

2018-02-28  
2017-3403  
(Container)



# Grazon™ XC

## Herbicide

GROUP	4	HERBICIDE
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- Contains Picloram and 2,4-D

For sale for use to control trees, deep-rooted perennial and biennial broadleaf weeds on rangeland and permanent pastures, and other non-cropland areas in Western Canada only.

COMMERCIAL

READ THE LABEL AND BOOKLET BEFORE USING

ACTIVE INGREDIENT: Picloram, present as triisopropanolamine salt 97.5 g/L  
2,4-D, present as choline salt 360 g a.e./L  
Solution

REGISTRATION NO. 31642 PEST CONTROL PRODUCTS ACT

**WARNING- EYE IRRITANT**

NET CONTENTS: 1 L - bulk

**Dow AgroSciences Canada Inc.**  
2400, 215 – 2<sup>nd</sup> Street S.W.  
Calgary, Alberta  
T2P 1M4  
1-800-667-3852

®™Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow

**PRECAUTIONS****CAUSES EYE IRRITATION****HARMFUL IF SWALLOWED****DO NOT GET IN EYES****AVOID CONTACT WITH EYES, SKIN AND CLOTHING****KEEP OUT OF REACH OF CHILDREN****PROTECTIVE CLOTHING AND EQUIPMENT**

Do not apply this product in a way that this product will contact workers or other persons, either directly or through drift. Only handlers (mixers, loaders and applicators) wearing personal protective equipment may be in the area being treated during application. See **DIRECTIONS FOR USE** for crop specific REIs.

**Ground and Aerial**

When handling more than 736 L per day, workers must use a closed system

- When mixing/loading, wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, socks, shoes and **goggles or face shield**. Rinse gloves before removal.
- When applying or during clean-up and repair, wear coveralls over a long sleeved shirt, long pants, chemical resistant gloves, socks and shoes. Rinse gloves before removal.
- Gloves are not required during application when the applicator is in an enclosed tractor or in an enclosed airplane cockpit.

**Application using Aerial Equipment**

- Applicators must wear coveralls over a long-sleeved shirt and long pants. Chemical-resistant gloves must also be worn during clean-up and repair activities.
- No human flaggers are permitted.

**Application using Groundboom Equipment**

- Applicators must wear coveralls over a long-sleeved shirt and long pants. Chemical-resistant gloves must also be worn during clean-up and repair activities.

**Application using Handheld Equipment (Backpack sprayers, manually pressurized handwands, mechanically-pressurized handguns and rights-of-way sprayers)**

- Applicators must wear coveralls over a long-sleeved shirt, long pants and chemical-resistant gloves.
- Mixers/loaders/applicators using mechanically pressurized handguns must wear a respirator if they will be handling more than 5 kg ae/day (13.9 L/day/person).
- Do not handle more than 8 kg ae/day (22.2 L/day/person).

**MIXING****Mechanical Transfer System**

**10 L containers:** Manufacturers are required to incorporate a built-in plastic spout on the containers, to minimize spillage and exposure.

**110 L Containers and greater:** Use a transfer system that avoids open pouring when transferring the liquid concentrate from such containers into the spray tank.

**OPERATOR USE PRECAUTIONS**

- Wear freshly laundered clothing and clean protective equipment daily.
- Rinse gloves before removal.
- Wash hands before eating, drinking, using tobacco or using the toilet.
- If herbicide penetrates clothing remove immediately; then wash thoroughly and put on clean clothing. Throw away clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate.

- After using this product, remove clothing and launder separately and promptly and thoroughly wash hands and exposed skin with soap and water. Follow manufacturer's instructions for cleaning personal protective clothing and equipment. If no such instructions for washables are provided, use detergent and hot water. Keep and wash personal protective equipment separate from household laundry.
- After work, remove all clothing and shower using soap and water.

#### **PHYSICAL OR CHEMICAL HAZARDS**

**COMBUSTIBLE.** Keep away from heat and open flame.

#### **FIRST AID**

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

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

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

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

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

#### **TOXICOLOGICAL INFORMATION**

If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Employ supportive care. Treatment should be based on judgment of the physician in response to reactions of the patient. 2,4-D may cause severe irritation to the eyes. Overexposure to 2,4-D may cause coughing, burning, dizziness or temporary loss of muscle coordination. Other possible effects of overexposure include fatigue, muscle weakness or nausea. Treat symptomatically.

#### **AGRICULTURAL CHEMICAL**

**Do not ship or store with food, feeds, drugs or clothing.**

#### **ENVIRONMENTAL HAZARDS**

- Picloram is persistent and will carryover. It is recommended that any products containing picloram not be used in areas treated with this product during the previous season.
- TOXIC to small mammals, birds, aquatic organisms and non-target terrestrial plants.
- Observe buffer zones specified under DIRECTIONS FOR USE.
- This product will harm other broadleaved plants in the vicinity of the treatment area. If applying this product using a handheld sprayer, do not directly spray or allow the spray to drift onto ornamentals or gardens.
- Do not spray exposed roots of trees and ornamentals.

#### **LEACHING**

The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (e.g. sandy soil) and/or the depth to the water table is shallow.

#### **RUNOFF**

- To reduce runoff from treated areas into aquatic habitats avoid application to areas with moderate to steep slope, compacted soil, or clay.
- Avoid application of this product when heavy rain is forecast.
- Contamination of aquatic areas as a result of runoff may be reduced by including a strip of untreated vegetation between the treated area and the edge of the water body.

## **STORAGE**

Do not store Grazon XC Herbicide near food, feedstuffs, fertilizers, seeds, insecticides, fungicides or other pesticides or herbicides intended to be used on picloram sensitive crops. Store in heated storage. If frozen, bring to room temperature and agitate vigorously before mixing with water.

## **DISPOSAL**

### **Recyclable Containers:**

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.

### **Returnable Containers:**

Do not reuse this container for any purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

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.

**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.

(Booklet)



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**OPERATOR USE PRECAUTIONS**

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### **AGRICULTURAL CHEMICAL**

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### **ENVIRONMENTAL HAZARDS**

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- TOXIC to small mammals, birds, aquatic organisms and non-target terrestrial plants.
- Observe buffer zones specified under DIRECTIONS FOR USE.
- This product will harm other broadleaved plants in the vicinity of the treatment area. If applying this product using a handheld sprayer, do not directly spray or allow the spray to drift onto ornamentals or gardens.
- Do not spray exposed roots of trees and ornamentals.

### **LEACHING**

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### **RUNOFF**

- To reduce runoff from treated areas into aquatic habitats avoid application to areas with moderate to steep slope, compacted soil, or clay.
- Avoid application of this product when heavy rain is forecast.
- Contamination of aquatic areas as a result of runoff may be reduced by including a strip of untreated vegetation between the treated area and the edge of the water body.

**STORAGE**

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**DISPOSAL****Recyclable Containers:**

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**Returnable Containers:**

Do not reuse this container for any purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

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**

Use Grazon XC Herbicide to control deep-rooted perennial and biennial broadleaf weeds on rangeland, permanent grass pastures and other non-cropland areas in Western Canada. **Read all precaution statements before using this product.** For more information or help, contact your local Dow AgroSciences representative.

**GENERAL USE PRECAUTIONS**

Certain environmental conditions may increase the potential for herbicides to move in water, through the soil and enter an underlying aquifer<sup>†</sup>. These environmental conditions include:

- Soils that are very permeable (textures of sandy loam to sand) throughout the entire profile and which also have an underlying shallow aquifer.
- Soils containing sinkholes over limestone bedrock.
- Surfaces composed of severely fractured rock or unconsolidated gravels and underlaid with an aquifer.

The above conditions may permit direct movement of herbicides, including those containing picloram, to underlying aquifers.

To help identify areas of concern, a Dow AgroSciences representative can be contacted for additional information and assistance towards doing site inspections.

<sup>†</sup>An aquifer is "an underground, saturated, permeable, geologic formation capable of producing significant quantities of water to a well or spring. It is the ability of the saturated zone, or portion of that zone, to yield water which makes it an aquifer" (American Chemical Society, 1983).

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



### **Aerial application**

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

- Do not apply more than once per year.
- DO NOT apply this product directly to freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs, irrigation ditches and wetlands), estuaries or marine habitats.
- DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

### **Restricted Entry Interval (REI)**

- Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours following application on agricultural areas. For non-crop areas, do not enter or allow worker entry into treated areas until sprays have dried.

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

### **Sensitive Plants**

Herbicidal effects of Grazon XC Herbicide occur primarily from uptake by plant foliage and translocation throughout the plant, however, secondary herbicidal action may occur from soil uptake of picloram. Very small amounts can kill or damage sensitive broadleaf plants. Care should be taken to avoid spraying desirable broadleaved plants during both growing and dormant periods. Grazon XC Herbicide should not be applied to the foliage of target vegetation near areas planted to crops such as legumes (peas, lentils, alfalfa, clover), beans, soybeans, canola, potatoes, tobacco, grapes, tomatoes, flowers, ornamental shrubs and trees or other desirable broadleaved crops. Do not apply Grazon XC Herbicide within the area occupied by roots of desirable trees unless injury can be tolerated. When applying Grazon XC Herbicide leave a buffer zone from the base of the trunk of at least 1.5 times the height of desirable trees, plants or shrubs.

In addition, care should be taken to avoid contaminating soil in which sensitive crops will be grown. Hay cut from vegetation which has been treated with Grazon XC Herbicide should not be used for composting or mulching, nor should the manure from animals ingesting treated grass or hay be used around susceptible plants, because picloram residues pass through the animal unchanged and are still herbicidally active. Contact Dow AgroSciences Canada Inc. for additional information on sensitive broadleaf plant species.

**On areas treated with this product, do not rotate to crops intended for food or feed use**, other than range or pasture grasses, wheat, barley or oats not underseeded with a legume, **do not move treated soil, or use treated soil for growing other plants** until soil residues of picloram are no longer detectable as indicated by an adequately sensitive bioassay or chemical test.

**Do not spray pastures if the injury to existing forage legumes cannot be tolerated.** Grazon XC Herbicide may injure or kill legume plants. Forage legumes may be less sensitive to the herbicide after the seed has set and plant growth is mature.

**Established grasses are tolerant to this product**, but newly seeded grasses may be injured until well established as indicated by tillering, development of a secondary root system and vigorous growth.

**Do not transfer livestock** from treated grazing areas onto broadleaf crop areas without first allowing 7 days of grazing on untreated grass pasture. Otherwise, urine may contain enough picloram to cause injury to sensitive broadleaf plants.

**Do not mix with dry fertilizer.**

**Do not use on sub-irrigated land.**

#### PREHARVEST/GRAZING INTERVALS

- Do not allow lactating dairy animals to graze the treated areas within 7 days after application.
- Do not harvest grass for hay within 30 days after application.
- Withdraw meat animals from treated fields at least 3 days before slaughter.

#### Tank Mixtures

In some cases, tank mixing a pest control product with another pest control product or a fertilizer can result in biological effects that could include, but are not limited to: reduced pest efficacy or increased host crop injury. The user should contact Dow AgroSciences Canada Inc. at 1-800-667-3852 or [www.dowagro.ca](http://www.dowagro.ca) for information before mixing any pesticide or fertilizer that is not specifically recommended on this label. The user assumes the risk of losses that result from the use of tank mixes that do not appear on this label or that are not specifically recommended by Dow AgroSciences Canada Inc.

#### DIRECTIONS FOR USE

##### Application Rates for Grazon XC Herbicide

Weed Species Controlled	Rate per Hectare (litres)
Canada thistle, dandelion, common yarrow	2.47 L
In addition to the above weeds: sweet and red clover, wild carrot, common ragweed, goldenrod, dock, plantain, prickly lettuce, burdock, fleabane, vetch, leafy spurge <sup>*</sup> , toadflax <sup>*</sup>	4.67 L
<u>Tree and Woody Species Controlled</u> Aspen Birch Willow Wild prairie rose	6.2 L
<u>Tree and Woody Species Suppressed</u> Balsam poplar Western Snowberry	

<sup>\*</sup>For control of leafy spurge and toadflax under less than optimum growing conditions, use a recommended surfactant (such as Intake Adjuvant or any non-ion surfactant) at the rate of 0.25% by volume (e.g., 250 mL per 100 L of water). If maximum rainfastness is desired increase the rate to 0.375% (375 mL per 100 L of water). The recommended surfactant should be added after the herbicide is thoroughly mixed. Agitate to thoroughly mix the water, surfactant and Grazon XC Herbicide. Apply soon after mixing. Do not prolong application for longer than 24 hours after mixing. See surfactant label for a full list of recommended rates. Some surfactants require rates ranging from 0.2 to 1%.

## BROADCAST GROUND APPLICATION

**Broadleaved Weed Control:** Apply 2.47 to 4.67 L/ha of Grazon XC Herbicide in 100 - 200 L/ha of total spray volume. For better coverage use 200 L/ha. Maximum 1 application per year. Use enough water to wet weeds without run-off. Apply in spring or early summer when fully developed green leaves are present. Use higher rates in areas with dense weed populations or for a more extended control. For best results in terms of foliage response, desirable forage grasses should be present in the area to be treated in sufficient density to provide competition to lessen weed re-establishment following treatment. Additionally, good grazing management practices are recommended, particularly in the year following treatment, to allow forage grass density to increase.

### **Deciduous Tree and Woody Species Control (Broadcast Foliage Application)**

Apply up to 6.2 L/ha of Grazon XC Herbicide in 100-200 L /ha water to control deciduous tree and woody species. For better coverage, use 200 L/ha.

Apply to trees or woody plants after the foliage is fully developed. Maximum 1 application per year. Apply when plants are actively growing to achieve the maximum control. Application may not give satisfactory results when the foliage has lost its normal green colour and vigour, and leaves have formed a waxy cuticle.

For faster burndown of coniferous species use a recommended surfactant (such as Intake Adjuvant or any non-ionic surfactant) at the rate of 0.25% by volume (250 mL per 100 L of water). If maximum rainfastness is desired increase the rate to 0.375% (375 mL per 100 L of water). The recommended surfactant should be added after the herbicide is thoroughly mixed. Agitate to thoroughly mix the water, surfactant and Grazon XC Herbicide. Apply soon after mixing. Do not prolong application for longer than 24 hours after mixing. See surfactant label for a full list of recommended rates. Some surfactants require rates ranging from 0.2 to 1%.

Spray drift could cause injury to trees and other desirable broadleaved plants outside the desired treatment area and may render soil unproductive for sensitive broadleaved plants. Stay back a minimum 1.5 times the height of desirable trees to prevent unwanted root uptake.

With ground broadcast methods of application, use the pressures recommended by the nozzle manufacturer to minimize production of fines, and choose nozzle tips that produce coarse droplets (VMD >400 microns,  $V_{0.1}$  >210 microns, and  $V_{0.6,2}$  <850 microns). The use of nozzles designed to minimize drift is recommended, such as an air induction or venturi nozzle.

**NOTE: Legumes are susceptible to Grazon XC Herbicide. Do not spray pastures containing forage legumes unless the loss of such legumes can be tolerated.**

## BROADCAST AERIAL APPLICATION

### **Broadleaved Weed and Deciduous Tree and Woody Species Control**

For broadleaved weed control, apply 2.47 L to 6.2 L of Grazon XC Herbicide per hectare in a minimum spray volume of 20 L/ha by air. For deciduous tree and woody species control, apply up to 6.2 L of Grazon XC Herbicide per hectare in a minimum spray volume of 20 L/ha by air. For better coverage of dense foliage, use 50 L/ha.

Apply to trees or woody plants after the foliage is fully developed. Maximum 1 application per year. Apply when plants are actively growing to achieve the maximum control. Application may not give satisfactory results when the foliage has lost its normal green colour and vigour, and leaves have formed a waxy cuticle.

**Broadcast Aerial Application Directions for Use**

Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.

Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. **Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.**

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices

**Use Precautions**

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

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified buffer zones should be observed.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Do not apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. Do not spray when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

**Operator Precautions**

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

**Product Specific Precautions**

Read and understand the entire label before opening this product. If you have questions, call the manufacturer at 1-800-667-3852 or obtain technical advice from the distributor or your provincial agricultural representative. Application of this specific product must meet and/or conform to the following:

- Buffer Zones: Appropriate buffer zones should be established between treatment areas and aquatic systems and treatment areas and significant wildlife habitat.
- Use the lower end of recommended spray pressure recommended by the nozzle manufacturer. Avoid placing nozzles where spray will enter wing tip vortices.
- Aerial application should be made as close to the ground as possible while maintaining adequate coverage.
- Do not apply this product directly to, or otherwise permit it to come into direct contact with desirable crops or other desirable broadleaved plants or non-target species and do not permit spray mists to drift onto them.

- Spray drift could cause injury to trees and other desirable broadleaved plants outside the desired treatment area and may render soil unproductive for sensitive broadleaved plants.
- To prevent contamination of adjacent surface water including lakes, ponds and streams, strict adherence to provincial setbacks from water is essential.

### **Controlling Droplet Size**

**Volume:** Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

**Pressure:** Use the pressures recommended by the nozzle manufacturer to minimize production of fines, and choose nozzle tips that produce coarse droplets. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

**Number of Nozzles:** Use the minimum number of nozzles that provide uniform coverage.

**Nozzle Orientation:** Orienting nozzles so that the spray is released parallel to the airstream produced larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure. Increase spray volume by choosing a nozzle with a larger orifice.

**Nozzle Type:** Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Coarse sprays are less likely to drift, use only nozzles or nozzle configuration which minimize the production of fine spray drops. Choose a nozzle that provides a coarse sized droplet, and consistency in droplet size (VMD >350 microns,  $V_{0.1}$  >210 microns, and  $V_{0.6.2}$  <700 microns). Flat Fan or CP nozzles are recommended for aerial application. When spraying, avoid combination of pressure and nozzle type that will result in fine particles (mist) which are more likely to drift.

**Boom Length:** For some use patterns, reducing the effective boom length to less than 65% of the wingspan or rotor length may further reduce drift without reducing swath width.

Do not use human flaggers.

**Wind:** Drift potential is lowest at low wind speeds. Many factors, including droplet size and equipment type determine drift potential at any given speed. Caution should be exercised when winds are below 2 kph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Applicators should be familiar with local wind patterns and how they affect spray drift.

**Temperature and Humidity:** When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**Temperature Inversions:** Applications should not occur during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures 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. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**Sensitive Areas:** The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

**Determine Air Movement and Direction Before Making Foliar Applications:** Do not spray when wind is blowing toward susceptible crops or ornamental plants near enough to be injured. It is suggested that a continuous smoke column at or near the spray site or a smoke generator on the spray equipment be used to detect air movements, lapse conditions, or temperature inversions (stable air). If the smoke layers or otherwise indicates a potential for hazardous spray drift, do not spray.

### **Sprayer Clean-Out Instructions**

To avoid injury to desirable plants, thoroughly clean equipment used to apply this product before re-use or using it to apply other chemicals.

1. Immediately after spraying, completely drain the sprayer tank. Any contamination on the outside of the spraying equipment should be removed by washing with clean water.
2. First rinse:
  - Spray the inside of tank with clean water and fill the sprayer with at least one tenth of the spray tank volume.
  - Agitate and circulate for 15 minutes, and flush through booms and hoses.
  - Remove end caps or open ball valves on the ends of each boom section, and flush solution through the boom ends to ensure there is no spray solution trapped between the boom end and the nozzles.
  - Drain tank completely.
3. Second rinse:
  - Fill the tank with clean water.
  - Add All Clear Spray Tank Decontaminator, or Clean-Out Spray Tank Cleaner, or 1 L of household ammonia (containing a minimum of 3 % ammonia) per 100 L of water, or similar tank cleaning agent as per manufacturer's recommendations while filling the tank with clean water.
  - Agitate and then flush the boom and hoses with the cleaning solution. Top up with water making sure the tank is completely full. Allow to stand for 15 minutes with agitation. Flush the solution out of the spray tank through the spray booms. Remove end caps or open ball valves on the ends of each boom section, and flush solution through the boom ends to ensure there is no spray solution trapped between the boom end and the nozzles.
  - If possible, let the solution stand in the sprayer tank and booms for an extended period of time, overnight if possible.
  - After flushing the boom and hoses, drain tank completely.
  - Remove nozzles and screens and clean separately with a cleaning agent or an ammonia solution (100 mL in 10 L water).
4. Third rinse:
  - Rinse the tank with clean water and flush through the boom and hoses using at least one tenth of the spray tank volume.
  - Remove end caps or open ball valves on the ends of each boom section, and flush solution through the boom ends to ensure there is no spray solution trapped between the boom end and the nozzles.
  - Drain tank completely.

**Do not** use ammonia with chlorine bleach. Using ammonia with chlorine bleach will release a gas with a musty odour which may cause eye, nose, throat and lung irritation. Do not clean equipment in an enclosed area.

## BUFFER ZONES TO PROTECT SENSITIVE HABITATS

Seasonal water bodies require buffer zones if there is water in them during application. Water bodies which do not fill on an annual basis need not be buffered.

For application to rights-of-way, buffer zones for protection of sensitive terrestrial habitats are not required; however, the best available application strategies that minimize off-site drift, including meteorological conditions (e.g. wind direction, low wind speed) and spray equipment (e.g. coarse droplet sizes, minimizing height above canopy), should be used. Applicators must, however, observe the specified buffer zones for protection of sensitive aquatic habitats.

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

### For Coarse Spray (ASAE)

Method of Application	Target/Rate (L/ha)		Aquatic habitat of depth:		Terrestrial habitat
			< 1 m	> 1 m	
Field sprayer	Rangelands, permanent grass pastures, non-cropland including rights-of-way (6.2 L/ha)		2	1	70*
	Aerial	Rangelands and permanent grass pastures (6.2 L/ha)	Fixed-wing	65	20
Rotary-wing			40	15	300
Non-cropland including rights-of-way (6.2 L/ha)		Fixed-wing	225	125	800*
		Rotary-wing	95	50	700*

\*Buffer zones for the protection of terrestrial habitats are not required for use on right-of-way including railroad ballast, rail and hydro rights-of-way, utility easements and roads.

### For Very Coarse Spray (ASAE)

Method of Application	Target/Rate (L/ha)		Aquatic habitat of depth:		Terrestrial habitat
			< 1 m	> 1 m	
Aerial	Rangelands and permanent grass pastures (6.2 L/ha)	Fixed-wing	50	15	425
		Rotary-wing	30	15	275
	Non-cropland including rights-of-way (6.2 L/ha)	Fixed-wing	150	75	800*
		Rotary-wing	60	35	600*

\*Buffer zones for the protection of terrestrial habitats are not required for use on right-of-way including railroad ballast, rail and hydro rights-of-way, utility easements and roads.

**For Very Coarse – Extremely Coarse Spray (ASAE)**

Method of Application	Target/Rate (L/ha)		Aquatic habitat of depth:		Terrestrial habitat
			< 1 m	> 1 m	
Aerial	Rangelands and permanent grass pastures, (6.2 L/ha)	Fixed-wing	25	15	325
		Rotary-wing	20	10	225
	Non-cropland including rights-of-way (6.2 L/ha)	Fixed-wing	125	65	800*
		Rotary-wing	50	35	500*

\*Buffer zones for the protection of terrestrial habitats are not required for use on right-of-way including railroad ballast, rail and hydro rights-of-way, utility easements and roads.

When a tank mixture is used, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture.

NOTE: Applicators may recalculate a site-specific buffer zone by combining information on current weather conditions and spray configuration for the following applications: all airblast applications, and for field and aerial applications which specify the following droplet size category wording on the product label: DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) coarse classification. To access the Buffer Zone Calculator, please visit the Pest Management Regulatory Agency web site.

**RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management, Grazon XC Herbicide is a Group 4 herbicide. Any weed population may contain or develop plants naturally resistant to Grazon XC Herbicide and other Group 4 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. 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 herbicide resistance:

- Where possible, rotate the use of Grazon XC Herbicide or other Group 4 herbicides within a growing season (sequence) or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group when such use is permitted. To delay resistance, the less resistance-prone partner should control the target weed(s) as effectively as the more resistance-prone partner.
- Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates; precision fertilizer application method and timing to favour the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Monitor treated weed populations after herbicide application for signs of resistance development (for example, only one weed species on the herbicide label not controlled). If resistance is suspected, prevent weed seed production in the affected area if possible by an alternative herbicide from a different group. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.



- For further information or to report suspected resistance, contact Dow AgroSciences Canada Inc. at 1-800-667-3852 or at [www.dowagro.ca](http://www.dowagro.ca).

**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.