

# **LIQUID COPPER FUNGICIDE READY TO USE**

**DORMANT AND GROWING SEASON LIQUID  
COPPER FUNGICIDE.**

**FOR ORGANIC PRODUCTION**

**FOR A WIDE RANGE OF PLANT DISEASES:  
POWDERY MILDEW, RUSTS, BLACKSPOT, LEAF  
& FRUIT SPOT, DOWNY MILDEW, FRUIT ROT,  
LATE BLIGHT.**

Manufactured under a license of W. Neudorff  
GmbH KG, Germany.



EPA Est. No. 4-NY-1  
EPA Reg. No. 67702-1-4

Distributed by  
Bonide Products, Inc.  
6301 Sutliff Road  
Oriskany, NY 13424

## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read and follow all applicable directions and precautions on this label before using.

## APPLICATION DIRECTIONS

Using the provided hand-pump sprayer, spray all plant surfaces thoroughly with Bonide Liquid Copper Fungicide RTU. One quart will treat 10 square yards (1.0 L will treat 10 m<sup>2</sup>).

To control **powdery mildews**, begin treatment 2 weeks before disease normally appears. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Spray every 7 days when the amount of disease is increasing rapidly. If possible, time applications so that 12 hours of dry weather follow application. On plants that are very susceptible to powdery mildew, such as home-greenhouse-grown cucumber, it is best to spray the plants twice a week during the first 2 weeks after emergence, and weekly thereafter. On outdoor plants, re-apply after rain.

To control **downy mildews, leaf and fruit spots, blights, and rust**, begin treatment 2 weeks before disease normally appears or when weather forecasts predict a long period of wet weather. Alternatively, begin treatment when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Spray all plant parts thoroughly. Re-apply following heavy rain. Apply every 7 days when the amount of disease is increasing rapidly. Sprays every 5 to 7 days should be used for preventing late blight on potato and related plants. If possible, time applications so that at least 12 hours of dry weather follows application.

To prevent **fruit rots**, spray Bonide Liquid Copper Fungicide RTU thoroughly onto flowers and fruit. Apply at the start of flowering and continue every 7 to 10 days until harvest. Fungicidal sprays are especially warranted when weather forecasts predict a long period of wet weather. Re-apply after rain.

## **APPLICATION DIRECTIONS Cont.**

Begin treatment 2 weeks before disease normally appears or when disease first appears, and repeat at 7 to 10 day intervals for as long as needed. Re-apply after rain.

### **GRAPES**

Note: Do not mix Bonide Liquid Copper Fungicide RTU with lime. Certain Vinifera and French Hybrid varieties may be sensitive to copper sprays resulting in marginal leaf burn. Before spraying these varieties, consult your State Experiment Station or make test sprays.

#### **Downy mildew, Black rot, Phomopsis Cane and Leaf Spot, Powdery mildew**

Spray all plant surfaces thoroughly with Bonide Liquid Copper Fungicide RTU. For best control begin treatment when new growth reaches 1/2 inch and repeat at 7 to 14 day intervals throughout the growing season.

#### **Gray mold (Fruit rot)**

Spray all plant surfaces thoroughly with Bonide Liquid Copper Fungicide RTU. For best control begin treatment at the end of bloom and repeat at 7 to 14 day intervals.

### **PEACHES**

#### **Peach leaf curl**

Spray all plant surfaces thoroughly with Bonide Liquid Copper Fungicide RTU. Can be used to control peach leaf curl. Apply as a dormant spray in late fall during a period of dry weather.

### **ORNAMENTAL PLANTS**

African violet - Bacterial leaf spot and blight, Botrytis blight, Leaf spot, Powdery mildew

Aluminum plant - Bacterial leaf spot and blight, Anthracnose, Leaf spot, Rhizoctonia blight

Aralia - Anthracnose, Bacterial leaf spot and blight, Leaf spot

Areca palm - Leaf spot

Bird's nest fern - Bacterial leaf spot and blight

Boston fern - Bacterial leaf spot and blight, Botrytis blight, Rhizoctonia blight

Bromeliad - Anthracnose, Bacterial Leaf spot and blight

## ORNAMENTAL PLANTS Cont.

Cactus - Leaf spot

Caladium - Bacterial leaf spot and blight, Rhizoctonia blight

Chinese evergreen - Anthracnose, Bacterial leaf spot and blight, Leaf spot, Rhizoctonia blight, Soft rot

Corn plant - Bacterial leaf spot and blight, Botrytis blight, Leaf spot

Croton - Anthracnose, Bacterial leaf spot and blight

Devils ivy - Bacterial leaf spot and blight, Rhizoctonia blight

Dieffenbachia - Bacterial leaf spot and blight, Leaf spot, Rhizoctonia blight

Dracaena - Bacterial leaf spot and blight, Botrytis blight, Leaf spot

Dwarf Schefflera - Bacterial leaf spot and blight, Leaf spot

Earthstar - Anthracnose

English ivy - Anthracnose, Bacterial leaf spot and blight, Botrytis blight, Leaf spot, Rhizoctonia blight

Euphorbia - Rhizoctonia blight

Fishtail palm - Bacterial leaf spot and blight, Leaf spot

Grape ivy - Anthracnose, Botrytis blight, Downy mildew, Powdery mildew, Rhizoctonia blight

India-rubber tree - Leaf spot, Botrytis blight

Japanese fatsia - Bacterial leaf spot and blight, Leaf spot, Rhizoctonia blight

Ladyfinger palm - Leaf spot

Lipstick vine - Botrytis blight, Leaf spot

Nephthytis - Bacterial leaf spot and blight, Leaf spot, Rhizoctonia blight

Nerve plant - Rhizoctonia blight

Norfolk Island pine - Colletotrichum needle blight

Oyster plant - Leaf spot

Peperomia - Leaf spot, Rhizoctonia blight

Philodendron - Anthracnose, Botrytis blight, Leaf spot

## ORNAMENTAL PLANTS Cont.

Pothos - Bacterial leaf spot and blight, Rhizoctonia blight

Prayer plant - Leaf spot

Rattlesnake plant - Bacterial leaf spot and blight, Leaf spot

Schefflera - Anthracnose, Bacterial leaf spot and blight, Leaf spot, Rhizoctonia blight

Sedum - Leaf spot

Snake plant - Bacterial leaf spot and blight, Leaf spot

Spathe flower - Leaf spot, Rhizoctonia blight

Staghorn fern - Bacterial leaf spot and blight, Rhizoctonia blight

Swiss cheese plant - Bacterial leaf spot and blight, Anthracnose, Rhizoctonia blight, Soft rot

Tailflower - Anthracnose, Bacterial leaf spot and blight, Leaf spot, Rhizoctonia blight, Soft rot

Ti plant - Anthracnose, Leaf spot

Urn plant - Anthracnose, Bacterial leaf spot and blight

Various palms - Leaf spot

Wax plant - Botrytis blight, Leaf spot, Rhizoctonia blight

Weeping fig - Leaf spot

Yucca - Leaf spot

Zebra plant - Botrytis blight, Leaf spot, Rhizoctonia blight

Bonide Liquid Copper Fungicide RTU may cause some copper toxicity on some plant species. Before spraying a specific plant species, consult your State Experiment Station or make a test spray.

## ROSE AND ORNAMENTAL SHRUBS

### **Blackspot, Downy mildew, Gray mold, Leafspots, Powdery mildew, Rust**

Spray all plant surfaces thoroughly with Bonide Liquid Copper Fungicide RTU. Begin treatment when new spring growth emerges and repeat every 7 to 10 days for as long as needed to control disease. Bonide Liquid Copper Fungicide RTU may cause some copper toxicity on some roses. Copper toxicity appears as purple spots.

Bonide Liquid Copper Fungicide RTU decomposes to form soluble copper, and fatty acid, both of which can be used by microbes and plants.

Fixed copper is one of the oldest fungicides and bactericides, used to control a wide range of plant diseases. Bonide Liquid Copper Fungicide RTU is a patented, fixed copper fungicide, made by combining a soluble copper fertilizer with a naturally-occurring fatty acid. The copper and the fatty acid combine to form a copper salt of the fatty acid, known technically as a true soap. The copper soap fungicide controls many common diseases using low concentrations of copper, down as low as 90 ppm. The net result is an excellent vegetable, fruit and ornamental fungicide. Bonide Liquid Copper Fungicide RTU is suited for use in domestic circumstances, both indoors and outdoors.

A wide range of bacteria and fungi attack plants, however, they generally only cause a few types of diseases. When using Bonide Liquid Copper Fungicide RTU, it is important to identify the type of disease in order to use the best method of disease control.

Bonide Liquid Copper Fungicide RTU controls diseases of a wide range of plants, including many vegetables, fruit and ornamentals. As with most fungicides, Bonide Liquid Copper Fungicide RTU acts to protect plants from infection. Therefore, it is important to have Bonide Liquid Copper Fungicide RTU on the leaf, flower or fruit before the pathogen is able to cause an infection.

**Powdery mildews** tend to occur on the upper leaf surfaces, as though a white powder was sprinkled onto the plant. Powdery mildews can form a dense, white, cottony mass, making the whole leaf appear white. They are also commonly found on stems. Powdery mildews rarely kill plants. Most fungal diseases require water to infect plants. Powdery mildews are unique in that they do not require water for infection. Hence, under home greenhouse conditions, powdery mildews can become severe. Shade and dense plantings also promote powdery mildew.

**Powdery mildews** commonly occur on the following plants: bean, beet, broccoli, brussel sprouts, cauliflower, cabbage, cantaloupe, chard, chicory, chive, cucumber, currant, endive, gooseberry, hop, kale, kohlrabi, lettuce, lilac, pea, pumpkin, rose, rutabaga, spinach, squash, strawberry, turnip, zucchini and many other plant species.

**Downy mildews** tend to occur on the lower leaf surfaces. Downy mildews are much finer than powdery mildews, and appear as fine white cotton, similar to duck down. Downy mildews can rapidly kill plant leaves during wet, cool weather, but are inhibited by hot dry weather. White rust is caused by fungi related to the downy mildews and occurs as small white blisters, full of white powder, that appear on plant leaves. The white powder is rust spores.

**Downy mildews** commonly occur on the following plants: bean, beet, broccoli, brussel sprouts, cauliflower, cabbage, cantaloupe, chard, chicory, chive, corn, cucumber, endive, garlic, hop, kale, kohlrabi, leek, lettuce, onion, pea, pumpkin, rutabaga, shallot, spinach, squash, sunflower, tobacco, turnip, zucchini and many other plant species.

**Leaf and fruit spots** are small brown or black spots on the leaf or fruit. They commonly occur on many of the plants grown around the home and in the garden. These spots can be caused by a range of fungi and bacteria. Leaf and fruit spots are commonly caused by fungi belonging to the following genera: *Alternaria*, *Cercospora*, *Colletotrichum*, *Cylindrosporium*, *Gloeosporium*, *Glomerella*, *Gnomonia*, *Marssonina*, *Mycosphaerella* (*Didymella*), *Phomopsis*, *Phyllosticta*, *Septoria*, and *Sphaceloma*. Spots on leaves and fruit can expand and grow together. Leaf spot pathogens require water to infect plants. During wet weather, spots can develop into a **blight**, rapidly, killing leaves, flowers and stems.

**Leaf and fruit spots** commonly occur on:

QUINCE: Anthracnose, Cedar Apple Rust, Coryneum Blight, Flyspeck, Quince Rust, Scab, Sooty Blotch

BEAN, PEA: Anthracnose, Ascochyta leaf and pod spot, Bacterial blights (halo, common and brown spot)

BEET, CHARD, SPINACH: *Cercospora* leaf spot

CARROTS: *Alternaria* leaf blight, Bacterial leaf blight, *Cercospora* leaf blight

CELERY AND CELERIAC: Bacterial leaf spot, *Cercospora* (early) blight, *Septoria* (late) blight

CORN: Southern leaf blight, *Cercospora* leaf spot

CABBAGE AND RELATED PLANTS: *Alternaria* blight, Bacterial leaf spot

CUCUMBERS, CANTALOUPE, SQUASH, PUMPKIN, ZUCCHINI: *Alternaria* blight, scab, Angular leaf spot, Anthracnose, Scab, *Ulocladium* leaf spot

CURRENT AND GOOSEBERRY: Anthracnose, *Phyllosticta* and *Septoria* leaf spots

GINSENG: *Alternaria* blight, *Botrytis* blight, *Phytophthora* mildew

HOP: Anthracnose, *Cercospora* leaf spot

LETTUCE, CHICORY, ENDIVE: *Septoria* leaf spot



ONION, GARLIC, LEEK, SHALLOT, CHIVES: Botrytis leaf blight, Neck rot and Bacterial soft rot

PARSLEY: Leaf scorch, Leaf spot

STRAWBERRY: Angular leaf spot, Leaf scorch, Mycosphaerella leaf spot, Phomopsis leaf blight, Septoria leaf spots

TOMATO, POTATO, EGGPLANT, PEPPER: Anthracnose, Bacterial speck, Bacterial spot, Cercospora leaf spot, Early blight, Gray mold, Late blight, Leaf mold, Septoria leaf spot

**Rusts** are small orange blisters that appear on plant leaves, that are full of orange powder. The orange powder is rust spores. Towards the end of the season, black spores are often produced.

**White rusts** commonly occur on the following plants: broccoli, brussel sprouts, cauliflower, cabbage, chard, kale, kohlrabi, spinach, sunflower, turnip, and many other plant species.

**Rusts** are commonly found on roses, currants and many other types of plants.

**Fruit rots** appear as soft, rotten areas on the fruit. Often the causal fungus can be seen growing and producing spores on the surface of the rotting area. Rots are often caused by fungi belonging to the following genera: *Aspergillus*, *Botrytis*, *Monilinia*, *Mucor*, *Penicillium*, *Rhizopus* and *Sclerotinia*.

**Fruit rots** commonly occur on strawberries, raspberries, and other fruit.

## **Cultural Method to Assist in Reducing Plant Disease**

Several common sense techniques can also be used to reduce plant disease. These include:

- Inspect the plants often for signs of disease or insect pests. Take appropriate measures when warranted.
- Promote healthy plant growth, but do not over fertilize.
- Do not grow the same types of plants in the same location in successive years.
- Control weed species around the garden that are related to the plant species that you are growing. Weeds are a source of plant pathogens.
- Space plants to ensure good airflow and drying after rain. Also, water plants in the morning to minimize the time that the plants are wet. Wet leaves, flowers and fruit promote infections by plant pathogens.
- Prune plants during dry weather to reduce wound infections.
- At the end of the growing season remove and compost all garden refuse. Garden refuse can act as a source of plant pathogens.

### **STORAGE AND DISPOSAL**

#### **STORAGE**

Store this product in its original container and keep in a secure storage area out of reach of children and domestic animals. Store in a secure place, away from open fire or flame. Keep container closed and reseal after use. Product may be damaged by freezing. Do not store product below 40°F (4°C). If spilled, use absorbent materials and dispose of in an approved manner.

#### **DISPOSAL**

**If empty:** Do not reuse this container. Place in trash or offer for recycling if available.

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

## FIRST AID

<b>IF IN EYES:</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"><li>• Call 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 by a poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>IF INHALED:</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>

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

## **PRECAUTIONARY STATEMENTS**

### **HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**CAUTION:** Harmful if swallowed, absorbed through skin or inhaled. Wash thoroughly with soap and water after handling. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Remove contaminated clothing and wash clothing before reuse.

### **ENVIRONMENTAL HAZARDS**

This product is toxic to fish and aquatic organisms. Do not apply directly to water. Do not contaminate water when disposing of equipment washwaters.

## **NOTICE TO BUYER**

Seller warrants that this product conforms to the chemical description on this label and is reasonably fit for purposes stated on this label only when used in accordance with directions under normal use conditions. This warranty does not extend to use of this product contrary to label directions, or under abnormal use conditions, or under conditions not reasonably foreseeable to seller. Buyer assumes all risk of any such use. Seller makes no other warranties, either expressed or implied.