

(Sleeve)

GROUP	<b>3</b>	FUNGICIDE
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## **Crusade™ Fungicide**

EMULSIFIABLE CONCENTRATE

COMMERCIAL

FOR CONTROL OR SUPPRESSION OF LISTED DISEASES IN WHEAT, BARLEY  
AND OATS

ACTIVE INGREDIENT:  
Prothioconazole.....100 g/L  
Tebuconazole.....126 g/L

DANGER – CORROSIVE TO EYES AND SKIN

REGISTRATION NUMBER 35831 PEST CONTROL PRODUCTS ACT

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

NET CONTENTS: 0.5 to 324 L

Nufarm Agriculture Inc.  
5101, 333 – 96th Ave NE  
Calgary, Alberta T3K 0S3  
1-800-868-5444

24-Hour Emergency Response Number 1-800-424-9300

**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.

**PRECAUTIONS:**

**KEEP OUT OF REACH OF CHILDREN.** Wash thoroughly with soap and water after handling and before eating, drinking, or smoking. If product comes in contact with clothing, remove all contaminated clothing, wash skin with soap and water and dress in clean clothing. Launder applicator clothing separate from other laundry.

CORROSIVE to the eye and skin. DO NOT get in eyes or on skin.

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

Apply only when the potential for drift beyond the area to be treated is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

**PROTECTIVE CLOTHING AND EQUIPMENT:**

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

**FIRST AID:**

**If swallowed:** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

**If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

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

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

**TOXICOLOGICAL INFORMATION:**

Treat symptomatically. Probable mucosal damage may contraindicate the use of gastric lavage.

**ENVIRONMENTAL PRECAUTIONS:**

Toxic to aquatic organisms and non-target terrestrial plants. Observe spray 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 filter strip between the treated area and the edge of the water body.

**STORAGE:**

- Store this product away from food or feed.
- Do not contaminate water by storage or disposal.
- Keep away from fire or open flame or other sources of heat.
- Do not store at temperatures below freezing.
- If stored for 1 year or longer, shake well before using.
- Store the tightly closed container away from feeds, seeds, fertilizer, plants and foodstuffs.
- Do not use or store in or around the home.
- Keep in original container during storage.
- In case of fire, leaking or damaged containers, call toll free 1-800-424-9300.

**DISPOSAL:**

**Recyclable Container:** 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 or territorial requirements.

**Returnable Container:** DO NOT reuse this container for any purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

**Disposal of Unused, Unwanted Product:**

For information on disposal of unused, unwanted product, contact the registrant or the

provincial or territorial regulatory agency. Contact the registrant and the provincial or territorial regulatory agency in case of a spill, and for cleanup of spills.

Crusade<sup>TM</sup> is a trademark of Nufarm Agriculture Inc.

(Booklet)

GROUP

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FUNGICIDE

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5101, 333 – 96th Ave NE  
Calgary, Alberta T3K 0S3  
1-800-868-5444

24-Hour Emergency Response Number 1-800-424-9300

## GENERAL INFORMATION

### 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.

**Crusade™ Fungicide** is a broad-spectrum systemic fungicide for the control or suppression of listed diseases on wheat, barley and oats.

### PRECAUTIONS:

**KEEP OUT OF REACH OF CHILDREN.** Wash thoroughly with soap and water after handling and before eating, drinking, or smoking. If product comes in contact with clothing, remove all contaminated clothing, wash skin with soap and water and dress in clean clothing. Launder applicator clothing separate from other laundry.

CORROSIVE to the eye and skin. DO NOT get in eyes or on skin.

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

Apply only when the potential for drift beyond the areas to be treated is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

### PROTECTIVE CLOTHING AND EQUIPMENT:

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

### FIRST AID:

**If swallowed:** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

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control centre or doctor for further treatment advice.

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**TOXICOLOGICAL INFORMATION:**

Treat symptomatically. Probable mucosal damage may contraindicate the use of gastric lavage.

**ENVIRONMENTAL PRECAUTIONS:**

Toxic to aquatic organisms and non-target terrestrial plants. Observe spray 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 filter strip between the treated area and the edge of the water body.

**STORAGE:**

- Store this product away from food or feed.
- Do not contaminate water by storage or disposal.
- Keep away from fire or open flame or other sources of heat.
- Do not store at temperatures below freezing.
- If stored for 1 year or longer, shake well before using.
- Store the tightly closed container away from feeds, seeds, fertilizer, plants and foodstuffs.
- Do not use or store in or around the home.
- Keep in original container during storage.
- In case of fire, leaking or damaged containers, call toll free 1-800-424-9300.

**DISPOSAL:**

**Recyclable Container:** 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 or territorial requirements.

**Returnable Container:** DO NOT reuse this container for any purpose. For disposal, this

empty container may be returned to the point of purchase (distributor/dealer).

**Disposal of Unused, Unwanted Product:**

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

**DIRECTIONS FOR USE**

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 when wind speed is less than 1 km/h. Avoid application of this product when winds are gusty. DO NOT apply with sprays finer than the American Society of Agricultural and Biological Engineers (ASABE) S572 (572.1 to 572.3) Medium classification. Boom height must be 60 cm or less above the crop or ground.

Conventionally piloted aircraft application: DO NOT apply when wind speed is less than 1 km/h. Avoid application of this product when winds are gusty. DO NOT apply when wind speed is greater than 16 km/h at flying height at the site of application. DO NOT apply with sprays finer than the American Society of Agricultural and Biological Engineers (ASABE) S572 (572.1 to 572.3) Medium classification. Reduce drift caused by turbulent wingtip vortices. Nozzle distribution along the spray boom length MUST NOT exceed 65% of the wing- or rotorspan.

**Spray buffer zones:**

The spray 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), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of application	Crop/Site		Spray Buffer Zones (metres) Required for the Protection of:				Terrestrial Habitat:
			Freshwater Habitat of Depths:		Estuarine/Marine Habitat of Depths:		
			Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m	
Field sprayer	Wheat (spring, winter, and durum), barley, oats		1	1	1	1	1
Aerial	Wheat (spring, winter, and durum), barley, oats	Fixed wing	5	1	1	1	15
		Rotary wing	2	1	1	1	15

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

The spray buffer zones for this product for conventional application equipment can be modified based on weather conditions and spray equipment configuration by accessing the Spray Buffer Zone Calculator on the Drift Mitigation portion of the Canada.ca website.

**Crusade Fungicide** is a broad-spectrum systemic fungicide for control of a wide range of diseases on wheat (spring, winter and durum), barley and oats. **Crusade Fungicide** will protect the crop from yield and quality losses due to disease.

USE DIRECTIONS			
CROP	DISEASE	RATE (mL/ha)	REMARKS
<p><b>Wheat</b> (spring, winter and durum)</p>	<p><b>Suppression of:</b> Fusarium head blight (<i>Gibberella zeae</i> / <i>Fusarium graminearum</i>)</p> <p><b>Control of:</b> Rusts (leaf, stem and stripe) (<i>Puccinia recondita</i>, <i>P. graminis</i>, <i>P. striiformis</i>)</p> <p>Leaf &amp; glume blotch (<i>Septoria tritici</i>, <i>Stagonospora nodorum</i>)</p> <p>Tan spot (<i>Pyrenophora tritici-repentis</i>)</p> <p>Powdery mildew (<i>Erysiphe graminis</i>)</p>	<p>800 - 1000</p> <p>Apply <b>Crusade</b> with a non-ionic surfactant such as Enhance at 0.125% v/v or with Carrier at 0.125% v/v.</p>	<p>For suppression of Fusarium Head Blight, apply <b>Crusade Fungicide</b> as a preventative spray within the time period from when at least 75% of the wheat heads on the main stem are fully emerged to when 50% of the heads on the main stem are in flower. Application at this timing will also control the listed leaf diseases.</p> <p>Apply by ground or aerial application equipment. For ground application, apply specified dosage in a minimum of 100 L of water per hectare. For aerial application, apply specified dosage in a minimum of 50 L of water per hectare.</p>

<p><b><u>Barley</u></b></p>	<p><b>Suppression of:</b></p> <p>Fusarium head blight (<i>Fusarium</i> spp.) (at 1000 mL/ha rate only)</p> <p><b>Control of:</b></p> <p>Net blotch (<i>Pyrenophora teres</i>)</p> <p>Spot blotch (<i>Cochliobolus sativus</i>)</p> <p>Scald (<i>Rhynchosporium secalis</i>)</p> <p>Leaf blotch (<i>Septoria passerinii</i>)</p> <p>Rusts (leaf, stem and stripe) (<i>Puccinia hordei</i>, <i>P. graminis</i>, <i>P. striiformis</i>)</p> <p>Powdery mildew (<i>Erysiphe graminis</i>)</p>	<p>800 - 1000</p> <p>Apply <b>Crusade</b> with a non-ionic surfactant such as Enhance at 0.125% v/v or with Carrier at 0.125% v/v</p>	<p>For suppression of Fusarium head blight, apply <b>Crusade Fungicide</b> as a preventative spray within the time period when 70 to 100% of the barley main stem heads are fully emerged, to 3 days after full head emergence. Application at this timing will also control the listed leaf diseases.</p> <p>Apply by ground or aerial application equipment. For ground application, apply specified dosage in a minimum of 100 L of water per hectare. For aerial application, apply specified dosage in a minimum of 50 L of water per hectare.</p>
<p><b><u>Oats</u></b></p>	<p><b>Control of:</b></p> <p>Crown rust (<i>Puccinia coronata</i>)</p> <p>Stem rust (<i>Puccinia graminis</i>)</p> <p>Stagonospora (Septoria) leaf blotch and black stem (<i>Stagonospora avenae</i> syn. <i>Septoria avenae</i>)</p>	<p>800 - 1000</p> <p>Apply <b>Crusade</b> with a non-ionic surfactant such as Enhance at 0.125% v/v or with Carrier at 0.125% v/v</p>	<p>Apply <b>Crusade Fungicide</b> as a preventive foliar spray when the earliest disease symptoms appear on the leaves and stems. Fields should be observed closely for early disease symptoms, particularly when susceptible varieties are planted and/or under prolonged conditions favorable for disease development.</p> <p>Apply by ground or aerial application equipment. For ground application, apply specified dosage in a minimum of 100 L of water per hectare. For aerial application, apply specified dosage in a minimum of 50 L of water per hectare.</p>

**RESTRICTIONS:**

- A maximum of one application of **Crusade Fungicide** may be applied per crop season.
- Applications may not be made within 36 days of harvest.
- Do not allow livestock to graze or feed green forage to livestock prior to 6 days after treatment with **Crusade Fungicide**.

- Straw cut after harvest may be fed or used for bedding.

### **Rotational Crops:**

A rotational plantback interval of 120 days must be observed for crops not listed on the label.

Treated areas may be replanted with any crop specified on this label as soon as practical after the last application. For all other crops, do not plant back within 120 days of last application.

<b><u>Crop</u></b>	<b><u>PHI</u></b>
Wheat (spring, winter and durum)	36 days
Barley	36 days
Oats	36 days

### Mixing Instructions:

**Crusade Fungicide** must be applied with properly calibrated, clean equipment. Prior to adding **Crusade Fungicide** to the spray tank, ensure that the spray tank is thoroughly clean.

### **Crusade Fungicide** applied alone:

- Add one-half of the required amount of water to the spray or mixing tank and start agitation.
- Add the required quantity of **Crusade Fungicide** to the water and complete filling with water to the required total volume.
- Maintain agitation throughout mixing and spraying.

### **GROUND APPLICATION:**

1. Use well-maintained and calibrated conventional spray equipment, which provides adequate and uniform coverage.
2. Apply **Crusade Fungicide** in a minimum of 100 L water/ha.
3. Spray screens should be no finer than 50 mesh.
4. Ensure that the by-pass line discharges at the bottom of the tank to minimize foaming.
5. Maintain pressure at no less than 275 kPa to ensure good foliage penetration and coverage.
6. Provincial spray buffer zones that are greater than the spray buffer zones indicated in the DIRECTIONS FOR USE should be respected.
7. If spray mixture remains in the tank overnight, or for long periods during the day, agitate thoroughly prior to application.

### **AERIAL APPLICATION-GENERAL INFORMATION:**

1. Apply only by aircraft equipment which has been functionally and operationally

- calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.
2. Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate specified for aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.
  3. Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices or a Global Positioning System (GPS).
  4. To ensure proper coverage and distribution and to minimize drift, check to see that swath width and droplet size are adequate, and that wind velocities are low.
  5. Use mechanical flaggers only.

**AERIAL APPLICATION-USE PRECAUTIONS:**

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

**AERIAL APPLICATION-PRODUCT SPECIFIC PRECAUTIONS:**

1. Read and understand the entire label before opening this product. If you have questions, call the registrant at 1-800-868-5444 or obtain technical advice from the distributor or your provincial or territorial agricultural representative. Application of this specific product must meet and/or conform to the following:
2. Volume: Apply the specified rate in a minimum spray volume of 50 litres per hectare for conventionally piloted aircraft.

**AERIAL APPLICATION- OPERATOR PRECAUTIONS:**

1. **DO NOT** allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.
2. It is desirable that the pilot has communication capabilities at each treatment site at the time of application.
3. All personnel on the job site must wash hands and face thoroughly before eating and drinking.
4. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

**RESISTANCE MANAGEMENT RECOMMENDATIONS:**

For resistance management, **Crusade Fungicide** contains two Group 3 fungicides. Any fungal population may contain individuals naturally resistant to **Crusade Fungicide** and other Group 3 fungicides. A gradual or total loss of pest control may occur over time if these fungicides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay fungicide resistance:

- Where possible, rotate the use of **Crusade Fungicide** or other Group 3 fungicides with different groups that control the same pathogens.
- Use tank mixtures with fungicide from a different group that is effective on the target pathogen when such use is permitted.
- Fungicide use should be based on an integrated disease management program that includes scouting, historical information related to pesticide use and crop rotation and considers host plant resistance, impact of environmental conditions on disease development, disease thresholds, as well as cultural, biological and other chemical control practices.
- Where possible, make use of predictive disease models to effectively time fungicide applications.
- Monitor treated fungal/bacterial populations for resistance development. Notify Nufarm Agriculture Inc. if reduced sensitivity of the pathogen to **Crusade Fungicide** is suspected.
- If disease continues to progress after treatment with this product, do not increase the use rate. Discontinue use of this product, and switch to another fungicide with a different site of action, if available.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for specific crops and pathogens.
- For further information or to report suspected resistance, contact Nufarm Agriculture Inc. at 1-800-868-5444 or at [www.nufarm.ca](http://www.nufarm.ca).

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