



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

April 4, 2019

Nakia Smith  
Regulatory Product Manager, Fungicides  
Syngenta Crop Protection, LLC  
410 Swing Road  
Greensboro, NC 27409

Subject: Label Amendment – various label updates including resistance management, clarification of application method, minor reformatting and correction of typographical errors  
Product Name: Orondis  
EPA Registration Number: 100-1571  
Application Date: 2/9/2018  
Decision Number: 538488

Dear Ms. Smith:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

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Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Heather A Garvie by phone at 703-308-0034, or via email at [garvie.heather@epa.gov](mailto:garvie.heather@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Lindsay Roe". The signature is fluid and cursive, with a large initial "L" and a stylized "R".

Lindsay Roe,  
Product Manager 22  
Fungicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

Enclosure

[Master Label]

<b>OXATHIPIPROLIN</b>	<b>GROUP</b>	<b>49</b>	<b>FUNGICIDE</b>
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**Orondis®**

[Alternate Brand Name: Orondis® Gold 200]

**Fungicide**

Active Ingredient:	
Oxathiapirolin*:	18.7%
Other Ingredients:	81.3%
<hr/>	
Total:	100.0%

\*CAS No. 1003318-67-9

Orondis is formulated as a suspension concentrate and contains 1.67 pounds of oxathiapirolin per gallon of product.

**KEEP OUT OF REACH OF CHILDREN.**

See additional precautionary statements and directions for use inside booklet.

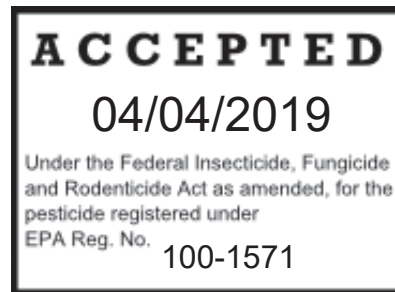
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EPA Est.

SCP 1571

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## 1.0 FIRST AID

FIRST AID
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
<b>HOT LINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call <b>1-800-888-8372</b>

## 2.0 PRECAUTIONARY STATEMENTS

### 2.1 Personal Protective Equipment (PPE)

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

- Long-sleeved shirt
- Long pants
- Shoes plus socks

#### 2.1.1 USER SAFETY REQUIREMENTS

Follow the 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.

#### 2.1.2 ENGINEERING CONTROLS

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

#### User Safety Recommendations

**Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- 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.

## **2.2 Environmental Hazards**

This product is toxic to aquatic invertebrates. For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

## **DIRECTIONS FOR USE**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Orondis must be used only in accordance with instructions on this label, in separately issued labeling or exemptions under FIFRA (Supplemental Labels, Special Local Need Registration, FIFRA Section 18 exemptions), or as otherwise permitted by FIFRA. Always read the entire label, including the Conditions of Sale and Limitation of Warranty and Liability.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

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

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on the label about personal protective equipment (PPE), and restricted-entry interval, and notification to workers (as applicable). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.**

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks

## 3.0 PRODUCT INFORMATION

Read all label directions before use. All applications must be made according to the use directions that follow.

- Orondis is a suspension concentrate containing oxathiapiprolin and is for use by foliar or soil application for the control or suppression of the diseases listed on this label.
- Orondis is active against selected Oomycete diseases listed on this label and has preventive, residual, curative, eradivative and anti-sporulant activity.
- Orondis is locally systemic, translaminar, and moves systemically in the xylem.
- See **Section 7.0** for specific crop/disease recommendations.

### 3.0.1 MODE OF ACTION

Oxathiapiprolin, the active ingredient in Orondis, inhibits an oxysterol binding protein (OSBP) homologue.

### 3.0.2 CROP TOLERANCE

Not all crops within a crop group, and 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 on all crops within a crop group, 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.

### 3.1 Integrated Pest Management (IPM)

Syngenta recommends the use of Integrated Pest Management (IPM) programs to control pests. Orondis may be used as part of an IPM program which can include biological, cultural, and genetic practices aimed at preventing economic pest damage. Application of this product should be based on IPM principles and practices including field scouting or other detection methods, correct target pest identification, population monitoring, and treating when disease forecasting models reach locally determined action levels. Consult your state cooperative extension service, professional consultants, or other qualified authorities to determine the appropriate management, cultural practice and treatment threshold levels for the specific crop, geography and diseases.

### 3.2 Resistance Management

<b>OXATHIPIPROLIN</b>	<b>GROUP</b>	<b>49</b>	<b>FUNGICIDE</b>
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Orondis contains the active ingredient oxathiapiprolin, which has been assigned Group 49 by the Fungicide Resistance Action Committee (FRAC). 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. Repeated use of products for control of specific plant pathogens may lead to selection of resistant strains of fungi and result in a reduction of disease control. A disease management program for Orondis that includes rotation and tank mixing with fungicides with a different mode of action is essential to reduce the risk of fungicide resistance development.

To delay fungicide resistance, take one or more of the following steps:

- Rotate the use of oxathiapiprolin or other Group 49 fungicides within a growing season sequence with different groups that control the same pathogens.
- Use tank mixtures with fungicide from a different group that are equally effective on the target pest when such use is permitted. Use at least the minimum application rate as labeled by the manufacturer.
- Adopt an integrated disease management program for fungicide use that includes scouting, uses historical information related to pesticide use, and crop rotation, and which 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. Note that using predictive models alone is not sufficient to manage resistance.

- Monitor treated fungal populations for resistance development.
- Contact your local extension specialist or certified crop advisor for any additional pesticide resistance-management and/or IPM recommendations for specific crop and pathogens.
- For further information or to report suspected resistance contact Syngenta at 1-866-Syngent(a) (866-796-4368). You can also contact your pesticide distributor or university extension specialist to report resistance.

## 4.0 APPLICATION DIRECTIONS

### 4.1 Methods of Application

#### 4.1.1 FOLIAR APPLICATION (INCLUDING AERIAL APPLICATION AND CHEMIGATION)

See **Section 7.0** for specific foliar application instructions and **Section 4.5** for chemigation instructions.

#### 4.1.2 SOIL APPLICATION

- For suppression or control of soil borne diseases, as recommended in this label, Orondis must be applied in a manner that ensures the product solution adequately saturates the target crop root/crown zone.
- When applied to the root/crown zone before, during, or soon after sowing or transplanting the crop, Orondis will suppress or control certain seedling root rot and crown diseases that limit crop stand establishment.
- For soil application, apply Orondis using drip irrigation, micro-sprinkler irrigation, transplant water application (water wheel or continuous stream transplanters), surface band or directed application, or in-furrow application using the rates in the table below. See table and **Section 4.5** for drip irrigation instructions.
- 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 application rates for Orondis /1,000 feet of row, based on plant row spacing.**

Orondis Conversion Chart for Drip (Trickle) or Micro-Sprinkler Chemigation, Continuous Transplant Water, and Direct/Banded/In-Furrow Application							
Corresponding field rate (fl oz/acre)	Rate in fl oz product/1,000 row ft; based on planted row spacing (in inches) of:						
	30	34	36	48	60	72	84
2.4	0.14	0.16	0.17	0.22	0.28	0.33	0.39
4.8	0.28	0.31	0.33	0.44	0.55	0.66	0.77
9.6	0.55	0.62	0.66	0.88	1.10	1.32	1.54
19.2	1.10	1.25	1.32	1.76	2.20	2.65	3.09

**Transplant Water Application**

- Transplants should be adequately watered before transplanting. Ensure transplant water volume is sufficient to thoroughly wet the root zone.
- See table for continuous-stream transplanters. Ensure 4-8 fl oz transplant water/transplant depending on sandy (4 fl oz) vs silty soil (6-8 fl oz).
- For water-wheel transplanters, use the plant population to determine the rate per plant.

Example:

$$\frac{19.2 \text{ fl oz product}}{\text{acre}} \times \frac{\text{acre}}{4356 \text{ squash plants}} = \frac{0.0044 \text{ fl oz product}}{\text{squash plant}}$$

**Surface Band or Directed Application**

- Apply in a 4- to 12-inch band. See table for rates.
- Follow application with cultivation or irrigation (1/2 - 1 inch) to move Orondis to the target disease zone.

**Transplant Tray Application**

- Apply as a foliar spray to the transplants in the transplant tray 24-48 hours prior to transplanting. Immediately water the spray off the foliage into the transplant tray soil, not watering past soil saturation.
- For this application, the acre of transplants receives the full prescribed rate acre rate for transplant tray application, applied as a foliar spray, which is then washed into the transplant cubes. Transplant cubes should be on the dry side at the beginning of this treatment.

**4.2 Application Equipment**

**4.2.1 SHIELDED SPRAYERS**

- Shielding the boom or individual nozzles can reduce the effects of wind.
- However, it is the responsibility of the applicator to verify that the shields are minimizing drift potential, and not interfering with uniform deposition of the product.

#### 4.2.2 AIR-ASSISTED (AIR-BLAST) FIELD CROP SPRAYERS

- Air-assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result.
- It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, that it is configured properly, and that drift potential has been minimized.
- **Note:** Air-assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Read the specific crop use and application equipment instructions to determine if an air-assisted field crop sprayer can be used.

#### 4.2.3 SPRAY TANK CLEAN-OUT

- Prior to application, start with clean, well maintained application equipment. Immediately following application, thoroughly clean all spray equipment to reduce the risk of forming hardened deposits which might become difficult to remove.
- Drain application equipment. Thoroughly rinse and flush all application equipment with clean water.
- Take all necessary safety precautions when cleaning equipment. Do not clean near wells, water sources or desirable vegetation. Dispose of waste rinse water in accordance with local regulations.

### 4.3 Application Volume and Spray Coverage

See **Sections 4.1 and 7.0** for application volume information.

- Thorough coverage is necessary to provide good disease control.
- Make no more spray solution than is needed for application.
- Avoid spray overlap, as crop injury may occur.
- For air-assisted ground applications, apply in a minimum of 10 gallons of water per acre unless specified otherwise.
- For aerial applications, apply in a minimum of 2 gallons of water per acre unless specified otherwise.
- For ground applications, apply in a minimum of 15 gallons of water per acre unless specified otherwise. Increase the spray volume as the plants mature to ensure thorough coverage of the foliage.

### 4.4 Mixing Directions

#### 4.4.1 ORONDIS ALONE

1. Add  $\frac{1}{2}$ - $\frac{2}{3}$  of the required amount of water to the spray or mixing tank.
2. With the agitator running, add Orondis to the tank.
3. Continue agitation while adding the remainder of the water.

4. Begin application of the spray solution after Orondis has completely dispersed into the mix water.
5. Maintain agitation until all of the mixture has been sprayed.

#### 4.4.2 TANK-MIX PRECAUTIONS

- The crop safety of all tank mixtures with Orondis which may include physically compatible pesticides, fertilizers, adjuvants, and/or additives, has not been tested.
- When using a tank mixture with Orondis, it is important to understand crop safety.
- To test for crop safety prepare a small volume of the intended tank mixture, apply it to an area of the target crop as directed by both this label and the tank-mix partner product labels, and observe the treated crop to ensure that a phytotoxic response does not occur.
- Some materials including oils, surfactants, adjuvants, and pesticide formulations when applied individually, sequentially, or in tank mixtures may solubilize the plant cuticle, facilitate penetration into plant tissue, and increase potential for crop injury.
- All tank mixes should be pre-tested to determine physical compatibility between formulations.
- Follow the most restrictive precautions and limitations on the labeling of all products used in mixtures.
- It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions, limitation and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

#### 4.4.3 TANK-MIX COMPATIBILITY TEST

Orondis is physically compatible with many commonly used fungicides, herbicides, insecticides, biological control products, liquid fertilizers, non-ionic surfactants, crop oils, methylated seed oils and drift control additives. However, since the formulations of products change, it is important to test the physical compatibility of desired tank mixes and check for undesirable physical effects, including settling out or flocculation.

A jar compatibility test is recommended prior to tank mixing with other pesticides and/or adjuvants/additives, in order to ensure the compatibility of Orondis with other tank-mixed pesticide, adjuvant or fertilizer partners. The recommended procedure for conducting jar tank-mix compatibility tests is as follows:

**Compatibility Test:** Since pesticides, adjuvants and fertilizers can vary in quality, always **check tank-mix compatibility with tank-mixed partners each time before use**. Be especially careful when using **complete** suspension or fluid fertilizers as carriers, as serious compatibility problems are more likely to occur with these products. Commercial application equipment may improve tank-mix compatibility in some instances. The following test assumes a spray volume of 25 gallons/A. For other spray

volumes, make appropriate changes in the components. Check tank-mix compatibility using this procedure:

1. Add 1 pt of carrier (either the water or liquid fertilizer to be used in the spray operation) to each of two clear 1-qt jars with tight lids.
2. To **one** of the jars, add ¼ teaspoon or 1.2 mL of a commercially available tank-mix compatibility agent approved for this use (¼ teaspoon is equivalent to 2 pt/100 gallons of spray). Invert the jar, shake or stir gently to ensure thorough mixing.
3. To **both** jars, add the appropriate amount of each tank-mix partner. If more than one tank-mix partner is to be used, add them separately with dry formulations (wetable powders or water dispersible granules) first, followed by liquid flowables, capsule suspensions, emulsifiable concentrates and finally adjuvants. After each addition, invert the jar, shake or stir gently to thoroughly mix. The appropriate amount of each tank-mix partner for this test, is as follows:  
**Dry formulations:** For each pound to be applied per acre, add 1.5 level teaspoons to each jar.  
**Liquid formulations:** For each pint to be applied per acre, add 1/2 teaspoon or 2.5 mL to each jar.
4. After adding all ingredients, put lids on and tighten, then invert each jar 10 times to fully mix. Let the mixtures stand for 15-30 minutes and then assess by looking for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. Determine if a compatibility agent is needed in the spray mixture by comparing the two jars. If either mixture separates, but can be remixed readily, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, test the following methods of improving compatibility: (A) slurry dry formulations in water before addition, or (B) add the compatibility agent directly into liquid formulations, before addition to the tank-mixture. If these procedures are followed but incompatibility is still observed, do not use the tank-mixture.

#### 4.4.4 ORONDIS IN TANK MIXTURES

- Always follow the tank mix instructions of the product label that are most restrictive.
- Apply at least the minimum labeled rate of each fungicide in the tank mix.
- Consult a Syngenta representative or local agricultural authorities for more information concerning tank mixtures.
- When using in a tank mix, add different formulation types in the sequence indicated below. Allow time for complete mixing and dispersion after addition of each product.
  1. Water-soluble bag (WSB).
  2. Water-soluble granules (SG).
  3. Water-dispersible granules (WG).
  4. Wettable powders (WP).
  5. Water-based suspension concentrates (SC). (Orondis).
  6. Capsule suspension (CS)
  7. Suspo emulsion (SE).
  8. Oil dispersion (OD).
  9. Emulsion in water (EW).

10. Emulsifiable concentrates (EC).
11. Water-soluble concentrates (SL).
12. Adjuvants, surfactants, oils.
13. Soluble fertilizers.
14. Drift retardants.

#### 4.4.5 SPRAY ADDITIVES

- Orondis may be used with adjuvants, for example, non-ionic surfactants, organosilicone surfactants, crop oils, methylated seed oils, and blends at typical agricultural use rates for these adjuvants.
- When an adjuvant is to be used with this product, the use of an adjuvant that meets the standards of the Council of Producers & Distributors of Agrotechnology (CPDA) adjuvant certification is recommended.

## 4.5 Application through Irrigation Systems (Chemigation)

### 4.5.1 CHEMIGATION RESTRICTIONS

- Apply Orondis only through drip (trickle) or strip tubing irrigation systems or sprinkler irrigation systems (such as center-pivot, lateral-move, end-tow, side (wheel) roll, traveler, big-gun, solid-set or hand-move irrigation systems).
- Do not connect any irrigation system (including greenhouse systems) used for pesticide applications to a public water system unless the pesticide label-prescribed safety devices for public water systems (**Section 4.5.4**) are in place. Public water system means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals at least 60 days out of the year.
- The irrigation system used for application of Orondis must provide for uniform distribution of Orondis-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 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.

### 4.5.2 APPLICATION DIRECTIONS FOR IRRIGATION SYSTEMS

- **Preparation:** A pesticide tank is recommended for the application of Orondis in chemigation systems. Thoroughly clean the injection system and tank of any fertilizer or chemical residues using a standard clean-out procedure. Dispose of any residues in accordance with State and Federal laws. With the mix tank 1/4 to 1/2 full with water and the agitator running, measure the required amount of Orondis and add it to the tank. Then add additional water to bring your total pesticide mixture up to the desired volume for your application. **Note:** Always add the Orondis to water; never put Orondis into a dry tank or other mixing equipment without first adding water. See **Section 4.4.2** for tank-mixing sequence. Continue to agitate the mixture throughout the application process. Good agitation is required in the injection tank.

Use mechanical or hydraulic agitation; do not use air agitation.

- **Injection into Chemigation Systems:** Inject the proper amount of Orondis into the irrigation water flow using a positive displacement injection pump or a Venturi injector. Injection should occur at a point in the main irrigation water flow to ensure thorough mixing with the irrigation water.
  - In moving systems, apply specified dosage of Orondis as a continuous injection. In non-moving systems, inject Orondis for 15 to 30 minutes at end of cycle. Use the least amount of water possible consistent with uniform coverage.
  - Mix the amount of Orondis needed for acreage to be treated into the quantity of water determined during prior calibration. For moving systems, inject into the system continuously for one complete revolution of the field. For non-moving systems, inject into system for the time established during calibration.
- **Uniform Water Distribution:** Non-uniform distribution can result in crop injury, lack of effectiveness, or illegal pesticide residues in or on the crop being treated. Ensure the chemigation system is operating properly to uniformly distribute the chemigation application to the crop. Contact the equipment manufacturer, the local University Extension agent or other experts if you have questions about achieving uniform distribution of the application.
- **Monitoring of Chemigation Applications:** A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of a responsible person, shall shut the system down and make necessary adjustments should the need arise. Wear the personal protective equipment as defined in the PPE section of the label for applicators and other handlers when making adjustments or repairs on the chemigation system when Orondis is in the irrigation water.
- **Operation:** Start the water pump and let the system achieve the desired pressure before starting the injector. Start the injector. Stop injection equipment after treatment is completed and continue to operate irrigation equipment until all Orondis is flushed from system.
- **Cleaning the System:** Thoroughly clean the injection system and tank of any fertilizer or chemical residues using a standard clean-out procedure. Dispose of any residues in accordance with State and Federal laws. Consult your owner's manual or your local equipment dealer for cleanout procedures for your injection system.

### **Drip (Trickle) Irrigation Instructions**

- Orondis must be applied in a manner that ensures the product is in the root zone.
- Orondis must be in the root zone to provide effective control of target pests.
- Orondis is most effective when it is applied so that the roots are at or near the site of application; manage irrigation so that significant quantities of Orondis remain in the root zone.
- Do not begin applications until after crop emergence in direct-seeded crops.
- Do not make applications if soil moisture is below the level required for active plant growth.
- This product must be applied uniformly in the root zone or poor performance may result. Drip tape or emitters must be located within or directly adjacent to the root zone.

- Orondis must not be applied at the same time that a drip irrigation line clean out product is being used as performance may be reduced.
- The drip system must be properly designed, free of leaks, and operated in a manner that provides uniform application of water throughout the field.
- In most situations, this product should be applied during the first 1/3 of the irrigation cycle, starting just after the system has come up to pressure.
- The minimum injection period is the time that it takes water to move from the injection point to the furthest emitter in the irrigation zone (propagation time). If this time is not known, it can be calculated by measuring the time for a soluble dye to move from the injection point to the farthest emitter. A longer injection improves uniformity throughout the zone, but needs to allow for at least an equal period of water to flush the system and move the product through the soil.

#### **4.5.3 OPERATING INSTRUCTIONS FOR CHEMIGATION**

1. 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. 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.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. 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.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **4.5.4 SPECIFIC INSTRUCTIONS FOR PUBLIC WATER SYSTEMS**

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
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 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, or, in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
  6. Systems must use a metering device, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
  7. Do not apply when wind speed favors drift beyond the area intended for treatment.

## 5.0 ROTATIONAL CROP RESTRICTIONS

The following crops may be planted at the specified interval following application of Orondis.

Crop, Crop Group, or Crop Subgroup	Plant-back Interval (in Days)
Basil (fresh and dried) Brassica, Leafy Greens (Crop Subgroup 4-16B) Brassica, Head and Stem (Crop Group 5-16) Bulb Vegetables (Crop Group 3-07) Cacao Caneberry (Crop Subgroup 13-07A) Citrus (Crop Group 10-10) Cucurbit Vegetables (Crop Group 9) Fruiting Vegetables (Crop Group 8-10) Ginseng Herbs and Spices (Crop Subgroup 19A) Leafy Greens (Crop Subgroup 4-16A) Peas, Edible-Podded and Succulent Shelled Stalk and Stem Vegetables (Crop Subgroup 22A) Strawberries Tobacco Tuberous and Corm Vegetables (Crop Subgroup 1C)	0
Cereals (Crop Groups 15,16) Grass animal feeds (Crop Group 17)	30
Herbs and Spices (Crop Subgroup 19B) Legume Vegetables, except succulent shelled and edible-podded peas Non-grass Animal feed (Crop Group 18) Peanuts All other crops not listed	180

## 6.0 RESTRICTIONS AND PRECAUTIONS

See **Section 7.0** for crop-specific Restrictions and Precautions.

### 6.1 Use Restrictions

- Different application methods (foliar and soil) must not be combined when protecting a crop during a growing season.
- Use this product only in commercial and farm plantings.
- **DO NOT** use for home plantings.
- Orondis may be used in greenhouse production of tomatoes, bell and non-bell peppers, and edible-peel cucurbits (cucumbers, summer squash). **DO NOT** use in greenhouses on any other crops.
- **DO NOT** formulate this product into other end-use products.

### 6.2 Spray Drift Precautions

The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions. Avoiding spray drift is the responsibility of the applicator.

#### 6.2.1 IMPORTANCE OF DROPLET SIZE

- The most effective drift management strategy is to apply the largest droplets which are consistent with pest control objectives.
- The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage.
- Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly or under unfavorable environmental conditions.
- A droplet size classification system describes the range of droplet sizes produced by spray nozzles. The American Society of Agricultural and Biological Engineers (ASABE) provides a Standard that describes droplet size spectrum categories defined by a number of reference nozzles (fine, coarse, etc.). Droplet spectra resulting from the use of a specific nozzle may also be described in terms of volume mean diameter (VMD). Coarser droplet size spectra have larger VMD's and lower drift potential.

#### 6.2.2 AERIAL APPLICATION SPRAY DRIFT MANAGEMENT

- **Nozzle Type** – Solid-stream or other low-drift nozzles produce the coarsest droplet spectrum.
- **Number of Nozzles** – Using the minimum number of nozzles with the highest flow rate that provide uniform coverage will produce a coarser droplet spectrum.
- **Nozzle Orientation** – Orienting nozzles in a manner that minimizes the effects of air shear will produce the coarsest droplet spectrum. For some nozzles such as

solid stream, pointing the nozzles straight back parallel to the airstream will produce a coarser droplet spectrum than other orientations.

- **Pressure** – Selecting the pressure that produces the coarsest droplet spectrum for a particular nozzle and airspeed reduces spray drift potential. For some nozzle types such as solid streams, lower pressures can produce finer droplet spectra and increase drift potential.
- **Boom Length** – Using shorter booms decreases drift potential. Boom lengths are expressed as a percentage of an aircraft's wingspan or a helicopter's rotor blade diameter. Shorter boom length and proper positioning can minimize drift caused by wingtip or rotor vortices.
- **Application Height** – Applications made at the lowest height that are consistent with pest control objectives and the safe operation of the aircraft will reduce the potential for spray drift.

### 6.2.3 GROUND APPLICATION SPRAY DRIFT MANAGEMENT

- **Nozzle Type** – Select a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. The use of low-drift nozzles will reduce drift potential.
- **Pressure** – The lowest spray pressures recommended for the nozzle produce the largest droplets. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, using a higher-capacity nozzle instead of increasing pressure results in the coarsest droplet spectrum.
- **Flow Rate/Orifice Size** – Using the highest flow rate nozzles (largest orifice) that are consistent with pest control objectives reduces the potential for spray drift. Nozzles with higher rated flows produce coarser droplet spectra.
- **Application Height** – Applications made at the lowest height consistent with pest control objectives, and that allow the applicator to keep the boom level with the application site and minimize bounce, will reduce the exposure of spray droplets to evaporation and wind, and reduce spray drift potential.

### 6.2.4 WIND

- Drift potential is lowest when applications are made in light to gentle sustained winds (2-10 mph), which are blowing in a constant direction.
- Many factors, including droplet size and equipment type also determine drift potential at any given wind speed.
- AVOID GUSTY OR WINDLESS CONDITIONS.
- Local terrain can also influence wind patterns.
- Every applicator is expected to be familiar with local wind patterns and how they affect spray drift.

### 6.2.5 TEMPERATURE AND HUMIDITY

- Setting up equipment to produce larger droplets to compensate for droplet evaporation can reduce spray drift potential.
- Droplet evaporation is most severe when conditions are both hot and dry.

### **6.2.6 SURFACE TEMPERATURE INVERSIONS**

- Drift potential is high during a surface temperature inversion. Surface inversions restrict vertical air mixing, which may cause small suspended droplets to remain close to the ground and move laterally in a concentrated cloud.
- Surface inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning.
- Mist or fog may indicate the presence of an inversion in humid areas. Inversions may also be identified by producing smoke and observing its behavior. Smoke that remains close to the ground, or moves laterally in a concentrated cloud under low wind conditions indicates a surface inversion. Smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### **6.2.7 SENSITIVE AREAS**

Making applications when there is a sustained wind moving away from adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is an effective way to minimize the effect of spray drift.

### **6.2.8 DRIFT CONTROL ADDITIVES**

- Using product compatible drift control additives can reduce drift potential.
- When a drift control additive is used, read and carefully observe cautionary statements and all other information on the additive's label.
- If using an additive that increases viscosity, ensure that the nozzles and other application equipment will function properly with a viscous spray solution.
- Preferred drift control additives have been certified by the Council of Producers and Distributors of Agrotechnology.

## 7.0 CROP USE DIRECTIONS

### 7.1 Basil, fresh and dried (Field and Greenhouse)

Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Downy mildew ( <i>Peronospora belbahrii</i> )	1.0 – 2.4	Begin applications prior to disease development and continue on a 5- to 10-day interval.	Apply as a foliar application by ground only.
<b>Resistance Management:</b> <ul style="list-style-type: none"> <li>• Refer to <b>Section 3.2</b>.</li> <li>• Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>• Where 3 or more applications are made, use Orondis (or any other FRAC 49-containing product) in no more than 33% of the applications, or a maximum of 4 applications, whichever is fewer. Where less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).</li> <li>• On multiple plantings in the same year, do not exceed 6 applications per acre per year.</li> </ul>			
<b>USE RESTRICTIONS</b>			
<ol style="list-style-type: none"> <li>1) Refer to <b>Section 6.1</b> for additional product use restrictions.</li> <li>2) <b>Maximum Single Application Rate:</b> 2.4 fl oz/A (0.03 lb ai/A of oxathiapiprolin-containing products)</li> <li>3) <b>Minimum Application Interval:</b> 5 days</li> <li>4) <b>Maximum Annual Rate:</b> 9.6 fl oz/A/year (0.12 lb ai/A/year of oxathiapiprolin-containing products)</li> <li>5) <b>Pre-harvest Interval (PHI):</b> 0 days</li> </ol>			

## 7.2 Brassica, Head and Stem Vegetables, Crop Group 5-16

Crops (including all cultivars, varieties, and/or hybrids of these)			
Broccoli Brussels sprouts	Cabbage Cabbage, Chinese, Napa	Cauliflower	
Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Downy mildew ( <i>Peronospora parasitica</i> )	1.0 – 2.4	Begin applications prior to disease development and continue on a 5- to 10-day interval.	Apply as a foliar application by ground, air-assisted (air blast), or aerial application.  Use the higher rates when disease is present, for longer application intervals, or for susceptible varieties.
<b>Resistance Management:</b>			
<ul style="list-style-type: none"> <li>• Refer to <b>Section 3.2</b>.</li> <li>• Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>• Where 3 or more applications are made, use Orondis (or any other FRAC 49-containing product) in no more than 33% of the applications, or a maximum of 4 applications, whichever is fewer. Where less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).</li> <li>• On multiple plantings in the same year, do not exceed 6 applications per acre per year.</li> </ul>			
USE RESTRICTIONS			
<ol style="list-style-type: none"> <li>1) Refer to <b>Section 6.1</b> for additional product use restrictions.</li> <li>2) <b>Maximum Single Application Rate:</b> 2.4 fl oz/A (0.03 lb ai/A of oxathiapiprolin-containing products)</li> <li>3) <b>Minimum Application Interval:</b> 5 days</li> <li>4) <b>Maximum Annual Rate:</b> 9.6 fl oz/A/year (0.12 lb ai/A/year of oxathiapiprolin-containing products)</li> <li>5) <b>Pre-harvest Interval (PHI):</b> 0 days</li> </ol>			

## 7.3 Brassica, Leafy Greens, Crop Subgroup 4-16B

Crops (including all cultivars, varieties, and/or hybrids of these)			
Arugala		Cress, garden	Radish, leaves
Broccoli raab		Cress, upland	Rape greens
Broccoli, Chinese		Hanover salad	Rocket, wild
Cabbage, Abyssinian		Kale	Shepherd's purse
Cabbage, seakale		Maca	Turnip greens
Chinese cabbage (bok choy)		Mizuna	Watercress
Collards		Mustard greens	
Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Downy mildew ( <i>Peronospora parasitica</i> )	1.0 – 2.4	Begin applications prior to disease development and continue on a 5- to 10-day interval.	Apply as a foliar application by ground only.  A non-ionic surfactant, modified seed oil, spreader sticker, or crop oil concentrate may be added at a rate recommended by the adjuvant label.
<b>Resistance Management:</b>			
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.2</b>.</li> <li>Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>Where 3 or more applications are made, use Orondis (or any other FRAC 49-containing product) in no more than 33% of the applications, or a maximum of 4 applications, whichever is fewer. Where less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).</li> <li>On multiple plantings in the same year, do not exceed 6 applications per acre per year.</li> </ul>			
USE RESTRICTIONS			
<ol style="list-style-type: none"> <li>Refer <b>Section 6.1</b> for additional product use restrictions.</li> <li>For applications made to <b>watercress</b>, production fields must be drained of water at least 24 hours prior to application, and water must not be reapplied to the field for a minimum of 24 hours following the application and each reapplication.</li> <li><b>Maximum Single Application Rate:</b> 2.4 fl oz/A (0.03 lb ai/A of oxathiapiprolin-containing products)</li> <li><b>Minimum Application Interval:</b> 5 days</li> <li><b>Maximum Annual Rate:</b> 9.6 fl oz/A/year (0.12 lb ai/A/year of oxathiapiprolin-containing products)</li> <li><b>Pre-harvest Interval (PHI):</b> 0 days</li> </ol>			



## 7.4 Bulb Vegetables, Crop Group 3-07

Crops (including all cultivars, varieties, and/or hybrids of these)			
Chive, fresh leaves		Kurrat	Onion, green
Chive, Chinese, fresh leaves		Lady's leek	Onion, macrostem
Daylily, bulb		Leek	Onion, pearl
Elegans hosta		Leek, wild	Onion, potato, bulb
Fritillaria, bulb		Lily, bulb	Onion, tree, tops
Fritillaria, leaves		Onion, Beltsville bunching	Onion, Welsh, tops
Garlic, bulb		Onion, bulb	Shallot, bulb
Garlic, great-headed, bulb		Onion, Chinese, bulb	Shallot, fresh leaves
Garlic, serpent, bulb		Onion, fresh	
Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Downy mildew ( <i>Peronospora destructor</i> )	1.0 – 2.4	Begin applications prior to disease development and continue on a 5- to 10-day interval.	Apply as a foliar application by ground, air-assisted (air blast), or aerial application.  Use the higher rates when disease is present, for longer application intervals, or for susceptible varieties.
<b>Resistance Management:</b>			
<ul style="list-style-type: none"> <li>• Refer to <b>Section 3.2</b>.</li> <li>• Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>• Where 3 or more applications are made, use Orondis (or any other FRAC 49-containing product) in no more than 33% of the applications, or a maximum of 4 applications, whichever is fewer. Where less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).</li> <li>• On multiple plantings in the same year, do not exceed 6 applications per acre per year.</li> </ul>			
USE RESTRICTIONS			
<ol style="list-style-type: none"> <li>1) Refer to <b>Section 6.1</b> for additional product use restrictions.</li> <li>2) <b>Maximum Single Application Rate:</b> 2.4 fl oz/A (0.03 lb ai/A of oxathiapiprolin-containing products)</li> <li>3) <b>Minimum Application Interval:</b> 5 days</li> <li>4) <b>Maximum Annual Rate:</b> 9.6 fl oz/A/year (0.12 lb ai/A/year of oxathiapiprolin-containing products)</li> <li>5) <b>Pre-harvest Interval (PHI):</b> 0 days</li> </ol>			

## 7.5 Cacao

Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Black pod rot ( <i>Phytophthora</i> spp.)	2.4 – 9.6	<b>Soil Application-Resets or New Plantings:</b> Make first application at planting and up to one additional application approximately 3-6 months later, coinciding with a root growth flush.	Apply as a soil spray around the base of the tree, to the zone of maximum root density, or through irrigation water (micro-sprinkler or drip). See <b>Section 4.1.2</b> .  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.
		<b>Soil Application-Established Plantings:</b> Make two applications at a 3- to 6-month interval, coinciding with root growth flush.	Apply as a soil spray beneath the tree canopy or through irrigation water (micro-sprinkler or drip). See <b>Section 4.1.2</b> .  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.
	1.2 – 2.4	<b>Foliar/Fruit Application:</b> Make single application to fruit before initial signs of black pod rot appear.  For post-harvest control of black pod rot, apply at 0-1 day before harvest.	Apply in sufficient volume to provide uniform and complete coverage of fruit.
<b>Resistance Management:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 3.2</b>.</li> <li>Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>Do not follow soil applications of Orondis with foliar applications of Orondis (or any other FRAC 49-containing product). Use either soil applications or foliar applications but not both for disease control.</li> <li><b>DO NOT</b> use in cacao nurseries.</li> </ul>			
<b>USE RESTRICTIONS</b>			
<ol style="list-style-type: none"> <li>Refer to <b>Section 6.1</b> additional product use restrictions.</li> <li><b>Maximum Single Application Rate:</b> <ol style="list-style-type: none"> <li><b>Soil Application:</b> 9.6 fl oz/A (0.125 lb ai/A of oxathiapiprolin-containing products)</li> <li><b>Foliar/Fruit Application:</b> 2.4 fl oz/A (0.03 lb ai/A of oxathiapiprolin-containing products)</li> </ol> </li> <li><b>Minimum Application Interval:</b> 90 days</li> <li><b>Maximum Annual Rate:</b> <ol style="list-style-type: none"> <li><b>Soil Application:</b> 19.2 fl oz/A/year (0.25 lb ai/A/year of oxathiapiprolin-containing products)</li> </ol> </li> </ol>			

- b) **Foliar/Fruit Application:** 2.4 fl oz/A/year (0.03 lb ai/A/year of oxathiapiprolin-containing products)
- 5) **Maximum Number of Applications:**
  - a) **DO NOT** make more than two soil applications per year.
  - b) **DO NOT** make more than one foliar/fruit application per year.
- 6) **Pre-harvest Interval (PHI):** 0 days

## 7.6 Caneberry, Crop Subgroup 13-07A

Crops (including all cultivars, varieties, and/or hybrids of these)			
Blackberry Loganberry		Raspberry, red and black Wild raspberry	
Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Phytophthora root rot ( <i>Phytophthora</i> spp.)	2.4 - 19.2	<p>Make first application before plants start to grow in the spring.</p> <p>Make a second application during a period favorable for root growth and at least 7 days after the first application.</p>	<p>Apply as a banded, soil-directed spray in a minimum of 20 gal/A of water, or via drip or micro-sprinkler irrigation. For banded application, direct the spray along each side of the crop row and direct the application to the soil, near and under the lower leaves. See <b>Section 4.1.2.</b></p> <p>Use a higher rate in the listed rate range for moderate to severe infections.</p> <p>The application is to be made at the per acre rate concentrated in a band.</p> <p>Apply ¼ - ½ inch of water after application, either by overhead sprinkler irrigation or garden hose drench on the row.</p>
<p><b>Resistance Management:</b></p> <ul style="list-style-type: none"> <li>• Refer to <b>Section 3.2.</b></li> <li>• Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>• Where 3 or more applications are made, use Orondis (or any other FRAC 49-containing product) in no more than 33% of the applications, or a maximum of 4 applications, whichever is fewer. Where less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).</li> <li>• Do not make more than two applications per year.</li> </ul>			
USE RESTRICTIONS			
<ol style="list-style-type: none"> <li>1) Refer to <b>Section 6.1</b> for additional product use restrictions.</li> <li>2) <b>Maximum Single Application Rate:</b> 19.2 fl oz/A (0.25 lb ai/A of oxathiapiprolin-containing products)</li> <li>3) <b>Minimum Application Interval:</b> 7 days</li> <li>4) <b>Maximum Annual Rate:</b> 38.6 fl oz/A/year (0.50 lb ai/A/year of oxathiapiprolin-containing products)</li> </ol>			

- 5) **Maximum Number of Applications:** **DO NOT** make more than two applications per year.
- 6) **Pre-harvest Interval (PHI):** 1 day

## 7.7 Citrus Fruit, Crop Group 10-10

Crops (including all cultivars, varieties, and/or hybrids of these)			
Australian desert lime	Lemon	Satsuma mandarin	
Australian finger lime	Lime	Sweet lime	
Australian round lime	Mediterranean mandarin	Tachibana orange	
Brown River finger lime	Mount White lime	Tahiti lime	
Calamondin	New Guinea wild lime	Tangelo	
Citron	Orange, sour	Tangerine (Mandarin)	
Citrus hybrids	Orange, sweet	Tangor	
Grapefruit	Pummelo	Trifoliate orange	
Japanese summer grapefruit	Russell River lime	Uniq fruit	
Kumquat			
Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Brown rot Citrus foot rot Gummosis Root rot Trunk canker ( <i>Phytophthora</i> spp.)	2.4 – 9.6	<b>Citrus Resets or New Plantings:</b> Make first application at planting and up to one additional application approximately 3-6 months later, coinciding with a root growth flush.	Apply as a soil spray or drench around the base of the tree, to the zone of maximum root density, or through irrigation water (micro-sprinkler or drip). See <b>Section 4.1.2</b>  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.
		<b>Established Plantings:</b> Make two applications at a 3- to 6-month interval, coinciding with root growth flush.	Apply as a soil spray beneath the tree canopy or through irrigation water (micro-sprinkler or drip). See <b>Section 4.1.2</b>  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.
Brown rot ( <i>Phytophthora</i> spp.)	1.2 – 2.4	Make single application to fruit before initial signs of brown rot appear. or For post-harvest control of brown rot, apply at 0-1 day before harvest.	Make foliar applications by ground or air. Apply in sufficient volume to provide uniform and complete coverage of fruit.
<b>Resistance Management:</b>			
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.2</b>.</li> <li>Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> </ul>			

- Do not follow soil applications of Orondis with foliar applications of Orondis (or any other FRAC 49-containing product). Use either soil applications or foliar applications but not both for disease control.
- **DO NOT** use in citrus nurseries.

**USE RESTRICTIONS**

- 1) Refer to Section 6.1 for additional product use restrictions.
- 2) **Maximum Single Application Rate:**
  - a) **Foliar/Fruit Application:** 2.4 fl oz/A (0.03 lb ai/A of oxathiapiprolin-containing products)
  - b) **Soil Application:** 9.6 fl oz/A (0.12 lb ai/A of oxathiapiprolin-containing products)
- 3) **Minimum Application Interval:** 90 days
- 4) **Maximum Annual Rate:**
  - a) **Foliar/Fruit Application:** 2.4 fl oz/A/year (0.03 lb ai/A/year of oxathiapiprolin-containing products)
  - b) **Soil Application:** 19.2 fl oz/A/year (0.25 lb ai/A/year of oxathiapiprolin-containing products)
- 5) **Maximum Number of Applications:**
  - a) **DO NOT** make more than two soil applications per year.
  - b) **DO NOT** make more than one foliar/fruit application per year.
- 6) **Pre-harvest Interval (PHI):** 0 days

## 7.8 Cucurbit Vegetables, Crop Group 9

Crops (including all cultivars, varieties, and/or hybrids of these)			
Chayote (fruit)	<b>Muskmelon</b>	<b>Squash, summer</b> (field and greenhouse)	
Chinese waxgourd (Chinese preserving melon)	Cantaloupe	Crookneck squash	
Citron melon	Casaba	Scallop squash	
Cucumber	Crenshaw melon	Straightneck squash	
Gherkin	Golden pershaw melon	Vegetable marrow	
<b>Gourd, edible</b>	Honeydew melon	Zucchini	
Hyotan	Honey balls	<b>Squash, winter</b>	
Cucuzza	Mango melon	Acorn squash	
Hechima	Persian melon	Butternut squash	
Chinese okra	Pineapple melon	Calabaza	
<b>Momordica spp.</b>	Santa Claus melon	Hubbard squash	
Balsam apple	Snake melon	Spaghetti squash	
Balsam pear	True cantaloupe	Watermelon	
Bittermelon	Pumpkin		
Chinese cucumber			
Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	1.0 – 2.4	Begin applications prior to disease development and continue on a 5- to 14-day interval.	Apply as a foliar application by ground, air-assisted (air blast), or aerial application.  Use the higher rates when disease is present, for longer application intervals, or for susceptible varieties.
Phytophthora Blight ( <i>Phytophthora capsici</i> )	2.4 - 19.2	Apply at planting	Apply in-furrow, in transplant water or by drip irrigation or in subsequent drip irrigation.

			<p>See <b>Section 4.1.2</b> for at-planting, in-furrow, or transplant-water instructions.</p> <p>See <b>Section 4.5.2</b> for drip irrigation instructions. *In direct-seeded plantings, drip applications should not be made until after crop emergence.</p> <p>Use the higher rates for heavier soils, for longer application intervals, or for susceptible varieties.</p>
	1.0 – 2.4	<p>Begin foliar applications prior to disease development, and continue on a 3- to 14-day interval.</p> <p>For pickle fruit protection, begin applications starting at 1 inch fruit on 3- to 5-day intervals.</p>	<p>Apply by ground, air-assisted, or aerial application.</p> <p>For <b>Pickle Fruit</b> protection, apply with a copper fungicide.</p> <p>Use the higher rates when disease is present, for longer application intervals, or for susceptible varieties.</p>
Downy Mildew Phytophthora Blight (foliar)	1.0 – 2.4	<p>Begin applications prior to disease development and continue on a 5- to 14-day interval.</p>	<p><b>Greenhouse Production of edible peel cucurbits (cucumbers, summer squash):</b> Apply as a foliar spray using a rate range of 0.035 - 0.083 fl oz (0.21 tsp – 0.5 tsp) per gallon of spray per 1518 sq ft.</p>
<p><b>Resistance Management:</b></p> <ul style="list-style-type: none"> <li>• Refer to <b>Section 3.2</b>.</li> <li>• Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>• Do not follow soil applications of Orondis with foliar applications of Orondis (or any other FRAC 49-containing product). Use either soil applications or foliar applications but not both for disease control.</li> <li>• Where 3 or more applications are made, use Orondis (product or any other FRAC 49-containing product) in no more than 33% of the applications, or a maximum of 4 applications, whichever is fewer. Where less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).</li> <li>• On multiple plantings in the same year, do not exceed 6 applications per acre per year.</li> </ul>			
<b>USE RESTRICTIONS</b>			
<p>1) Refer to <b>Section 6.1</b> for additional product use restrictions.</p> <p>2) <b>Maximum Single Application Rate:</b></p> <ol style="list-style-type: none"> <li><b>Foliar and Fruit Applications:</b> 2.4 fl oz/A (0.03 lb ai/A of oxathiapiprolin-containing products)</li> <li><b>Soil Applications:</b> 19.2 fl oz/A (0.25 lb ai/A of oxathiapiprolin-containing products)</li> </ol> <p>3) <b>Minimum Application Interval:</b></p> <ol style="list-style-type: none"> <li><b>Foliar Applications:</b> 3 days for Phytophthora Blight and 5 days for Downy mildew</li> <li><b>Soil Applications:</b> 7 days</li> </ol>			

- 4) **Maximum Annual Rate:**  
 a. **Foliar and Fruit Applications:** 9.6 fl oz/A/year (0.12 lb ai/A/year of oxathiapiprolin-containing products)  
 b. **Soil Applications:** 38.6 fl oz/A/year (0.50 lb ai/A/year of oxathiapiprolin-containing products)  
 5) **Pre-harvest Interval (PHI):** 0 days

## 7.9 Fruiting Vegetables, Crop Group 8-10

Crops (including all cultivars, varieties, and/or hybrids of these)			
African eggplant	Martynia	Pepper, non-bell (field and greenhouse)	
Bush tomato	Naranjilla	Roselle	
Cocona	Okra	Scarlet eggplant	
Currant tomato	Pea eggplant	Sunberry	
Eggplant	Pepino	Tomatillo	
Garden huckleberry	Pepper, bell (field and greenhouse)	Tomato (field and greenhouse)	
Goji berry		Tree tomato	
Groundcherry			
Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Buckeye Rot ( <i>Phytophthora parasitica</i> ) Late Blight ( <i>Phytophthora infestans</i> ) Pepper Downy Mildew ( <i>Peronospora tabacina</i> ) Phytophthora Blight ( <i>Phytophthora capsici</i> )	1.0 – 2.4	Begin applications prior to disease development and continue on a 5- to 14-day interval.	Apply as a foliar application by ground, air-assisted (air blast), or aerial application.  Use the higher rates when disease is present, for longer application intervals, or for susceptible varieties.
Buckeye Rot Late Blight Phytophthora Blight (foliar)	1.0 – 2.4	Begin applications prior to disease development and continue on a 5- to 14-day interval.	<b>Greenhouse Production of bell and non-bell peppers and tomatoes:</b> Apply as a foliar spray using a rate range of 0.035 - 0.083 fl oz (0.21 tsp – 0.5 tsp) per gallon of spray per 1518 sq ft.
Phytophthora Blight and Crown Rot ( <i>Phytophthora capsici</i> )	2.4 - 19.2	Apply at planting.	Apply in-furrow, in transplant water or by drip irrigation or in subsequent drip irrigation.  See <b>Section 4.1.2</b> for at-planting, in-furrow, or transplant-water instructions.  See <b>Section 4.5.2</b> for drip irrigation instructions.  Use the higher rates for heavier soils, for longer application



			intervals, or for susceptible varieties.
<p><b>Resistance Management:</b></p> <ul style="list-style-type: none"> <li>• Refer to <b>Section 3.2</b>.</li> <li>• Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>• Do not follow soil applications of Orondis with foliar applications of Orondis (or any other FRAC 49-containing product). Use either soil applications or foliar applications but not both for disease control.</li> <li>• Where 3 or more applications are made, use Orondis (or any other FRAC 49-containing product) in no more than 33% of the applications, or a maximum of 4 applications, whichever is fewer. Where less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).</li> <li>• On multiple plantings in the same year, do not exceed 6 applications per acre per year.</li> </ul>			
<b>USE RESTRICTIONS</b>			
<ol style="list-style-type: none"> <li>1) Refer to <b>Section 6.1</b> for additional product use restrictions.</li> <li>2) <b>Maximum Single Application Rate:</b> <ol style="list-style-type: none"> <li>a. <b>Foliar Applications:</b> 2.4 fl oz/A (0.03 lb ai/A of oxathiapiprolin-containing products)</li> <li>b. <b>Soil Applications:</b> 19.2 fl oz/A (0.25 lb ai/A of oxathiapiprolin-containing products)</li> </ol> </li> <li>3) <b>Minimum Application Interval:</b> <ol style="list-style-type: none"> <li>a. <b>Foliar Applications:</b> 5 days</li> <li>b. <b>Soil Applications:</b> 7 days</li> </ol> </li> <li>4) <b>Maximum Annual Rate:</b> <ol style="list-style-type: none"> <li>a. <b>Foliar Applications:</b> 9.6 fl oz/A/year (0.12 lb ai/A/year of oxathiapiprolin-containing products)</li> <li>b. <b>Soil Applications:</b> 38.6 fl oz/A/year (0.50 lb ai/A/year of oxathiapiprolin-containing products)</li> </ol> </li> <li>5) <b>Pre-harvest Interval (PHI):</b> 0 days</li> </ol>			

## 7.10 Ginseng

Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Phytophthora Root Rot ( <i>Phytophthora cactorum</i> )	2.4 – 19.2	Begin applications prior to disease development, and continue on a 14-day interval.	Apply as a foliar application by ground, air-assisted (air blast), or aerial application.  Use the higher rates for heavy disease pressure conditions and susceptible varieties.
<b>Resistance Management:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 3.2</b>.</li> <li>Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>Do not follow soil applications of Orondis with foliar applications of Orondis (or any other FRAC 49-containing product). Use either soil applications or foliar applications but not both for disease control.</li> <li>Where 3 or more applications are made, use Orondis (or any other FRAC 49-containing product) in no more than 33% of the applications, or a maximum of 4 applications, whichever is fewer. Where less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).</li> </ul>			
<b>USE RESTRICTIONS</b>			
<ol style="list-style-type: none"> <li>Refer to <b>Section 6.1</b> for additional product use restrictions.</li> <li><b>Maximum Single Application Rate:</b> 19.2 fl oz/A (0.25 lb ai/A of oxathiapiprolin-containing products)</li> <li><b>Minimum Application Interval:</b> 14 days</li> <li><b>Maximum Annual Rate:</b> 38.6 fl oz/A/year (0.50 lb ai/A/year of oxathiapiprolin-containing products)</li> <li><b>DO NOT</b> use on Ginseng in California.</li> <li><b>Pre-harvest Interval (PHI):</b> 14 days</li> </ol>			

## 7.11 Leafy Greens, Crop Subgroup 4-16A

Crops (including all cultivars, varieties, and/or hybrids of these)			
Amaranth, Chinese	Dandelion	Lettuce, head	
Amaranth, leafy	Dang-gwi	Lettuce, leaf	
Aster, Indian	Dillweed	Orach	
Blackjack	Dock	Parsley, fresh leaves	
Cat's whiskers	Dol-nam-mul	Plantain, buckhorn	
Cham-chwi	Ebolo	Primrose, English	
Cham-na-mul	Endive	Purslane, garden	
Chipilin	Escarole	Purslane, winter	
Chervil, fresh leaves	Fameflower	Radicchio	
Chrysanthemum, garland	Feather cockscomb	Spinach	
Cilantro, fresh leaves	Good King Henry	Spinach, Malabar	
Corn salad	Huauzontle	Spinach, New Zealand	
Cosmos	Jute, leaves	Swiss chard	
	Lettuce, bitter	Tanier spinach	
		Violet, Chinese	
Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Downy Mildew ( <i>Bremia lactucae</i> )	4.8 - 19.2	Apply at planting.	Apply in furrow, in transplant water, or by drip, or in subsequent drip irrigation.  See <b>Section 4.1.2</b> for at-planting, in-furrow, or transplant-water instructions.  See <b>Section 4.5.2</b> for drip irrigation instructions.  Use the higher rates for heavier soils, for longer application intervals, or for susceptible varieties.
	1.0 – 2.4	Begin applications prior to disease development and continue on a 3- to 14-day interval.	Apply as a foliar application by ground, air-assisted (air blast), or aerial application.  Use the higher rates when disease is present, for longer application intervals, or for susceptible varieties.
Downy Mildew ( <i>Peronospora farinosa</i> )	1.2 – 2.4	Begin applications prior to disease development and continue on a 3- to 10-day interval.	
<b>Resistance Management:</b>			
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.2</b>.</li> <li>Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>Do not follow soil applications of Orondis with foliar applications of Orondis (or any other FRAC 49-containing product). Use either soil applications or foliar applications but not both for disease control.</li> <li>Where 3 or more applications are made, use Orondis (or any other FRAC 49-containing product) in no more than 33% of the applications, or a maximum of 4 applications, whichever is fewer. Where</li> </ul>			

less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).

- On multiple plantings in the same year, do not exceed 6 applications per acre per year.

#### USE RESTRICTIONS

- 1) Refer to **Section 6.1** for additional product use restrictions.
- 2) **Maximum Single Application Rate:**
  - a. **Foliar Applications:** 2.4 fl oz/A (0.03 lb ai/A of oxathiapiprolin-containing products)
  - b. **Soil Applications:** 19.2 fl oz/A (0.25 lb ai/A of oxathiapiprolin-containing products)
- 3) **Minimum Application Interval:**
  - a. **Foliar Applications:** 3 days
  - b. **Soil Applications:** 7 days
- 4) **Maximum Annual Rate:**
  - a. **Foliar Applications:** 9.6 fl oz/A/year (0.12 lb ai/A/year of oxathiapiprolin-containing products)
- 5) **Soil Applications:** 38.6 fl oz/A/ year (0.50 lb ai/A/year of oxathiapiprolin-containing products)
- 6) **Pre-harvest Interval (PHI):** 0 days

## 7.12 Peas, Succulent Shelled and Edible-Podded

Crops (including all cultivars, varieties, and/or hybrids of these)			
<i>Pisum</i> spp. Dwarf pea Edible-pod pea		English pea Garden pea Green pea	Snow pea Sugar snap pea
Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Downy Mildew ( <i>Peronospora viciae</i> , <i>Phytophthora phaseoli</i> )	1.2 – 2.4	Begin applications prior to disease development, and continue on a 5- to 7- day interval.	Apply by ground, air-assisted, or aerial application.  Use the higher rate when disease is present, for longer application intervals, or for susceptible varieties.
<b>Resistance Management:</b>			
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.2</b>.</li> <li>Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>Where 3 or more applications are made, use Orondis (or any other FRAC 49-containing product) in no more than 33% of the applications, or a maximum of 4 applications, whichever is fewer. Where less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).</li> <li>On multiple plantings in the same year, do not exceed 6 applications per acre per year.</li> </ul>			
USE RESTRICTIONS			
<ol style="list-style-type: none"> <li>Refer to <b>Section 6.1</b> for additional product use restrictions.</li> <li><b>Maximum Single Application Rate:</b> 2.4 fl oz/A (0.03 lb ai/A of oxathiapiprolin-containing products)</li> <li><b>Minimum Application Interval:</b> 5 days</li> <li><b>Maximum Annual Rate:</b> 9.6 fl oz/A/year (0.12 lb ai/A/year of oxathiapiprolin-containing products)</li> <li><b>DO NOT</b> use on Succulent Shelled and Edible-Podded Peas in California</li> <li><b>Pre-harvest Interval (PHI):</b> 0 days</li> </ol>			

## 7.13 Stalk and Stem Vegetables, Crop Subgroup 22A

Crops (including all cultivars, varieties, and/or hybrids of these)			
Agave	Celtuce	Kohlrabi	
Aloe vera	Fennel, Florence, fresh leaves and stalk	Palm hearts	
Asparagus	Fern, edible	Prickly pear, pads	
Bamboo shoots	Kale, sea	Prickly pear, Texas, pads	
Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Phytophthora rot ( <i>Phytophthora</i> spp.)	2.4 - 19.2	<b>New plantings:</b> Use as a crown soak prior to planting.	Use 10 gallons of solution, or the volume required to fully submerge 100 crowns.  To determine the amount of product needed to treat 100 crowns, first determine the number of plants per acre using typical plant spacing.  Then use the following formula: (100 ÷ number plants per acre) x use rate = product needed to treat 100 crowns in 10 gallons of solution.  Make a crown soak solution in a large enough container to ensure that the crowns are fully submerged.  Place crowns in fungicide solution and soak for a minimum of 10 minutes.  After soaking, remove from solution, drain, and then plant the crowns.
		<b>Established plantings:</b> Make first application to established asparagus beds at least 14 days prior to harvest (first cutting).  Make second application on the day of the first cutting.	Apply as a soil-directed banded spray in a minimum of 20 gal/A of water.  The application is to be made at the per acre rate concentrated in a band.  Apply ¼ - ½ inch of water after application, either by overhead sprinkler irrigation or garden hose drench on the row.
			Orondis may be applied by drip irrigation using the following directions: • Apply 1/2 acre-inch of water alone.

			<ul style="list-style-type: none"> <li>• Then apply the first 1/4 - 1/3 of the irrigation water with Orondis.</li> <li>• Finally, apply the final 2/3 – 3/4 of the irrigation water without Orondis.</li> </ul> <p>Refer to <b>Section 4.5.2</b> for additional drip irrigation instructions.</p>
<p><b>Resistance Management:</b></p> <ul style="list-style-type: none"> <li>• Refer to <b>Section 3.2</b>.</li> <li>• Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>• Where 3 or more applications are made, use Orondis (or any other FRAC 49-containing product) in no more than 33% of the soil fungicide applications, or a maximum of 2 applications, whichever is fewer. Where less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).</li> </ul>			
<p><b>USE RESTRICTIONS</b></p>			
<ol style="list-style-type: none"> <li>1) Refer to <b>Section 6.1</b> for additional product use restrictions.</li> <li>2) <b>Maximum Single Application Rate:</b> 19.2 fl oz/A (0.25 lb ai/A of oxathiapiprolin-containing products)</li> <li>3) <b>Minimum Application Interval:</b> 14 days</li> <li>4) <b>Maximum Annual Rate:</b> 38.6 fl oz/A/year (0.50 lb ai/A/year of oxathiapiprolin-containing products)</li> <li>5) <b>Maximum Number of Applications:</b> <b>DO NOT</b> make more than two applications per year.</li> <li>6) <b>Pre-harvest Interval (PHI):</b> 0 days</li> </ol>			

## 7.14 Tobacco

Target Disease	Rate (fl oz/A)	Application Timing	Use Directions
Black Shank ( <i>Phytophthora parasitica</i> var. <i>nicotianae</i> )	2.4	Apply as a foliar spray to the tobacco transplants in the transplant tray 24-48 hours prior to transplanting.	Immediately water the spray off the foliage into the transplant tray soil, not watering past soil saturation.  See <b>Section 4.1.2</b> for additional information.
	4.8 - 19.2	Apply at planting (in furrow or in transplant water).	See <b>Section 4.1.2</b> for additional information.
		Apply soil-directed or banded applications at 1st cultivation or layby.	See <b>Section 4.1.2</b> for additional information.
Blue Mold ( <i>Peronospora tabacina</i> )	1.0 - 2.4	Begin applications prior to disease development, and continue on a 7- to 10-day interval.	Apply by ground, air-assisted, or aerial application.  Use the higher rates when disease is present, for longer application intervals, or for susceptible varieties.

### Resistance Management:

- Refer to **Section 3.2**.
- Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.
- Do not follow soil applications of Orondis with foliar applications of Orondis (or any other FRAC 49-containing product). Use either soil applications or foliar applications but not both for disease control.
- Where 3 or more applications are made, use Orondis (or any other FRAC 49-containing product) in no more than 33% of the applications, or a maximum of 4 applications, whichever is fewer. Where less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).

### USE RESTRICTIONS

- 1) Refer to **Section 6.1** for additional product use restrictions.
- 2) **Maximum Single Application Rate:**
  - a. **Foliar Applications (including transplant tray application):** 2.4 fl oz/A (0.03 lb ai/A of oxathiapiprolin-containing products)
  - b. **Soil or Soil-Directed Applications:** 19.2 fl oz (0.25 lb ai/A of oxathiapiprolin-containing products)
- 3) **Minimum Application Interval:** 7 days for all application types
- 4) **Maximum Annual Rate:**
  - a. **Foliar Applications:** 9.6 fl oz/A/year (0.12 lb ai/A/year of oxathiapiprolin-containing products)
- 5) **Soil or Soil-Directed Applications (including transplant tray application):** 38.6 fl oz/A/year (0.50 lb ai/A/year of oxathiapiprolin-containing products) **DO NOT** use on tobacco in California
- 6) **Pre-harvest Interval (PHI):** 7 days

## 7.15 Tuberos and Corm Vegetables, Crop Subgroup 1C



<b>Crops (including all cultivars, varieties, and/or hybrids of these)</b>			
Arracacha		Chayote (root)	Sweet potato
Arrowroot		Chufa	Tanier
Artichoke, Chinese		Dasheen (taro)	Turmeric
Artichoke, Jerusalem		Ginger	Yam bean
Canna, edible		Leren	Yam, true
Cassava, bitter and sweet		Potato	
<b>Target Disease</b>	<b>Rate (fl oz/A)</b>	<b>Application Timing</b>	<b>Use Directions</b>
Late Blight ( <i>Phytophthora infestans</i> )	0.8 – 2.4	Begin applications prior to disease development, and continue on a 5- to 14-day interval.	Apply as a foliar application by ground, air-assisted, or aerial application.  Use the higher rates when disease is present, for longer application intervals, or for susceptible varieties.
Pink Rot ( <i>Phytophthora erythroseptica</i> )	2.4 – 9.6	Apply at planting.	Apply as an in-furrow application as a 6- to 8-inch band directly over the seed pieces in the furrow, and then close furrows.
	2.4	Make first application at nickel-sized tubers (coinciding with beginning of flowering).  Follow with a second application after 10-14 days.	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, follow with irrigation to do so.
<b>Resistance Management:</b>			
<ul style="list-style-type: none"> <li>• Refer to <b>Section 3.2</b>.</li> <li>• Make no more than 2 sequential applications of Orondis (or any other FRAC 49-containing product) before rotating to a fungicide with a different mode of action.</li> <li>• Do not follow soil applications of Orondis with foliar applications of Orondis (or any other FRAC 49-containing product). Use either soil applications or foliar applications but not both for disease control.</li> <li>• Where 3 or more applications are made, use Orondis (or any other FRAC 49-containing product) in no more than 33% of the applications, or a maximum of 4 applications, whichever is fewer. Where less than 3 fungicide applications are made, make no more than 1 application of Orondis (or any other FRAC 49-containing product).</li> <li>• On multiple plantings in the same year, do not exceed 6 applications per acre per year.</li> </ul>			
<b>USE RESTRICTIONS</b>			
<ol style="list-style-type: none"> <li>1) Refer to <b>Section 6.1</b> for additional product use restrictions.</li> <li>2) <b>Maximum Single Application Rate:</b> <ol style="list-style-type: none"> <li>a. <b>Foliar Applications:</b> 2.4 fl oz/A (0.03 lb ai/A of oxathiapiprolin-containing products)</li> <li>b. <b>Soil or Soil-Directed Applications:</b> 9.6 fl oz/A (0.12 lb ai/A of oxathiapiprolin-containing products)</li> </ol> </li> <li>3) <b>Minimum Application Interval:</b> 5 days foliar and 10 days in-furrow</li> <li>4) <b>Maximum Annual Rate:</b> <ol style="list-style-type: none"> <li>a. <b>Foliar Applications:</b> 9.6 fl oz/A/year (0.12 lb ai/A/year of oxathiapiprolin-containing products)</li> <li>b. <b>Soil or Soil-Directed Applications:</b> 19.2 fl oz/A/year (0.25 lb ai/A of oxathiapiprolin-containing products)</li> </ol> </li> <li>5) <b>DO NOT</b> use on Tuberous and Corm Vegetables in California</li> <li>6) <b>Pre-harvest Interval (PHI):</b> 5 days</li> </ol>			



## 8.0 STORAGE AND DISPOSAL

### STORAGE AND DISPOSAL

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

#### **Pesticide Storage**

Keep container closed when not in use. Always store pesticides in the original container only, away from other pesticides, food, pet food, feed, seed, fertilizers, and veterinary supplies. If a leaky container must be contained within another, mark the outer container to identify the contents. Storage areas must be locked and secure from vandalism, with precautionary signs posted. The storage area must be dry, well-lit, and well-ventilated. Keep pesticide storage areas clean. Clean up any spills promptly. Protect pesticide containers from extreme heat and cold. Store herbicides, insecticides and fungicides in separate areas within the storage unit. Place liquid formulations on lower shelves and dry formulations above. Maintaining a spill kit and fire extinguisher on hand and having emergency phone numbers posted will allow you to be prepared for emergencies. If spill cleanup PPE is stored nearby, but outside the pesticide storage area, it will be accessible when needed.

#### **Pesticide Disposal**

Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

#### **Container Handling [less than or equal to 5 gallons]**

Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

#### **Container Handling [greater than 5 gallons]**

Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local

authorities.

**Container Handling [greater than 5 gallons]**

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean the container before final disposal, empty the remaining contents from this container into application or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER.**

## **9.0 CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.**

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for

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## 10.0 APPENDIX

### 10.1 Orondis Use Summary Table [Optional table]

[Start Optional Text]

**IMPORTANT:** The table below is a summary of the Crop Use Directions for Orondis. However, it is important for the user to read and follow the complete instructions contained within this label.

Crop or Crop Group or Crop Subgroup with examples	Maximum Rate per Application (fl oz/A)	Maximum Rate per Application (lb ai/A)	Minimum Application Interval (days)	Pre-Harvest Interval (PHI days)	Maximum Rate per Year (fl oz/A)	Maximum Rate per Year (lb ai/A)
Basil, fresh and dried	2.4	0.03	5	0	9.6	0.12
Brassica, Head and Stem Vegetables (Crop Group 5-16): cabbage, broccoli, cauliflower	2.4	0.03	5	0	9.6	0.12
Brassica, Leafy Greens (Crop Subgroup 4-16B): collards, mustard greens	2.4	0.03	5	0	9.6	0.12

<b>Bulb Vegetables (Crop Group 3-07)</b>	2.4	0.03	5	0	9.6	0.12
<b>Cacao</b>	2.4 foliar or 9.6 soil	0.03 foliar or 0.12 soil	90	0	2.4 foliar or 19.2 soil	0.03 foliar or 0.25 soil
<b>Caneberry (Crop Subgroup 13-07A):</b> blackberry	19.2	0.25	7	1	38.6	0.50
<b>Citrus Fruit (Crop Group 10-10):</b> lemon, orange, grapefruit	2.4 foliar or 9.6 soil	0.03 foliar or 0.12 soil	90	0	2.4 foliar or 19.2 soil	0.03 foliar or 0.25 soil
<b>Cucurbit vegetables (Crop Group 9):</b> cucumber, cantaloupe, watermelon, squash	2.4 foliar or 19.2 soil	0.03 foliar or 0.25 soil	3 foliar or 7 soil	0	9.6 foliar or 38.6 soil	0.12 foliar or 0.50 soil
<b>Fruiting vegetables (Crop Group 8-10):</b> tomato, pepper	2.4 foliar or 19.2 soil	0.03 foliar or 0.25 soil	5 foliar or 7 soil	0	9.6 foliar or 38.6 soil	0.12 foliar or 0.50 soil
Ginseng*	19.2	0.25	14	14	38.6	0.50
<b>Leafy greens (Crop subgroup 4-16A):</b> lettuce, spinach	2.4 foliar or 19.2 soil	0.03 foliar or 0.25 soil	3 foliar or 7 soil	0	9.6 foliar or 38.6 soil	0.12 foliar or 0.50 soil
Peas, succulent shelled and edible-podded*	2.4	0.03	5	0	9.6	0.12
<b>Stalk and Stem Vegetables (Crop Subgroup 22A):</b> asparagus, kohlrabi	19.2	0.25	14	0	38.6	0.50
Tobacco*	2.4 foliar or 19.2 soil	0.03 foliar or 0.25 soil	7	7	9.6 foliar or 38.6 soil	0.12 foliar or 0.50 soil

<b>Tuberous and Corn vegetables* (Crop Subgroup 1C): potato</b>	2.4 foliar or 9.6 soil	0.03 foliar or 0.12 soil	5 foliar or 10 soil	5	9.6 foliar or 19.2 soil	0.12 foliar or 0.25 soil
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\* Not for use in California  
[End of Optional Text]

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Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:  
Syngenta Crop Protection, LLC  
P.O. Box 18300  
Greensboro, North Carolina 27419-8300