

GROUP M5 FUNGICIDE



BRAVO® ZN
Agricultural Fungicide

COMMERCIAL – AGRICULTURAL

SUSPENSION

ACTIVE INGREDIENT:

Chlorothalonil500 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**

CAUTION



POISON

**WARNING: EYE IRRITANT
POTENTIAL SKIN SENSITIZER**

ALL MIXING AND LOADING MUST BE DONE WITH CLOSED TRANSFER SYSTEMS

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

NET CONTENTS: **25 L to BULK**

Syngenta Canada Inc.
140 Research Lane, Research Park
Guelph, Ontario N1G 4Z3
Telephone: 1-877-964-3682

Label

1.0 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.

2.0 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.

3.0 TOXICOLOGICAL INFORMATION

Treat symptomatically.

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

4.0 PRECAUTIONS

WARNING - Causes eye irritation. Harmful if inhaled. Potential skin sensitizer.

KEEP OUT OF REACH OF CHILDREN.

DO NOT get in eyes.

Restricted Entry Interval: DO NOT re-enter treated areas within 12 hours except for following activities for crops listed:

Crop	Activity	Restricted Entry Interval (REI) (days)
Carrot	Hand harvesting	22
	Scouting	7
Parsnip	Hand harvesting	21
	Scouting	5
Potato	Handset irrigation	23
	Roguing (seed)	19
	Scouting	3
Onions (dry bulb and green bunching)	Hand weeding	6
	Scouting	1
Cole crops (broccoli, Brussels sprouts, cauliflower)	Topping (Brussels sprouts)	5
	Scouting	5
Cabbage	Scouting, thinning	2
	Hand weeding	1
Chickpeas	Scouting	2
Peas (dry)	Scouting	1
Lentils	Scouting	3
Tomatoes, processing	Scouting	7
Asparagus	Scouting	4
Highbush blueberries	Handset irrigation	3
Cherry (sweet and sour)	Thinning	8
Corn, sweet	Hand harvesting	18
	Mechanical harvesting	14
	Scouting	1
Peach and nectarine	Thinning	11
Cranberry	Scouting	5
Filberts (hazelnuts)	Scouting	18
	Transplanting	10
	Orchard maintenance	2

Do not hand harvest processing tomatoes.

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.

Apply only when the potential for drift to non-target areas of human habitation and areas of human activity such as houses, cottages, schools and recreational areas is minimal. Take into consideration wind speed, wind directions, temperature inversions, application equipment, and sprayer settings.

If this pest control product is to be used on a commodity that may be exported to other countries in the world and you require information on acceptable residue levels in these countries, please contact Syngenta Canada Inc. at 1-87-SYNGENTA / 1-877-964-3682.

5.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

ALL MIXING AND LOADING MUST BE DONE WITH CLOSED TRANSFER SYSTEMS.

For more information and recommendation on the closed system set-up, contact Syngenta Canada Inc. at 1-877-964-3682.

Wear coveralls over long pants, and a long-sleeved shirt, chemical resistant gloves and socks and shoes during mixing, loading, clean-up and repair activities. Wear pants, a long-sleeved shirt, chemical resistant gloves, and socks and shoes during application. Gloves are not required during application within a closed cab.

Mixers/loaders/applicators in greenhouses and mushroom houses must wear a respirator with a NIOSH-approved organic vapour-removing cartridge with a prefilter approved for pesticides OR a NIOSH-approved canister approved for pesticides.

Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves with soap and water before removing.

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.

Wear freshly laundered clothes daily.

Do not wear contaminated shoes.

All users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

6.0 ENVIRONMENTAL PRECAUTIONS

TOXIC to aquatic organisms. Observe buffer zone specified under DIRECTIONS FOR USE. To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of run-off may be reduced by including a vegetative strip between the treated area and the edge of the water body.

7.0 STORAGE

Keep in original container, tightly closed, during storage. Store in a cool, dry, well ventilated area away from feed and foodstuffs, and out of the reach of children and animals. If frozen, allow to thaw and agitate thoroughly prior to use.

8.0 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.

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)***

BRAVO® and Weather Stik® are trademarks of a Syngenta Group Company.

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Pamphlet

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Mixers/loaders/applicators in greenhouses and mushroom houses must wear a respirator with a NIOSH-approved organic vapour-removing cartridge with a prefilter approved for pesticides OR a NIOSH-approved canister approved for pesticides.

Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves with soap and water before removing.

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9.0 PRODUCT INFORMATION

BRAVO® 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.

10.0 DIRECTIONS FOR USE

10.1 General Information

As this product is not registered for the control of pests in aquatic systems, **DO NOT** use to control aquatic pests.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

DO NOT use on greenhouse-grown agricultural crops, with the exception of celery seedbeds.

DO NOT allow effluent or runoff from greenhouses and mushroom houses containing this product to enter lakes, streams, ponds or other bodies of water.

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.

10.2 Ground Application

10.2.1 General Precautions

Mixers and loaders must use a closed system.

Wear coveralls over a long-sleeved shirt and long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean-up and repair.

Applicators treating potato fields must use groundboom equipment with an enclosed cab. Gloves are not required for an application in an enclosed cab. Wear chemical-resistant gloves when leaving the cab for clean-up and repair.

Field sprayer application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural and Biological Engineers (ASABE) medium classification. Boom height must be 60 cm or less above the crop or ground.

10.2.2 Mixing Instructions

1. Ensure that the sprayer interior is clean, then fill the spray tank with $\frac{1}{2}$ the required amount of water and engage gentle agitation. Good agitation is indicated by a rippling or rolling action on the surface of the water.
2. Add any WG or DF formulation mix partners and agitate to ensure complete mixing.
3. Add BRAVO ZN (SC) and agitate to ensure complete mixing.
4. Add any additional SC formulation mix partners and agitate to ensure complete mixing.
5. Add any EC formulation mix partners and agitate to ensure complete mixing.
6. Fill the tank to $\frac{3}{4}$ the required amount of water.
7. Add any solution (SN) formulation mix partners and agitate to ensure complete mixing.
8. Finish filling the sprayer with water, maintaining good agitation.
9. After any break in spraying operations, agitate thoroughly before spraying again.
10. Spray the pesticide suspension the same day as mixing.
11. Do not mix, load or clean spray equipment where there is a potential to contaminate wells or aquatic systems.

NOTE: WG and DF formulations are preferentially batch mixed.

NOTE: SC, SN, and SL formulations may be inducted or batch mixed.

NOTE: EC formulations are preferentially batch mixed.

It is **NOT** recommended to combine solid (WG or DF) formulations with liquid tank mix partners within a single batch. Batch mix WG or DF formulations first, pump into the hopper, and then add liquid tank mix partners by induction or as an additional batch mix. When tank mixing multiple products, follow the mixing order outlined below:

10.2.3 Spraying Instructions

1. Water Volume: Specific to crop and disease. Consult the tabulated instructions for use which follow.
2. Spray Nozzles: 80° or 110° pre-orifice flat fan or air induction nozzles are recommended. Use 50 mesh nozzle screens. Do not use flood type nozzles, controlled droplet application equipment, spray foils or hollow cone nozzles.
3. Pressure: As recommended by the nozzle manufacturer.
4. Apply at uniform speed and avoid overlapping. Shut off spray boom while starting, turning, slowing or stopping to avoid potential crop injury from over application.

10.2.4 Equipment Clean-Up

Clean Up Before Spraying:

- Prior to using BRAVO ZN Agricultural Fungicide, ensure that the spray tank, lines and filter are thoroughly clean.

Clean Up After Spraying:

- Thoroughly clean application equipment immediately after spraying. Do not allow any residue to dry within the spray tank.
- When using tank mixes, consult the tank-mix partner label for additional cleanup instructions.
- The following recommendations are provided:
 1. Drain and flush tank walls, boom and all hoses for ten minutes with a clean water/detergent mixture. Rinse with clean water. **Do not** clean the sprayer near desirable vegetation, wells or other water sources.
 2. Remove all nozzles and screens and wash separately.
 3. Dispose of all rinsate in accordance with provincial regulations.

10.3 Airblast Application

Wear coveralls over a long-sleeved shirt and long pants, chemical resistant gloves, socks and shoes during mixing, loading, clean-up, and repair activities. Wear a long sleeved-shirt, long pants, chemical resistant gloves, socks and shoes during application. Gloves are not required during application within a closed cab. Wear chemical-resistant gloves when leaving the cab for clean-up and repair.

In addition, wear chemical-resistant headgear during open cab airblast application. Chemical-resistant headgear includes Sou'Wester hat, chemical-resistant rain hat or large brimmed waterproof hat and hood with sufficient neck protection.

If handling more than 122 kg a.i./day (244 L), an applicator must wear a respirator with a NIOSH-approved organic vapour-removing cartridge with a prefilter approved for pesticides OR a NIOSH-approved canister approved for pesticides or use airblast equipment with an enclosed cab.

Airblast application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** direct spray above plants to be treated. Turn off outward pointing nozzles at row ends and outer rows. **DO NOT** apply when wind speed is greater than 16 km/h at the application site as measured outside of the treatment area on the upwind side.

10.4 Aerial Application

10.4.1 General Information

Mixers and loaders must use a closed system.

The field crew and the mixer/loaders: Wear coveralls over a long-sleeved shirt and long pants, chemical-resistant gloves, socks and shoes during mixing, loading, clean-up, and repair.

Aerial applicators: Wear a long-sleeved shirt, long pants, socks and shoes during application. Gloves are not required during application within a closed cockpit.

Aerial application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply when wind speed is greater than 16 km/h at flying height at the site of application. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural and Biological Engineers (ASABE) medium classification. To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wing- or rotorspan.

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.

10.4.2 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.

10.4.3 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.

10.4.4 Pilot Precautions

Read and understand the entire label before using this product. 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. Suggested conditions for good aerial application are moderate temperatures (less than 25°C) and moderate relative humidity (greater than 40%). Light winds at altitude of 3-16 km/h are preferred, with 3-9 km/h considered optimal. Ensure uniform application and a uniform spray with minimum potential for drift. To avoid streaked, uneven or overlapped application, use appropriate marking technology. GPS based marking is preferred.

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.

DO NOT apply during atmospheric conditions of thermal inversion which are characterized by dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply when wind speed is greater than 16 km/h at flying height at the site of application. **DO NOT** apply spray droplets which are smaller than the American Society of Agricultural and Biological Engineers medium classification (ASABE Standard S-572.1). The nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wing or rotor span in order to reduce drift caused by turbulent wingtip vortices.

10.4.5 Product Specific Precautions

Read and understand the entire label before opening this product. If you have questions, call the manufacturer at 1-87-SYNGENTA (1-877-964-3682) 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:

Volume: Apply the recommended rate in a minimum spray volume of 50 litres per hectare.

Refer to ENVIRONMENTAL PRECAUTIONS for additional details.

Avoid spraying when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

DO NOT overspray non-target terrestrial or aquatic habitats. DO NOT apply this product directly to freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs, ditches, and wetlands), estuaries or marine habitats. DO NOT contaminate

irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

10.4.6 Mixing Instructions

It is important to check the physical compatibility of tank mixed pesticide products in a small volume prior to filling the sprayer. Check the compatibility of tank mixes containing BRAVO ZN using a jar test with proportionate amounts of mix partners, and water, before mixing in the spray tank.

Mixing this product directly in the aircraft hopper **IS NOT** recommended. The use of chemical handling or managing equipment to load the hopper **IS** recommended. This product **MAY BE** inducted into a hopper which is prefilled with water or when the product and water are mixed prior to entering the hopper. This product **MAY BE** batch mixed and pumped into the hopper. In all cases the chemical handling equipment and hopper interior must be clean prior to use.

NOTE: WG and DF formulations are preferentially batch mixed.

NOTE: SC, SN, and SL formulations may be inducted or batch mixed.

NOTE: EC formulations are preferentially batch mixed.

It is **NOT** recommended to combine solid (WG or DF) formulations with liquid tank mix partners within a single batch. Batch mix WG or DF formulations first, pump into the hopper, and then add liquid tank mix partners by induction or as an additional batch mix. When tank mixing multiple products, follow the mixing order outlined below:

1. Pump water into the hopper to at least $\frac{1}{4}$ to $\frac{1}{2}$ of the desired spray volume. Engage hopper circulation, if possible.
2. Thoroughly batch mix any WG or DF formulation mix partners and agitate to ensure complete mixing. Pump into the hopper.
3. Induct or thoroughly batch mix BRAVO ZN and any additional SE or SC formulations.
4. Thoroughly batch mix any EC formulation mix partners. EC formulations may be added to the batch from Step 3, if desired.
5. Induct or thoroughly batch mix any solution (SN or SL) formulation mix partners. SN/SL formulations may be added to the batch from Step 3, if desired.
6. Pump batch mixed SC, EC, and/or SN/SL products into the hopper.
7. Finish filling the hopper with water.
8. If it was not possible to engage hopper agitation in Step 1, do so as soon as possible once airborne.
9. Spray the pesticide suspension the same day as mixing.
10. Do not mix, load or clean equipment where there is a potential to contaminate wells or aquatic systems.

10.4.7 Spraying Instructions

1. Water Volume: Apply in a minimum spray volume of 45 L/ha OR the volume given in the crop and pest specific instructions tabulated below, whichever is LARGER.
2. Spray Nozzles: Use only ASABE medium or coarse nozzles rated as delivering droplets of volume median diameter of 300 microns or greater.
3. Pressure: As recommended by the nozzle manufacturer to achieve ASABE medium or coarse sized droplets.

4. Ensure hopper agitation is engaged whenever possible during flight.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in overly 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.

10.4.8 Equipment Clean-Up

Before Spraying:

Prior to using BRAVO ZN, ensure that the hopper, chemical handling equipment, lines and filter are thoroughly cleaned.

After Spraying:

Thoroughly clean application equipment immediately after spraying. **DO NOT** allow BRAVO ZN residue to dry within application equipment.

When using tank mixes, consult the tank-mix partner label for additional clean-up instructions. The following recommendations are provided:

1. Drain and flush tank walls, boom and all hoses for ten minutes with a clean water/detergent mixture. Rinse with clean water. **DO NOT** clean application equipment near desirable vegetation, wells or other water sources.
2. Remove all nozzles and screens and wash separately.
3. Dispose of all rinsate in accordance with provincial regulations.

10.5 Vegetative Filter Strips

A Vegetative Filter Strip (VFS) of at least 10 metres wide must be constructed and maintained. The VFS is required between the field edge and adjacent, downhill aquatic habitats to reduce risk to aquatic organisms from run-off. Aquatic habitats include, but are not limited to, lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, and estuaries.

The VFS is to be composed of grasses and may also include shrubs, trees, or other vegetation. Additional guidance can be found on the PMRA Environmental Risk Mitigation webpages.

Both VFS and spray drift buffer zones must be observed.

10.6 Spray Drift Buffer Zones

Spray drift buffer zones are to protect terrestrial and aquatic habitats from spray drift. Spray drift buffer zones are a separate requirement from VFS which are required to mitigate risks from run-off.

Spot treatments using hand-held equipment **DO NOT** require a buffer zone.

The spray drift buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of application	Crop		Buffer zones (metres) Required for the Protection of:			
			Freshwater Habit of Depths:		Estuarine/Marine Habitats of Depths:	
			Less than 1 m	Greater than 1m	Less than 1 m	Greater than 1m
Field sprayer*	Wheat, evening primrose, potato		2	1	2	1
	Asparagus, carrots, sweet corn, parsnip, dry pea		3	1	3	1
	Celery, chickpeas, lentils, strawberry		3	1	3	2
	Cole crops, cucurbit vegetables, onions, tomatoes, ginseng, cabbage		4	1	4	2
	Blueberries (lowbush, highbush)		5	1	5	3
	Cranberries		10	1	10	4
Airblast	Filberts (hazelnuts), blueberries (lowbush, highbush)	Early growth stage	40	15	40	30
		Late growth stage	30	5	30	20
	Stonefruit (cherries, peaches, nectarines)	Early growth stage	40	15	40	30
		Late growth stage	30	10	30	20

Method of application	Crop		Buffer zones (metres) Required for the Protection of:			
			Freshwater Habit of Depths:		Estuarine/Marine Habitats of Depths:	
			Less than 1 m	Greater than 1m	Less than 1 m	Greater than 1m
Aerial	Potato, evening primrose	Fixed wing	65	4	65	20
		Rotary wing	50	1	50	15
	Wheat	Fixed wing	75	5	75	20
		Rotary wing	55	2	55	15
	Dry peas	Fixed wing	95	5	95	25
		Rotary wing	70	4	70	20
	Carrots	Fixed wing	100	5	100	30
		Rotary wing	75	5	75	20
	Parsnips	Fixed wing	90	5	90	20
		Rotary wing	60	3	60	20
	Celery, lentils	Fixed wing	175	10	175	40
		Rotary wing	100	5	100	30
	Cole crops, cucurbit vegetables, onion, tomato	Fixed wing	200	10	200	55
		Rotary wing	125	10	125	40

*For field sprayer application, buffer zones can be reduced with the use of drift reducing spray shields. When using a spray boom fitted with a full shield (shroud, curtain) that extends to the crop canopy, the labelled buffer zone can be reduced by 70%. When using a spray boom where individual nozzles are fitted with cone-shaped shields that are no more than 30 cm above the crop canopy, the labelled buffer zone can be reduced by 30%.

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASABE) category indicated on the labels for those tank mix partners.

The spray-drift buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Buffer Zone Calculator on the Pest Management Regulatory Agency web site. This tool cannot be used to reduce the vegetative filter strips.

11.0 CROP USE DIRECTIONS

Application of any product containing chlorothalonil cannot be made more frequently than the Retreatment Intervals stated below.

11.1 Carrot

Crops	Carrot
Maximum Number of Applications per Year	7
Target Disease	Cercospora leaf blight (<i>Cercospora carotae</i>) Alternaria leaf blight (<i>Alternaria dauci</i>)
Use Rate L/ha	2.4-3.2
Application Interval (days)	7-10
Remarks	Start applications when disease threatens and repeat at 7-10 day intervals. Use sufficient water to obtain adequate coverage. DO NOT apply within 2 days of harvest.

11.2 Parsnip

Crop	Parsnip
Maximum Number of Applications per Year	7
Target Disease	Root canker (<i>Phoma complanata</i>)
Use Rate L/ha	2.8
Application Interval (days)	7-10
Remarks	Start applications in mid-August and repeat at 7-10 day intervals. DO NOT apply within 7 days of harvest.

11.3 Potato

Crop	Potatoes
Maximum Number of Applications per Year	3
Target Disease	Late blight (<i>Phytophthora infestans</i>)
Use Rate L/ha	1.2-2.4
Target Disease	Early blight (<i>Alternaria solani</i>), Botrytis vine rot (<i>Botrytis cinerea</i>)
Use Rate L/ha	1.6-2.4
Application Interval (days)	7-10
Remarks	Use sufficient water to obtain adequate spray coverage. Begin applications when plants are 15-20 cm high, or when disease threatens. Under severe disease conditions, use the higher rates at 7 day intervals. DO NOT apply within 2 days of harvest.
Tank Mixed with QUADRIS® Flowable Fungicide for Control of Early Blight on Potatoes	
Diseases Controlled	Early Blight (<i>Alternaria solani</i>)
Product Rate/Ha BRAVO ZN Agricultural Fungicide	2 L/ha
Product Rate/Ha TANK MIX PARTNER	500 mL/ha QUADRIS Flowable Fungicide
Application Timing	Apply on a 7 to 14 day interval, starting prior to disease development.
Notes	Apply as a broadcast foliar spray in sufficient water for thorough coverage. Use the short application interval under high disease pressures.
<p>Restrictions: Do not exceed more than 3 applications per hectare per season. Do not apply sequential treatments of BRAVO ZN Agricultural Fungicide tank mixed with QUADRIS Flowable Fungicide. DO NOT apply to potato plants later than 2 days before harvest.</p> <p>A plant back interval of 30 days for potatoes (root crops) is required.</p> <p>Follow all precautions, restrictions and directions on the labels of fungicide products used in an alternation program.</p> <p>Follow recommendations provided by local disease monitoring services or provincial spray calendars regarding the appropriate application timing for protectant fungicides in your area. Cultural practices such as canopy management and removal of overwintered plant debris should be integrated with the use of fungicides to reduce disease incidence. Use the higher rate, and the shorter application interval under conditions of heavy infection pressure, on highly susceptible varieties, or when environmental conditions are favourable for disease development.</p> <p>CAUTION: QUADRIS Flowable Fungicide has been shown to be extremely phytotoxic to certain apple and crabapple varieties. BRAVO ZN Agricultural Fungicide tank mixed with QUADRIS Flowable Fungicide should not be applied where there is the possibility of spray drift reaching apple and crabapple trees. DO NOT use sprayers used to apply BRAVO ZN Agricultural Fungicide tank mixed with QUADRIS Flowable Fungicide to spray apples or crabapples.</p> <p>Field Application</p> <p>Do not apply BRAVO ZN Agricultural Fungicide tank mixed with QUADRIS Flowable Fungicide through irrigation equipment.</p>	

Do not apply during periods of dead calm or when winds are gusty. Do not overspray non-target terrestrial or aquatic habitats. Do not contaminate aquatic habitats when cleaning and rinsing spray equipment or containers. Do not apply with spray droplets smaller than the ASABE medium classification. Apply using nozzle tips and in sufficient water volume for thorough coverage (i.e. at least 100 litres per hectare).	
A buffer zone of 3 metres is required between the downwind point of direct application and the closest edge of sensitive aquatic habitats (such as lakes, rivers, sloughs, ponds, coulees, prairie potholes, creeks, marshes, streams, reservoirs, and wetlands) and estuarine/marine habitats.	
Tank Mix with either RIDOMIL GOLD® 480EC or RIDOMIL GOLD 480SL Fungicide for Control and Suppression of diseases on Potatoes	
Crop	Potato
Target Disease	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>)
Use Rate of BRAVO ZN Agricultural Fungicide (L/ha)	2.0
Use Rate of RIDOMIL GOLD 480EC or RIDOMIL GOLD 480SL (L/ha)	0.208
Application Interval (days)	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.
Notes	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.
Restrictions: 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.	

11.4 Onions (dry bulb and green bunching)

Crop	Onions (dry bulb and green bunching)
Maximum Number of Applications per Year	2
Target Disease	Botrytis leaf blight (<i>Botrytis squamosa</i>)
Use Rate L/ha	2.4-4.8
Application Interval (days)	7-10
Remarks	Start applications when disease threatens. Use sufficient water to obtain adequate coverage. DO NOT apply within 7 days of harvest to dry bulb onions. DO NOT apply within 14 days of harvest to green bunching onions.

11.5 Celery

Crop	Celery
Maximum Number of Applications per Year	2
Target Disease	Early blight (<i>Cercospora apii</i>)
Use Rate L/ha	1.6-2.4
Application Interval (days)	3-5
Remarks	Start applications when transplants are set in the field. Apply BRAVO ZN Agricultural Fungicide in sufficient water to obtain adequate coverage. DO NOT apply within 7 days of harvest. Start applications shortly after crop emergence. Use the higher rate under severe disease conditions.
Target Disease	Late blight (<i>Septoria apicola</i>)
Use Rate L/ha	2.4-4.0
Application Interval (days)	3-10
Remarks	Start applications when transplants are set in the field. Apply BRAVO ZN Agricultural Fungicide in sufficient water to obtain adequate coverage. DO NOT apply within 7 days of harvest. Start applications shortly after crop emergence. Use the higher rate under severe disease conditions.
Crop	Celery Seedbeds
Maximum Number of Applications per Year	1
Target Disease	Early blight (<i>Cercospora apii</i>) and Late blight (<i>Septoria apicola</i>)
Use Rate L/ha	2.0-2.4
Remarks	For control of early blight and late blight in celery seedbeds, use 2.0-2.4 litres BRAVO ZN Agricultural Fungicide per 1000 litres of water per hectare. Apply shortly after crop emergence. Use the higher rate under severe disease conditions.

11.6 Broccoli, Brussels Sprouts, Cauliflower

Crop	Broccoli, Brussels Sprouts, Cauliflower
Maximum Number of Applications per Year	1
Target Disease	Alternaria leaf spot (<i>Alternaria brassicae</i>), Downy mildew (<i>Peronospora parasitica</i>)
Use Rate L/ha	2.5-4.8
Remarks	Begin BRAVO ZN Agricultural Fungicide application after transplants are set in the field (or shortly after emergence of field seeded crop) or when conditions favour disease development. Use sufficient water to obtain adequate coverage. DO NOT apply within 7 days of harvest.

11.7 Cabbage

Crop	Cabbage
Maximum Number of Applications per Year	2
Target Disease	Alternaria leaf spot (<i>Alternaria brassicae</i>), Downy mildew (<i>Peronospora parasitica</i>)
Use Rate L/ha	2.5-4.8
Application Interval (days)	7-10
Remarks	Begin BRAVO ZN Agricultural Fungicide application after transplants are set in the field (or shortly after emergence of field seeded crop) or when conditions favour disease development. Use sufficient water to obtain adequate coverage. DO NOT apply within 7 days of harvest.

11.8 Chickpea

Crop	Chickpea
Maximum Number of Applications per Year	2
Target Disease	Ascochyta blight (<i>Ascochyta rabiei</i>)
Use Rate L/ha	3.0-4.0 (first application) 2.0-3.0 (second application)
Application Interval (days)	10
Remarks	Use 3.0-4.0 litres per hectare in first application and 2.0-3.0 litres per hectare in the second application. The first application must be applied before disease is established and no later than the onset of flowering and remaining application 10 days later. DO NOT apply within 14 days of harvest. Application of BRAVO ZN Agricultural Fungicide in combination with Herbicides could result in phytotoxicity or yellowing of the crop. Apply only with ground application equipment in 220 litres of water per hectare. DO NOT APPLY USING AERIAL APPLICATION EQUIPMENT.

11.9 Dry Peas

Crop	Dry Peas
Maximum Number of Applications per Year	2
Target Disease	Ascochyta blight (<i>Mycosphaerella pinodes</i>)
Use Rate L/ha	2.0 - 3.0
Application Interval (days)	10 - 14
Remarks	<p>The first application must be applied before disease is established and no later than the onset of flowering. Make a second application at early pod set, around 10 days after the first. Always apply the higher rate when conditions are favourable for disease.</p> <p>Application of BRAVO ZN Agricultural Fungicide in combination with Herbicides could result in phytotoxicity or yellowing of the crop. DO NOT apply within 32 days of harvest.</p> <p>DO NOT feed the hay from treated crop to livestock. DO NOT allow grazing of treated crop.</p>

11.10 Lentils

Crop	Lentils
Maximum Number of Applications per Year	2
Target Disease	Ascochyta blight (<i>Ascochyta lentis</i>) Anthracnose (<i>Colletotrichum truncatum</i>)
Use Rate L/ha	2.0 - 4.0
Application Interval (days)	10 -14
Remarks	<p>Apply BRAVO ZN Agricultural Fungicide beginning at preflowering prior to row closure, make a second application 10 to 14 days after the first application (during bloom period).</p> <p>DO NOT apply within 48 days of harvest.</p> <p>Application of BRAVO ZN Agricultural Fungicide in combination with Herbicides could result in phytotoxicity or yellowing of the crop.</p> <p>DO NOT feed the straw from treated crop to livestock. DO NOT allow grazing of treated crop.</p>

11.11 Tomato (including processing tomatoes)

Crop	Tomato (including processing tomatoes)
Maximum Number of Applications per Year	Tomatoes for processing: 2 at higher rate, 7 at lower rate All other tomatoes: 2
Target Disease	Early blight (<i>Alternaria solani</i>), Late blight (<i>Phytophthora infestans</i>), Septoria leaf spot (<i>Septoria lycopersici</i>), Anthracnose (<i>Colletotrichum coccodes</i>)
Use Rate L/ha	2.4 or 4.0
Application Interval (days)	8-10 days at the lower rate or 14 days at the higher rate
Target Disease	Botrytis gray mold (<i>Botrytis cinerea</i>)
Use Rate L/ha	4.8
Application Interval (days)	14
Remarks	Apply BRAVO ZN Agricultural Fungicide in sufficient water to obtain adequate coverage. Begin applications when disease threatens and spray as per listed interval. DO NOT apply within two (2) days of harvest.
Processing tomatoes: BRAVO ZN Agricultural Fungicide can be tank mixed with Lexone Herbicide. Follow the above directions for use for disease control and use Lexone at 150 grams active ingredient per hectare for weed control. Refer to the Lexone label for proper rates and use. When using this tank mix combination, DO NOT apply within 30 days of harvest.	

11.12 Cucurbit Vegetables (Cucumber, Cantaloupe, Muskmelon, Honeydew)

Crop	Cucumber, Cantaloupe, Muskmelon, Honeydew
Maximum Number of Applications per Year	2
Target Disease	Anthracnose (<i>Colletotrichum orbiculare</i>), Powdery mildew (<i>Sphaerotheca fuliginea</i>), Scab (<i>Cladosporium cucumerinum</i>)
Use Rate L/ha	4.8
Application Interval (days)	7
Remarks	Apply BRAVO ZN Agricultural Fungicide in sufficient water to obtain adequate coverage. Begin applications when plants are in the first true leaf stage or when conditions are favourable for disease development. Repeat applications at 7 day intervals. DO NOT apply within two (2) days of harvest. DO NOT apply via sprinkler irrigation system.

11.13 Watermelon, Squash, Pumpkin

Crop	Watermelon, Squash, Pumpkin
Maximum Number of Applications per Year	2
Target Disease	Anthracnose (<i>Colletotrichum orbiculare</i>)
Use Rate L/ha	3.2
Application Interval (days)	7
Remarks	<p>Apply BRAVO ZN Agricultural Fungicide in sufficient water to obtain adequate coverage.</p> <p>Begin applications when plants are in the first true leaf stage or when conditions are favourable for disease development.</p> <p>Repeat application 7 days later.</p> <p>DO NOT apply within 2 days of harvest.</p> <p>DO NOT apply via sprinkler irrigation system.</p>
Target Disease	Scab (<i>Cladosporium cucumerinum</i>)
Use Rate L/ha	4.8
Application Interval (days)	7
Remarks	<p>Apply BRAVO ZN Agricultural Fungicide in sufficient water to obtain adequate coverage.</p> <p>Begin applications when plants are in the first true leaf stage or when conditions are favourable for disease development.</p> <p>Repeat application 7 days later.</p> <p>DO NOT apply within 2 days of harvest.</p> <p>DO NOT apply via sprinkler irrigation system.</p>

11.14 Cherry

Crop	Cherry (Sweet and Sour)
Maximum Number of Applications per Year	2
Target Disease	Blossom blight/Brown rot (Pre-harvest) (<i>Monilinia fructicola</i>)
Use Rate L/ha	5.0-9.0
Application Interval (days)	10
Remarks	<p>Apply 1-2 applications from pink through shuck split at 10 days apart.</p> <p>DO NOT apply after shuck split to avoid fruit injury.</p> <p>DO NOT make more than 2 pre-harvest applications per season regardless of disease being treated.</p> <p>DO NOT apply within 40 days of harvest.</p> <p>Use higher rate per hectare for trees greater than 6 metres in height, or if weather is warm (above 16°C.) and wet during bloom.</p> <p>Apply in 500-1000 litres of water per hectare.</p>
Crop	Cherry (Sour)
Maximum Number of Applications per Year	2
Target Disease	Cherry leaf spot (Pre-harvest) (<i>Blumeriella jaapii</i>)
Use Rate L/ha	5.0-9.0
Application Interval (days)	10
Remarks	<p>Apply 1-2 applications from pink through shuck split at 10 days apart.</p> <p>DO NOT apply after shuck split to avoid fruit injury.</p> <p>DO NOT make more than 2 pre-harvest applications per season regardless of disease being treated.</p> <p>DO NOT apply within 40 days of harvest.</p>
Crop	Cherry (Sour)
Maximum Number of Applications per Year	1
Target Disease	Cherry leaf spot (Post-harvest) (<i>Blumeriella jaapii</i>)
Use Rate L/ha	5.0-7.2
Remarks	<p>Apply once to foliage 1-7 days after fruit is removed.</p> <p>Apply in 500-1000 litres water per hectare.</p> <p>DO NOT make more than 1 post-harvest application per season regardless of disease being treated.</p>

Crop	Cherry (Sour)
Maximum Number of Applications per Year	2
Target Disease	Black knot (Pre-harvest) (<i>Apiosporina morbosa</i>)
Use Rate L/ha	6.0-9.0
Application Interval (days)	10
Remarks	<p>Apply 1-2 applications from pink through shuck split at 10 days apart.</p> <p>DO NOT apply after shuck split to avoid fruit injury.</p> <p>For orchards with a history of black knot disease, prune out, remove and burn all black knots from commercial orchard during the dormant period, before bud break. Remove any infected wild cherry or plum trees surrounding commercial orchard. Follow BRAVO ZN Agricultural Fungicide spray schedule for blossom blight, including one application at shuck split.</p> <p>DO NOT make more than 2 pre-harvest applications per season regardless of disease being treated.</p> <p>DO NOT apply within 40 days of harvest.</p>
Crop	Cherry (Sour)
Maximum Number of Applications per Year	1
Target Disease	Black knot (Post-harvest) (<i>Apiosporina morbosa</i>)
Use Rate L/ha	6.0-7.2
Remarks	<p>Apply once to foliage 1-7 days after fruit is removed.</p> <p>For orchards with a history of black knot disease, prune out, remove and burn all black knots from commercial orchard during the dormant period, before bud break. Remove any infected wild cherry or plum trees surrounding commercial orchard.</p> <p>DO NOT make more than 1 post-harvest application per season regardless of disease being treated.</p>

11.15 Peach and Nectarine

Crop	Peach and Nectarine
Target Disease	Blossom blight/Brown rot (<i>Monilinia fructicola</i>)
Use Rate L/ha	5.0-9.0
Application Interval (days)	10
Maximum Number of Applications per Year	2
Target Disease	Peach leaf curl (<i>Taphrina deformans</i>)
Use Rate L/ha	5.0-7.0
Maximum Number of Applications	1 dormant (spring or fall)
Remarks	<p>DO NOT APPLY BRAVO ZN AGRICULTURAL FUNGICIDE WITHIN 10 DAYS OF AN OIL APPLICATION AS IT MAY CAUSE BURNING TO FLOWERS AND LEAF TISSUE.</p> <p>For blossom blight/brown rot, apply 1-2 applications from pink through shuck period.</p> <p>Use higher rate per hectare for trees greater than 6 metres in height, or if weather is warm (above 16°C) and wet during bloom. Apply in 500-1000 litres of water per hectare.</p> <p>DO NOT apply after shuck split to avoid fruit injury.</p> <p>For peach leaf curl, apply one application per year as a fall dormant spray at 75-100% leaf drop or as a spring dormant spray. Apply in at least 1000 litres of water per hectare.</p> <p>For both diseases inclusive, DO NOT make more than 3 applications per crop per year including a dormant spray.</p> <p>DO NOT apply 60 days before harvest.</p>

11.16 Highbush Blueberry

Crop	Highbush Blueberry
Maximum Number of Applications per Year	2
Target Disease	Anthraxnose Fruit Rot (<i>Colletotrichum acutatum</i>), Alternaria Fruit Rot (<i>Alternaria tenuissima</i>), Phomopsis Canker (<i>Phomopsis vaccinii</i>)
Use Rate L/ha	7.2
Application Interval (days)	7
Remarks	<p>Apply two applications between green tip and petal fall.</p> <p>After petal fall, a protective schedule using a different registered product may be necessary to ensure continued control of fruit rot.</p> <p>DO NOT apply within 54 days of harvest.</p>

11.17 Strawberry

Crop	Strawberry
Maximum Number of Applications per Year	3 2 (spring) + 1 (post-harvest)
Target Disease	Botrytis Fruit Rot (<i>Botrytis cinerea</i>)
Use Rate L/ha	3.5
Application Interval (days)	10-12
Remarks	<p>Apply BRAVO ZN Agricultural Fungicide in sufficient water to obtain coverage.</p> <p>Apply once in the fall.</p> <p>Apply two pre-bloom sprays the following spring, one when new growth appears and again 10-12 days later. Use ground application equipment only.</p> <p>DO NOT make more than 3 applications per year.</p> <p>DO NOT apply within 30 days of harvest.</p> <p>DO NOT APPLY USING AERIAL APPLICATION EQUIPMENT. DO NOT apply via sprinkler irrigation system.</p>

11.18 Cranberry

Crop	Cranberry
Maximum Number of Applications per Year	1
Target Disease	Fruit rots (<i>Gloeosporium minus</i> , <i>Penicillium</i> spp. and <i>Pestalotia vaccinii</i>) Twigleaf blight (<i>Lophodermium hypophyllum</i>) and upright dieback (<i>Phomopsis vaccinii</i>)
Use Rate L/ha	6.8-11.6
Remarks	<p>Apply once per year as needed.</p> <p>DO NOT make more than one application per year.</p> <p>DO NOT apply within 50 days of harvest.</p> <p>DO NOT apply BRAVO ZN Agricultural Fungicide to fields when flooded or allow release of irrigation water from bogs for at least 3 days following application.</p> <p>BRAVO ZN Agricultural Fungicide may be applied through sprinkler irrigation equipment.</p> <p>Use 3000 litres of water per hectare through solid set systems only. See application and calibration techniques for sprinkler irrigation under Directions for Use.</p> <p>DO NOT APPLY USING AERIAL APPLICATION.</p>
<p>APPLICATION AND CALIBRATION TECHNIQUES FOR SPRINKLER IRRIGATION SOLID SET IRRIGATION EQUIPMENT:</p> <p>Adjust sprinkler nozzles to prevent direct spray or drift into non-target areas. Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents within desired time periods. Mix desired amount of BRAVO ZN for acreage to be covered into quantity of water used during calibration. Operate entire system at normal pressures recommended by the manufacturer of injection equipment for amount of time established during calibration.</p> <p>BRAVO ZN can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed (e.g. as indicated by dye) and continue to operate irrigation system until BRAVO ZN has been cleared from the last sprinkler head. DO NOT operate irrigation system without safety valves or other devices to prevent back-siphoning of BRAVO ZN into water source. Tank containing BRAVO ZN should be connected to the discharge side of irrigation pump or other pressurized equipment attached to irrigation line. Never inject pesticides into the intake line or the suction side of pump. Irrigation water treated with BRAVO ZN Fungicide should be maintained on the treated area until the water is absorbed by the soil.</p>	

11.19 Wheat

Crop	Wheat
Maximum Number of Applications per Year	2
Target Disease	Septoria leafspot (<i>Septoria tritici</i>), Stagonospora glume blotch (<i>Stagonospora nodorum</i>) and Tan Spot (<i>Pyrenophora tritici-repentis</i>)
Use Rate L/ha	1.5 - 2.5
Application Interval (days)	10-14
Remarks	Apply BRAVO ZN Agricultural Fungicide at Zadok's growth stage 37 (flag leaf emergence). A second application up to growth stage 69 (ear fully emerged) may be necessary if conditions favour disease spread.
Target Disease	Fusarium head blight (scab) (<i>Fusarium graminearum</i>) suppression
Use Rate L/ha	2.0 - 2.5
Application Interval (days)	10-14
Remarks	DO NOT apply more than two (2) applications per season regardless of disease being treated. Apply BRAVO ZN Agricultural Fungicide at growth stage 61-65 (early flowering) to suppress Fusarium head blight. For best results, this application must be made prior to conditions favouring infection, i.e. before flowering has started in the majority of tillers and wet weather is due. DO NOT apply within 30 days of harvest. DO NOT feed the straw from treated crop to livestock. DO NOT allow grazing of treated crop.

11.20 Sweet Corn

Crop	Sweet corn
Maximum Number of Applications per Year	2
Target Disease	Common rust (<i>Puccinia sorghi</i>)
Use Rate L/ha	3.2
Application Interval (days)	10-14
Remarks	Apply when symptoms are first noticed and repeat again 10-14 days later. DO NOT apply within 14 days of harvest.

11.21 Mushroom

Crop	Mushroom
Maximum Number of Applications per Year	1 (per crop production cycle)
Target Disease	Dry bubble (<i>Verticillium fungicola</i>)
Use Rate L/ha	254 mL/100 m ² 128 mL/100 m ²
Remarks	Apply 254 millilitres per 100 square metres immediately after casing or in the casing mix and 128 millilitres at pinning in 100 to 130 litres of water. Individuals applying BRAVO ZN Agricultural Fungicide in mushroom facilities should wear a full face respirator during all activities. In addition, if re-entry into mushroom facilities within 48 hours of treatment is required wear a full face respirator. DO NOT apply within 7 days of harvest.

12.0 MINOR USES**NOTE TO USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR THE INDICATED SPECIAL USE APPLICATIONS:**

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than Syngenta Canada Inc. under the User Requested Minor Use Label Expansion program. For these uses, Syngenta Canada Inc. has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) under all environmental conditions or for all crop varieties when used in accordance with the label. The user should test the product on a small area first, under local conditions and using standard practices, to confirm the product is suitable for widespread application.

12.1 Ginseng

Crop	Ginseng
Maximum Number of Applications per Year	3 2 + 1 (fall)
Target Disease	Alternaria leaf blight (<i>Alternaria panax</i>) Grey mold (<i>Botrytis cinerea</i>)
Use Rate L/ha	2.4-4.8
Application Interval (days)	10
Remarks	Start applications when disease threatens and make second application 10 days later. A third application may be made in the fall. DO NOT make more than three applications per year. DO NOT apply within 14 days of harvest. DO NOT feed treated ginseng (roots or foliage) to livestock.

12.2 Cucurbit Vegetables

Crop	Cucurbit Vegetables
Maximum Number of Applications per Year	2
Target Disease	Downy mildew (<i>Pseudoperonospora cubensis</i>), Powdery mildew (<i>Sphaerotheca fuliginea</i>)
Use Rate L/ha	4.8
Application Interval (days)	Begin applications at the first true leaf stage or when conditions are favourable for disease development. Repeat application at 7 day interval.
Remarks	Apply BRAVO ZN Agricultural Fungicide in sufficient water to obtain adequate coverage. DO NOT apply within two (2) days of harvest. DO NOT APPLY USING AERIAL APPLICATION EQUIPMENT. DO NOT apply via sprinkler irrigation system.
Complete list of crops (CG9): Chayote; Chinese waxgourd; Citron melon; Cucumber (field); Gerkin; Gourd, edible; Momordica spp.; Muskmelons (includes cantaloupe); Pumpkin; Squash, summer (includes zucchini); Squash, winter; Watermelon. Including cultivars and/or hybrids of these.	

12.3 Lowbush (Wild) Blueberry (Sprout Year)

Crop	Lowbush (Wild) Blueberry (Sprout Year)
Maximum Number of Applications per Year	2
Target Disease	Phomopsis canker (<i>Phomopsis vaccinii</i>) Leaf spot diseases (suppression only) including Septoria leaf spot (<i>Septoria</i> sp.), rust (<i>Naohidemyces vaccinii</i>) and Valdensinia leaf spot (<i>Valdensinia heterodoxa</i>)
Use Rate L/ha	7.2
Application Interval (days)	42 Make the first application in early to mid-June of the sprout year. Follow with a second application in early August. Application should be based on the level of disease pressure in the previous year.
Remarks	Apply BRAVO ZN Agricultural Fungicide in 200 - 950 L/ha of water. DO NOT apply within 54 days of harvest. DO NOT APPLY USING AERIAL APPLICATION EQUIPMENT.

12.4 Evening Primrose

Crop	Evening Primrose
Maximum Number of Applications per Year	2
Target Disease	Blight and dieback (<i>Septoria oenotherae</i>)
Use Rate L/ha	2.3
Application Interval (days)	14-28
Remarks	Fall applications only. Apply to direct seeded fields after emergence when disease symptoms appear. Reapply at the shorter interval if conditions favour disease.

12.5 Asparagus	
Crop	Asparagus
Maximum Number of Applications per Year	3
Target Disease	Purple Spot (<i>Stemphylium vesicarium</i>), Rust (<i>Puccinia asparagi</i>)
Use Rate L/ha	3.4
Application Interval (days)	14
Remarks	<p>Begin applications following final harvest of spears.</p> <p>Apply BRAVO ZN Agricultural Fungicide in 100 - 200 L/ha of water.</p> <p>DO NOT apply within 190 days of harvest.</p> <p>DO NOT APPLY USING AERIAL APPLICATION EQUIPMENT.</p>
12.6 Filberts (Hazelnuts)	
Crop	Filberts (Hazelnuts)
Maximum Number of Applications per Year	3
Target Disease	Eastern filbert blight (<i>Anisogramma anomala</i>)
Use Rate L/ha	6.72
Application Interval (days)	20
Remarks	<p>Apply preventatively during bud-break to shoot elongation (in spring and early summer). Do not apply within 120 days of harvest.</p> <p>Apply BRAVO ZN Agricultural Fungicide in 500 – 3000 L/ha of water.</p> <p>Do not enter or allow worker re-entry into treated areas during the restricted entry interval of 18 days for scouting, 10 days for transplanting and 2 days for orchard maintenance activities.</p> <p>DO NOT apply with oils, other pesticides, surfactants or fertilizers.</p> <p>DO NOT apply within one week of an oil-based pesticide application.</p> <p>Apply ground foliar application only. DO NOT apply by chemigation.</p> <p>DO NOT APPLY USING AERIAL APPLICATION EQUIPMENT.</p>

13.0 RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, BRAVO ZN Agricultural Fungicide contains a Group M5 fungicide. Any fungal population may contain individuals naturally resistant to BRAVO ZN Agricultural Fungicide and other Group M5 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 M5 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.

Use tank mixtures with fungicides from a different group that is effective on the target pathogen when such use is permitted.

Fungicide use should be based on an integrated disease management program that includes scouting, historical information related to pesticide use and crop rotation and considers host plant resistance, impact of environmental conditions on disease development, disease thresholds, as well as cultural, biological and other chemical control practices.

Where possible, make use of predictive disease models to effectively time fungicide applications.

Monitor treated fungal populations for sign of resistance development. Notify Syngenta Canada Inc. if reduced sensitivity of pathogen to BRAVO ZN is suspected.

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.

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