

2024-1378  
2024-06-04

**GROUP 24 BACTERICIDE**

# **KASUMIN® 2L**

**Bactericide**

**COMMERCIAL  
LIQUID**

**READ THE LABEL BEFORE USING**

**KEEP OUT OF REACH OF CHILDREN**

**POTENTIAL SENSITIZER**

**ACTIVE INGREDIENT:**

Kasugamycin, present as hydrochloride hydrate ... 2.00%

Contains 1,2-benzisothiazolin-3-one at 0.02% as a preservative

**REGISTRATION NO. 30591**

**PEST CONTROL PRODUCTS ACT**

**NET CONTENTS: 10 L**

**UPL AgroSolutions Canada Inc.  
PO Box 12219  
Research Triangle Park, NC 27709+**

**For Product Use Information Call 1-800-438-6071**

FOR CHEMICAL EMERGENCY: spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300

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#### **GENERAL INFORMATION -**

Kasumin 2L Bactericide is a liquid formulation of kasugamycin hydrochloride hydrate (2.3%) containing 2 % (by weight) of kasugamycin. Kasugamycin is an aminoglycosidic antibiotic (bactericide) that controls fire blight (*Erwinia amylovora*) on pome fruit, caneberry subgroup 13-07A, Saskatoon berry and suppresses walnut blight (*Xanthomonas campestris* pv. *juglandis*) on walnuts as well as bacterial spot (*Xanthomonas campestris* pv. *vesicatoria*), bacterial stem canker (*Clavibacter michiganensis* subsp. *michiganensis*) on fruiting vegetables (greenhouse and field), and blossom blast and bacterial canker (*Pseudomonas syringae*) on cherries (Crop Subgroup 12-09A).

#### **PRECAUTIONS**

- **KEEP OUT OF REACH OF CHILDREN**
- May cause sensitization.
- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Wear a long-sleeved shirt and long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean-up and repair. It is important to wear gloves for the mixing/loading operation and when making sprayer and nozzle repairs and adjustments. Do not handle this product with bare hands. Follow the manufacturer's instructions for cleaning/maintaining personal protective equipment. If no such instructions for washables are available, use detergent and hot water. Keep and wash personal protective equipment separately from other laundry.

Change contaminated clothing daily and wash before use. Remove clothing immediately if pesticide gets inside. Shower immediately and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves and leave on before removing any protective clothing. As soon as possible shower and change into clean clothing.

Apply only when the potential for drift to areas of human habitation or areas of 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.

**RESTRICTED ENTRY INTERVAL:** DO NOT enter or allow worker entry into treated areas (including greenhouses where crops have been treated) during the restricted- entry interval (REI) of 12 hours following application.

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

**DO NOT apply this product by air. Use only according to label directions.**

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#### FIRST AID

<b>If in eyes</b>	Hold eye open and rinse slowly and gently with water for 15-20minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control centre or doctor for treatment advice.
<b>If on skin or clothing</b>	Take off contaminated clothing. Rinse skin with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.
<b>If inhaled</b>	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 center or doctor for further treatment advice.
<b>If swallowed</b>	Call a poison control centre or doctor 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.
Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.	

**FOR CHEMICAL EMERGENCY: spill, leak, fire, exposure, or accident call  
CHEMTREC 1-800-424-9300**

#### TOXICOLOGICAL INFORMATION

No specific antidote available. Treat symptomatically.

#### ENVIRONMENTAL HAZARDS

Toxic to non-target terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

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

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#### STORAGE AND DISPOSAL

**STORAGE:** Store in a dry place away from excessive heat. To prevent contamination store this product away from food or feed. Store in original container only.

**DISPOSAL:**

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

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

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

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

#### DIRECTIONS FOR USE

This product contains the bactericide kasugamycin. To reduce the development of resistant plant pathogenic bacteria, this product should be used only when required.

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) medium classification. Boom height must be 60 cm or less above the crop or ground.

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

**DO NOT** apply by air.

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**Buffer zones:**

Use of the following spray methods or equipment **DO NOT** require a buffer zone: hand-held or backpack sprayer and spot treatment.

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands).

Method of application	Crop		Buffer Zones (metres) Required for the Protection of Terrestrial Habitat:
Airblast	Pome fruit, walnuts, cherry subgroup 12-09-A	Early growth stage	2
		Late growth stage	1
	Caneberry Subgroup 13-07A, Saskatoon berry	Early growth stage	3
		Late growth stage	2

When tank mixes are permitted, consult the labels of the tankmix 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.

**Commented [DB(1)]:** PMRA requested amendment under Sub No 2023-3115.

This product can be tank mixed with Ohm or Wave as post emergent applications for only crops registered on both this product label and those listed on Ohm or Wave labels.

**Commented [BD2]:** PMRA requested deletion under Sub No 2023-3115 since the term 'BIOSOLUTION' is undefined and should be removed as any implied claims have not been evaluated under the PCPA.

**APPLICATION GUIDELINES**  
**Broadcast Ground Sprayers**

Thorough coverage is necessary to provide good disease control. Applications using sufficient water volume to provide thorough and uniform coverage generally provide the most effective disease control. Check the sprayer frequently to ensure proper calibration and continued uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

**Use Precautions**

Read and understand the entire label before opening this product. If you have questions, call UPL AgroSolutions Canada Inc at 1-800-438-6071 or obtain technical advice from the distributor or your provincial agricultural representative.

**Commented [NGRaD3]:** Ohm & Wave has already been approved as tank mix partners on Interline & Everest 3.0 AG with submission no. as 2022-3886 & 2022-4178 respectively.

**Commented [BD4]:** PMRA requested deletion under Sub No 2023-3115

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### USE DIRECTIONS FOR SPECIFIC CROPS

KASUMIN 2L BACTERICIDE provides control or suppression of important diseases of fruiting vegetables, pome fruit, walnuts, caneberry subgroup 13-07A, Saskatoon berry and cherries (Crop Subgroup 12-09A).

### FRUITING VEGETABLES - CROP GROUP 8 (GREENHOUSE OR FIELD): Eggplant, Groundcherry, Pepino, Pepper (includes bell pepper, chili pepper, cooking pepper, pimento, sweet pepper), Tomatillo, Tomato

Disease Suppression	Application Rate	Application Timing and Resistance Management
<b>Bacterial Spot</b> ( <i>Xanthomonas campestris</i> pv. <i>vesicatoria</i> )	100 ppm (e.g., 1.2 L/ha in 240 L/ha of water)	<ul style="list-style-type: none"><li>▪ Spray volume must be sufficient to provide good coverage of treated foliage.</li><li>▪ Begin applications when conditions favour disease development.</li><li>▪ Repeat applications at intervals that are necessary or when conditions favour disease development.</li></ul>
<b>Bacterial Stem Canker</b> ( <i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i> )		

### RESTRICTIONS AND OTHER INFORMATION:

- Apply Kasumin 2L Bactericide at a 100 ppm concentration.
- Do not apply more than 1.2L/ha or 240L/ha carrier volume per application.
- Spray volume must be sufficient to provide good coverage of treated foliage.
- Follow the mixing directions provided in the table under "Mixing Procedures" to create the desired volume of spray solution.
- Do not apply more than 3.6 L Kasumin 2L Bactericide per hectare per year.
- Do not make more than 3 applications of Kasumin 2L Bactericide per year.
- A minimum interval of 7 days between applications is required.
- Do not make more than two consecutive applications of Kasumin 2L Bactericide. If additional applications are needed, rotate with another product with a different mode of action that is registered for this use.
- For resistance management purposes, do not apply on greenhouse vegetable transplants.
- Do not apply Kasumin 2L Bactericide within 1 day of harvest.

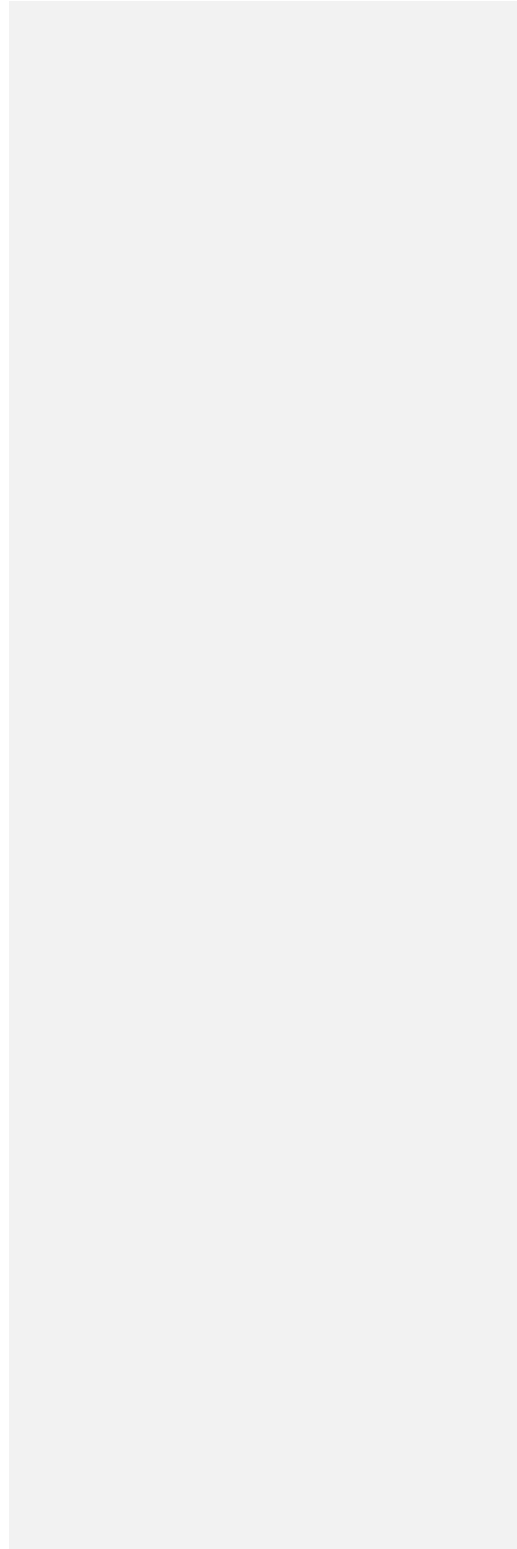
### TANK MIXES

Kasumin 2L Bactericide may be tank mixed with **Kocide 2000-O (Reg. No. 33441)** for control of registered bacterial diseases on tomatoes and peppers (greenhouse and field). When tank mixes are permitted, read and observe all label directions, including rates, and restrictions for each product used in the tankmix. Follow the more stringent label precautionary measures for mixing, loading and applying stated on both product labels.

**Commented [BD5]:** PMRA requested amendment under Sub No 2023-3115.

**Commented [BD6]:** PMRA requested insertion under Sub No 2023-3115.

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**POME FRUIT - CROP GROUP 11-09 (BEARING AND NONBEARING):**  
**Apple, Azarole, Crabapple, Mayhaw Medlar, Pear, Asian Pear, Quince, Chinese Quince, Japanese Quince, Tejocote, Cultivars, varieties and/or hybrids of these commodities**

Disease Control	Application Rate	Application Timing and Resistance Management
<b>Fire Blight</b> ( <i>Erwinia amylovora</i> )	100 ppm (e.g., 5.0 L/ha in 1000 L/ha of water)	<ul style="list-style-type: none"><li>▪ Spray volume must be sufficient to provide good coverage of treated foliage.</li><li>▪ Reduced spray volumes may be utilized for small trees where complete coverage can be obtained with less water per hectare.</li><li>▪ Begin applications at 20 – 30% bloom or when conditions favour disease development.</li><li>▪ Repeat applications at 7-day intervals or when conditions favour disease development.</li></ul>

**RESTRICTIONS AND OTHER INFORMATION:**

- Apply Kasumin 2L Bactericide at a 100 ppm concentration.
- Do not apply more than 5L/ha or 1000 L/ha carrier volume per application.
- Spray volume must be sufficient to provide good coverage of treated foliage.
- Follow the mixing directions provided in the table under “Mixing Procedures” to create the desired volume of spray solution.
- Do not apply more than 20.0 L of Kasumin 2L Bactericide per hectare per year.
- Do not make more than 4 applications of Kasumin 2L Bactericide per year.
- Do not make more than two consecutive applications of Kasumin 2L Bactericide. If additional applications are needed, rotate with another product with a different mode of action that is registered for this use.
- Do not use alternate tree-row application method.
- Do not apply after petal fall.
- Do not apply Kasumin 2L Bactericide within 90 days of harvest.

**Commented [BD7]:** PMRA requested amendment under Sub No 2023-3115.



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**WALNUT**

Disease Suppression	Application Rate	Application Timing and Resistance Management
Walnut Blight ( <i>Xanthomonas campestris</i> pv. <i>juglandis</i> )	100 ppm (e.g., 5.0 L/ha in 1000 L/ha of water)	<ul style="list-style-type: none"> <li>▪ Spray volume must be sufficient to provide good coverage of treated foliage.</li> <li>▪ Reduced spray volumes may be utilized for small trees where complete coverage can be obtained with less water per hectare.</li> <li>▪ Begin applications when conditions favour disease development.</li> </ul>

RESTRICTIONS AND OTHER INFORMATION:
<ul style="list-style-type: none"> <li>• Apply Kasumin 2L at a 100 ppm concentration.</li> <li>• Do not apply more than 5L/ha or 1000 L/ha carrier volume per application.</li> <li>• Spray volume must be sufficient to provide good coverage of treated foliage.</li> <li>• Follow the mixing directions provided in the table under “Mixing Procedures” to create the desired volume of spray solution.</li> <li>• Do not apply more than 20.0 Litres of Kasumin 2L Bactericide per hectare per year.</li> <li>• Do not make more than 4 applications of Kasumin 2L Bactericide per year.</li> <li>• A minimum interval of 14 days between applications is required.</li> <li>• Do not make more than two consecutive applications of Kasumin 2L Bactericide. If additional applications are needed, rotate with another product with a different mode of action that is registered for this use.</li> <li>• Do not use alternate tree-row application method</li> <li>• Do not apply Kasumin 2L Bactericide within 100 days of harvest.</li> </ul>

Commented [BD8]: PMRA requested amendment under Sub No 2023-3115.

**MIXING PROCEDURES**

Prepare no more spray mixture than is needed for the immediate operation. Thoroughly clean spray equipment before using this product. Agitation is necessary for proper dispersal of the product. Maintain maximum agitation throughout the spraying operation. Do not let the spray mixture stand overnight in the spray tank. Flush the spray equipment thoroughly following each use and apply the rinsate to a previously treated area.

Mixing Instructions for 100 ppm spray solution for fruiting vegetables	
Litres of Water per Hectare (L/ha)	product (L/ha)
50	0.25
100	0.5
240	1.2

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Mixing Instructions for 100 ppm spray solution for treatment of fruit trees and walnuts	
Litres of Water per Hectare (L/ha)	product (L/ha)
50	0.25
100	0.5
200	1
500	2.5
1000	5

If using KASUMIN 2L BACTERICIDE in a tankmixture with Kocide 2000-O, read and observe all directions, including rates and restrictions for Kocide 2000-O used in the tank mix. Follow the more stringent label precautionary measures for mixing, loading and applying stated on both product labels.

- Commented [BD9]:** PMRA requested insertion under Sub No 2023-3115.
- Commented [BD10]:** PMRA requested deletion under Sub No 2023-3115.
- Commented [BD11]:** PMRA requested amendment under Sub No 2023-3115.
- Commented [BD12]:** PMRA requested amendment under Sub No 2023-3115.

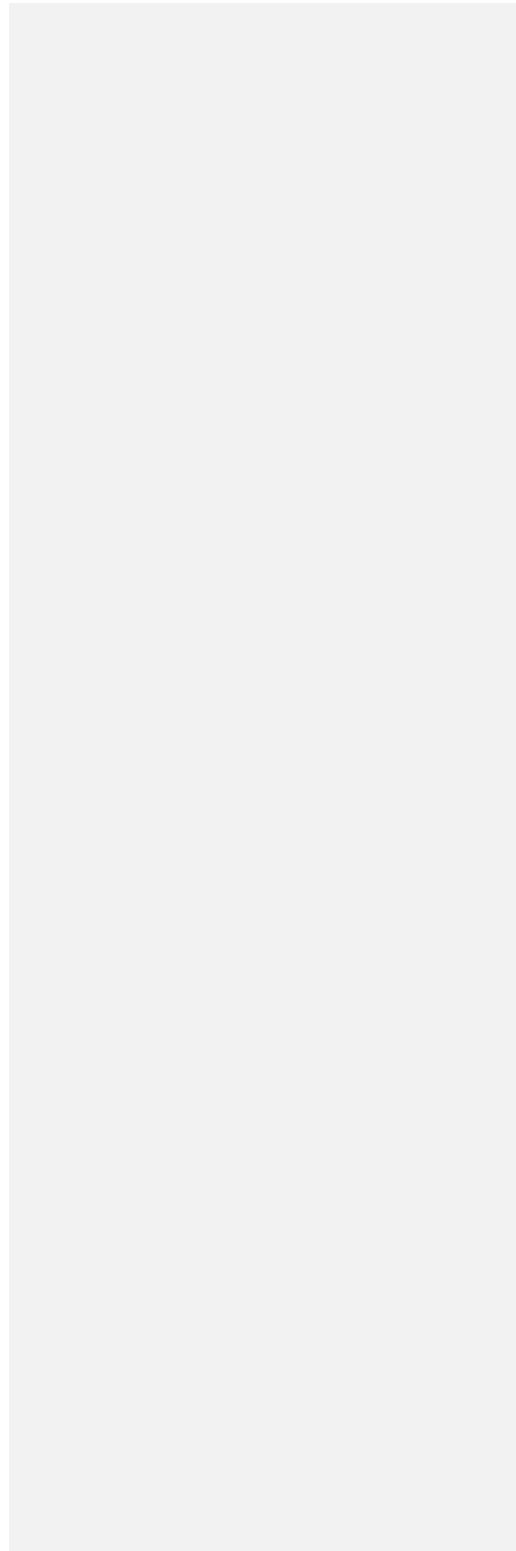
**MINOR USES:**

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

CROP	PATHOGEN CONTROLLED	APPLICATION RATE OF KASUMIN 2L BACTERICIDE	REMARKS

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Caneberry Subgroup 13-07 A <sup>1</sup> ( <i>Rubus</i> spp.)  Saskatoon berry ( <i>Amelanchier alnifolia</i> )	Fire blight ( <i>Erwinia amylovora</i> )	100 ppm (e.g., 5.0 L/ha in 1000 L/ha of water)	<b>TIME OF APPLICATION:</b> Begin applications at beginning of bloom before the first flowers open and continue during bloom. Repeat applications every 3-4 days under warm conditions favouring disease development. Under cool conditions apply every 5-7 days.
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			<p>Apply a maximum of four applications per year using ground equipment.</p> <p>Do not make more than two consecutive applications of Kasumin 2L Bactericide. If additional applications are needed, rotate with another product with a different mode of action that is registered for this use. PHI is 1 day</p>
<p>1 Caneberry subgroup: 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, loganberry, 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, raspberrry (black and red), wild raspberry and cultivars, varieties and/or hybrids of these),</p>			
<p><b>Cherry Subgroup 12-09A</b> Capulin Cherry, black Cherry, Nanking, Cherry, sweet Cherry tart, and Cultivars, varieties and/or hybrids of these</p>	<p>Control of blossom blast (<i>Pseudomonas syringae</i>) and suppression of bacterial canker (<i>Pseudomonas syringae</i>)</p>	<p>100 ppm (e.g., 5.0 L/ha in 1000 L/ha of water)</p>	<p>Begin applications at the beginning of bloom. Repeat applications at 7 day intervals. Apply a maximum of four applications per year. PHI is 30 days.</p>

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### **RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management, please note that Kasumin 2L Bactericide contains a Group 24 bactericide. Any microbial population may contain individuals naturally resistant to Kasumin 2L Bactericide and other Group 24 Bactericides. A gradual or total loss of pest control may occur over time if these bactericides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to the site of action but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed. To reduce the likelihood of bacteria developing resistance to kasugamycin, sound resistance management practices should be employed when using this product. Such practices include limiting the number of consecutive applications of Kasumin 2L Bactericide, and alternating Kasumin 2L Bactericide applications with other bactericides that have a different mode of action. See crop specific use directions above.

To delay resistance:

- Where possible, rotate the use of Kasumin 2L Bactericide with products from different groups that control the same pathogens.
- Do not make more than two consecutive applications of Kasumin 2L Bactericide before alternating to a registered bactericide with a different mode of action.
- Use tank-mixtures with bactericides from a different group when such use is permitted.
- Kasumin 2L Bactericide 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/bactericide applications.

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- Monitor treated pathogen populations for resistance development. Notify UPL AgroSolutions Canada Inc if reduced sensitivity of the pathogen to Kasumin 2L Bactericide 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 bactericide 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.
- Where possible, make use of predictive disease models to effectively time fungicide applications.
- For further information and to report suspected resistance, contact UPL AgroSolutions Canada Inc at 1-800-438-6071.

#### **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.

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