallic copper/A.
				<b>Annually:</b> Do not exceed 8.0 lbs. metallic copper/A.					<b>Annually:</b> Do not exceed 11.85 lbs. metallic copper/A.
Parsley	Leaf scorch;  Leaf spot	20 – 40	Begin applications when plants are first established in the field. Repeat every 7 to 10 days depending upon disease severity and environmental conditions.	<b>For single applications:</b> Do not exceed 1.0 lbs. metallic copper/A.	Spinach	Anthracnose,  Downy Mildew,  White rust	15 – 20	Apply at first sign of disease or when conditions favor disease development. Repeat at 7 to 10 day intervals.	<b>For single applications:</b> Do not exceed 0.79 lbs. metallic copper/A.
				<b>Annually:</b> Do not exceed 2.0 lbs. metallic copper/A.					<b>Annually:</b> Do not exceed 3.95 lbs. metallic copper/A.
				<b>Minimum interval:</b> 7 days					<b>Minimum interval:</b> 7 days
				<b>Minimum interval:</b> 5days					<b>Minimum interval:</b> 3 days
				<b>Minimum interval:</b> 10 days					<b>Minimum interval:</b> 7 days
†INSTILL Bactericide <sup>®</sup> & Fungicide contains 0.55lbs of metallic copper per gallon of product.									

**Vegetables and Field Crops**

**Other Field Crops**

CROP	DISEASE	RATE (fl. oz./100 gal)	Use instructions	†Use restrictions	CROP	DISEASE	RATE (fl. oz./Acre)	Use instructions	†Use restrictions														
<b>Tobacco</b>	Angular leaf spot;  Downy Mildew	15 – 20	Apply at first sign of disease or when conditions favor disease development.	<p><b>For single applications:</b> Do not exceed 2.0 lbs. metallic copper/A.</p> <p><b>Annually:</b> Do not exceed 8.0 lbs. metallic copper/A.</p> <p><b>Minimum interval:</b> 10 days</p>	<b>*Rice</b>	False Smut, Panicle Blight	8 – 24	<p>First application at late boot stage and repeat at 7 to 10 day intervals or as needed depending on the weather conditions until 80% heading. Use higher rate and shorter spray interval when disease pressure is high or environmental conditions are favorable for disease development.</p>	<p>DO NOT drain the field for at least 14 days after last application.</p> <p>Apply in a minimum of 20 gallons per acre of spray solution.</p>														
	<p><b>For single applications:</b> Do not exceed 0.53 lbs. metallic copper/A.</p> <p><b>Annually:</b> Do not exceed 17.4 lbs. metallic copper/A.</p> <p><b>Minimum interval:</b> 3 days</p>			<b>Tomato</b>  (processing)						<p>Anthracnose; Bacterial Speck (<i>Pseudomonas</i>);  Bacterial Spot (<i>Xanthomonas</i>); Bacterial Wilt (<i>Ralstonia</i>); Early blight; Late blight</p>	20 - 40	<p>Begin applications before first sign of disease. Use higher rates when conditions are favorable for disease development. Repeat at 7 to 10 day intervals.</p>	<p><b>For single applications:</b> Do not exceed 17.4 lbs. metallic copper/A.</p> <p><b>Annually:</b> Do not exceed 17.4 lbs. metallic copper/A.</p> <p><b>Minimum interval:</b> 3 days</p>	<b>*Wheat, *Barley and *Oats</b>	Fusarium Head Blight; Helminthosporium Spot Blotch; Powdery Mildew; Stagonospora Glume; Stem Blotch; Stem Rust	8 – 24	<p>Make first application at early heading and follow with second spray 10 days later. Use the higher rates when conditions favor disease.</p>	<p>Apply in a minimum of 20 gallons per acre of spray solution.</p> <p>Do not apply more than 1.06 lbs. copper per acre per year.</p>	<p>Gray Mold (<i>Botrytis</i>);  Powdery Mildew; Septoria Leaf Spot</p>	<p><b>For single applications:</b> Do not exceed 1.6 lbs. metallic copper/A.</p> <p><b>Annually:</b> Do not exceed 8.0 lbs. metallic copper/A.</p> <p><b>Minimum interval:</b> 3 days</p>	<p>For wheat, INSTILL Bactericide<sup>®</sup> &amp; Fungicide can be applied as a foliar application for early season disease control and again at early heading and followed with another application 10 days later.</p>	<b>Tomato</b>  (fresh market)	<p>Anthracnose; Bacterial Speck (<i>Pseudomonas</i>); Bacterial Spot (<i>Xanthomonas</i>); Bacterial Wilt (<i>Ralstonia</i>)  Early blight; Late blight</p> <p>Gray Mold (<i>Botrytis</i>); Powdery Mildew;  Septoria Leaf Spot</p>
<b>Tomato</b>  (processing)	<p>Anthracnose; Bacterial Speck (<i>Pseudomonas</i>);  Bacterial Spot (<i>Xanthomonas</i>); Bacterial Wilt (<i>Ralstonia</i>); Early blight; Late blight</p>	20 - 40	<p>Begin applications before first sign of disease. Use higher rates when conditions are favorable for disease development. Repeat at 7 to 10 day intervals.</p>		<p><b>For single applications:</b> Do not exceed 17.4 lbs. metallic copper/A.</p> <p><b>Annually:</b> Do not exceed 17.4 lbs. metallic copper/A.</p> <p><b>Minimum interval:</b> 3 days</p>	<b>*Wheat, *Barley and *Oats</b>	Fusarium Head Blight; Helminthosporium Spot Blotch; Powdery Mildew; Stagonospora Glume; Stem Blotch; Stem Rust	8 – 24	<p>Make first application at early heading and follow with second spray 10 days later. Use the higher rates when conditions favor disease.</p>	<p>Apply in a minimum of 20 gallons per acre of spray solution.</p> <p>Do not apply more than 1.06 lbs. copper per acre per year.</p>													
	<p>Gray Mold (<i>Botrytis</i>);  Powdery Mildew; Septoria Leaf Spot</p>			<p><b>For single applications:</b> Do not exceed 1.6 lbs. metallic copper/A.</p> <p><b>Annually:</b> Do not exceed 8.0 lbs. metallic copper/A.</p> <p><b>Minimum interval:</b> 3 days</p>	<p>For wheat, INSTILL Bactericide<sup>®</sup> &amp; Fungicide can be applied as a foliar application for early season disease control and again at early heading and followed with another application 10 days later.</p>																		
<b>Tomato</b>  (fresh market)	<p>Anthracnose; Bacterial Speck (<i>Pseudomonas</i>); Bacterial Spot (<i>Xanthomonas</i>); Bacterial Wilt (<i>Ralstonia</i>)  Early blight; Late blight</p> <p>Gray Mold (<i>Botrytis</i>); Powdery Mildew;  Septoria Leaf Spot</p>	20 - 40	<p>Begin applications before first sign of disease. Use higher rates when conditions are favorable for disease development. Repeat at 7 to 10 day intervals.</p>	<p><b>For single applications:</b> Do not exceed 1.6 lbs. metallic copper/A.</p> <p><b>Annually:</b> Do not exceed 8.0 lbs. metallic copper/A.</p> <p><b>Minimum interval:</b> 3 days</p>	<p>†INSTILL Bactericide<sup>®</sup> &amp; Fungicide contains 0.55lbs of metallic copper per gallon of product.</p> <p><b>* NOT APPROVED FOR USE IN CALIFORNIA</b></p>																		



Tree Crops and Small Fruits					Tree Crops and Small Fruits				
CROP	DISEASE	RATE (fl. oz./100 gal)	Use instructions	†Use restrictions	CROP	DISEASE	RATE (fl. oz./100 gal)	Use instructions	†Use restrictions
Almond,  Apricot,  Cherry, Nectarine, Peach, Plum, Prunes	Bacterial canker,	20 - 40	<u>Dormant, late dormant, up to pink bud</u>	<u>Dormant, late dormant, up to pink bud</u>	Apple, Pear and Quince	Anthracnose; Apple scab;	20 - 40	<u>Fall, late dormant</u>	<u>Fall, late dormant</u>
	Bacterial blast, Bacterial spot,		Make first application before fall rains and a second application at late dormant stage before foliage and buds begin to swell. Higher rates should be used when conditions favor disease.	<b>For single applications:</b>		Blossom blast;		Apply as a full cover spray. Use higher rates under severe disease conditions. After harvest, apply before fall rains.	<b>For single applications:</b>
	Shot-hole		<u>Bloom/ growing season</u>	Do not exceed 8.0 lbs. metallic copper/A.	Fire Blight ( <i>Erwinia</i> )		<u>Between silver-tip and green-tip</u>	Do not exceed 8.0 lbs. metallic copper/A. Only one application is permitted.	
			Apply during early bloom. Do not apply after full bloom or injury may occur. Use the higher rates when rainfall is heavy and disease pressure is high.	<b>Minimum interval:</b>	Shoot blast;		For fireblight, apply between silver-tip and green tip.	<u>Between silver-tip and green-tip</u>	
				7 days			<u>Bloom, growing season</u>	<b>For single applications:</b>	
				<u>Bloom/ growing season</u>			<b>Extended spray schedule where fruit finish is not a concern:</b>	Do not exceed 6.0 lbs. metallic copper/A.	
				<b>For single applications:</b>			Continued applications may be made at 5 to 7 day intervals or as needed between 1/2 inch green-tip and first cover spray. The addition of spray oil may enhance coverage of the wood in dormant sprays.	Only one application is permitted.	
				Do not exceed 1.5 lbs. metallic copper/A.				<u>Bloom, growing season</u>	
				<b>Minimum interval:</b>				<b>For single applications:</b>	
				5 days				Do not exceed 1.5 lbs. metallic copper/A.	
				<u>Annually</u>				<b>Minimum interval:</b>	
				Do not exceed 18.0 lbs. metallic copper/A.				5 days	
								<u>Annually</u>	
								Do not exceed 16.0 lbs. metallic copper/A.	

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Tree Crops and Small Fruits					Tree Crops and Small Fruits				
CROP	DISEASE	RATE (fl. oz./100 gal.)	Use instructions	†Use restrictions	CROP	DISEASE	RATE (fl. oz./100 gal.)	Use instructions	†Use restrictions
<b>Avocado</b>	Algal leaf spot,	30 – 50	Start applications when bloom buds begin to swell. Use higher rates when conditions favor disease.	<b>For single applications:</b> Do not exceed 3.15 lbs. metallic copper/A.  <b>Annually:</b> Do not exceed 18.9 lbs. metallic copper/A.  <b>Minimum interval:</b> 14 days	<b>Blueberries</b>	Bacterial canker	20 – 40	Make first application before fall rains and a second application after 4 weeks later.	<b>For single applications:</b> Do not exceed 2.1 lbs. metallic copper/A.  <b>Annually:</b> Do not exceed 8.4 lbs. metallic copper/A.  <b>Minimum interval:</b> 7 days
	Anthracnose,								
<b>Blackberries</b> <b>Raspberries</b>	Anthracnose,	20 – 40	Make fall application after harvest. Apply late dormant spray after pruning/training in the spring.	<b>For single applications:</b>  Do not exceed 2.0 lbs. metallic copper/A.  <b>Annually:</b> Do not exceed 10.0 lbs. metallic copper/A.  <b>Minimum interval:</b> 7 days	<b>Kiwi</b>	Erwinia herbicola,	20 - 50	Apply in 200 gallons of water per acre. Make first application before conditions favor disease. Use higher rates for conditions that favor heavy disease pressure.	<b>For single applications:</b>  Do not exceed 2.1 lbs. metallic copper/A.  <b>Annually:</b> Do not exceed 6.3 lbs. metallic copper/A.  <b>Minimum interval:</b> 30 days
	Leaf Spot,		Pseudomonas blight			Apply when leaf buds begin to open and repeat when flower buds show white.		Pseudomonas fluorescens,	

† INSTILL Bactericide<sup>^</sup> & Fungicide contains 0.55lbs of metallic copper per gallon of product.



Tree Crops and Small Fruits				
CROP	DISEASE	RATE (fl. oz./100 gal.)	Use instructions	†Use restrictions
Pistachio	Alternaria leaf blight	20 - 40	Begin application at bud swell and repeat every 14 to 28 days depending on disease pressure. Use higher rates when disease conditions are severe.	<b>For single applications:</b> Do not exceed 2.1 lbs. metallic copper/A.  <b>Annually:</b> Do not exceed 8.4 lbs. metallic copper/A.  <b>Minimum interval:</b> 14 days
	Septoria leaf blight			
Strawberries	Angular leaf spot ( <i>Xanthomonas</i> ),	15 – 30	Begin application when plants are established and continue throughout the season using higher rates when conditions favor disease.	<b>For single applications:</b> Do not exceed 1.5 lbs. metallic copper/A.  <b>Annually:</b> Do not exceed 8.19 lbs. metallic copper/A.  <b>Minimum interval:</b> 7 days
	Leaf spot			
Walnut	Walnut blight	30 – 50	Apply first spray at early pre-bloom prior to or when catkins are partially extended. Make additional applications during bloom and early nutlet stage if frequent rainfall occurs. For effective control, coverage of catkins, leaves and nutlets is essential.	<b>For single applications:</b> Do not exceed 4.0 lbs. metallic copper/A.  <b>Annually:</b> Do not exceed 32.0 lbs. metallic copper/A.  <b>Minimum interval:</b> 7 days

†INSTILL Bactericide<sup>A</sup> & Fungicide contains 0.55lbs of metallic copper per gallon of product.

Citrus Crops			
DISEASE	RATE (fl. oz./100 gal)	Use instructions	†Use restrictions
Algal spot;	20 - 40	Apply as a pre-bloom and post bloom spray. Higher rates should be used when conditions favor disease.	<b>For single applications:</b> Do not exceed 3.15 lbs. metallic copper/A.  <b>Annually:</b> Do not exceed 12.6 lbs. metallic copper/A.
Melanose		Apply when first flush of spring appears and each flush thereafter. Application to fruit should start after most petals have fallen and be repeated depending on rainfall and disease pressure.	
Alternaria brown spot		Begin applications in late spring, post-petal fall and continue once per month through early fall.	<b>Minimum interval:</b> 7 days
<b>Black Spot</b>		Apply to flushes 7 to 14 days after shoots begin to grow. Young fruit may require additional application. Disease pressure will determine timing and number of applications. Each flush of new growth should be sprayed under heavy disease pressure.	
<b>Citrus Canker</b> (suppression)		Apply in summer on expanded new flush. Repeat on subsequent flushes if conditions favor disease development. Use higher rate when disease pressure is severe.	
<b>Greasy spot</b>			

## GRAPES

DISEASE	RATE (fl. oz./100 gal.)	Use instructions	†Use restrictions
<b>Downy Mildew;</b>	15 – 25	Begin applications at bud break with following applications throughout the season, depending on disease severity.	<b>For single applications:</b>
<b>Gray Mold;</b>		Foliage injury may occur on copper sensitive varieties such as Concord, Delaware, Niagara and Rosette.	Do not exceed 3.0 lbs. metallic copper/A.
<b>Powdery Mildew</b>			<b>Annually:</b>  Do not exceed 20.0 lbs. metallic copper/A.  <b>Minimum interval:</b> 3 days

## USE DIRECTIONS FOR CHEMIGATION

The following precautions must be observed when using this product in any type of irrigation system.

Apply this product only through overhead sprinkler, including center pivot, lateral move, end tow, side (wheel) roll, big gun, solid set, or hand move; drip (trickle); or flood (basin) irrigation system(s). Do not apply this product through any other type of irrigation equipment.

Do not apply this product through any system using aluminum parts or components as damage to the system may occur.

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

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

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

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

Agitation in the pesticide supply tank is recommended at least once every 2 hours and may be more frequent or continuous.

The dosage rate should not be diluted by additional water applied as irrigation. Apply the prescribed rate and allow foliar surfaces to dry before irrigating. If irrigation precedes INSTILL Bactericide<sup>^</sup> and Fungicide application, allow foliage to drip off before beginning the application.

To optimize dilution of the pesticide in the supply tank, first add INSTILL Bactericide<sup>^</sup> and Fungicide to a small amount of water, room temperature or warmer, and mix gently until evenly dispersed.

† INSTILL Bactericide<sup>^</sup> & Fungicide contains 0.55lbs of metallic copper per gallon of product.

## POSTING

Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential areas, labor camps, businesses, day care centers, hospitals, in-patient clinics, nursing homes, or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or 2) when the chemigated area is open to the public such as golf courses or retail greenhouses.

Posting must conform to the following requirements. Treated areas shall be posted with signs at all usual points of entry and along routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corner of the treated areas and in any other location affording maximum visibility to sensitive areas. The printed side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in English. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period.

All words shall consist of letters at least 2 1/2 inches tall, and all letters and the symbol shall be a color which sharply contrasts with their immediate background. At the top of the sign shall be the words KEEP OUT, followed by an octagonal stop symbol at least 8 inches in diameter containing the word STOP. Below the symbol shall be the words PESTICIDES IN IRRIGATION WATER.

## SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

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.

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.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

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.

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.

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.

## REQUIREMENTS FOR SPRINKLER & DRIP CHEMIGATION

Observe all the requirements in the USE DIRECTIONS FOR CHEMIGATION section and the following additional requirements:

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.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

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.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

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.

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.

Do not apply when wind speed favors drift beyond the area intended for treatment.

## REQUIREMENTS FOR FLOOD CHEMIGATION

Observe all the requirements in the USE DIRECTIONS FOR CHEMIGATION section and the following additional requirements.

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 back flow if water flow stops.

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

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.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

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.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

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.

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.



## FIRST AID

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

### If in Eyes:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
- Call a poison control center or doctor for treatment advice.

### If Swallowed:

- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

### If on Skin or Clothing:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

**Note to Physician:** Skin symptoms may be similar to copper allergic reactions and can be treated similarly, including the use of steroid containing lotion. If swallowed, probable mucosal damage may contraindicate the use of gastric lavage.

## ACTIVE INGREDIENT

Copper Sulfate Pentahydrate\*

(CAS# 7758-99-8).....21.27%

**OTHER INGREDIENTS**.....78.73%

**Total**.....100.00%

\*Copper as Metallic..... 5.4%

Contains 2.18 lbs. active ingredient and 0.55 lbs. of metallic copper per gallon of product.

## PHYSICAL OR CHEMICAL HAZARDS

For spills, you may contact CHEMTREC at 1-800-424-9300.

**DO NOT  
FREEZE**



Distributed by:



**S.T. Biologicals,  
Incorporated**  
P.O. Box 385370  
Minneapolis, MN 55438  
1-800-356-8733

## KEEP OUT OF REACH OF CHILDREN WARNING AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

**SEE ATTACHED LABEL BROCHURE FOR DIRECTIONS  
FOR USE AND PRECAUTIONARY STATEMENTS**

**NET CONTENTS: 2.5 GALLONS**

E.P.A. REG. NO. 49538-5-92632  
E.P.A. EST. NO. 49538-MN-001

\*Non-Public health bacteria