

GROUP	49	4	FUNGICIDES
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## ORONDIS® GOLD DC FUNGICIDE

**EMULSIFIABLE CONCENTRATE**

**COMMERCIAL**

FOR USE ON LABELLED CROPS

**ACTIVE INGREDIENTS:**

Oxathiapiprolin .....35 g/L  
Metalaxyl-M and S-isomer .....105 g/L

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

**WARNING – EYE IRRITANT**

REGISTRATION NO.: **35176**PEST CONTROL PRODUCTS ACT

NET CONTENTS: **0.5 L – 1,500 LITRES**

**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.

## 2.0 FIRST AID

**IN CASE OF POISONING**, contact a physician or a poison control centre **IMMEDIATELY**. 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 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 treatment advice.

**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.

## 3.0 TOXICOLOGICAL INFORMATION

There is no specific antidote. Treat symptomatically.

## 4.0 PRECAUTIONS

Causes eye irritation. **DO NOT** get in eyes

KEEP OUT OF REACH OF CHILDREN AND ANIMALS.

Keep unused product in original container tightly closed, locked up and away from food and feed.

**DO NOT** enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

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)

Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and chemical-resistant footwear during mixing, loading, application, clean-up and repair. In addition, wear protective eyewear (goggles or face shield) during mixing, loading, clean-up and repair. Gloves are not required during application within a closed cab.

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 before removing. As soon as possible, wash thoroughly and change into clean clothing.

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.

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

All users should wash hands after using ORONDIS® GOLD DC Fungicide for example before eating, drinking, smoking, using the toilet or using a handheld device.

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

## 6.0 ENVIRONMENTAL PRECAUTIONS

TOXIC to aquatic organisms. Observe spray buffer zones specified under DIRECTIONS FOR USE.

Toxic to certain beneficial arthropods (which may include predatory and parasitic insects, spiders, and mites). Minimize spray drift to reduce harmful effects on beneficial arthropods in habitats next to the application site such as hedgerows and woodland.

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 runoff may be reduced by including a vegetative filter strip between the treated area and the edge of the water body.

This product demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this product in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination

Oxathiapiprolin is persistent and may carryover. It is recommended that any products containing oxathiapiprolin not be used in areas treated with this product during the previous season.

## 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.

Store this product away from food or feed.

## 8.0 DISPOSAL

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

### **For Returnable Containers:**

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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/territorial requirements.

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

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**Pamphlet**

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## 9.0 PRODUCT INFORMATION

ORONDIS GOLD DC Fungicide is active against selective oomycete diseases listed on this label and has preventive and antispore activity. ORONDIS GOLD DC Fungicide is locally systemic, translaminar, and moves systemically in the xylem. ORONDIS GOLD DC Fungicide must be applied in a regularly scheduled protective spray program in rotation with other fungicides. See directions below for specific crop/disease recommendations.

**DO NOT** follow soil applications of ORONDIS GOLD DC Fungicide with foliar applications of oxathiapiprolin-containing fungicides. Different application methods (foliar and soil) must not be combined when protecting a crop during a growing season.

### 9.1 Cultivar/Varietal Crop Safety

Not all varieties, cultivars or hybrids of crops, have been individually tested for crop safety. It is not possible to evaluate for crop safety all applications of ORONDIS GOLD DC Fungicide on all crops, on all varieties, cultivars, or hybrids of those crops, or under all environmental conditions and growing circumstances. To test for crop safety, apply the product in accordance with the label instructions to a small area of the target crop to ensure that a phytotoxic response will not occur, especially where the application is a new use of the product by the applicator.

### 9.2 General Use Precautions

**DO NOT USE IN GREENHOUSES (ALONE OR IN TANK MIXTURES).**

**FAILURE TO FOLLOW DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR DISEASE CONTROL, AND/OR ILLEGAL RESIDUES.**

Unless indicated otherwise in the use directions for specific crops, make no more than two sequential application of ORONDIS GOLD DC Fungicide before alternating with a non-Group 49 and 4 fungicide registered for the same disease.

### 9.3 Crop Rotation

For all legume crops except succulent peas, a plant-back interval of 180 days is required. All other crops may be planted immediately following the last application.

## 10.0 DIRECTIONS FOR USE

### 10.1 General restrictions

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.

**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 Engineers (ASAE S572.1) fine classification. Boom height must

be 60 cm or less above the crop or ground.

**DO NOT** apply by air.

## 10.2 General Information

This product may be tank mixed with a fertilizer, a supplement, or with registered pest control products, whose labels also allow tank mixing, provided the entirety of both labels, including Directions For Use, Precautions, Restrictions, Environmental Precautions, and Spray Buffer Zones are followed for each product. In cases where these requirements differ between the tank mix partner labels, the most restrictive label must be followed. Do not tank mix products containing the same active ingredient unless specifically listed on this label.

In some cases, tank mixing pest control products can result in reduced pesticide efficacy or increased host crop injury. The user should contact Syngenta Canada Inc. at 1-87-SYNGENTA (1-877-964-3682) for information before applying any tank mix that is not specifically recommended on this label.

Syngenta Canada Inc. has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) of all potential tank-mixes under all environmental conditions or for all crop varieties. Tank mixes that are not specifically listed on this label should be tested on a small area first, under local conditions and using standard practices, to confirm the tank mix is suitable for widespread application.

To determine the physical compatibility of this product with other products, use a jar test.

Always read and follow label directions including WALES mixing order.

## 10.3 Ground Application

### 10.3.1 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 ORONDIS GOLD DC Fungicide and agitate to ensure complete mixing.
3. Finish filling the sprayer with water, maintaining good agitation.
4. After any break in spraying operations, agitate thoroughly before spraying again.
5. Spray the pesticide suspension the same day as mixing.
6. **DO NOT** mix, load or clean spray equipment where there is a potential to contaminate wells or aquatic systems.

### 10.3.2 Sprayer Clean-Up

#### Before Spraying:

- Prior to using ORONDIS GOLD DC Fungicide, ensure that the spray tank, lines and filter are thoroughly clean.

#### After Spraying:

- Thoroughly clean application equipment immediately after spraying. **DO NOT** allow ORONDIS GOLD DC Fungicide residue to dry within the spray tank

- 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/territorial regulations.

#### 10.4 Equipment Specific Instructions

For suppression or control of soil borne diseases, as recommended in this label, ORONDIS GOLD DC Fungicide must be applied in a manner that ensures the product solution adequately saturates the target crop root/crown zone.

For soil application, apply ORONDIS GOLD DC Fungicide using drip application, surface band or directed application, or in-furrow application. IN ALL CASES: If the application method does *not* move the product to the target root/crown disease zone, the application must be followed with irrigation or cultivation to correctly place the product for disease control.

**Soil Broadcast Application: 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 spray droplets which are smaller than the American Society of Agricultural and Engineers fine classification (ASAE Standard S-572.1). Boom height must be 60 cm or less above the crop or ground.

##### 10.4.1 Spraying Instructions

1. Water Volume: Apply in at least the minimum spray volume indicated in the crop and pest specific instructions tabulated below.
2. Sprayer Agitation: Use a jet agitator or liquid sparge tube which recirculates 7-10% of the tank per minute. **DO NOT** use an air sparger.
3. Pump: Screens should be used to protect the pump and prevent clogging. **DO NOT** place a screen in the recirculation line. Use 50 mesh or *coarser* screens between the pump and boom unless directed otherwise by the sprayer manufacturer.
4. Spray Nozzles: Use dedicated flood or stream type nozzles designed for soil application. Selected broadcast nozzles may also be suitable, if recommended for soil application by the manufacturer. Use 50 mesh nozzle screens or as recommended by the nozzle manufacturer.
5. Pressure: As recommended by the nozzle manufacturer to achieve no smaller than ASAE fine sized droplets.
6. 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.

**Surface Band or Directed Application:** Apply in a 10-30 cm (4-12 inch) band in at least the minimum spray volume indicated in the crop and pest specific instructions tabulated below. Follow application with cultivation or irrigation 1.25 - 2.5 cm (0.5 - 1 inch) to move ORONDIS GOLD DC Fungicide to the target disease zone.

##### **Application through irrigation equipment (CHEMIGATION):**

Do not apply this product through any other type of irrigation system.

Do not apply when wind speed causes non-uniform distribution and/or favors drift beyond the area intended for treatment.

Do not apply by chemigation if the area to be treated is within 100 metres of a residential area or park.

This product MAY ONLY be applied through lower pressure micro sprinklers and surface laid drip irrigation AND ONLY at rates specified on this label. **DO NOT** apply this product through any other type of irrigation system, including permanent sub-surface drip irrigation system (i.e. drip tape buried beneath more than 15 cm of soil). This product MAY BE applied through surface type drip irrigation tape buried up to 15 cm of soil. **DO NOT** apply ORONDIS GOLD DC Fungicide through any irrigation system which is physically connected to a public water system. ORONDIS GOLD DC Fungicide may be applied through irrigation systems, which may be **supplied** by a public water system **only if** the water is 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 to top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The irrigation system **must provide uniform distribution of treated water**. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. The system **must be calibrated to uniformly apply the rates specified**. If you have questions about calibration, contact your equipment manufacturers or distributor. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Do not inject ORONDIS GOLD DC at full strength or deterioration of valves and seals may occur. ORONDIS GOLD DC can affect many seal materials. Leather seals are best. EPDM or silicone rubber seals can be used, but should be replaced once a year. Do not use Viton<sup>®</sup>, nitrile (Buna-N), Neoprene, or PVC seals. Dilute ORONDIS GOLD DC Fungicide in the solution tank at a ratio of at least 15 parts of water to one part of ORONDIS GOLD DC Fungicide. Injecting a larger volume of a more dilute solution will usually allow a more accurate calibration of the metering equipment. Meter the pesticide into the irrigation water during the irrigation cycle.

#### 10.4.2 Operating Instructions for All Labeled Types of Irrigation Systems

1. The system must be calibrated to uniformly apply the rates specified. If you have questions about calibration, contact the equipment manufacturer.
2. 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.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check-valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must 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.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
6. 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.
7. Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump or Venturi injector), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
  8. **DO NOT** apply when wind speed favours drift beyond the area intended, except in drip chemigation.
  9. The pesticide injection pipeline must be on the downstream (field) side of the system filters to avoid potential pesticide off-site contamination or misapplication as a result of the filter backflushing process.
  10. Have a dedicated pesticide injection tank for chemigation purposes rather than tank-mixing pesticides with fertilizers or other non-pesticide chemigation products. This reduces the potential for incompatibility issues which could result in misapplication.
  11. Make ORONDIS GOLD DC Fungicide injections into the center of the water pipe for a thorough and quick mix. This can be accomplished with an “injection tube” which should contain a check valve.

#### **10.4.3 Specific Low Pressure Micro Sprinklers and Drip Irrigation Instructions**

ORONDIS GOLD DC Fungicide must be applied on the schedule specified in the tabulated crop and pest specific directions for use, not according to the irrigation schedule. The following calibration and application techniques are provided for user reference, but do not constitute a warranty of fitness for application through low-pressure microsprinkler or drip type irrigation equipment. Check with provincial/territorial and other applicable regulatory agencies for potential use restrictions before applying any agricultural chemicals through irrigation equipment.

1. Each run of the irrigation system must be calibrated separately to determine the time it takes water to move through the system and to make sure all emitters in the system are putting out the same amount of water.
2. Use only pressure injection or Venturi equipment.
3. Determine the area to be treated in each irrigation run.
4. Measure the output of each of the emitters or drip tubes closest to and farthest from the injection point.
5. For calibration, substitute a concentrated laundry detergent for the ORONDIS GOLD DC Fungicide mixture in the injector (solution) tank. It is important to use the same volume of soap solution as the planned volume of ORONDIS GOLD DC Fungicide solution when calibrating the system. The detergent will bubble as it leaves the emitters. Check the time period over which the bubbles occur for both the closest and farthest emitters. If these times are not within 2 minutes of each other, adjust the dilution ratio and/or the injection rate.

#### **10.4.4 Step-by-Step Calibration and Application Instructions**

1. Before starting to calibrate, operate the system until all of the emitters are putting out at equal flow rates or until the system is operating at full pressure.
2. Make up an indicator solution of detergent, using the same rate of indicator as the planned volume of ORONDIS GOLD DC Fungicide to be used in the mix.
3. Set the injector to apply the indicator solution at the injection rate to be used in the actual ORONDIS GOLD DC Fungicide application.
4. Attach a 30 cm length of flexible tubing over the emitter closest to the injection point, another 30 cm length over the emitter farthest away. Both emitters should be monitored

- to determine the time intervals that the indicator solution is observed.
5. Begin injecting the indicator solution. Direct the flow from the flexible tubes into a small container. Begin timing when the indicator solution is first detected. Stop timing when the indicator solutions are no longer detected in the container.
  6. If the period of detection of the indicator solution between the near and far emitter is within 2 minutes, comparable coverage will be obtained. If they are not, make adjustments by increasing the dilution ratio, ie using more than a 15:1 ratio of water to ORONDIS GOLD DC Fungicide, or adjust the injector to a slower flow rate.
  7. Once the system is calibrated, dilute the needed amount of ORONDIS GOLD DC Fungicide with water and any other tank mix partners in the injection tank at a minimum dilution of 15 parts water to 1 part ORONDIS GOLD DC Fungicide. Follow the directions for mixing and equipment set up in the **Mixing Instructions** section of this label for complete details.
  8. **DO NOT** begin to inject ORONDIS GOLD DC Fungicide into the system until all emitters are producing equal flow rates, or until the system is at full pressure.
  9. Inject the ORONDIS GOLD DC Fungicide solution into the system at the beginning of the irrigation set in 1.5-2.5 cm of irrigation water.

### 10.5 Product Specific Precautions

Follow recommendations provided by local disease monitoring services or provincial/territorial 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.

Repeated use of products for control of specific plant pathogens may lead to the selection of resistant strains of fungi and result in a reduction of disease control. The mode of action of Oxathiapiprolin, one of the active ingredients in ORONDIS GOLD DC Fungicide, is novel and has been assigned the FRAC code 49. Oxathiapiprolin inhibits an oxysterol binding protein (OSBP) homologue. Oxysterol binding proteins are implicated in the movement of lipids between membranes, among other processes. Inhibiting OSBP may disrupt other processes in the fungal cell, such as signaling, maintaining cell membranes, and the formation of more complex lipids that are essential for the cell to survive. A disease management program that includes rotation and/or tank mixing with fungicides with a different mode of action is essential to reduce the risk of fungicide resistance development. For guidance on a particular crop and disease control situation, consult your country/provincial/territorial extension specialist or official country/provincial/territorial recommendations.

ORONDIS GOLD DC Fungicide treatments should be integrated into an overall disease management strategy that includes selection of varieties with disease tolerance, plant residue management, crop rotation, and proper timing and placement of fertilizer and irrigation. Fungicide applications should begin prior to disease infection and continue throughout the season following a resistance management strategy (see **Resistance Management Recommendations**).

### 10.5.1 Spray Buffer zones

A spray buffer zone is NOT required for:

- uses with hand-held application equipment permitted on this label,
- low-clearance hooded or shielded sprayers that prevent spray contact with crop, fruit or foliage,
- soil drench or soil incorporation,
- use of low pressure micro-sprinklers in irrigation systems.

The spray 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).

Method of application	Crop	Spray Buffer Zones (metres) Required for the Protection of:	
		Freshwater Habitat of Depths:	
		Less than 1 m	Greater than 1 m
Field sprayer	Ginseng, Crop Subgroup 13-07A (caneberries), Crop Group 8-09 (fruiting vegetables)	1	0

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

## 11.0 CROP USE DIRECTIONS

### 11.1 Potatoes

Crops	Potatoes
Diseases Suppressed	Pink rot ( <i>Phytophthora erythroseptica</i> ) Pythium leak ( <i>Pythium</i> spp.)
Use rate	18 mL/100 m row
Application Timing/Instructions	Apply once as an in-furrow spray in 40 L per hectare of water at planting. Mount spray nozzle so the spray is directed into the furrow as a 15-20 cm band just before the seed is covered.
Minimum recommended application water volume	40 L/ha
Maximum number of applications per-year	1
Maximum rate of active ingredients applied	85 g ai/ha of oxathiapiprolin 255 g ai/ha of metalaxyl-M and S-isomer
Re-entry Interval (REI)	12 hours after application
Pre-harvest interval (PHI)	Not applicable
Specific Use Restrictions	<b>DO NOT</b> follow soil applications of ORONDIS GOLD DC Fungicide with foliar applications of any ORONDIS Fungicide or any other

	FRAC 49-containing product.
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**11.2 Ginseng**

<b>Crop</b>	<b>Ginseng</b>
<b>Diseases Controlled</b>	<b>Pythium damping off</b> ( <i>Pythium</i> spp.) <b>Phytophthora root rot</b> ( <i>Phytophthora cactorum</i> )
<b>Use rate (product/ha)</b>	3 L/ha (420 g ai/ha)
<b>Application Timing/Instructions</b>	Apply the first application of ORONDIS GOLD DC Fungicide as a soil drench application prior to the emergence of ginseng in the spring. Use a minimum water volume of 1000 L/ha. Subsequent applications should be made as a drench with a minimum water volume of 4000 L/ha. If possible, irrigate the field/treated area prior to application to wet the straw. Time the application of ORONDIS GOLD DC Fungicide immediately prior to rainfall to help move ORONDIS GOLD DC Fungicide into the root zone. If a minimum 1 cm of rainfall does not occur within an hour after application, the field/treated area should be irrigated overhead.  Phytophthora root rot only: Make a second drench application six weeks later and a third drench application six weeks after the second one.
<b>Minimum recommended application water volume</b>	1000 L/ha for the first application and 4000 L/ha for subsequent applications.
<b>Maximum number of applications per year</b>	3 per year in total; 1 for pythium damping off; 3 for phytophthora root rot
<b>Minimum Application Interval</b>	42 days
<b>Maximum rate of active ingredients applied</b>	945 gai/ha of metalaxyl-M and S-isomer and 315 gai/ha of oxathiapiprolin
<b>Restricted Entry Interval (REI)</b>	12 hours after application
<b>Pre-harvest interval (PHI)</b>	14 days
<b>Specific Use Restrictions:</b>	
<ol style="list-style-type: none"> <li><b>DO NOT</b> follow soil applications of ORONDIS GOLD DC Fungicide with foliar applications of oxathiapiprolin-containing fungicides. Use either soil applications or foliar applications, but not both for the control of relevant diseases.</li> <li>When 3 or more fungicide applications are made in a program, use ORONDIS GOLD DC (or other oxathiapiprolin-containing product) in no more than 33% of the applications. When less than three fungicide applications are made, make no more than one application of ORONDIS GOLD DC (or any other FRAC 49-containing product).</li> </ol>	

### 11.3 Cucumbers

<b>Crop</b>	<b>Cucumbers</b>
<b>Diseases Controlled</b>	<b>Pythium damping off</b> ( <i>Pythium</i> spp.) <b>Phytophthora root and crown rot</b> ( <i>Phytophthora capsici</i> )
<b>Use rate (product/ha)</b>	2 L/ha (280 g ai/ha)
<b>Application Timing/Instructions</b>	Apply at planting as a banded spray, or through drip irrigation. See specific soil application directions on this label.  If ORONDIS GOLD DC Fungicide is applied through drip irrigation, the oxathiapiprolin will protect only those roots within 15 cm of the emitter.
<b>Minimum recommended application water volume</b>	400 L/ha
<b>Maximum number of applications per crop cycle</b>	1
<b>Maximum rate of active ingredients applied</b>	210 g ai/ha of metalaxyl-M and S-isomer 70 g ai/ha of oxathiapiprolin
<b>Restricted Entry Interval (REI)</b>	12 hours after application
<b>Pre-harvest interval (PHI)</b>	Not applicable
<b>Specific Use Restrictions:</b>	
<ol style="list-style-type: none"> <li>1. <b>DO NOT</b> follow soil applications of ORONDIS GOLD DC Fungicide with foliar applications of oxathiapiprolin-containing fungicides. Use either soil applications or foliar applications, but not both for the control of relevant diseases.</li> <li>2. <b>DO NOT</b> use in transplant production.</li> <li>3. There will be no more than six applications of any FRAC 49-containing product per year on the same acreage, targeting the same pathogen.</li> </ol>	

### 11.4 Crop Group 8-09

<b>Crop</b>	<b>Crop Group 8-09 - Fruiting Vegetables:</b> African eggplant; bush tomato, cocona, currant tomato, eggplant, garden huckleberry, goji berry, groundcherry, martynia, naranjilla, okra, pea eggplant, pepino, pepper (bell and non-bell), roselle, scarlet eggplant, sunberry, tomatillo, tomato, tree tomato, cultivars, varieties and/or hybrids of these
<b>Diseases Controlled</b>	<b>Pythium damping off</b> ( <i>Pythium</i> spp.) <b>Phytophthora blight and crown rot</b> ( <i>Phytophthora capsici</i> )* *tomato, pepper (bell and non-bell) and eggplant only
<b>Use rate (product/ha)</b>	2 L/ha (280 g ai/ha) product (70 g ai/ha oxathiapiprolin; 210 g ai/ha metalaxyl-M and S-isomer)
<b>Application Timing/Instructions</b>	Applied At-Planting Soil Application by any of the following methods: <ul style="list-style-type: none"> <li>• Transplant water</li> <li>• Banded surface spray – Apply following transplanting or during seeding in a 38 – 76 cm (15- to 30-inch) band</li> <li>• Drip irrigation</li> </ul> <p>Make the second and third applications by drip irrigation or a directed surface spray.</p>
<b>Minimum recommended application water volume</b>	400 L/ha
<b>Maximum number of applications per year</b>	3 per year in total; 1 for Pythium damping-off; 3 for phytophthora blight and crown rot.
<b>Re-treatment Interval</b>	30 days
<b>Maximum rate of active ingredients applied</b>	210 g ai/ha oxathiapiprolin; 630 g ai/ha metalaxyl-M and S-isomer
<b>Restricted Entry Interval (REI)</b>	12 hours after application
<b>Pre-harvest interval (PHI)</b>	7 days
<b>Specific Use Restrictions:</b>	
<ol style="list-style-type: none"> <li>1. <b>DO NOT</b> follow soil applications of ORONDIS GOLD DC Fungicide with foliar applications of oxathiapiprolin-containing fungicides. Use either soil applications or foliar applications, but not both for the control of relevant diseases.</li> <li>2. When 3 or more fungicide applications are made in a program, use ORONDIS GOLD DC (or other oxathiapiprolin-containing product) in no more than 33% of the applications. When less than three fungicide applications are made, make no more than one application of ORONDIS GOLD DC (or any other FRAC 49-containing product).</li> </ol>	

## 11.5 Bulb Vegetables

<b>Crop</b>	<b>Bulb Vegetables:</b> Chive (fresh leaves), Chinese chive (fresh leaves), garlic (bulb), great-headed garlic (bulb), serpent garlic (bulb), kurrat, lady's leek, leek, Beltsville bunching onion, onion (bulb), Chinese onion (bulb), onion (fresh), green onion, macrostem onion, pearl onion, potato onion (bulb), tree onion (tops), Welsh onion (tops), shallot (bulb or fresh leaves), wild leek
<b>Disease Suppressed</b>	<b>Downy Mildew</b> ( <i>Peronospora destructor</i> )
<b>Use rate (product/ha)</b>	1 L/ha (140 g ai/ha) product (35 g ai/ha oxathiapiprolin; 105 g ai/ha metalaxyl-M and S-isomer)
<b>Application Timing/Instructions</b>	Apply as a foliar spray with the 1st application at beginning of infection risk (preventively). Subsequent applications should be at an interval 5 to 10 days (depending on disease pressure).
<b>Minimum recommended application water volume</b>	200 – 800 L/ha
<b>Maximum number of applications per year</b>	3
<b>Maximum rate of active ingredients applied</b>	105 g ai/ha oxathiapiprolin; 315 g ai/ha metalaxyl-M and S-isomer
<b>Restricted Entry Interval (REI)</b>	12 hours after application
<b>Pre-harvest interval (PHI)</b>	7 days
<b>Specific Use Restrictions:</b>	
<ol style="list-style-type: none"> <li><b>DO NOT</b> follow soil applications of ORONDIS GOLD DC Fungicide with foliar applications of oxathiapiprolin-containing fungicides. Use either soil applications or foliar applications, but not both for the control of relevant diseases.</li> <li>When 3 or more fungicide applications are made in a program, use ORONDIS GOLD DC (or other oxathiapiprolin-containing product) in no more than 33% of the applications. When less than three fungicide applications are made, make no more than one application of ORONDIS GOLD DC (or any other FRAC 49-containing product).</li> </ol>	

**11.6 Crop Subgroup 13-07A**

<b>Crops</b>	<b>Crop Subgroup 13-07A - Caneberry:</b> Blackberry (including Andean blackberry, arctic blackberry, bingleberry, black satin berry, boysenberry, brombeere, California blackberry, Chesterberry, Cherokee blackberry, Cheyenne blackberry, common blackberry, coryberry, darrowberry, dewberry, Dirksen thornless berry, evergreen blackberry, Himalayaberry, hullberry, lavacaberry, lowberry, Lucretiaberry, mammoth blackberry, marionberry, mora, mures deronce, nectarberry, Northern dewberry, olallieberry, Oregon evergreen berry, phenomenalberry, rangeberry, ravenberry, rossberry, Shawnee blackberry, Southern dewberry, tayberry, youngberry, zarzamora), Loganberry, Raspberry (black and red), Wild raspberry, and cultivars, varieties and/or hybrids of these
<b>Disease Controlled</b>	<b>Phytophthora root rot (<i>Phytophthora</i> sp.)</b>
<b>Use rate (product/ha)</b>	4.57 L product/ha, 640 g ai/ha (480 g ai/ha metalaxyl-M and S-isomer + 160 g ai/ha oxathiapiprolin)
<b>Application Timing/Instructions</b>	<b>Soil Spray (broadcast, band or drip)</b>  <b>New Plantings:</b> Make one application at the time of planting. One additional application may be made to coincide with the period most favourable for root rot development. For band applications use 48 cm band width.  <b>Established Plantings:</b> Before the plants start to grow in the spring, make a soil-directed application towards the base of the plant in a 1.0 m band over the row or via the drip irrigation. One additional application may be made to coincide with the period most favorable for root rot development.
<b>Minimum recommended application water volume</b>	2000 L/ha
<b>Maximum number of applications per year</b>	2
<b>Maximum rate of active ingredients applied/year</b>	<b>DO NOT</b> exceed 960 g ai/ha of metalaxyl-M and S-isomer/year. <b>DO NOT</b> exceed 320 g ai/ha of oxathiapiprolin/year.
<b>Minimum Application Interval</b>	7 days
<b>Restricted Entry Interval (REI)</b>	12 hours after application
<b>Pre-harvest interval (PHI)</b>	30 days
<b>Specific Use Restrictions:</b>	
<ol style="list-style-type: none"> <li><b>DO NOT</b> follow soil applications of ORONDIS GOLD DC with foliar applications of oxathiapiprolin-containing fungicides. Use either soil applications or foliar applications, but not both for the control of relevant diseases.</li> <li><b>DO NOT</b> use in nursery production.</li> </ol>	

11.7 Crop Subgroup 13-07B

<b>Crops</b>	<b>Crop Subgroup 13-07B - Bushberry subgroup, except lowbush blueberry:</b>  Aronia berry; blueberry, highbush; buffalo currant; Chilean guava; currant, black; currant, red; elderberry; European, barberry; gooseberry; cranberry, highbush; honeysuckle, edible; huckleberry; jostaberry; Juneberry; lingonberry; native currant; salal; sea buckthorn; cultivars, varieties, and/or hybrids of these
<b>Disease Controlled</b>	<b>Phytophthora root rot (<i>Phytophthora</i> spp.)</b>
<b>Use rate (product/ha)</b>	4.57 L product/ha, 640 g ai/ha (480 g ai/ha metalaxyl-M and S-isomer + 160 g ai/ha oxathiapiprolin)
<b>Application Timing/Instructions</b>	<b>Soil Application:</b> Make up to two soil applications per year.  <u>New Plantings:</u> Make first application at planting, and a second at least 30 days later, and coinciding with a period favourable for root rot development.  <u>Established Plantings:</u> Make first application before plants start to grow in the spring, and a second at least 30 days later, and coinciding with a period favourable for root rot development.  Apply as a drench, or soil directed spray, or through irrigation water (micro-sprinkler, drip or flood). For effective disease control, ensure that the product solution thoroughly wets the target root zone. If the application method does not move the product to the root zone, and rain is not imminent, then follow with irrigation.  ORONDIS GOLD DC will not revitalize plants showing moderate to severe root rot symptoms.  Use ORONDIS GOLD DC in conjunction with good cultural practices to manage disease.
<b>Minimum recommended application water volume</b>	2000 L/ha
<b>Maximum number of applications per year</b>	2
<b>Minimum Application Interval</b>	30 days
<b>Maximum rate of active ingredients applied/year</b>	<b>DO NOT</b> exceed 960 g ai/ha of metalaxyl-M and S-isomer/year. <b>DO NOT</b> exceed 320 g ai/ha of oxathiapiprolin/year.
<b>Restricted Entry Interval (REI)</b>	12 hours after application
<b>Pre-harvest interval (PHI)</b>	1 day
<b>Specific Use Restrictions:</b>	
<ol style="list-style-type: none"> <li>1. Maximum Product 9.14 L/ha/year</li> <li>2. <b>DO NOT</b> use in nursery production.</li> <li>3. <b>DO NOT</b> follow soil applications of ORONDIS GOLD DC with foliar applications of oxathiapiprolin-containing fungicides. Use either soil applications or foliar applications, but not both for the control of relevant diseases.</li> </ol>	

11.8 Tree Nuts

<b>Crops</b>	<b>Tree nuts</b> Almond, beechnut, bur oak, butternut, chestnut, ginkgo, hazelnut (Filbert), heartnut, hickory nut, Japanese horse-chestnut, monkey puzzle nut, pecan, pine nut, walnut (black), walnut (English), yellowhorn, and cultivars, varieties, and/or hybrids of these
<b>Disease Controlled</b>	<b>Phytophthora root rot</b> ( <i>Phytophthora</i> spp.)
<b>Use rate (product/ha)</b>	4 L product/ha, 560 g ai/ha (420 g ai/ha metalaxyl-M and S-isomer + 140 g ai/ha oxathiapiprolin)
<b>Application Timing/Instructions</b>	<p><b>Resets or New Plantings:</b> Make first soil application at planting and up to one additional application 2-6 months later, coinciding with a root growth flush.</p> <p><b>Established Plantings:</b> Make up to two soil applications at a 2- to 6-month interval, coinciding with root growth flush.</p> <p>Apply as a drench or soil spray under the canopy around the base of the tree to the zone of maximum root density, or through irrigation water (micro-sprinkler, drip, flood).</p> <p>For effective disease control, ensure that the product solution thoroughly wets the target root zone. If the application method does not move the product to the root zone, and rain is not imminent, then follow with irrigation.</p>
<b>Minimum recommended application water volume</b>	1000 L/ha
<b>Maximum number of applications per year</b>	2
<b>Minimum Application Interval</b>	2 months
<b>Maximum rate of active ingredients applied/year</b>	<b>DO NOT</b> exceed 840 g ai/ha of metalaxyl-M and S-isomer/year. <b>DO NOT</b> exceed 280 g ai/ha of oxathiapiprolin/year.
<b>Restricted Entry Interval (REI)</b>	12 hours after application
<b>Pre-harvest interval (PHI)</b>	30 days
<b>Specific Use Restrictions:</b>	
<ol style="list-style-type: none"> <li>1. Maximum Product 8 L/ha/year</li> <li>2. <b>DO NOT</b> use in nursery production.</li> <li>3. <b>DO NOT</b> follow soil applications of ORONDIS GOLD DC with foliar applications of oxathiapiprolin-containing fungicides. Use either soil applications or foliar applications, but not both for the control of relevant diseases.</li> </ol>	

## 11.9 Low Growing Berries

<b>Crops</b>	<b>Low growing berries</b> Bearberry; bilberry; blueberry, lowbush; cloudberry; muntries; partridgeberry; strawberry; cultivars, varieties, and/or hybrids of these.
<b>Diseases Controlled</b>	<b>Phytophthora root rot</b> ( <i>Phytophthora</i> spp.) <b>Red stele root rot</b> ( <i>Phytophthora fragariae</i> ) on strawberries only
<b>Disease Suppressed</b>	<b>Phytophthora crown rot</b> ( <i>Phytophthora cactorum</i> ) on strawberries only
<b>Use rate (product/ha)</b>	4.57 L product/ha, 640 g ai/ha (480 g ai/ha metalaxyl-M and S-isomer + 160 g ai/ha oxathiapiprolin)
<b>Application Timing/Instructions</b>	<b>Soil Application:</b> Make up to two applications as a banded soil spray or drip application.  New Plantings: Make the first application soon after planting when overhead watering for plant establishment has been completed, and a second application 30 days before the beginning of harvest or at fruit set.  Established Plantings: Make the first application in the spring before first bloom, and the second after harvest in the fall.
<b>Minimum recommended application water volume</b>	2000 L/ha
<b>Maximum number of applications per year</b>	2
<b>Minimum Application Interval</b>	30 days
<b>Maximum rate of active ingredients applied/year</b>	<b>DO NOT</b> exceed 960 g ai/ha of metalaxyl-M and S-isomer/year. <b>DO NOT</b> exceed 320 g ai/ha of oxathiapiprolin/year.
<b>Restricted Entry Interval (REI)</b>	12 hours after application
<b>Pre-harvest interval (PHI)</b>	30 days
<b>Specific Use Restrictions:</b>	
<ol style="list-style-type: none"> <li>1. Maximum Product 9.14 L/ha/year</li> <li>2. <b>DO NOT</b> use in nursery production.</li> <li>3. <b>DO NOT</b> follow soil applications of ORONDIS GOLD DC with foliar applications of oxathiapiprolin-containing fungicides. Use either soil applications or foliar applications, but not both for the control of relevant diseases.</li> </ol>	

## 12.0 RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, ORONDIS GOLD DC Fungicide contains a Group 49 and a Group 4 fungicide. Any fungal population may contain individuals naturally resistant to Group 49 and Group 4 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 this product or other Group 49 or 4 fungicides with different groups that control the same pathogens.

The following restrictions apply to the use of ORONDIS GOLD DC Fungicide:

1. Exposure to ORONDIS GOLD DC Fungicide (or any other FRAC 49-containing product) should not exceed thirty-three percent (33%) of the total period of protection needed per crop when foliar applications are used.
2. ORONDIS GOLD DC Fungicide (or any other FRAC 49-containing product) must not be used in nursery production of transplanted crops.
3. No foliar fungicide application of oxathiapiprolin-based fungicides (or any other FRAC 49-containing product) should be made following soil treatment application of oxathiapiprolin.

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 the pathogen to ORONDIS GOLD DC Fungicide 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 pathogens.

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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