

**GROUP M FUNGICIDE**



**Bravo® Zn**  
Agricultural Fungicide

AGRICULTURAL

SUSPENSION

**GUARANTEE:**

Chlorothalonil ..... 500 grams per litre

Contains 1,2-benzisothiazolin-3-one at 0.01% as a preservative.

**KEEP OUT OF REACH OF CHILDREN  
READ THE LABEL AND ATTACHED BOOKLET BEFORE USING**



REGISTRATION NO. **28900**  
PEST CONTROL PRODUCTS ACT

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Pamphlet

## NOTICE TO USER

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

## FIRST AID

**IF POISONING IS SUSPECTED, IMMEDIATELY** contact a physician or a poison control centre. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

**If swallowed**, call a poison control centre 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 centre or doctor. Do not give anything by mouth to an unconscious person.

**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 eye. Call a poison control centre or doctor for treatment advice.

**If on skin or clothing**, take off contaminated clothing. Rinse skin **IMMEDIATELY** with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

**If inhaled**, move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

## TOXICOLOGICAL INFORMATION

Treat symptomatically.

Note to Physician: Persons having an allergic reaction respond to treatment with antihistamines or steroid creams and/or systemic steroids.

## PRECAUTIONS

**WARNING - Causes eye irritation. Harmful if inhaled.**

**KEEP OUT OF REACH OF CHILDREN.**

DO NOT get in eyes.

Wear coveralls over long pants, and a long-sleeved shirt, goggles or a face shield, apron, and chemical resistant gloves during mixing, loading, clean-up and repair activities. Wear pants, a long-sleeved shirt and chemical resistant gloves during application.

DO NOT re-enter treated areas within 48 hours. If required, individuals may re-enter treated areas

within 48 hours for short-term tasks not involving hand labour only if at least 4 hours has passed since application, and long pants, long-sleeved shirt, hat and chemical-resistant gloves are worn.

AVOID contact with skin or clothing. Wash exposed areas of skin with soap and warm water after handling or using. DO NOT take internally. AVOID breathing spray mist. This product may produce temporary allergic side effects, characterized by redness of the eyes, mild bronchial irritation and redness or rash on exposed skin areas. DO NOT store near feed or foodstuffs. Store in a cool place. Protect from excessive heat. Apply only to areas specified on label.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's website at [www.croplife.ca](http://www.croplife.ca).

## **ENVIRONMENTAL HAZARDS**

This product is toxic to fish, aquatic invertebrates and marine/estuarine organisms. Runoff from treated areas may be hazardous to aquatic organisms in neighbouring areas. DO NOT apply directly to water.

Keep out of lakes, streams, and ponds. DO NOT contaminate water by cleaning of equipment, or disposal of wastes. DO NOT apply where runoff is likely to occur. DO NOT apply when weather conditions favour drift from areas being treated.

A buffer zone of 100 metres for aerial applications and 15 metres for ground applications to protect surface water bodies including lakes, streams, ponds or sloughs from drift must be observed. For aerial application, use mechanical flaggers only. Provincial buffer zones that are greater than the above buffer zones must be observed.

## **DISPOSAL**

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean up of spills.

### **CONTAINER DISPOSAL:**

#### **For recyclable containers:**

Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

**For refillable containers:**

For disposal, this container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not use this container for any other purpose.

***IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL, FIRE OR POISONING,  
CALL 1-800-327-8633 (FASTMED)***

**PRODUCT INFORMATION**

BRAVO<sup>®</sup> Zn Agricultural Fungicide is an excellent fungicide when used according to label directions for control of a broad spectrum of plant diseases. BRAVO Zn Agricultural Fungicide can be used effectively in dilute or concentrate sprays. Thorough uniform coverage is essential for disease control.

DO NOT combine BRAVO Zn Agricultural Fungicide in the spray tank with pesticides, surfactants or fertilizers, unless your prior use has shown the combination physically compatible and non-injurious under your conditions of use. Note: Slowly invert container several times to assure uniform mixture.

The required amount of BRAVO Zn Agricultural Fungicide should be added slowly into the spray tank during filling. With concentrate sprays, premix the required amount of BRAVO Zn Agricultural Fungicide in a clean container and add to the spray tank as it is being filled. Keep agitator running when filling spray tank and during spray operations.

**DIRECTIONS FOR USE**

Dosage rates on this label indicate litres of BRAVO Zn Agricultural Fungicide per hectare, unless otherwise stated. Applications should be made in sufficient water to obtain adequate coverage of foliage. Volume of water to be used will vary with crop and amount of plant growth. Spray volume usually will range from 225-1,600 litres per hectare for dilute sprays and 50-100 litres per hectare for concentrate ground sprays and aircraft applications. Both ground and aircraft methods of application are recommended unless specific directions are given for a crop.

**Generic Aerial Application Label Instructions - Directions for Use**

Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.

Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. When no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

## Use Precautions

Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in the *National Aerial Pesticide Application Manual*, developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides.

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified buffer zones should be observed.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Do not apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. Do not spray when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

## Operator Precautions

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

## Product Specific Precautions

Read and understand the entire label before opening this product. If you have questions, call the manufacturer or obtain technical advice from the distributor or your provincial agricultural representative. Application of this specific product must meet and/or conform to the following:

BRAVO ZN Agricultural Fungicide maximum rate is 12.0 kg a.i./ha/season for potatoes.

Volume: Apply the recommended rate in a minimum spray volume of 30 litres per hectare.

Refer to ENVIRONMENTAL PRECAUTIONS for additional details.

<b>Crop</b>	<b>Potato</b>
<b>Target Disease</b>	Late blight
<b>Use Rate (L/ha)</b>	1.2-2.4
<b>Application Interval (days)</b>	7-10
<b>Remarks</b>	Use sufficient water to obtain adequate spray coverage. Begin applications when plants are 15-20 cm high, or when disease threatens. Repeat applications as necessary to maintain disease control. Under severe disease conditions, use the higher rate at 7 day intervals. DO NOT apply to potato plants later than 1 day before harvest.
<b>Crop</b>	<b>Potato</b>
<b>Target Disease</b>	Early blight
<b>Use Rate (L/ha)</b>	1.6-2.4
<b>Application Interval (days)</b>	7-10
<b>Remarks</b>	Use sufficient water to obtain adequate spray coverage. Begin applications when plants are 15-20 cm high, or when disease threatens. Repeat applications as necessary to maintain disease control. Under severe disease conditions, use the higher rate at 7 day intervals. DO NOT apply to potato plants later than 1 day before harvest.

**Tank Mix with either RIDOMIL GOLD® 480EC or RIDOMIL GOLD 480SL Fungicide for Control and Suppression of diseases on Potatoes**

<b>Crop</b>	<b>Potato</b>
<b>Target Disease</b>	Control of foliar Late blight, Early blight, Botrytis vine rot, and Suppression of Storage rots namely Pythium Leak ( <i>Pythium</i> spp.) and Pink Rot ( <i>Phytophthora erythroseptica</i> )
<b>Use Rate of BRAVO ZN Agricultural Fungicide (L/ha)</b>	2.0
<b>Application Interval (days)</b>	Apply a second and third application of this tank mix at 14-day intervals. Apply a registered contact fungicide at 7-day intervals after application of this tank mixture.
<b>Use Rate of RIDOMIL GOLD 480EC or RIDOMIL GOLD 480SL (L/ha)</b>	0.208
<b>Notes</b>	Use a minimum of 50 L of water to obtain adequate spray coverage. Begin applications when plants are 15-20 cm high but no later than when plant foliage meets within the row uniformly across the field, or when disease threatens.
<b>Restrictions:</b> DO NOT apply more than three (3) applications per season regardless of disease being treated. DO NOT apply to potato plants later than 14 day before harvest.	

**Resistance Management Recommendations**

For resistance management, BRAVO Zn Agricultural Fungicide contains a Group M fungicide. Any fungal population may contain individuals naturally resistant to BRAVO Zn Agricultural Fungicide and other Group M fungicides. A gradual or total loss of pest control may occur over time if these fungicides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance management strategies should be followed.

**To delay fungicide resistance:**

Where possible, rotate the use of BRAVO Zn Agricultural Fungicide or other Group M fungicides with different groups that control the same pathogens.

Avoid application of more than the maximum number listed in the label and consecutive sprays of BRAVO Zn Agricultural Fungicide or other fungicides in the same group in a season.

Fungicide use should be based on an IPM program that includes scouting, historical information related to pesticide use and crop rotation and considers cultural, biological and other chemical control practices.

Monitor treated fungal populations for sign of resistance development. If disease continues to progress after treatment with this product, do not increase the use rate. Discontinue use of this product, and switch to another fungicide with a different target site of action, if available.

Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for specific crops and disease problems in your area.

For further information or to report suspected resistance, contact company representatives at 1-87-SYNGENTA (1-877-964-3682) or at [www.syngenta.ca](http://www.syngenta.ca).

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