

# **TriActor<sup>®</sup>**

## **Co-Pack**

- **Metribuzin 75DF Herbicide (PCP No 33833)**
- **Valtera<sup>™</sup> Herbicide (PCP No 29230)**
- **Nu-Image<sup>™</sup> Herbicide (PCP No 30420)**



2020-08-05  
2020-2341

<b>GROUP</b>	<b>5</b>	<b>HERBICIDE</b>
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Container Label

## **Metribuzin 75DF Herbicide**

Dry Flowable

For control of certain grasses and broadleaf weeds

COMMERCIAL

ACTIVE INGREDIENT: Metribuzin..... 75 %

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

**KEEP OUT OF REACH OF CHILDREN**

CAUTION

<skull and crossbones in inverted triangle>>

POISON

REGISTRATION NO. 33833      PEST CONTROL PRODUCTS ACT

NET CONTENTS: 56 g - 454 kg

UPL NA Inc.  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406, USA

1-800-438-6071

## PRECAUTIONS

- **KEEP OUT OF REACH OF CHILDREN.**
- Harmful if swallowed, inhaled or absorbed through skin.
- Avoid contact with skin, eyes, or clothing.
- Avoid breathing dust or spray mist.
- Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Wash contaminated clothing with soap and hot water before re-use.
- Wash skin thoroughly with soap and warm water after handling.
- Do not contaminate any body of water.
- Do not contaminate food or feed.
- Read and follow label instructions and directives.

### **Applicators and other handlers must wear during mixing/loading, clean-up and repair activities:**

- Long-sleeved shirt and long pants;
- Chemical-resistant gloves;
- Goggles or face shield;
- Shoes plus socks.

### NOTE:

- Users should remove personal protective equipment immediately after handling this product. Wash the outside of the gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.
- Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment (PPE) or use detergent and hot water. Keep and wash PPE separately from other laundry.

## FIRST AID

**IN CASE OF POISONING** Contact a physician or a poison control centre **IMMEDIATELY**.

**IF SWALLOWED** Call a poison control centre or doctor immediately for treatment advice. Have a 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/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 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 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

**TO PHYSICIAN:** No specific antidote is available. Treat the patient symptomatically.

**SYMPTOMS OF POISONING:** The compound does not cause any definite symptoms that would be diagnostic. Poisoning is accompanied by breathing difficulties and sedation.

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

## **STORAGE**

Do not store near food, feed, seed or fertilizer. Keep container tightly closed when not in use. Store in a cool, dry place

## **DISPOSAL**

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.

### **For Non-Recyclable Container**

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.

### **For 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:

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### **For Refillable Container (Accubin):**

**GENERAL INFORMATION:** The NET CONTENTS of this container is actually greater than 227/454 kg. The unit will only disperse up to the purchase quantity of 227/454 kg, leaving a small amount in the container. This amount is necessary to ensure accurate metering of purchased product down to the last kilogram.

This container and all attached or associated equipment are the property of UPL NA Inc. 630 Freedom Business Center, Suite 402, King of Prussia, PA 19406, USA. This unit is designed for recycle and refill. Your cooperation in this reusable packaging program will contribute to a cleaner environment and assure that this convenient packaging continues to be available.

1. After use, return the container to the point of purchase or designated locations.
2. This container must only be refilled with Metribuzin 75DF Herbicide.
3. Do not reuse container for other purposes.
4. Prior to refilling inspect thoroughly for damage.
5. Check for leaks after refilling and before transportation.
6. Do not refill or transport damaged or leaking containers.
7. If the container is not being refilled, return to the point of purchase.

## **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

<b>GROUP</b>	<b>5</b>	<b>HERBICIDE</b>
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- Read and follow label instructions and directives.

**Applicators and other handlers must wear during mixing/loading, clean-up and repair activities:**

- Long-sleeved shirt and long pants;
- Chemical-resistant gloves;
- Goggles or face shield;

- Shoes plus socks.

NOTE:

- Users should remove personal protective equipment immediately after handling this product. Wash the outside of the gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.
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## **STORAGE**

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3. Do not reuse container for other purposes.
4. Prior to refilling inspect thoroughly for damage.
5. Check for leaks after refilling and before transportation.
6. Do not refill or transport damaged or leaking containers.

7. If the container is not being refilled, return to the point of purchase.

#### **ENVIRONMENTAL PRECAUTIONS**

- Do not use treated vines or crops for food, feed, or forage unless they are specified on this label. Use only according to label direction.
- Do not apply when weather conditions favour drift from areas treated. Do not allow sprays to drift on to adjacent desirable plants.
- Do not contaminate water when disposing of equipment wash waters.
- Do not apply directly to water, or to areas where surface water is present.
- 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.
- Following application and during rainfall events that cause runoff, these chemicals may reach surface water bodies including streams and reservoirs.
- To reduce runoff from treated areas into aquatic habitats, consider the characteristics and conditions of the site before treatment. Site characteristics and conditions that may lead to runoff include, but are not limited to, heavy rainfall, moderate to steep slope, bare soil, poorly draining soil (e.g., soils that are compacted, fine textured or low in organic matter such as clay). Avoid application of this product when heavy rain is forecast.
- Do not exceed rates recommended on this label. Uneven application such as swath overlapping, variable tractor speed, spraying on turns, etc., may result in crop injury and increase chances of injury to succeeding crops.
- After harvest, tillage practices that provide thorough mixing of the soil may be helpful in reducing the chance of injury to succeeding crops.
- This product is not to be used in combination with any other product except as specifically recommended on this label.

#### **SPRAYER CLEANUP**

Spray equipment must be thoroughly cleaned to remove remaining traces of herbicide that might injure other crops. Drain any remaining spray solution of Metribuzin 75DF Herbicide from the spray tank and discard in non-crop areas away from water supplies. Rinse the spray tank and refill with water, adding a heavy-duty detergent at the rate of 250 mL/100 L of water. Recycle this mixture through the equipment for 5 minutes and spray out. Repeat this procedure twice. Fill the spray tank with clean water, recycle for 5 minutes, and spray out. Clean pump and nozzle screens thoroughly. Wash away any spray mixture from the outside of the spray tank, nozzles or spray rig.

#### **DIRECTIONS FOR USE**

##### **MIXING AND SPRAYING INSTRUCTIONS**

- It is essential that the sprayer be properly calibrated before making application.
- Spray Pressure - 150 to 275 kPa; for lentils, peas, and processing peas use 275 kPa only.
- Spray Volume - refer to appropriate crop section for water volume.
- Use screens no finer than 0.3 mm (50 mesh) in nozzle and in-line strainers (felt filters, or smaller screens will become clogged). A 16 mesh screen is recommended for the filter on the inlet side of the pump.
- Nozzle tips should be no finer than 6502, 8002 or TK 2.
- Do not use airblast or other high pressure spray equipment to apply Metribuzin 75DF Herbicide.
- **VIGOROUS, CONTINUOUS AGITATION IS ESSENTIAL FOR PROPER MIXING THROUGHOUT FILLING AND SPRAYING OPERATIONS.** Return line agitation is



not sufficient. Sparge tube, jet or mechanical agitation is required. Agitation should be sufficient to create a rippling or rolling action on the surface. A pump must be of sufficient capacity to provide adequate volume through the by-pass and/or jet agitation system to provide sufficient agitation even while the booms are operating.

- The sprayer should be checked frequently during application to be sure it is working properly and delivering a uniform spray pattern.
- Avoid over-laps that will increase dosages above those recommended.
- DO NOT apply using aerial application equipment.

Before mixing Metribuzin 75DF Herbicide and its labeled tank-mixtures, examine the spray equipment making sure it is completely clean and free of rust or corrosion. To ensure the equipment is free of any residues from previously used pesticides, flush lines with clean water or recommended detergents. Use an approved method for disposing of rinse water.

Refer to the other product label for pertinent recommendations regarding mixing procedures. The proper mixing sequence for Metribuzin 75DF Herbicide and recommended tank-mixtures is as follows:

1. Fill the spray tank or nurse tank 1/4 full with water.
2. Start recirculation and agitation system and continue throughout mixing and application.
3. Add recommended amount of Metribuzin 75DF Herbicide.
4. If tank-mixing with wettable powders or other dry flowable products refer to these product labels for specific mixing instructions.
5. Fill the spray tank with water to the desired level.
6. If tank-mixing with emulsifiable concentrates or soluble products, add these products near end of filling the spray tank.
7. Continue agitation during transport and application until the spray tank is empty.

Metribuzin 75DF Herbicide and all registered mixtures should be kept agitated once mixed and then sprayed out immediately. Do not allow mixtures to stand for prolonged periods of time. Water quality, pH, temperature and/or other components of the mixture may affect how long the mixture can stand before application.

NOTE: If spraying and agitation is stopped before the spray tank is empty, the suspended material will settle to the bottom of the tank. When spraying must be interrupted, it is recommended to maintain agitation until spraying resumes. If agitation must be stopped before the spray tank is empty, follow these steps to resume spraying:

1. Remove main filter.
2. Mechanically mix spray solution (i.e., paddle) prior to restarting pump. Ensure that loose sediment is moved out to the sump area.
3. Start agitation on full.
4. Paddle corners of the tank.
5. Reinstall main filter.

At the end of each spray day, rinse out the tank and sprayer lines with water.

### **RE-ENTRY INTERVAL**

Do not enter or allow re-entry into treated areas until 12 hours after application. Exception: If the product is soil injected or soil-incorporated, workers may enter the treated area if there will be no contact with anything that has been treated.

It is recommended that this product not be applied in a way that will contact workers or other persons, either directly or through drift. Only handlers wearing personal protective equipment may be in the area during application.

## SPRAY DRIFT MANAGEMENT

Field sprayer application: **DO NOT** apply during periods of dead calm or when winds are gusty. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification.

## BUFFER ZONES

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

Crop	Method of Application	Buffer Zones (metres) Required for the Protection of:						
		Freshwater Habitats of Depths			Estuarine/Marine Habitats of Depths			Terrestrial Habitat
		Less than 1 m	1-3 m	Greater than 3 m	Less than 1 m	1-3 m	Greater than 3 m	
All crops except tomatoes	Field sprayer	5	2	1	5	2	1	10
	Field sprayer with shrouds	2	1	0	2	1	0	3
	Field sprayer with cones	4	1	1	4	1	1	5
Tomatoes	Field sprayer	10	3	1	5	2	1	15
	Field sprayer with shrouds	3	1	0	2	1	0	5
	Field sprayer with cones	5	2	1	4	1	1	10

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.

## RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, Metribuzin 75DF Herbicide is a Group 5 Herbicide. Any weed population may contain or develop plants naturally resistant to Metribuzin 75DF Herbicide and other Group 5 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 Metribuzin 75DF Herbicide or other Group 5 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 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 the UPL NA Inc. at 1-800-438-6071.

## **EASTERN CANADA USES**

### **CROP INFORMATION AND RESTRICTIONS**

Metribuzin 75DF Herbicide provides selective weed control in:

<b>CANADA EAST</b>
<ul style="list-style-type: none"> <li>• Soybeans</li> <li>• Potatoes</li> <li>• Field Corn</li> <li>• Tomatoes</li> <li>• Asparagus (Established)</li> <li>• Sweet White Lupins</li> <li>• Processing Carrots</li> <li>• Fruit trees (newly planted, established)</li> </ul>

Metribuzin 75DF Herbicide may injure rotational crops:

- Rotation crops such as onions, celery, peppers, cole crops, lettuce and spinach, sugar beets, table beets and turnips, pumpkin and squash, cucumbers and melons, tobacco, and non-triazine tolerant canola (rapeseed) are sensitive to Metribuzin 75DF Herbicide and may be injured if planted in soil treated with Metribuzin 75DF Herbicide during the year of application or the following crop year.
- Fall seeded or cover crops such as wheat, oats, and rye may be injured when seeded within the same season as the application of Metribuzin 75DF Herbicide.

## **WEEDS CONTROLLED**

NOTE: Metribuzin 75DF Herbicide DOES NOT CONTROL TRIAZINE RESISTANT WEED BIOTYPES

### **GRASS WEEDS**

Barnyard grass  
Green foxtail  
Cheat grass  
Johnson grass (seedling)  
Crab grass  
Witch grass  
Fall panicum  
Yellow foxtail  
Giant foxtail

### **BROADLEAF WEEDS**

Carpetweed<sup>1</sup>  
Prickly mallow<sup>1</sup>  
Cocklebur  
Prostrate pigweed  
Common chickweed  
Redroot pigweed  
Common ragweed  
Russian thistle  
Corn spurry<sup>3</sup>  
Shepherd's purse  
Dandelion (seedling)  
Stinkweed<sup>2</sup>  
Green smartweed  
Velvetleaf  
Hempnettle<sup>3</sup>  
Wild buckwheat<sup>2</sup>  
Jimsonweed<sup>1</sup>  
Wild mustard  
Lady's-thumb  
Wild potato vine  
Lamb's-quarter  
Yellow woodsorrel<sup>1</sup>

<sup>1</sup>PREEMERGENCE only

<sup>2</sup>POSTEMERGENCE only

<sup>3</sup>Suppression with multiple postemergence applications of 200 g/ha.

WEEDS CONTROLLED (CANADA EAST) in Field Corn with Metribuzin 75DF Herbicide in tankmixture with the herbicide Primextra II Magnum

### **GRASS WEEDS**

Barnyard grass  
Fall panicum  
Giant foxtail  
Green foxtail

Hairy crabgrass  
 Old witchgrass  
 Smooth crabgrass  
 Yellow foxtail

**BROADLEAF WEEDS**

American nightshade  
 Lady's-thumb  
 Lamb's-quarter  
 Mustard  
 Purslane  
 Ragweed  
 Redroot pigweed  
 Smartweed  
 Velvetleaf  
 Wild buckwheat

**SOIL TYPES AND RESTRICTIONS**

The recommended use rates of Metribuzin 75DF Herbicide are dependent upon soil texture and organic matter content of the soil being treated. Rate tables in this label refer to the following three soil texture groups: coarse, medium and fine. If you are not sure how to classify your soil, contact your UPI representative, Soils & Crops Advisor, or other knowledgeable person. The following chart includes a complete listing of soil textures included in each of the soil texture groupings:

<b>COARSE</b>	<b>MEDIUM</b>	<b>FINE</b>
Loamy sand Sandy loam	Loam Silt loam Silt Sandy clay loam Sandy clay	Silty clay loam Silty clay Clay loam Clay

- On variable soils with coarse sandy areas, some crop injury may occur on the sandy areas if the rate used is for the finer soil type.
- Sandy loam and silty clay loam soils are transitional soils and may be classified as medium textured soils in some regions.
- Do not use this product on MUCK soils. If Metribuzin 75DF Herbicide is applied to MUCK soils, subsequent crops may be injured.
- Do not use on coarse soils with less than 2% organic matter.

**APPLICATION INFORMATION**

**PREPLANT SURFACE OR BURN-DOWN:**

- In conservation tillage, minimum-tillage, ridge-tillage, strip-tillage, or no-tillage crop production systems.
- Metribuzin 75DF Herbicide alone or in combination with recommended tank-mixes may be applied as a broadcast spray up to 30 days before planting.
- If possible, do not move treated soil out of the row or move untreated soil to the soil surface during planting, as weed control may be reduced.
- Rainfall and/or overhead sprinkler irrigation is necessary to move Metribuzin 75DF Herbicide into the upper soil surface where weed seeds germinate.

**PREPLANT INCORPORATION:**

- Refer to the tank-mix partner label for proper incorporation instructions.
- Avoid deep incorporation since reduced weed control and/or crop injury may result.
- Incorporate with implements which provide uniform, shallow incorporation (example: finishing disk, harrow, rolling cultivator, etc.).
- a single incorporation is satisfactory, however a second incorporation will generally improve herbicide soil blending and improves weed control (particularly on coarse soils).

**PREEMERGENCE APPLICATION:**

- Metribuzin 75DF Herbicide alone, or in the recommended tank-mixes, may be applied to the soil surface as a broadcast spray after planting of the crop, but prior to weed or crop emergence.
- Preemergence application may be made in all tillage systems (conventional, conservation, minimum, ridge, etc.).
- Rainfall and/or overhead sprinkler irrigation is necessary to move Metribuzin 75DF Herbicide into the upper soil surface where weed seeds germinate.
- If adequate moisture is not received within 7 to 10 days after application and weeds begin to emerge from the soil, a light rotary hoeing or shallow incorporation (no deeper than 1.25 cm deep) will improve performance, minimize crop damage, activate chemical and prevent soil crusting.
- Dry weather conditions as well as excessive rainfall or irrigation following application may reduce weed control.
- Do not apply heavy irrigation immediately after application.

**EARLY POSTEMERGENCE APPLICATION:**

- Do not tank-mix with liquid fertilizers, oils, oil concentrates, or surfactants when applying postemergence because severe crop injury may occur.
- Do not harvest within 60 days of postemergence application unless otherwise indicated.
- Thorough spray coverage on weed foliage is essential for adequate control with postemergent applications.

**SPLIT APPLICATION (POTATOES ONLY):**

- If a split application is desired, the chemical may be applied preemergence and postemergence. Avoid soil incorporation.
- Do not apply more than 1.5 kg/ha total per growing season.
- Do not harvest within 60 days of postemergence application unless otherwise indicated.

**BAND APPLICATION:**

- If a band application is desired, the chemical may be applied preemergence and postemergence as described above by using proportionally less Metribuzin 75DF Herbicide per hectare:

$$\frac{\text{Band width in centimetres}}{\text{Row width in centimetres}} \times \text{Broadcast rate/ha} = \text{Band rate/ha}$$

- Weeds between treated bands should be removed by cultivating, as needed, using protective fenders to keep freshly turned soil off treated bands.

## SOYBEANS - EASTERN CANADA

- Apply specified dosage as preemergence broadcast spray in 150 to 300 L of water per hectare and as preplant incorporated in at least 100 L of water per hectare.
- Applications of Metribuzin 75DF Herbicide made at rates above those recommended may result in burning, yellowing or stunting of the crop. If heavy rains occur soon after application, plant injury may result, especially in poorly drained areas where water may stand for several days. Soybean seeds must be planted at least 4 cm below the soil surface.
- VARIETIES: Do not use Metribuzin 75DF Herbicide on AC Brant, Apache, Baron, Eramosa, Maple Amber, Maple Ridge, IA 1003 or S-240. Consult your UPI representative, chemical dealer, or your seed supplier for information on the tolerance of soybean varieties, prior to Metribuzin 75DF Herbicide use.
- DO NOT USE Metribuzin 75DF Herbicide ON SANDY SOILS OR ON COARSE SOILS WITH LESS THAN 2% ORGANIC MATTER.
- Do not apply more than once per season regardless of method of application.

### Metribuzin 75DF Herbicide Alone: Preemergence Application<sup>1</sup>

SOIL TYPES	Rates per hectare and organic matter		
	Less than 2%	2 to 4%	Over 4%
COARSE	DO NOT USE	550 g	750 g
MEDIUM	750 g	925 g	1.1 kg
FINE	1.1 kg	1.25 kg	1.5 kg

1. REMARKS FOR NO or MINIMUM TILLAGE: DO NOT USE METRIBUZIN 75DF Herbicide on coarse soils. Under adverse conditions (drought), the following additives may be applied with the recommended treatments: crop oil concentrate (Assist) at 1% v/v or non-ionic surfactant at 0.1% v/v.

### METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES

Refer to the other product label for pertinent recommendations, directions for use, restrictions, precautions and any additional weeds not specified on this label. Unless prohibited on this or other product labels, apply as a broadcast or band application.

### Metribuzin 75DF Herbicide Tank-Mixes: Preplant Incorporated

Weeds controlled	Products	Rates per hectare and soil types		
		COARSE	MEDIUM	FINE
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide <sup>1</sup>	550 g	750 g	750 g
	plus Treflan E.C. (480 g/L)	1.2 L	1.7 L	2.4 L
Above plus yellow nutsedge	Metribuzin 75DF Herbicide <sup>1</sup>	550 g	750 g	750 g
	plus Dual Magnum	1.15 - 1.75 L	1.15 - 1.75 L	1.15 - 1.75 L
	or Dual II Magnum	1.15 - 1.75 L	1.15 - 1.75 L	1.15 - 1.75 L
	Metribuzin 75DF Herbicide plus Frontier <sup>2</sup>	550 g 1.25 - 1.4 L	750 g 1.25 - 1.4 L	750 g 1.25 - 1.4 L
Annual grasses and non-triazine resistant annual broadleaf weeds	Metribuzin 75DF Herbicide plus Axiom DF <sup>3</sup>	0.5 kg 0.84 kg	0.65 kg 1.12 kg	0.83 kg 1.26 kg

1. On heavy Brookston Clay soils, the Metribuzin 75DF Herbicide rate should be increased to a maximum rate of 1.1 kg/ha for season long control.
2. The lower rate of Frontier Herbicide provides suppression only for yellow nutsedge.
3. Tank-mixtures with Axiom DF can be applied up to 7 days before planting.

### Metribuzin 75DF Herbicide Preemergence

#### Following Preplant Incorporated Applications of Other Herbicides

Weeds controlled	Products	Rates per hectare and soil types		
		COARSE	MEDIUM	FINE
Annual grasses and broadleaf weeds	Treflan E.C. (480 g/L) followed by Metribuzin 75DF Herbicide <sup>1</sup>	1.2 L	1.7 L	2.4 L
		550 - 750 g	750 - 1100 g	1.1 - 1.5 kg
Above plus yellow nutsedge	Dual Magnum or Dual II Magnum followed by Metribuzin 75DF Herbicide <sup>1</sup>	1.15 - 1.75 L	1.15 - 1.75 L	1.15 - 1.75 L
		1.15 - 1.75 L	1.15 - 1.75 L	1.15 - 1.75 L
		550 - 750 g	750 - 1100 g	1.1 - 1.5 kg

1. The rate of Metribuzin 75DF Herbicide depends on soil organic matter levels. See rates for Metribuzin 75DF Herbicide alone. When broadleaf weed populations are low, rates of Metribuzin 75DF Herbicide may be reduced by 25%.

### Metribuzin 75DF Herbicide Alone or in Tank-Mixes (No or Minimum Tillage Systems): Preplant Surface (up to 30 days before planting) or Burndown Application

Weeds controlled	Products <sup>1</sup>	Rates per hectare and soil types		
		COARSE	MEDIUM	FINE
Annual weeds less than 4 cm in height and residual control of annual weeds <sup>3</sup>	Metribuzin 75DF Herbicide <sup>2</sup>	Do not use	0.75 - 1.1 kg	1.1 - 1.5 kg
Above including grasses	METRIBUZIN 75DF Herbicide plus Pursuit (240 g a.e./L)	Do not use	0.53 - 1.0 kg 312 - 420 mL	0.64 - 1.3 kg 312 - 420 mL
For improved burndown of above including control of annual weeds taller than 4 cm and emerged perennial weeds	One of the above treatments plus Roundup Transorb MAX Liquid <sup>4</sup> or Glyphos AU Soluble Concentrate <sup>4</sup>	Do not use		
			1.25 L	1.25 L
			1.25 L	1.25 L
Annual grasses and non-triazine resistant annual broadleaf weeds <sup>5</sup>	Metribuzin 75DF Herbicide plus Axiom DF <sup>6</sup>	Do not use	0.65 kg 1.12 kg	0.83 kg 1.26 kg



For burndown of above including control of weeds taller than 4 cm and perennial weeds	One of the above 2 treatments  plus or Roundup Transorb MAX Liquid <sup>4</sup>	Do not use	2.5 L	2.5 L
Emerged annual and perennial weeds and residual control of annual weeds including spreading atriplex, up to the 10 leaf stage	Metribuzin 75DF Herbicide <sup>8</sup> plus Roundup Transorb MAX Liquid <sup>4</sup>	Do not use	0.75 - 1.1 kg	1.1-1.5 kg
	or Glyphos AU Soluble Concentrate <sup>4</sup> or Credit Liquid <sup>4</sup> or Renegade HC Liquid <sup>4</sup> or Roundup WeatherMax with Transorb 2 Technology Liquid Herbicide <sup>4</sup>		2.35-2.5 L	2.35-2.5 L
			2.35-2.5 L	2.35-2.5 L
			2.35-2.5 L	2.35-2.5 L
		1.67 L	1.67 L	
Annual weeds less than 4 cm in height and residual control of annual weeds <sup>7</sup>	Metribuzin 75DF Herbicide plus Dual Magnum	0.67 - 0.75 kg	0.75 - 1.1 kg	1.1 - 1.5 kg
	or Dual II Magnum	1.15-1.75 L	1.15-1.75 L	1.15-1.75 L
Annual grasses and broadleaf weeds, including emerged annual or perennial weeds	Above treatment plus or Roundup Transorb MAX Liquid <sup>4</sup>  or Glyphos AU Soluble Concentrate <sup>4</sup> or Credit Liquid <sup>4</sup> or Renegade HC Liquid <sup>4</sup>		2.35-2.5 L	
			2.35-2.5 L	
			2.35-2.5 L	
			2.35-2.5 L	

- Under adverse conditions (drought), and for improved burndown of small emerged annual weeds, the following additives may be applied with the recommended treatments:
  - crop oil concentrate (Assist) at 1% v/v
  - non-ionic surfactant at 0.1% v/v
  - crop oil, 28-0-0, or 10-34-0 at 5% v/v (only for tank mixtures with the Herbicides Dual Magnum or Dual II Magnum +/- *glyphosate* Herbicide)
- For improved burndown of small weeds less than 4 cm in height, Gramoxone Liquid Herbicide with Wetting Agent can be added at a rate of 2.5 L/ha.
- Use the higher rate for the control of grass weeds or when broadleaf weeds are dense.
- Some perennial weeds, such as quackgrass, may not be controlled with these rates of Roundup, Glyphos, Credit, or Renegade. Consult the Roundup, Glyphos, Credit, or Renegade Herbicide labels regarding perennial weeds controlled.

5. If weeds are present at the time of application, apply this tank mixture with Roundup Herbicide.
6. Tank-mixtures with Axiom DF can be applied up to 7 days before planting.
7. Use the higher rates when weeds are dense and/or soils with high organic matter (over 4%) and at the heavy end of the soil texture class.
8. Consult Table entitled “Metribuzin 75DF Herbicide alone: Pre-emergence Application” for specific rates based on soil types and organic matter.

**Metribuzin 75DF Herbicide Tank Mixes:**

**Preemergence Applications for all tillage systems unless specified otherwise**

Weeds controlled	Products	Rates per hectare and soil types		
		COARSE	MEDIUM	FINE
Annual grasses and broadleaf weeds	Conventional Tillage Metribuzin 75DF Herbicide <sup>2,3,5</sup> plus Dual Magnum <sup>6</sup> or Dual II Magnum <sup>6</sup>	550 - 750 g 1.15 - 1.75 L 1.15 - 1.75 L	750 - 1100 g 1.15 – 1.75 L 1.15 – 1.75 L	1.1 - 1.5 kg 1.15 – 1.75 L 1.15 – 1.75 L
	No or Min. Tillage Metribuzin 75DF Herbicide <sup>1,2,3,5</sup> plus Dual Magnum <sup>6</sup> or Dual II Magnum <sup>6</sup>	550 g 1.15 - 1.75 L 1.15 - 1.75 L	750 - 1100 g 1.15 – 1.75 L 1.15 – 1.75 L	1.1 - 1.5 kg 1.15 – 1.75 L 1.15 – 1.75 L
	Metribuzin 75DF Herbicide plus Axiom DF <sup>4</sup>	500 g 840 g	650 g 1120 g	830 g 1260 g
	Metribuzin 75DF Herbicide plus Frontier	550 g 1.1 - 1.25 L	670 g 1.1 - 1.4 L	750 g 1.1 - 1.4 L
Above weeds plus partial control of eastern black nightshade and Proso millet	Conventional Tillage Metribuzin 75DF Herbicide <sup>2</sup> plus Pursuit (240 g a.e./L)	550 - 750 g 312 – 420 mL	750 - 1100 g 312 – 420 mL	1.1 - 1.5 kg 312 – 420 mL
	No or Min. Tillage Metribuzin 75DF Herbicide <sup>1,5</sup> plus Pursuit (240 g a.e./L)	Do Not Use	0.53 –1.0 kg 312 – 420 mL	0.64 – 1.33 kg 312 – 420 mL
For improved burndown of above including control of weeds taller than 4 cm and emerged perennials.	One of the above treatments in No or Min. Tillage plus Roundup Transorb MAX Liquid <sup>7,8</sup> or Glyphos AU Soluble Concentrate <sup>7,8</sup>	Do not use		
			1.25 L 1.25 L	1.25 L 1.25 L

Annual grasses and broadleaf weeds including nightshade, emerged annual or perennial weeds	No or Min. Tillage Metribuzin 75DF Herbicide <sup>1, 2,3,5</sup>	550 g	750 - 1100 g	1.1 - 1.5 kg
	plus Dual Magnum or Dual II Magnum plus	1.15 – 1.75 L 1.15 – 1.75 L	1.15 – 1.75 L 1.15 – 1.75 L	1.15 – 1.75 L 1.15 – 1.75 L
	Roundup Transorb MAX Liquid <sup>8</sup>	2.35-2.5 L		
	or Glyphos AU Soluble Concentrate <sup>8</sup> or Credit Liquid <sup>8</sup> or Renegade HC Liquid <sup>8</sup>	2.35-2.5 L 2.35-2.5 L 2.35-2.5 L		
For improved burndown of annual grasses and broadleaf weed less than 4 cm in height	No or Min. Tillage Metribuzin 75DF Herbicide <sup>1,2</sup>	Do not use	750 - 1100 g	1.1 - 1.5 kg
	plus Gramoxone Liquid Herbicide with Wetting Agent <sup>9</sup>		2.5 L	2.5 L

- In NO or MINIMUM TILLAGE, under adverse conditions (drought), and for improved burndown of small emerged annual weeds, the following additives may be applied with the recommended treatments:
  - crop oil concentrate (Assist) at 1% v/v
  - non-ionic surfactant at 0.1% v/v
  - crop oil, 28-0-0, or 10-34-0 at 5% v/v (only for tank mixtures with the Herbicides Dual Magnum or Dual II Magnum +/- *glyphosate* Herbicide)
- The rate of Metribuzin 75DF Herbicide depends on soil organic matter levels. See rates for Metribuzin 75DF Herbicide alone.
- When broadleaf weed populations are low, rates of Metribuzin 75DF Herbicide may be reduced by 25%.
- In NO or MINIMUM TILLAGE, DO NOT USE this tank-mixture on coarse soils.
- Use the higher rate when weeds are dense and/or soils with high organic matter (over 4%) and at the heavy end of the soil texture class.
- Including nightshade: Eastern black nightshade and American nightshade are controlled with tank-mixture including Dual Magnum or Dual II Magnum only.
- Except tank-mixtures that include Axiom DF Herbicide or Frontier Herbicide.
- Some perennial weeds, such as quackgrass, may not be controlled with these rates of Roundup, Glyphos, Credit, or Renegade. Consult the Roundup, Glyphos, Credit, or Renegade Herbicide labels regarding perennial weeds controlled.
- Apply this tank-mixture after planting, but no later than 3 days prior to crop emergence.

## POTATOES

### EASTERN CANADA, COASTAL BRITISH COLUMBIA, AND UNDER IRRIGATED CONDITIONS IN ALBERTA

- Apply specified dosage in 100 to 300 L of water per hectare, depending on equipment and local practices.
- Do not use on the varieties Belleisle or Tobique.

- Consult your chemical dealer or your seed supplier for information on the tolerance of newly released potato varieties, prior to Metribuzin 75DF Herbicide use.
- Do not harvest within 60 days of application.
- If a hilling is done before emergence, allow time for the soil to settle or crust before application. This will help reduce loose treated soil from moving off the hill to the bottom of the trench and leaving untreated areas on the side of the hills. For best results it is also recommended that hilling following application be delayed as long as possible before foliage fills in the rows. Supplemental row cultivation on potatoes may also be helpful to improve weed control.
- The higher rates are recommended for longer season potatoes or where longer control is required and where weed infestations are heavy.

### **METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES**

Refer to the other product label for pertinent recommendations, directions for use, restrictions, precautions, and any additional weeds not specified on this label. Unless prohibited on this or other product labels, apply as a broadcast or band application.

### **Metribuzin 75DF Herbicide Alone or in Tank-Mixes: Preemergence Applications<sup>1</sup>**

<b>Weeds Controlled</b>	<b>Products</b>	<b>Rates per Hectare</b>
Annual grasses and broadleaf weeds. Suppression of quackgrass and yellow nutsedge at high rate	Metribuzin 75DF Herbicide	550-1500 g
Above including grasses	Metribuzin 75DF Herbicide plus Dual Magnum <sup>2</sup> or Dual II Magnum <sup>2</sup>	750 - 1500 g 1.25 - 1.75 L 1.25 - 1.75 L
Above including weeds more than 4 cm tall and quackgrass	Metribuzin 75DF Herbicide plus Gramoxone Liquid Herbicide with Wetting Agent	750 - 1100 g 2.75 L

1. Apply immediately after planting or after hilling. Avoid soil incorporation. If a hilling is done before emergence, allow time for the soil to settle or crust before application. This will help reduce loose treated soil from moving off the hill to the bottom of the trench and leaving untreated areas on the sides of the hills. For best results it is also recommended that hilling following application be delayed as long as possible before foliage fills the rows.
2. Do not use tank-mixes with Dual Magnum or Dual II Magnum on the variety Superior or on sandy or coarse textured soils low in organic matter. Do not apply tank-mixes with Dual Magnum or Dual II Magnum at ground crack or if potatoes have emerged. Do not use tank-mixes with Dual Magnum or Dual II Magnum on muck, peat or high organic matter soils.

### Metribuzin 75DF Herbicide Alone or in Tank-Mixes: Early Postemergence<sup>1</sup>

Weeds Controlled	Products	Rates per Hectare
Annual grasses and broadleaf weeds <sup>2</sup>	Metribuzin 75DF Herbicide	550 - 1500 g
Annual grasses <sup>4</sup> including Volunteer corn, persian darnel, Volunteer spring wheat and barley, Wild oats, Wild proso millet, Quack grass <sup>5</sup> , Wirestem Muhly	Metribuzin 75DF Herbicide plus Venture L <sup>3</sup>	550 g 0.6 - 2.0 L <sup>6</sup>
Annual grasses and broadleaf weeds <sup>7</sup>	Metribuzin 75DF Herbicide plus Prism <sup>®</sup> SG Herbicide <sup>8</sup>	280-375 g 60 g

1. Apply specified dosage per hectare as a broadcast postemergence spray over the tops of potatoes when they are less than 10 cm high. Do not use postemergence treatments on Atlantic, Eramosa, Shepody, red-skinned or any early maturing varieties. Temporary yellowing or leaf burn may occur, especially if crop is under stress from poor growing conditions such as periods of cool, wet, and cloudy weather. Avoid postemergence application under these conditions.
2. Spray before weeds are 4 cm high. Use high rates for grasses or dense broadleaf weeds.
3. Do not harvest within 90 days of application.
4. Apply to actively growing annual grasses at the full 2-leaf to 5-leaf stages. For green and yellow foxtail, apply at full 2-leaf to 4-leaf stage.
5. Apply to actively growing plants that have 3 to 5 fully developed leaves.
6. Refer to Venture L Herbicide label for weed/rate chart.
7. Spray before broadleaf weeds are 4 cm high and when annual grasses are 1 to 6 leaf stage (up to early tillering – two 2-leaf tillers).
8. Prism Herbicide must be applied with a recommended non-ionic surfactant, i.e. Citowett Plus, Agral 90 or Agsurf at 2 L per 1000 L of spray solution (0.2% v/v).
9. The application rate of Metribuzin 75DF Herbicide at 375 g per hectare should be used under conditions of heavy weed infestation.

### Metribuzin 75DF Herbicide Preemergence or Early Postemergence<sup>1</sup> Following Preplant Incorporated Application of Other Herbicides or Metribuzin 75DF Herbicide Tank-Mixes Preplant Incorporated

Weeds Controlled	Products	Rates per Hectare
Annual grasses and broadleaf weeds (less than 4 cm in height) including yellow nutsedge	Metribuzin 75DF Herbicide plus Dual Magnum <sup>2</sup> or Dual II Magnum <sup>2</sup>	750 - 1500 g 1.25 - 1.75 L 1.25 - 1.75 L
Heavy infestation of barnyard grass, annual grasses, and broadleaf weeds (less than 4 cm in height)	Metribuzin 75DF Herbicide plus Eptam Liquid EC Herbicide	750 - 1100 g 4.25 - 5.5 L

1. Apply specified dosage per hectare as a broadcast postemergence spray over the tops of potatoes when they are less than 10 cm high. Do not use postemergence treatments on Atlantic, Eramosa, Shepody, red-skinned or any early maturing varieties.
2. Do not use tank-mixes with Dual Magnum or Dual II Magnum on the variety Superior or on sandy or coarse textured soils low in organic matter. Do not apply tank-mixes with Dual Magnum or Dual II Magnum at ground crack or if potatoes have emerged. Do not

use tank-mixes with Dual Magnum or Dual II Magnum on muck, peat or high organic matter soils.

**METRIBUZIN 75DF Herbicide Alone in Split Applications (Preemergence or early Postemergence<sup>1</sup>)**

Weeds Controlled	Products	Rates per Hectare
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide	No more than 1.5 kg per growing season

1. Apply specified dosage per hectare as a broadcast postemergence spray over the tops of potatoes when they are less than 10 cm high. Do not use postemergence treatments on Atlantic, Eramosa, Shepody, red-skinned or any early maturing varieties.

**METRIBUZIN 75DF Herbicide Applied Alone (Preemergence) followed by a Tankmix Application with Prism SG Herbicide (early Postemergence)**

For control of annual grasses and broadleaf weeds, apply a preemergence application of Metribuzin 75DF Herbicide at 550 - 1125 g/ha. Apply immediately after planting or after hilling. Avoid soil incorporation. If a hilling is done before emergence, allow time for the soil to settle or crust before application. This will help reduce loose treated soil from moving off the hill to the bottom of the trench and leaving untreated areas on the sides of the hills. For best results it is also recommended that hilling following application be delayed as long as possible before foliage fills the rows. Use the high rate for suppression of quackgrass and yellow nutsedge.

Follow with an early postemergence application of 280-375 g/ha of Metribuzin 75DF Herbicide plus 60 g/ha of Prism SG Herbicide. Spray before broadleaf weeds are 4 cm high and when annual grasses are 1 to 6 leaf stage (up to early tillering – two 2-leaf tillers).

Do not apply more than 1.5 kg/ha per growing season.

**FIELD CORN - EASTERN CANADA**

Metribuzin 75DF Herbicide can be used as a 2 way tank-mix with Primextra II Magnum Herbicide. Apply specified dosage as preemergence broadcast spray in 150 to 300 L of water per hectare. Do not use on Sweet Corn or Seed Corn. These tank-mix Herbicide treatments control certain grass and broadleaf weeds, especially velvetleaf. Corn seeds must be planted at least 4 cm below the soil surface. Do not apply after corn has emerged. Some corn varieties are sensitive to Metribuzin 75DF Herbicide. Use Metribuzin 75DF Herbicide on the following varieties only:

Pioneer		Hyland	Asgrow	Cargill	Garst
3737	3803	LG2350	RX578	4587	8882
3925	3902	LG2461		5157	8808
3906	3790	HL2803		Funk's	G4309
3744	3772	HL2570			G4299
3732	3475				
COOP	NK	DeKalb	Ferguson	Golden Harvest	
6356	PX9214	DK-485	8758	H-2410	
	N4350	DK-535	8868		
Agri	Pickseed	First Line	Cardinal	Renk	
501	5577	1783	MX285	R148	

## METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES

Refer to the other product label for pertinent recommendations, directions for use, restrictions, precautions, and any additional weeds not specified on this label. Unless prohibited on this or other product labels, apply as a broadcast or band application.

### Metribuzin 75DF Herbicide Tank-Mixes: Preemergence Application

Weeds Controlled	Products	Rates per Hectare <sup>2</sup>
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide <sup>1</sup>	400 - 675 g
	plus Primextra II Magnum	2.6 L

1. The Metribuzin 75DF Herbicide 675 g/ha rate should be used if a heavy weed infestation is expected.
2. Do not apply to sandy soils or light soils. Apply only to medium or fine soils.

## TRANSPLANTED TOMATOES (GROWN FOR PROCESSING ONLY) - EASTERN CANADA

- Apply specified dosage in 150 to 300 L of water per hectare, depending on equipment and local practices.
- Do not apply to direct seeded tomatoes.
- Do not apply more than a total of 1.0 kg/ha of Metribuzin 75DF Herbicide to COARSE SOILS, 1.5 kg/ha to MEDIUM SOILS, or 1.8 kg/ha to FINE SOILS per crop season.
- Do not apply the above mentioned total amounts of Metribuzin 75DF Herbicide for each soil type within a time span of less than 35 days.
- Allow at least 14 days between applications.
- Avoid application when tomatoes are under stress.
- Crop injury or delayed maturity may result from postemergence applications if tomatoes are growing under stress conditions such as periods of drought, flooding, or cool, wet or cloudy weather before application or at time of application. Stress can be expected if temperatures have been below 15°C or above 30°C. Three days of sunny weather should follow cloudy, cool weather before spraying Metribuzin 75DF Herbicide postemergence.
- Varieties differ in tolerance to Metribuzin 75DF Herbicide. Newly introduced varieties with unknown tolerance to Metribuzin 75DF Herbicide should only be treated in a small test area to determine tolerance.

## METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES

Refer to the other product label for pertinent recommendations, directions for use, restrictions, precautions, and any additional weeds not specified on this label. Unless prohibited on this or other product labels, apply as a broadcast or band application.

### Metribuzin 75DF Herbicide Alone: Postemergence Application

Crop	Rates per hectare	Remarks
Transplant Tomatoes (grown for processing only) for weeds less than 4 cm in height	Single Application 375 g to 1.1 kg	Avoid contacting at least the top 2/3 of the tomato foliage with spray. Best results are usually obtained when application is about 3 weeks after transplanting. Use the lower rate on sandy soils. At the lower rate the treatment may not provide acceptable

		control of grasses. Do not harvest within 60 days of application.
	Multiple Application 200 g	Reapply as new flushes of weeds emerge. Do not make more than 4 applications per season. The treatment may not provide acceptable control of grasses. Do not harvest within 30 days of application. On sunny days application should be made in the afternoon or early evening.

NOTE FOR MULTIPLE APPLICATION ONLY: The fungicide Bravo 500 at the rate of 2.4 to 4.8 L/ha can be tank-mixed with METRIBUZIN 75DF Herbicide following dosage and remarks for Metribuzin 75DF Herbicide used in Multiple Application. Refer to the Bravo 500 Fungicide label for diseases controlled and specific recommendations.

**Metribuzin 75DF Herbicide Tank-Mixes Preplant Incorporated  
Followed by Postemergence Application of METRIBUZIN 75DF Herbicide Alone**

Weeds controlled	Products	Rates per hectare and soil types		
		COARSE	MEDIUM	FINE
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide plus Treflan E.C. (480 g/L) followed by	330 - 400 g 1.2 L	500 - 750 g 1.7 L	800 - 900 g 2.4 L
	Metribuzin 75DF Herbicide (Postemergence)	600 g	750 g	800 - 900 g

NOTE: For best season long control of annual grasses and annual broadleaf weeds apply a tank-mix of Metribuzin 75DF Herbicide with Treflan E.C. Herbicide and preplant incorporate into the soil before transplanting tomatoes. Then follow up with a directed postemergence application of Metribuzin 75DF Herbicide when weed escapes are less than 2.5 cm in height and transplants are well established (3 weeks after transplanting). Transplants must have recovered from transplant shock and new growth should be evident. This follow up Metribuzin 75DF Herbicide application is usually timed for early July but should not be applied any earlier than 21 days after transplanting tomatoes or no later than 60 days before harvest. Metribuzin 75DF Herbicide spray should be directed onto any emerged weeds in a manner to minimize application to crop plants. The total rate of two applications of Metribuzin 75DF Herbicide should not exceed the maximum total of Metribuzin 75DF Herbicide for each soil type. Do not mix or apply other pesticides to tomatoes within 24 hours of Metribuzin 75DF Herbicide application. If weed pressure is light to medium, it may not be necessary to apply Metribuzin 75DF Herbicide twice. Shallow cultivation may also be used to complete the control of any weeds not normally controlled by Metribuzin 75DF Herbicide.



### Metribuzin 75DF Herbicide Tank-Mixes: Preplant Incorporated

Weeds controlled	Products	Rates per hectare and soil types		
		COARSE	MEDIUM	FINE
Annual grasses, broadleaf weeds including nightshade and yellow nutsedge	Metribuzin 75DF Herbicide plus Treflan E.C. (480 g/L) plus Dual Magnum or Dual II Magnum	330 g	670 g	670 g
		1.1 L	2.1 L	2.1 L
		1.0 L	1.25 L	1.25 L
		1.0 L	1.25 L	1.25 L

CAUTION: THIS TANK-MIX MAY DAMAGE TRANSPLANTS AND REDUCE CROP YIELD IF TRANSPLANTS HAVE BEEN WEAKENED BY ANY CAUSE. TO PREVENT DAMAGE PLANT ONLY HEALTHY TRANSPLANTS; DO NOT PLANT WHEN WET, COOL OR UNFAVORABLE CONDITIONS PREVAIL. FOLLOW ALL APPLICATION AND INCORPORATION DIRECTIONS EXACTLY. Do not use this mixture more than once per year. Apply spray solution followed by a shallow incorporation (5-7.5 cm). Then transplant tomatoes 5-10 cm deep. Do not harvest within 60 days of application.

### ASPARAGUS (Established) - EASTERN AND WESTERN CANADA

Metribuzin 75DF Herbicide is recommended for use in ground spray equipment as a preemergence surface application to established asparagus in early spring before spears or ferns emerge and/or following last cutting. Apply specified dosage in 100 to 300 L of water per hectare, depending on equipment and local practices. Do not use on newly seeded asparagus or on young plants during the first growing season after setting crowns. Do not apply to established crops after emergence of spears.

### Metribuzin 75DF Herbicide Alone: Preemergence Application

Crop	Rates per hectare	Remarks
Asparagus (established)	1.5 kg	If the field is to be disked, apply Metribuzin 75DF Herbicide after disking but before the crop emerges. Do not apply within 14 days of harvest.

### SWEET WHITE LUPINS - MARITIME PROVINCES ONLY

- **DO NOT APPLY TO LUPINS INTENDED FOR HUMAN CONSUMPTION.**
- Apply specified dosage in 150 to 300 L of water per hectare, depending on equipment and local practices.
- Seed must be planted at least 4 cm below the soil surface.
- Do not apply on COARSE soils with less than 2% organic matter.
- Apply during planting or as a separate operation, before crop emerges.
- Do not apply more than once per season.
- Applications of Metribuzin 75DF Herbicide made at rates above those recommended may result in burning, yellowing or stunting of the crop.
- If heavy rains occur soon after application, plant injury and stand reduction may result, especially in poorly drained areas where water may stand for several days.
- Do not use treated vines for feed or forage

### METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES

Refer to the other product label for pertinent recommendations, directions for use, restrictions, precautions, and any additional weeds not specified on this label. Unless prohibited on this or other product labels, apply as a broadcast or band application.

### METRIBUZIN 75DF Herbicide Alone or in Tank-Mixes: Preemergence Application

Weeds controlled	Products	Rates per hectare and soil types		
		COARSE	MEDIUM	FINE
Annual weeds	Metribuzin 75DF Herbicide	560 g	675 g	675 g
Annual grasses and broadleaf weeds including nightshade <sup>1</sup>	Metribuzin 75DF Herbicide plus Dual Magnum <sup>1</sup> or Dual II Magnum <sup>1</sup>	675 g	675 g	675 g
		1.1 - 1.75 L	1.1 - 1.75 L	1.1 - 1.75 L
		1.1 - 1.75 L	1.1 - 1.75 L	1.1 - 1.75 L

1. For optimum nightshade control and for heavier weed problems, use higher rate of the herbicides Dual Magnum or Dual II Magnum.

### PROCESSING CARROTS - ATLANTIC CANADA ONLY

- To be used only on processing carrots previously treated with preemergent application of linuron Herbicide (1100 g ai/ha; please refer to respective product labels for pertinent recommendations, directions for use, restrictions and precautions).
- Apply Metribuzin 75DF Herbicide when the fourth leaf is partially expanded on most carrot plants, followed by a second application, if necessary, when the fifth leaf is partially expanded (about 6 days after first application).
- Carrot varieties differ in their tolerance to Metribuzin 75DF Herbicide: growers should limit first use of Metribuzin 75DF Herbicide to a limited area of each cultivar before adoption as a field practice.
- It may be necessary to delay harvest of more sensitive cultivars treated with Metribuzin 75DF Herbicide.
- Do not apply on COARSE soils with less than 2% organic matter.

### Metribuzin 75DF Herbicide Alone: Postemergence Application

Weeds controlled	Product	Rate per hectare
Annual weeds including Scentless chamomile	Metribuzin 75DF Herbicide	375 g

### NEWLY PLANTED FRUIT TREES - EASTERN CANADA AND BRITISH COLUMBIA

- Use on apple, apricot, cherry, peach, pear and plum trees in the year of planting.
- Apply specified dosage as a preplant incorporated application in 150 - 300 L of water per hectare before transplanting fruit trees.
- Do not apply more than once per crop season.

### METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES

Refer to the other product label for pertinent recommendations, directions for use, restrictions, precautions and any additional weeds not specified on this label. Unless prohibited on this or other product labels apply as a broadcast or band application.

**Metribuzin 75DF Herbicide Alone or in Tank-mixes: Preplant Incorporated**

Weeds controlled	Products	Rates per hectare and soil types		
		COARSE	MEDIUM	FINE
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide <sup>1</sup>	500 g	750 g	1 kg
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide plus Treflan E.C. (480 g/L)	500 g 1.2 L	750 g 1.7 L	750 g 2.4 L

1. Do not use on pear or plum trees.

**ESTABLISHED FRUIT TREES**

**- EASTERN CANADA AND BRITISH COLUMBIA**

- Use on established (bearing) apple, apricot, peach, pear, plum and sweet and sour cherry trees.
- Apply specified dosage as a preemergence band application under the trees in at least 150 L to 300 L of water per hectare.
- Do not apply more than once per crop season.

**METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES**

Refer to the other product label for pertinent recommendations, directions for use, restrictions, precautions and any additional weeds not specified on this label. Unless prohibited on this or other product labels, apply as a band application.

**Metribuzin 75DF Herbicide Alone or in Tank-Mixes: Preemergence Application**

Weeds Controlled	Products	Rates per Hectare
Annual broadleaf weeds	Metribuzin 75DF Herbicide	1.0 kg
Annual grasses and broadleaf weeds including yellow nutsedge, American nightshade and eastern black nightshade	Metribuzin 75DF Herbicide plus Dual Magnum or Dual II Magnum	1.0 kg 1.75 L 1.75 L
Annual grasses and broadleaf weeds including bluegrass, perennial rye grass, wild barley, annual sow thistle, henbit, prickly lettuce and purslane	Metribuzin 75DF Herbicide plus Sinbar <sup>1,2,3</sup>	1.0 kg 0.63 kg

1. Do not use on soil coarser than sandy loam with less than 3% organic matter.
2. Do not use on apricot and plum trees.
3. Treatment usually provides partial control of quackgrass, horsenettle and yellow nutsedge.

## WESTERN CANADA USES

### CROP INFORMATION AND RESTRICTIONS

Metribuzin 75DF Herbicide provides selective weed control in:

CANADA WEST
Spring Barley and Spring Wheat
Dryland Winter Wheat
Field Peas
Processing Peas
Chickpeas
Lentils
Soybeans
Fababeans
Potatoes
Potatoes - Sprinkler Irrigation
Asparagus (Established)
Shelterbelts

Metribuzin 75DF Herbicide may injure the following rotational crops:

- Rotation crops such as onions, celery, peppers, cole crops, lettuce and spinach, sugar beets, table beets and turnips, pumpkin and squash, cucumbers and melons, tobacco, and non-triazine tolerant canola (rapeseed) are sensitive to Metribuzin 75DF Herbicide and may be injured if planted in soil treated with Metribuzin 75DF Herbicide during the year of application or the following crop year.
- Fall seeded or cover crops such as wheat, oats, and rye may be injured when seeded within the same season as the application of Metribuzin 75DF Herbicide.

### WEEDS CONTROLLED

NOTE: METRIBUZIN 75DF HERBICIDE DOES NOT CONTROL TRIAZINE RESISTANT WEED BIOTYPES AND TREFLAN E.C. HERBICIDE, AND RIVAL HERBICIDE DO NOT CONTROL TRIFLURALIN RESISTANT WEED BIOTYPES.

#### **Spring Barley and Spring Wheat (Postemergence at a rate of 200 g/ha)**

Common chickweed, Green smartweed, Hempnettle (suppression\*\* only), Lady's-thumb, Lamb's-quarter, Redroot pigweed, Stinkweed, Volunteer non-triazine tolerant canola, Wild mustard

#### **Spring Barley and Spring Wheat (Postemergence at a rate of 275 to 375 g/ha)**

Ball mustard, Common chickweed, Common Groundsel, Corn spurry, Green smartweed, Hempnettle, Henbit (375 g/ha only), Lady's-thumb, Lamb's-quarter, Night flowering catchfly, Redroot pigweed, Russian thistle (375 g/ha only), Stinkweed, Tartary buckwheat, Volunteer non-triazine tolerant canola, Wild mustard, Wormseed mustard

#### **Dryland Winter Wheat (Norstar only) (Postemergence at a rate of 560 to 750 g/ha)**

Downy Brome, Stinkweed, Flixweed, Shepherd's purse

#### **Chickpeas and Lentils as Postemergence Application (SUPPRESSION\*\* ONLY)**

Ball mustard, Common chickweed, Corn spurry, Green smartweed, Hempnettle, Lamb's-quarter, Stinkweed, Tartary buckwheat, Volunteer non-triazine tolerant canola, Wild mustard

**Processing Peas, Field Peas (Postemergence)**

Ball mustard, Common chickweed, Corn spurry, Green smartweed, Hempnettle, Lamb's-quarter, Stinkweed, Tartary buckwheat, Volunteer non-triazine tolerant canola, Wild mustard

**Field Peas, Soybeans, Lentils and Fababeans (Preplant Incorporated with Treflan E.C. Herbicide)**

Annual blue grass, Barnyard grass, Brome grass, Cheat grass, Goose grass, Green foxtail, Persian darnel, Stink grass, Wild oats, Yellow foxtail  
 Carpetweed, Chickweed, Cow cockle, Green smartweed, Hempnettle, Knotweed, Lady's-thumb, Lamb's-quarter, Purslane, Redroot pigweed, Russian Thistle (not controlled in Fababeans), Shepherd's purse, Stinkweed, Volunteer non-triazine tolerant canola, Wild buckwheat, Wild mustard

**Field Peas (Preplant Incorporated with Rival Herbicide)**

Annual blue grass, Barnyard grass, Brome grass, Cheat grass, Crab grass, Goose grass, Green foxtail, Persian darnel, Stink grass, Wild oats, Yellow foxtail  
 Carpetweed, Chickweed, Corn spurry, Cow cockle, Green smartweed, Hempnettle, Knotweed, Kochia, Lady's thumb, Lamb's-quarter; Purslane, Redroot pigweed, Shepherd's purse, Stinkweed, Volunteer non-triazine tolerant canola, Wild buckwheat, Wild mustard

**Potatoes and Potatoes Sprinkler Irrigation Application**

Ball mustard, Common chickweed, Corn spurry, Green smartweed, Hempnettle, Lady's-thumb, Lamb's-quarter, Redroot pigweed, Shepherd's purse, Stinkweed, Tartary buckwheat, Volunteer non-triazine tolerant canola, Wild mustard

**Shelterbelts**

Green foxtail, Wild oats, Witch grass, Lamb's-quarter, Prostrate pigweed, Purslane, Russian thistle, Shepherd's purse, Stinkweed, Wild buckwheat

\*\*Suppression is a visual reduction in weed competition (reduced population and /or vigour) as compared to an untreated area.

**SOIL TYPES AND RESTRICTIONS**

The recommended use rates of METRIBUZIN 75DF Herbicide are dependent upon soil texture and organic matter content of the soil being treated. Rate tables in this label refer to the following three soil texture groups: coarse, medium, and fine.

If you are not sure how to classify your soil, contact your UPL NA Inc. representative, Soils & Crops Advisor, or other knowledgeable person. The following chart includes a complete listing of soil textures included in each of the soil texture groupings:

<b>COARSE</b>	<b>MEDIUM</b>	<b>FINE</b>
Loamy sand	Loam	Silty clay loam
Sandy loam	Silt loam	Silty clay
	Silt	Clay loam
	Sandy clay loam	Clay
	Sandy clay	

- On variable soils with coarse sandy areas, some crop injury may occur on the sandy areas if the rate used is for the finer soil type.
- Sandy loam and silty clay loam soils are transitional soils and may be classified as medium textured soils in some regions.
- Do not use this product on MUCK soils. If METRIBUZIN 75DF Herbicide is applied to MUCK soils, subsequent crops may be injured.
- Do not use on coarse soils with less than 2% organic matter.

## **APPLICATION INFORMATION**

### **PREPLANT INCORPORATION (FALL AND SPRING APPLICATIONS)**

- Cultivate to destroy existing weeds before Metribuzin 75DF Herbicide plus tank-mix partner application. When applying to stubble field, chop and thoroughly mix crop residue into soil to a depth of 10-15 cm. Disc type implements provide the best results. To avoid concentration of wild oat seed below the treated layer, do not plow (moldboard).
- Metribuzin 75DF Herbicide tank-mixes may be applied as a broadcast spray and incorporated into the soil in two different directions (see table below for specific instructions).
- Metribuzin 75DF Herbicide in combination with recommended tank-mix may be applied in the spring or the fall. First incorporation must be done within 24 hours after application. For fall application, the second incorporation may be done in the spring at the time of seedbed preparation. It is preferred to do both incorporations in the fall followed by shallow tillage (disc or vibrashank cultivator operated at 5-8 cm deep) in the spring prior to planting.
- Incorporation with implements set to cut less than 8 cm deep or more than 10 cm deep may result in erratic weed control or crop damage.
- Uneven application or improper incorporation of Metribuzin 75DF Herbicide and tank-mix partner can result in erratic weed control or crop injury depending on rate used.
- Stress conditions such as seedling disease, cold weather, deep planting, excessive moisture, high salt concentration, or drought may weaken seedlings and increase the possibility of crop damage from the Herbicides. Temporary lightening in colour may occur on the margin of leaves or cotyledons and a slight delay in crop development may be observed. This is quickly outgrown and usually has no lasting effect.

<b>Implement</b>	<b>Working Depth</b>	<b>Tractor Speed</b>	<b>Remarks</b>
Tandem disk or discer	8 - 10 cm	7 - 10 km/hr.	Preferred on stubble
Vibrashank cultivator	8 - 10 cm	10 - 13 km/hr.	Do not use if soil is crusted, lumpy, or too wet for good mixing action.
Deep tillage cultivator	Not Recommended		
Rod weeder			
Harrows			
Chisel plow			
Hoe drills			

### **POSTEMERGENCE APPLICATION**

- Crop must be planted at least 5 cm below the soil surface.
- Do not use in crop underseeded with forage.

- Do not apply more than once per season.
- Do not tank-mix with other pesticides, wetting agents, or surfactants.
- To improve coverage the spray boom may be rotated forward by 45°.
- Activity on weeds may not be noticeable for 7 to 10 days after application.
- Metribuzin 75DF Herbicide may be applied when crop is wet with dew, but weed control may be reduced if there is rainfall within 6 hours after application.
- Temporary (7-10 days) lightening in crop colour and occasional slight reduction in crop height may be observed, especially if frost or abnormally high temperatures occur within 1 to 2 days of application. If frost occurs, allow 4 to 5 days for crop to recover before applying Metribuzin 75DF Herbicide.
- Activity on weeds and crop tolerance may be reduced if Metribuzin 75DF Herbicide is applied later than specified crop stages.
- Allow a 4 to 5 day interval between application of Metribuzin 75DF Herbicide and other pesticides such as wild oat Herbicides.

#### **SPRING BARLEY and SPRING WHEAT - WESTERN CANADA**

- Apply specified dosage as postemergence broadcast spray in 80 to 100 L of water per hectare.
- Do not graze or feed treated crop to livestock within 30 days of application.
- Do not harvest for grain within 60 days of application.
- Do not use on soils containing less than 3% organic matter. Application made before heavy rainfall or irrigation (3 cm or more) on these low organic matter soils may cause crop injury ranging from leaf burn to stand reduction.
- Use higher rate on barley for the best residual control of chickweed and hempnettle or when weed infestation is dense.

#### **METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES**

Refer to the other product label for pertinent recommendations, directions for use, restrictions, precautions, and any additional weeds not specified on this label. Unless prohibited on this or other product labels, apply as a broadcast or band application.

#### **Metribuzin 75DF Herbicide Alone or in Tank-Mixes:**

##### **Postemergence Application in SPRING BARLEY<sup>1</sup>**

<b>Weeds controlled</b>	<b>Crop stage</b>	<b>Products</b>	<b>Rates per hectare</b>
Annual broadleaf weeds (refer to other product labels for additional weeds)	2 to 5 leaf (midtillering)	Metribuzin 75DF Herbicide	200 - 375 g
	3 to 5 leaf (midtillering)	Metribuzin 75DF Herbicide plus MCPA (amine 500) or 2,4-D (amine 500)	200 - 375 g 0.85 - 1.1 L 0.85 - 1.1 L
	2 to 3 leaf	Metribuzin 75DF Herbicide plus Banvel or Banvel II or Target Liquid	200 - 275 g 230 mL 230 mL 1.0 - 1.5 L

1. Barley varieties Klondike, Leduc, and Johnston are less tolerant to Metribuzin 75DF Herbicide than other varieties. Some temporary lightening of crop colour may be expected and, occasionally, crop height may be reduced. Apply Metribuzin 75DF Herbicide to these varieties in one of the following ways: 200 - 275 g/ha of Metribuzin

75DF Herbicide alone; or 200 g/ha of Metribuzin 75DF Herbicide in tank-mix with MCPA herbicide.

Do not tank-mix Metribuzin 75DF Herbicide with the Herbicides Banvel, Target or 2,4-D on these varieties.

**Metribuzin 75DF Herbicide Alone or in Tank-Mixes:  
Postemergence Application in SPRING WHEAT**

Weeds controlled	Crop stage	Products	Rates per hectare
Annual broadleaf weeds (refer to other product labels for additional weeds)	2 to 5 leaf (midtillering)	Metribuzin 75DF Herbicide	200 - 275 g
	3 to 5 leaf (midtillering)	Metribuzin 75DF Herbicide	200 - 275 g
		plus MCPA (amine 500) or 2,4-D (amine 500)	0.85 - 1.1 L 0.85 - 1.1 L
	2 to 4 leaf <sup>1</sup>	Metribuzin 75DF Herbicide plus Banvel or Banvel II	200 - 275 g 230 mL 230 mL
	2 to 5 leaf	Metribuzin 75DF Herbicide plus Target Liquid	200 - 275 g 1.0 - 1.5 L

1. Crop tolerance may be reduced at the 4 leaf stage.

**DRYLAND WINTER WHEAT - WESTERN CANADA**

- **Use on Norstar variety only.**
- Apply specified dosage as postemergence broadcast spray in at least 100 L of water per hectare in late fall (October or November).
- Apply after the crop has commenced tillering and initiated development of secondary roots. This is usually after the 3-leaf stage. To achieve this stage, the wheat would normally need to be planted no later than September 15th. Crop injury may occur if secondary roots have not developed at time of application. Before applying Metribuzin 75DF Herbicide, examine plants to determine if secondary rooting has occurred, even though plants have tillered.
- For best results, apply before weeds are 3 cm tall or have 3 cm rosettes
- Do not apply on irrigated wheat as crop injury may occur.
- Do not tank-mix Metribuzin 75DF Herbicide with other pesticides or liquid fertilizers.
- Activities on weeds may not be noticeable until the following spring when growth starts.
- Do not plant any crop for at least 12 months after application.
- Weed control may be reduced if winter wheat is planted into unworked spring wheat stubble.
- Temporary chlorosis may occur after application of Metribuzin 75DF Herbicide to winter wheat, especially if heavy frost occurs.

**Metribuzin 75DF Herbicide Alone: Postemergence Application**

Weeds controlled	Crop stage	Products	Rates per hectare
Downy Brome and winter annual broadleaf weeds	Secondary root initiation	Metribuzin 75DF Herbicide	560-750 g



**FIELD PEAS - WESTERN CANADA**

- Apply specified dosage as postemergence broadcast spray in at least 170 L of water per hectare or as preplant incorporated in at least 100 L of water per hectare.
- Do not apply more than once per season except when following split-application recommendations.
- Do not graze or feed treated crop to livestock within 70 days of application.
- Do not harvest for grain within 70 days of application.
- Do not use on soils containing less than 4% organic matter. Application made before heavy rainfall or irrigation (3 cm or more) on these low organic matter soils may cause crop injury ranging from leaf burn to stand reduction.
- Use higher rate when weed infestation is dense.

**METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES**

Refer to the other product label for pertinent recommendations, directions for use, restrictions, and precautions.

Unless prohibited on this or other product labels, apply as a broadcast or band application.

**Metribuzin 75DF Herbicide Alone or in Tank-Mixes:**

**Postemergence Application<sup>1</sup>**

<b>Weeds controlled<sup>2</sup></b>	<b>Products</b>	<b>Rates per hectare</b>	<b>Remarks</b>
Annual broadleaf weeds (less than 5 cm in height)	Metribuzin 75DF Herbicide (Single application)	275 - 375 g in one application	Under certain field or weather conditions a split application of METRIBUZIN 75DF Herbicide may provide better weed control than a single application. The first application should be made at the cotyledon to 2-leaf stage of the weeds. The second application should be made when a second flush of weeds has emerged or if weeds which were more advanced at the time of the first application are starting to regrow. Allow 7 to 10 days between applications.
	Metribuzin 75DF Herbicide (Split application)	140 - 190 g Per application	
Green smartweed, lady's thumb, lamb's- quarter, wild mustard, stinkweed, redroot pigweed, volunteer non-triazine tolerant canola	Metribuzin 75DF Herbicide plus MCPA Sodium salt (300 g/L)	190 g  467 mL	

1. Pea vines must be less than 15 cm long at the time of application. Do not apply within 3 days after periods of cool, wet, or cloudy weather as crop injury may occur.
2. Peas may provide poor competition against weed growth. Under conditions of heavy weed pressure or lush weed growth, METRIBUZIN 75DF Herbicide alone may not provide adequate control due to regrowth of some weeds.

**Metribuzin 75DF Herbicide Tank-Mixes:  
Preplant Incorporated (Spring applications)<sup>1</sup>**

Weeds controlled	Products	Soil types and rates per hectare	
		COARSE (5-6% organic matter) <sup>2</sup>	MEDIUM or FINE (all soils with 6-15% organic matter) <sup>2</sup>
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide plus Treflan E.C. (480 g/L) or Rival EC	375 g	375 - 475 g
		1.7 L	2.3 - 3.0 L <sup>3</sup>
		2.2 L	2.2 - 2.8 L <sup>3</sup>

**Metribuzin 75DF Herbicide Tank-Mixes:  
Preplant Incorporated (Fall applications)<sup>1</sup>**

Weeds controlled	Products	Soil types and rates per hectare	
		COARSE (4-6% organic matter) <sup>2</sup>	MEDIUM or FINE (all soils with 6-15% organic matter) <sup>2</sup>
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide plus Treflan E.C. (480 g/L)	475 g	475 - 550 g
		2.3 L	3.0 - 3.4 L <sup>3</sup>

**NOTES METRIBUZIN 75DF Herbicide TANK-MIXES PREPLANT INCORPORATED (SPRING AND FALL APPLICATIONS)**

1. Fall application: before freeze up. Spring application: when soil is warm enough to promote germination. Avoid transplanting weed seedlings; seed into a weedfree seedbed using accepted cultural practices.
2. Herbicides rate varies with soil organic matter; the higher the organic matter, the higher the rate of Herbicides required.
  - do not use on soils with less than 4% organic matter (fall application) or 5% organic matter (spring application)
  - on soils with 4-6% (fall application) or 5-6% (spring application) organic matter, use the lowest recommended rate
  - on all soils with 6-10% organic matter, select a rate in the range recommended for Medium and Fine soils
  - on all soils with 10% organic matter or greater, use the highest recommended rate (broadleaf weed control may not be adequate)
3. Use high rate in fields with high weed infestations.

**PROCESSING PEAS - WESTERN CANADA**

- Apply specified dosage as postemergence broadcast spray in at least 170 L of water per hectare.
- Do not graze or feed treated crop to livestock within 70 days of application.
- Do not harvest within 40 days of application.

- Do not use on soils containing less than 4% organic matter. Application made before heavy rainfall or irrigation (3 cm or more) on these low organic matter soils, may cause crop injury ranging from leaf burn to stand reduction.
- Use higher rate when weed infestation is dense.
- Do not tank-mix with other pesticides, wetting agents or surfactants.

#### **Metribuzin 75DF Herbicide Alone:**

##### **Postemergence Application<sup>1</sup>**

<b>Weeds Controlled</b>	<b>Products</b>	<b>Rates per Hectare</b>
Annual broadleaf weeds (no more than 5 cm in height) <sup>2</sup>	Metribuzin 75DF Herbicide	275 - 375 g

1. Pea vines must be less than 15 cm long at the time of application. Do not apply within 3 days after periods of cool, wet, or cloudy weather as crop injury may occur.
2. Peas may provide poor competition against weed growth. Under conditions of heavy weed pressure or lush weed growth, Metribuzin 75DF Herbicide alone may not provide adequate control due to regrowth of some weeds.

#### **CHICKPEAS - WESTERN CANADA**

##### **Use on Desi and Kabuli types only.**

- Apply specified dosage as postemergence broadcast spray in at least 170 L of water per hectare.
- Do not apply more than once per crop season.
- Do not graze or feed treated crop to livestock within 70 days of application.
- Do not harvest within 40 days of application.
- Do not use on soils containing less than 4% organic matter. Application made before heavy rainfall or irrigation (3 cm or more) on these low organic matter soils, may cause crop injury ranging from leaf burn to stand reduction.
- Do not tank-mix with other pesticides, wetting agents or surfactants.

##### **Metribuzin 75DF Herbicide Alone: Postemergence Application<sup>1</sup>**

<b>Weeds Controlled</b>	<b>Products</b>	<b>Rates per Hectare</b>
Annual broadleaf weeds (no more than 5 cm in height) <sup>2</sup>	Metribuzin 75DF Herbicide	275 g

1. Apply when pea vines are at the 1-3 above ground node stage (maximum height of 6 cm). **NOTE: APPLICATION PAST THE RECOMMENDED GROWTH STAGE MAY CAUSE SEVERE CROP INJURY.** Do not apply within 3 days after periods of cool, wet, or cloudy weather as crop injury may occur.
2. Chickpeas may provide poor competition against weed growth. Under conditions of heavy weed pressure or lush weed growth, METRIBUZIN 75DF Herbicide alone may not provide adequate suppression due to regrowth of some weeds.

#### **LENTILS – WESTERN CANADA**

- Apply specified dosage as postemergence broadcast spray in at least 170 L of water per hectare or as preplant incorporated in at least 100 L of water per hectare.
- Do not apply more than once per season except when following split-application recommendations.
- Do not graze or feed treated crop to livestock within 70 days of application.
- Do not harvest for grain within 70 days of application.

- Do not use on soils containing less than 4% organic matter. Application made before heavy rainfall or irrigation (3 cm or more) on these low organic matter soils may cause crop injury ranging from leaf burn to stand reduction.
- Use higher rate when weed infestation is dense.

### Metribuzin 75DF Herbicide Alone: Postemergence Application<sup>1</sup>

Weeds suppressed	Products	Rates per hectare	Remarks
Annual broadleaf weeds (less than 5 cm in height) <sup>2</sup>	Metribuzin 75DF Herbicide (Single application)	275 g in one application	Under certain field or weather conditions a split application of Metribuzin 75DF Herbicide may provide better weed suppression than a single application. The first application should be made at the cotyledon to 2-leaf stage of the weeds. The second application should be made when a second flush of weeds has emerged or if weeds which were more advanced at the time of the first application are starting to regrow. Allow 7 to 10 days between applications.
	Metribuzin 75DF Herbicide (Split application)	140 - 190 g per application	

1. Lentil vines must be less than 15 cm long or in the 3 to 5-node stage at the time of application. Do not apply within 3 days after periods of cool, wet, or cloudy weather as crop injury may occur.
2. Lentils may provide poor competition against weed growth. Under conditions of heavy weed pressure or lush weed growth, METRIBUZIN 75DF Herbicide alone may not provide adequate suppression due to regrowth of some weeds.

### METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES

Refer to the other product label for pertinent recommendations, directions for use, restrictions, and precautions. Unless prohibited on this or other product labels, apply as a broadcast or band application.

### Metribuzin 75DF Herbicide Tank-Mix:

#### Preplant Incorporated - Fall applications - prior to soil freeze-up

Weeds controlled	Products	Soil types <sup>1</sup> and rates per hectare	
		COARSE (4-6% organic matter) <sup>2</sup>	MEDIUM or FINE (all soils with 6-15% organic matter) <sup>2</sup>
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide plus Treflan E.C. (480 g/L)	475 g	475 - 550 g
		2.3 L	3.0 - 3.4 L <sup>3</sup>

1. Do not use on muck soils
2. Metribuzin 75DF Herbicide rate varies with the soil organic matter; the higher the organic matter, the higher the rate of Metribuzin 75DF Herbicide required.
  - do not use on soils with less than 4% organic matter
  - on soils with 4-6% organic matter, use the lowest recommended rate
  - on all soils with 6-10% organic matter, select a rate in the range recommended for Medium and Fine soils

- on all soils with 10% organic matter or greater, use the highest recommended rate (broadleaf weed control may not be adequate)
3. Use high rate of Treflan E.C. Herbicide if wild oat infestation is heavy.

Spring tillage following fall application of Metribuzin 75DF Herbicide plus Treflan E.C. Herbicide should be done when the soil is warm enough to promote germination. Avoid transplanting weed seedlings; seed into a weedfree seedbed using acceptable cultural practices.

### **SOYBEANS - WESTERN CANADA**

- Apply specified dosage as preplant incorporated in at least 100 L of water per hectare.
- **VARIETIES:** Do not use Metribuzin 75DF Herbicide on AC Brant, Apache, Baron, OAC Eramosa, Maple Amber, Maple Ridge, IA 1003 or S-240. Consult your UPL NA Inc. representative, chemical dealer, or your seed supplier for information on the tolerance of soybean varieties, prior to Metribuzin 75DF Herbicide use.
- Seedling disease, cold weather, deep planting, excessive moisture, high soil pH (above 7.5), high salt concentration, or drought may weaken soybean seedlings and increase the possibility of damage from Metribuzin 75DF Herbicide and Treflan E.C. Herbicide. Under these conditions, delayed crop development or reduced yield may result.

### **METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES**

Refer to the other product label for pertinent recommendations, directions for use, restrictions, precautions and any additional weeds not specified on this label. Unless prohibited on this or other product labels, apply as a broadcast or band application.

#### **Metribuzin 75DF Herbicide Tank-Mixes: Preplant Incorporated (Spring application)**

<b>Weeds controlled</b>	<b>Products</b>	<b>Soil types and rates per hectare</b>	
		<b>COARSE (2-6% organic matter)<sup>1</sup></b>	<b>MEDIUM or FINE (all soils with 6-15% organic matter)<sup>2</sup></b>
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide plus Treflan E.C. (480 g/L)	275 - 375 g 1.7 L	375 - 550 g 2.3 - 3.0 L <sup>2</sup>

1. METRIBUZIN 75DF Herbicide rate varies with the soil organic matter; the higher the organic matter the higher the rate of METRIBUZIN 75DF Herbicide required.
  - do not use on soils with less than 2% organic matter
  - on soils with 2-3% organic matter use 275 g/ha
  - on soils with 3-6% organic matter use 375 g/ha
  - on all soils with 6-10% organic matter, select a rate in the range recommended for Medium and Fine soils
  - on all soils with 10% organic matter or greater, use the highest recommended rate (broadleaf weed control may not be adequate)
2. Use high rate of Treflan E.C. Herbicide if wild oat infestation is heavy.

### **FABABEANS - WESTERN CANADA**

- Apply specified dosage as preplant incorporated in at least 100 L of water per hectare.
- Do not use on soils with high salt content, which can be determined using a conductivity test at a provincial laboratory. Do not use when the conductivity reading is higher than 1 mS/cm using the 1 to 1 method or 2 mS/cm using the standard paste method.

## **METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES**

Refer to the other product label for pertinent recommendations, directions for use, restrictions, precautions, and any additional weeds not specified on this label. Unless prohibited on this or other product labels, apply as a broadcast or band application.

### **Metribuzin 75DF Herbicide Tank-Mixes: Preplant Incorporated (Spring applications)<sup>1</sup>**

<b>Weeds controlled</b>	<b>Products</b>	<b>Soil types and rates per hectare</b>	
		<b>COARSE</b> (2-6% organic matter) <sup>2</sup>	<b>MEDIUM or FINE</b> (all soils with 6-15% organic matter) <sup>2</sup>
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide plus Treflan E.C. (480 g/L)	275 – 375 g 1.7 L	375 - 550 g 2.3 L

### **Metribuzin 75DF Herbicide Tank-Mixes: Preplant Incorporated (Fall applications)<sup>1</sup>**

<b>Weeds controlled</b>	<b>Products</b>	<b>Soil types and rates per hectare</b>	
		<b>COARSE</b> (2-6% organic matter) <sup>2</sup>	<b>MEDIUM or FINE</b> (all soils with 6-15% organic matter) <sup>2</sup>
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide plus Treflan E.C. (480 g/L)	375 – 475 g 2.3 L	475 - 550 g 3.0 L

### **NOTES METRIBUZIN 75DF HERBICIDE TANK-MIXES PREPLANT INCORPORATED (SPRING AND FALL APPLICATIONS)**

1. Fall application: before freeze up. Spring application: when soil is warm enough to promote germination. Avoid transplanting weed seedlings; seed into a weedfree seedbed using accepted cultural practices.
2. Herbicides rate varies with the soil organic matter; the higher the organic matter, the higher the rate of Herbicides required.
  - do not use on soils with less than 2% organic matter
  - on soils with 2-3% organic matter, use the lowest recommended rate
  - on soil with 3-6% organic matter, use 375 g/ha in spring application or 475 g/ha in fall application
  - on all soils with 6-10% organic matter, select a rate in the range recommended for Medium and Fine soils
  - on all soils with 10% organic matter or greater, use the highest recommended rate (broadleaf weed control may not be adequate)

## **POTATOES**

### **MANITOBA, SASKATCHEWAN, ALBERTA,**

### **AND INTERIOR BRITISH COLUMBIA (INCLUDING THE PEACE RIVER REGION)**

- Apply specified dosage as postemergence broadcast spray or preplant incorporated in 100 to 300 L of water per hectare.
- Do not use on the varieties Belleisle or Tobique.

- Consult your chemical dealer, UPL NA Inc. representative or your seed supplier for information on the tolerance of newly released potato varieties, prior to Metribuzin 75DF Herbicide use.
- Do not harvest within 60 days of application.
- FOR ADDITIONAL USES IN ALBERTA UNDER IRRIGATION AND IN COASTAL BRITISH COLUMBIA, SEE THE EASTERN CANADA POTATO SECTION OF THIS LABEL.

### **METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES**

Refer to the other product label for pertinent recommendations, directions for use, restrictions, precautions, and any additional weeds not specified on this label. Unless prohibited on this or other product labels, apply as a broadcast or band application.

#### **Metribuzin 75DF Herbicide Alone or in Tank-Mixes: Postemergence Application<sup>1</sup>**

<b>Weeds controlled</b>	<b>Products</b>	<b>Rates per hectare</b>
Annual broadleaf weeds less than 4 cm in height	Metribuzin 75DF Herbicide	375 g
Above plus green foxtail	Metribuzin 75DF Herbicide Plus Prism <sup>2</sup>	280 - 375 g <sup>3</sup> 60 g

1. Do not use postemergence on varieties Atlantic, Eramosa, red-skinned or any early maturing varieties
2. Prism Herbicide must be applied with a recommended non-ionic surfactant, i.e. Citowett Plus, Agral 90 or Agsurf at 2 L per 1000 L of spray solution (0.2% v/v).
3. The application rate of Metribuzin 75DF Herbicide at 375 g per hectare should be used under conditions of heavy weed infestation.

#### **Metribuzin 75DF Tank-Mixes: Preplant Incorporated<sup>1</sup>**

<b>Weeds controlled</b>	<b>Products</b>	<b>Rates per hectare</b>
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide plus Eptam Liquid EC Herbicide	375 - 550 g
		4.25 - 5.5 L

1. Do not use on soils with greater than 7% organic matter.

### **POTATOES - SPRINKLER IRRIGATION APPLICATION**

#### **MANITOBA, SASKATCHEWAN, ALBERTA, AND INTERIOR BRITISH COLUMBIA (INCLUDING THE PEACE RIVER REGION)**

Metribuzin 75DF Herbicide and Eptam Liquid EC Herbicide are recommended for application preemergence through sprinkler irrigation equipment to potatoes as directed on this label. Refer to the crop sections of this label for recommended rates, weeds controlled or suppressed, restrictions and special precautions.

Apply this product only through sprinkler (including centre pivot, lateral move, or solid set) irrigation systems, equipped with low pressure nozzles. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

## CALIBRATION: (Centre Pivot and Self-Propelled Lateral Move Systems)

Sprinkler irrigation systems must deliver a uniform application of water and be accurately calibrated for application of Metribuzin 75DF Herbicide. Greater accuracy in calibration (and distribution) will be achieved by injecting a larger volume of more dilute mixture of product and water per hour. Follow the steps below to calibrate centre pivot and lateral move systems:

1. Determine number of minutes required to make one complete revolution while applying 6 to 19 mm of water per hectare.
2. With the system at operating pressure determine the exact number of minutes required to inject 3.8 litres of water.
3. Divide the time required for one revolution (step 1) by the time required to inject 3.8 litres (step 2) and multiply by 3.8. This gives total litres of product-water mixture to be added to nurse tank.
4. Add required amount of water to nurse tank and start the agitation system. Then add sufficient Metribuzin 75DF Herbicide at the recommended rate (See RECOMMENDED BROADCAST APPLICATION) to the nurse tank.

EXAMPLE: If 20 hours (1200 minutes) were required for one revolution and if 2 minutes were required to inject 3.8 litres then a total of 2280 litres of product-water mixture are required  $[(1200 \div 2) \times 3.8 = 2280]$ ; to treat 55 ha at 0.75 kg/ha, 41.25 kg of Metribuzin 75DF Herbicide is required.

Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water system are in place.

A person knowledgeable of the irrigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

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.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the 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.

Do not apply when wind speed favours drift beyond the area intended for treatment.

Maintain continuous agitation in the injection nurse tanks during the Herbicide application, sufficient to keep the Herbicide in suspension.

Application of more than the quantity of irrigation water recommended on this label may result in decreased product performance by removing the chemical from the zone of effectiveness. Where



sprinkler distribution patterns do not overlap sufficiently unacceptable weed control may result. Where sprinkler distribution patterns overlap excessively, crop injury may result. Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water. To insure that all lines are flushed and free of remaining pesticide, an indicator dye may be injected into the lines to mark the end of the application period.

Use a minimum of 1 part water to 1 part Herbicide for injection. The use of a larger volume of water will insure greater accuracy and more uniform distribution. The run off water (tail water) from sprinkler irrigation should be recirculated.

**Metribuzin 75DF Herbicide Plus Eptam Liquid EC Herbicide Tank-Mix<sup>1</sup>:  
Preemergence Through Sprinkler Irrigation System:**

Weeds controlled	Products	Rates per hectare
Annual grasses and broadleaf weeds	Metribuzin 75DF Herbicide plus Eptam Liquid EC Herbicide	375 - 750 g
		4.25 - 5.5 L
REMARKS: PREEMERGENCE IN SPRINKLER IRRIGATION: Apply specified dosage in 8 to 19 mm of water per hectare as a continuous injection in centre pivot systems, or in the last 15 to 30 minutes of set in permanent solid set sprinkler systems or self-propelled wheel move systems. On sandy soil apply in 8 to 12 mm of water and use the lower rate of Metribuzin 75DF Herbicide and Eptam Liquid EC Herbicide. Apply preemergence to crop and weeds. Use the higher rate for control of grass weeds or when broadleaf weeds are dense. Do not harvest within 60 days of application.		

1. Do not use on the varieties Belleisle or Tobique.

**ASPARAGUS - WESTERN CANADA**

- SEE ASPARAGUS RECOMMENDATIONS IN THE EASTERN CANADA SECTION OF THIS LABEL.

**SHELTERBELTS - WESTERN CANADA**

- Apply specified dosage as preplant incorporated broadcast spray in at least 100 L to 225 L of water per hectare.
- Do not apply more than once per season.
- Do not use on soils with less than 5% organic matter.
- On soils with 10% organic matter and higher, broadleaf weed control will not be adequate.
- Seedling disease, cold weather, deep planting, excessive moisture, high soil pH (above 7.5), high salt concentration, or drought may weaken seedlings and increase the possibility of damage from METRIBUZIN 75DF Herbicide and Treflan E.C. Herbicide.

**METRIBUZIN 75DF HERBICIDE IN COMBINATION WITH OTHER HERBICIDES**

Refer to the other product label for pertinent recommendations, directions for use, restrictions, and precautions.

Unless prohibited on this or other product labels, apply as a broadcast application.

**Metribuzin 75DF Herbicide Tank-Mixes:  
Preplant Incorporated (Spring application)**

<b>Crops</b>	<b>Products</b>	<b>Rates per hectare</b>
Shelterbelt Species: Green ash Caragana Chokecherry Villosa lilac Poplar Saskatoon berry Sea-buckthorn	Metribuzin 75DF Herbicide plus Treflan E.C. (480 g/L)	400 g 5.2 L

All other products listed are registered trademarks or trademarks of their respective companies.

{Booklet Label}

GROUP	14	HERBICIDE
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**Valtera™ Herbicide**

HERBICIDE  
Water Dispersible Granules  
COMMERCIAL

Preemergence weed control in soybean, field corn, spring wheat, chickpea, field pea, lentils [small red and large green varieties], sunflowers, established alfalfa grown for seed and to maintain bare ground non-crop areas, including bare ground non-crop areas on farms. Also for harvest aid for dried shelled pea and bean (except soybean) and wheat.

ACTIVE INGREDIENT:	
Flumioxazin.....	51.1%

**READ THE LABEL BEFORE USE**

Warning: This product contains the allergen sulfite.

REGISTRATION NO.: 29230  
PEST CONTROL PRODUCTS ACT



**CAUTION - POISON**

**Net Contents: 2.27 kg**

Valent Canada, Inc.  
201-230 Hanlon Creek Blvd.  
Guelph, Ontario, Canada  
N1C 0A1  
(519)-767-9262  
www.valent.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.

## FIRST AID

- 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.
- 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.

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

***IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL OR POISONING CALL  
1-800-682-5368***

## TOXICOLOGICAL INFORMATION

There is no specific antidote for this product. Apply symptomatic therapy.

## PRECAUTIONS

**KEEP OUT OF REACH OF CHILDREN.** Avoid breathing dust and spray mist. Avoid contact with skin, eyes or clothing. Harmful if inhaled.

Wear protective goggles or face-shield when handling the concentrated product. Do not eat, drink or smoke during work. Wash hands and face thoroughly before eating, drinking, smoking, chewing gum, or using the toilet. Immediately wash off accidental splashes of the concentrate or spray mixture from skin, clothing and out of eyes. Remove clothing immediately if pesticide gets inside. Wash thoroughly and put on clean clothing. After

work, change clothing and wash entire body thoroughly. Wash contaminated working clothes separately from other laundry before reuse.

Follow mixer/loader and applicator scenario, as appropriate in the chart below. In addition, wear coveralls over long-sleeved shirt and long pants, chemical-resistant gloves, socks and shoes, goggles or face-shield, during clean-up and repair activities.

Equipment	Personal Protective Equipment		Maximum amount of product handled per day
	Mixer/Loader	Applicator	
Groundboom	Chemical-resistant coveralls over long sleeved shirt and long pants, chemical-resistant gloves, socks and shoes, and goggles or faceshield	<b>Open cab:</b> coveralls over long-sleeved shirt, long pants, socks and shoes, and chemical-resistant gloves, and respirator with a NIOSH approved organic-vapour-removing cartridge with a prefilter approved for pesticides, or a NIOSH approved canister approved for pesticides	43 kg
		<b>Closed cab:</b> long-sleeved shirt, long pants, socks and shoes. (No gloves are required, but must be available for maintenance activities)	
Right-of-Way sprayer	Chemical-resistant coveralls over long-sleeved shirt and long pants, chemical-resistant gloves, socks and shoes. Mixers and loaders must also wear goggles or faceshield.		7.0 kg
Backpack or High-pressure handwand equipment	Coveralls over long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes, and respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides, or a NIOSH-approved canister approved for pesticides. Mixers and loaders must also wear goggles or faceshield.		1.2 kg
Low-pressure Hand-held Equipment			0.315 kg

Do not apply when weather conditions favour spray drift from treated areas. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Keep all unprotected persons out of operating areas, or vicinity where there may be drift. Only protected handlers may be in the area during application.

Application is limited to non-residential areas only when there is low risk of drift to areas of human habitation or activity such as houses, cottages, schools and recreational areas,

taking into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

Do not enter or allow entry into treated areas until the sprays have dried in non-crop bare ground use areas. Do not enter or allow worker entry into treated areas until the restricted entry interval of 12 hours for all crop uses.

Do not apply to fine-textured soils.

Pregrazing Intervals:

Following treatment with Valtera Herbicide, follow these grazing restrictions:

For field corn:

- DO NOT permit livestock to graze fields within 93 days after application.
- DO NOT harvest as green feed or silage within 93 days after application.

For soybeans:

- DO NOT harvest as green feed or permit livestock to graze fields within 21 days after application.
- DO NOT cut hay/fodder within 50 days after application.

For wheat:

- DO NOT harvest as green feed or permit livestock to graze fields within 26 days after application.
- DO NOT cut hay/fodder within 52 days after application.

For all other crops:

- DO NOT graze, cut or feed treated crops to livestock.

Do not apply to farm alleys or roads where traffic may result in treated dust settling onto crops or other desirable vegetation.

Do not apply within 100 metres of non-dormant pears.

Do not apply to powdery soils or soils that are susceptible to wind displacement unless irrigation can be applied immediately after application.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., contact Valent Canada, Inc.

Read and understand the entire label before opening this product. If you have any questions, call the manufacturer at 1-800-682-5368 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:

#### **ENVIRONMENTAL PRECAUTIONS**

This product is toxic to aquatic organisms and non-target terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE. Toxic to small wild mammals. Toxic to certain beneficial insects. Minimize spray drift to reduce harmful effects on beneficial insects in habitats next to the application site such as hedgerows and woodland.

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

## **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 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.

## **STORAGE**

Do not contaminate water, food or feed by storage. Keep pesticide in original container. Store in a cool, dry, secure place. Do not put formulation or dilute spray solution into food or drink containers. Do not store or transport near feed or food. Not for use or storage in or around the home. To prevent contamination, store this product away from food or feed.

## **RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management Valtera Herbicide contains a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to Valtera Herbicide and other Group 14 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 Valtera Herbicide or other Group 14 herbicides within a growing season (sequence) or among growing seasons with different herbicide groups that control the same weeds in the 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), cultural (for example, higher

crop seeding rates; precision fertilizer application method and timing to favour the crop and not the weeds), biological biological (weed-competitive crops or varieties) and other chemical control practices.

- Monitor treated weed populations for 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 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 advisor for any additional pesticide resistance-management and/or or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information and to report suspected resistance, contact Valent Canada, Inc. at 1-800-682-5368 or at [www.valent.ca](http://www.valent.ca).

## GENERAL INFORMATION

Valtera Herbicide provides residual control of susceptible weeds in soybean, field corn, spring wheat, chickpea, field pea, lentils [small red and large green varieties], sunflowers, established alfalfa grown for seed and to maintain bare ground non-crop areas on farms when used in accordance with this label. It also may be used as a harvest aid for crop subgroup 6C dried shelled pea and bean (including bean (*Lupinus* spp.), bean (*Phaseolus* spp.), bean (*Vigna* spp.), broad bean [fava bean], chickpea, guar, lablab bean), lentil, pea (*Pisum* spp.), pigeon pea (excluding soybean) and wheat. Valtera Herbicide is effective as a preemergence herbicide, for control of selected grass and broadleaf weeds. Valtera Herbicide controls weeds by inhibiting protoporphyrinogen oxidase, an essential enzyme required by plants for chlorophyll biosynthesis. Seedling weeds are controlled preemergence when exposed to sunlight following contact with the soil applied herbicide. Preemergence weed control with Valtera Herbicide is most effective when applied to clean, weed-free soil surfaces. Disturbing soil surfaces may reduce herbicide efficacy.

Valtera Herbicide offers residual control of susceptible grass and broadleaf weeds listed on this label and assists in the control of acetolactate synthase (ALS) resistant weeds. The length of residual control is dependent on the application rate as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase and on soils of high organic matter and/or high clay content.

Always read and follow label directions for all tank mix products before using. The most restrictive labeling of any tank mix partner must be followed.

### Rotational Restrictions

The following rotational crops may be planted after applying Valtera Herbicide at the listed rate. Planting earlier than the recommended rotational interval may result in crop injury.

Valtera Herbicide Rate	Crop	Rotational Interval



105-140 g/ha (for harvest aid use on Dried Shelled Pea and Bean (except soybean))	Winter wheat	7 days
140 g/ha	Soybean, field corn, chickpea, field pea	Immediately
	Sunflowers	30 days
	Spring Wheat, Lentils [small red and large green varieties]	7 days
	Durum Wheat	30 days
	Winter wheat	4 months
	Sorghum, dry common beans <sup>1</sup> , and Canola	9 months
	Alfalfa and barley	11 months
	All other crops not listed <sup>2</sup>	12 months
210 g/ha	Soybean, field corn, chickpea, field pea	Immediately
	Sunflowers	2 months
	Spring Wheat	7 days
	Winter wheat	4 months
	Lentils [small red and large green varieties]	6 months
	Sorghum, dry common beans <sup>1</sup>	9 months
	Alfalfa, barley, and canola	11 months
	All other crops not listed <sup>2</sup>	12 months

<sup>1</sup> Common bean varieties vary in their tolerance to herbicides, including to Valtera Herbicide. Since not all common bean varieties grown as rotational crops have been tested for tolerance to Valtera Herbicide, first seeding common bean varieties to the field previously treated with Valtera Herbicide should be limited to a small area to confirm tolerance prior to adoption as a general field practice. Additionally, consult your seed supplier for information on the tolerance of specific varieties of common bean as a rotational crop seeded to field treated with Valtera Herbicide.

<sup>2</sup> Successful soil bioassay must be performed prior to planting crops not listed.

## GENERAL DIRECTIONS FOR USE

### SPRAYER AND APPLICATION INFORMATION

Apply using ground application equipment only. Before applying Valtera Herbicide, start with clean, well maintained application equipment. Nozzles should be uniformly spaced on boom and frequently checked for accuracy. For broadcast application, apply Valtera Herbicide with ground equipment using standard commercial sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume. When banding, use proportionately less water and Valtera Herbicide per hectare.

Equipment with Valtera Herbicide residues remaining in the system may result in crop injury to the subsequently treated crop. Spray equipment used to apply Valtera Herbicide should not be used to apply other materials to any plant foliage. Spray equipment must be cleaned each day following Valtera Herbicide application. After Valtera Herbicide is applied, the following steps must be used to clean the spray equipment:

1. Completely drain the spray tank, rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens. Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.
2. Top off tank, add 4 L of 3% household ammonia for every 400 L of water, circulate through sprayer for 5 minutes, and then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes.
3. Drain tank completely.
4. Add enough clean water to the spray tank to allow all hoses, booms, screens and nozzles to be flushed for 3 minutes.
5. Remove all nozzles and screens and rinse them with clean water.
6. Do not contaminate water, food or feed by cleaning of equipment.

### **MIXING INSTRUCTIONS**

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water. Engage gentle agitation.
2. While agitating, slowly add Valtera Herbicide to the spray tank. Agitation should create a rippling or rolling action on the water surface.
3. If tank mixing Valtera Herbicide with other labelled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
4. Add adjuvants or surfactants, if recommended.
5. Fill spray tank to desired level with water. **Agitation should continue until spray solution has been applied.**
6. Mix only the amount of spray solution that can be applied the day of mixing. Valtera Herbicide should be applied within 6 hours of mixing.

As this pesticide is not registered for the control of pests in aquatic systems, **DO NOT** use to control aquatic pests.

**DO NOT** contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

Field sprayer application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) medium classification. Boom height must be 60 cm or less above the crop or ground.

**DO NOT** apply using aerial application equipment.

Use caution when applying under circumstances where possible drift to unprotected persons or food, forage or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption can occur.

Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much pressure.

Make application when the wind velocity favours on-target product deposition.

Do not make applications during temperature inversions. Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures.

All ground application equipment must be properly maintained and calibrated using appropriate carriers.

### **BUFFER ZONES:**

Use of the following spray methods or equipment **DO NOT** require a buffer zone: hand-held or backpack sprayer and spot treatment, or low-clearance hooded or shielded sprayers that ensure spray drift does not come in contact with orchard crop fruit or foliage.

For application to rights-of-way, buffer zones for protection of sensitive terrestrial habitats are not required; however, the best available application strategies which 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 terrestrial and 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.

Method of application	Crop	Buffer Zones (metres) Required for the Protection of:				
		Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:		Terrestrial habitat
		Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m	
Field sprayer	Dry beans	2	1	0	0	5
	Soybean, field corn, spring wheat, Crop Subgroup 6C (Dried Shelled Pea and Bean (except soybean)), Sunflowers	3	1	1	0	10
	Bare ground, non-crop uses	5	2	1	1	25*
	Established alfalfa for seed production	4	2	1	0	15

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

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) 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.

**The spray drift buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Buffer Zone Calculator on the Pest Management Regulatory Agency web site.**

#### **DIRECTIONS FOR USE IN SOYBEAN**

Valtera Herbicide offers residual control of susceptible broadleaf and grass weeds listed on this label and assists in the control of acetolactate synthase (ALS) resistant weeds. The length of residual control is dependent on the application rate as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase and on soils of high organic matter and/or high clay content.

Crop injury may occur from applications made to poorly drained soil and/or applications made under cool, wet conditions. Severe crop injury will result when soils are flooded following applications of Valtera Herbicide. Risk of crop injury can be minimized by using on well drained soils, planting at least 4 cm deep, using high quality seed and completely covering seeds with soil prior to preemergence applications. Treated soil that is splashed onto newly emerged crops may result in temporary crop injury.

Moisture is necessary to activate Valtera Herbicide in soil for residual weed control. Dry weather following applications of Valtera Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, Valtera Herbicide will control susceptible germinating weeds. Valtera Herbicide may not control weeds that germinate after application but before an activating rainfall/irrigation or weeds that germinate through cracks resulting from dry soil.

When adequate moisture is not received after a Valtera Herbicide application, weed control may be improved by irrigation with at least ½ to 1 cm of water. Weed control will be reduced if there is mechanical incorporation into the soil or if emerged weeds are controlled by cultivation.

If the crop treated with Valtera Herbicide is lost due to a catastrophe, such as hail or other forms of inclement weather, soybeans can be replanted immediately, provided no more than 210 g/ha of Valtera Herbicide was used on the lost crop. Crop injury may occur if these restrictions are not followed.

No-till planters that incorporate the soil during planting may result in decreased weed control in the row. When these types of planters are used, apply Valtera Herbicide within 3 days of planting and before soybeans emerge.

Do not perform any tillage operations after application or weed control will be reduced.

Apply only once during a single growing season.

### APPLICATION TIMING

Valtera Herbicide provides preemergence control of susceptible weeds in soybeans. Apply Valtera Herbicide with ground equipment before planting, during planting, or after planting, but before the crop emerges. DO NOT apply using aerial application equipment. Apply using ground application equipment only.

### Preemergence Applications

Valtera Herbicide may be applied to soybeans prior to planting or within 3 days after planting and prior to soybean emergence. Application after the soybeans have begun to crack, or are emerged, will result in severe crop injury. At an application rate of 210 g/ha of Valtera Herbicide on medium-textured soils, soybean crop injury may be observed following application.

### Burndown Applications (Spring and Fall)

Valtera Herbicide, applied as part of a burndown program, may be used for residual weed control where soybeans will be planted directly into a stale seedbed, cover crop, or in previous crop residues. For control of emerged weeds, tank mix with glyphosate, present as the isopropyl amine or potassium salt. Reduced weed control may occur when burndown applications are made to fields where heavy crop and/or weed residue exist.

### Tank Mix Restrictions

Do not tank mix Valtera Herbicide, or use in the same field, with flufenacet, metolachlor or s-metolachlor, dimethanamid or dimethanamid-p, alachlor, or acetochlor, as soybean injury may occur.

SOYBEAN– Application Rates and Weed Claims			
WEEDS CONTROLLED	Soil Type <sup>1</sup>	RATE (g/ha)	COMMENTS
Redroot pigweed ( <i>Amaranthus retroflexus</i> ) Green pigweed ( <i>Amaranthus powellii</i> ) Common ragweed ( <i>Ambrosia artemisiifolia</i> ) Common lamb's-quarters ( <i>Chenopodium album</i> ) Hairy nightshade ( <i>Solanum sarachoides</i> ) Dandelion ( <i>Taraxacum officinale</i> ) Eastern black nightshade ( <i>Solanum ptycanthum</i> ) Kochia ( <i>Kochia scoparia</i> ) including Group 2, 4, and 9 resistant kochia Canada fleabane ( <i>Conyza canadensis</i> ) Common chickweed ( <i>Stellaria media</i> ) Palmer amaranth ( <i>Amaranthus palmeri</i> ) Waterhemp, including biotypes resistant to herbicide groups 2, 5 and 9	Coarse-textured, with <5% organic matter	140	Preemergence: Apply prior to weed emergence.
	Medium-textured, with <5% organic matter	210	Postemergence: When weeds are already emerged, apply Valtera Herbicide as a tank mix <sup>2</sup> with a glyphosate product, present as isopropyl amine or potassium salt, at 1.2 kg a.i./ha.
<i>Suppression only:</i> Green foxtail ( <i>Setaria viridis</i> )			

Volunteer canola ( <i>Brassica napus</i> ) including glyphosate, glufosinate and imidazolinone tolerant varieties			
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<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

## **DIRECTIONS FOR USE IN FIELD CORN (minimum and no-till)**

Valtera Herbicide offers residual control of susceptible broadleaf and grass weeds listed on this label and assists in the control of acetolactate synthase (ALS) resistant weeds. The length of residual control is dependent on the application rate as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase and on soils of high organic matter and/or high clay content.

Use only on no-till or minimum tillage fields where last year's crop residue has not been incorporated into the soil. Crop injury may occur from applications made to poorly drained soil and/or applications made under cool, wet conditions. Severe crop injury will result when soils are flooded following applications of Valtera Herbicide.

Moisture is necessary to activate Valtera Herbicide in soil for residual weed control. Dry weather following applications of Valtera Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, Valtera Herbicide will control susceptible germinating weeds. Valtera Herbicide may not control weeds that germinate after application but before an activating rainfall/irrigation or weeds that germinate through cracks resulting from dry soil.

When adequate moisture is not received after a Valtera Herbicide application, weed control may be improved by irrigation with at least ½-1 cm of water. Do not irrigate when corn is emerging to 2-leaf.

Weed control will be reduced if there is mechanical incorporation into the soil or if emerged weeds are controlled by cultivation. Do not perform any tillage operations after application or weed control will be reduced. No-till planters that incorporate the soil during planting may result in decreased weed control in the row.

Apply only once during a single growing season.

### **APPLICATION TIMING**

#### **Preemergence Applications**

Valtera Herbicide provides preemergence control of susceptible weeds in field corn. Apply Valtera Herbicide with ground equipment between 7 and 30 days prior to planting field corn into no-till or minimum tillage fields.

#### **Burndown Applications (Spring and Fall)**

Valtera Herbicide, applied as part of a burndown program, may be used for residual weed control where field corn will be planted directly into previous crop residues. For control of emerged weeds, tank mix with glyphosate, present as isopropyl amine or potassium salt. Reduced weed control may occur when burndown applications are made to fields where heavy crop and/or weed residue exist.

DO NOT apply using aerial application equipment. Use ground application equipment only.

<b>FIELD CORN – Application Rates and Weed Claims</b>			
<b>WEEDS CONTROLLED</b>	<b>Soil Type<sup>1</sup></b>	<b>RATE (g/ha)</b>	<b>COMMENTS</b>
Redroot pigweed ( <i>Amaranthus retroflexus</i> ) Green pigweed ( <i>Amaranthus powellii</i> ) Common ragweed ( <i>Ambrosia artemisiifolia</i> ) Common lamb's-quarters ( <i>Chenopodium album</i> ) Hairy nightshade ( <i>Solanum sarachoides</i> ) Dandelion ( <i>Taraxacum officinale</i> ) Eastern black nightshade ( <i>Solanum ptycanthum</i> ) Kochia ( <i>Kochia scoparia</i> ) including Group 2, 4, and 9 resistant kochia  Canada fleabane ( <i>Conyza canadensis</i> ) Common chickweed ( <i>Stellaria media</i> ) Palmer amaranth ( <i>Amaranthus palmeri</i> ) Waterhemp, including biotypes resistant to herbicide groups 2, 5 and 9  <i>Suppression only:</i> Green foxtail ( <i>Setaria viridis</i> ) Volunteer canola ( <i>Brassica napus</i> ) including glyphosate, glufosinate and imidazolinone tolerant varieties	Coarse-textured, with <5% organic matter	140	Preemergence: Apply prior to weed emergence between 7 and 30 days prior to planting field corn into no-till or minimum tillage fields.  Postemergence: When weeds are already emerged, apply Valtera Herbicide as a tank mix <sup>2</sup> with a glyphosate product, present as isopropyl amine or potassium salt, at 1.2 kg a.i./ha.
	Medium-textured, with <5% organic matter	210	

<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

### **DIRECTIONS FOR USE IN SPRING WHEAT (minimum and no-till)**

Valtera Herbicide offers residual control of susceptible broadleaf and grass weeds listed on this label and assists in the control of acetolactate synthase (ALS) resistant weeds. The length of residual control is dependent on the application rate as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase and on soils of high organic matter and/or high clay content.

Use only on no-till or minimum tillage fields where last year's crop residue has not been incorporated into the soil. Crop injury may occur from applications made to poorly drained soil and/or applications made under cool, wet conditions. Severe crop injury will result when soils are flooded following applications of Valtera Herbicide.

Moisture is necessary to activate Valtera Herbicide in soil for residual weed control. Dry weather following applications of Valtera Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, Valtera Herbicide will control susceptible germinating weeds. Valtera Herbicide may not control weeds that germinate

after application but before an activating rainfall/irrigation or weeds that germinate through cracks resulting from dry soil.

When adequate moisture is not received after a Valtera Herbicide application, weed control may be improved by irrigation with at least ½ to 1 cm of water. Do not irrigate spring wheat between emergence and spike.

Weed control will be reduced if there is mechanical incorporation into the soil or if emerged weeds are controlled by cultivation. Do not perform any tillage operations after application or weed control will be reduced. No-till planters that incorporate the soil during planting may result in decreased weed control in the row.

Apply only once during a single growing season.

### APPLICATION TIMING

#### Preemergence Applications (Spring)

Valtera Herbicide provides preemergence control of susceptible weeds in spring wheat. Apply Valtera Herbicide with ground equipment at minimum 7 days prior to planting spring wheat into no-till or minimum tillage fields. Wheat must be planted a minimum of 2.5 cm (1 inch) deep to ensure crop safety. Do not plant Durum wheat within 30 days of an application of Valtera Herbicide.

#### Burndown Applications (Spring and Fall)

Valtera Herbicide, applied as part of a burndown program, may be used for residual weed control where spring wheat will be planted directly into previous crop residues. For control of emerged weeds, tank mix with glyphosate, present as isopropyl amine or potassium salt. Reduced weed control may occur when burndown applications are made to fields where heavy crop and/or weed residue exist.

For fall burndown: Application should be made in the fall, just before freeze-up and when winter annuals and perennial weeds are still growing to allow for optimum herbicide absorption and activity. Applications made after a killing frost will result in reduced perennial and winter annual weed control. Do not apply to snow covered or frozen soil. Abnormally warm winters may reduce the length of weed control observed in the spring.

DO NOT apply using aerial application equipment. Use ground application equipment only.

<b>SPRING WHEAT – Application Rates and Weed Claims for FALL APPLICATION</b>			
<b>WEEDS CONTROLLED</b>	<b>Soil Type<sup>1</sup></b>	<b>RATE (g/ha)</b>	<b>COMMENTS</b>
Redroot pigweed ( <i>Amaranthus retroflexus</i> ) Green pigweed ( <i>Amaranthus powellii</i> ) Common ragweed ( <i>Ambrosia artemisiifolia</i> ) Common lamb's-quarters ( <i>Chenopodium album</i> )	Coarse-textured, with <5% organic matter	140	Preemergence: Apply prior to weed emergence in the fall. The following spring, plant spring wheat into no-till or minimum tillage fields.
Hairy nightshade ( <i>Solanum sarachoides</i> ) Dandelion ( <i>Taraxacum officinale</i> ) Eastern black nightshade ( <i>Solanum ptycanthum</i> ) Kochia ( <i>Kochia scoparia</i> ) including Group 2, 4, and 9 resistant kochia	Medium-textured, with <5% organic matter	210	



<p>Canada fleabane (<i>Conyza canadensis</i>)  Common chickweed (<i>Stellaria media</i>)  Palmer amaranth (<i>Amaranthus palmeri</i>)  Waterhemp, including biotypes resistant to herbicide groups 2, 5 and 9</p> <p><i>Suppression only:</i>  Green foxtail (<i>Setaria viridis</i>)  Volunteer canola (<i>Brassica napus</i>) including glyphosate, glufosinate and imidazolinone tolerant varieties</p>			<p>Postemergence:  When weeds are already emerged, apply Valtera Herbicide as a tank mix<sup>2</sup> with a glyphosate product, present as isopropyl amine or potassium salt, at 1.2 kg a.i./ha.</p>
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<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

<b>SPRING WHEAT – Application Rates and Weed Claims for SPRING APPLICATION</b>			
<b>WEEDS CONTROLLED</b>	<b>Soil Type<sup>1</sup></b>	<b>RATE<sup>2</sup> (g/ha)</b>	<b>COMMENTS</b>
<p>Redroot pigweed (<i>Amaranthus retroflexus</i>)  Green pigweed (<i>Amaranthus powellii</i>)  Common ragweed (<i>Ambrosia artemisiifolia</i>)  Common lamb’s-quarters (<i>Chenopodium album</i>)  Hairy nightshade (<i>Solanum sarachoides</i>)  Dandelion (<i>Taraxacum officinale</i>)  Eastern black nightshade (<i>Solanum ptycanthum</i>)  Kochia (<i>Kochia scoparia</i>) including Group 2, 4, and 9 resistant kochia</p> <p>Canada fleabane (<i>Conyza canadensis</i>)  Common chickweed (<i>Stellaria media</i>)  Palmer amaranth (<i>Amaranthus palmeri</i>)  Waterhemp, including biotypes resistant to herbicide groups 2, 5 and 9</p> <p><i>Suppression only:</i>  Green foxtail (<i>Setaria viridis</i>)  Volunteer canola (<i>Brassica napus</i>) including glyphosate, glufosinate and imidazolinone tolerant varieties</p>	Coarse-textured and medium-textured soil, with <5% organic matter	140	<p>Preemergence:  Apply prior to weed emergence, and at minimum 7 days prior to planting spring wheat into no-till or minimum tillage fields.</p> <p>Postemergence:  When weeds are already emerged, apply Valtera Herbicide as a tank mix<sup>3</sup> with a glyphosate product, present as isopropyl amine or potassium salt, at 1.2 kg a.i./ha.</p>

<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: The duration of residual control may be reduced with 140 g/ha in medium textured soils <5% in OM.

<sup>3</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

**DIRECTIONS FOR USE IN FIELD PEA**

Valtera Herbicide offers residual control of susceptible broadleaf and grass weeds listed on this label and assists in the control of acetolactate synthase (ALS) resistant weeds.. The length of residual control is dependent on the application rate as well as on rainfall and

temperature conditions. Length of residual control will decrease as temperature and precipitation increase and on soils of high organic matter and/or high clay content.

Moisture is necessary to activate Valtera Herbicide in soil for residual weed control. Dry weather following applications of Valtera Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, Valtera Herbicide will control susceptible germinating weeds. Valtera Herbicide may not control weeds that germinate after application but before an activating rainfall/irrigation or plants that germinate through cracks resulting from dry soil.

When adequate moisture is not received after a Valtera Herbicide application, weed control may be improved by irrigation with at least ½ to 1 cm of water. Control will be reduced if there is mechanical incorporation into the soil or if emerged weeds are controlled by cultivation.

Do not perform any tillage operations after application or weed control will be reduced.

Apply only once during a single growing season.

DO NOT apply using aerial application equipment. Apply using ground application equipment only.

### **APPLICATION TIMING**

#### **Preemergence Applications (spring)**

Valtera Herbicide provides preemergence control of susceptible weeds in field pea. Apply Valtera Herbicide with ground equipment prior to planting or within 3 days after planting and prior to emergence. Application after the field peas have begun to crack, or are emerged, will result in severe crop injury.

#### **Burndown Applications (Spring and Fall)**

Valtera Herbicide, applied as part of a burndown program, may be used for residual weed control where field pea will be planted directly into previous crop residues. For control of emerged weeds, tank mix with glyphosate, present as isopropyl amine or potassium salt. Reduced weed control may occur when burndown applications are made to fields where heavy crop and/or weed residue exist.

For fall burndown: Application should be made in the fall, just before freeze-up and when winter annuals and perennial weeds are still growing to allow for optimum herbicide absorption and activity. Applications made after a killing frost will result in reduced perennial and winter annual weed control. Do not apply to snow covered or frozen soil. Abnormally warm winters may reduce the length of weed control observed in the spring.

<b>FIELD PEA – Application Rates and Weed Claims for FALL APPLICATIONS</b>			
<b>WEEDS CONTROLLED</b>	<b>Soil Type<sup>1</sup></b>	<b>RATE (g/ha)</b>	<b>COMMENTS</b>
Redroot pigweed ( <i>Amaranthus retroflexus</i> ) Green pigweed ( <i>Amaranthus powellii</i> ) Common ragweed ( <i>Ambrosia artemisiifolia</i> ) Common lamb's-quarters ( <i>Chenopodium album</i> )	Coarse- textured, with <5% organic matter	140	Preemergence: Apply prior to weed emergence.
	Medium- textured, with	210	Postemergence:

<p>Hairy nightshade (<i>Solanum sarachoides</i>)  Dandelion (<i>Taraxacum officinale</i>)  Eastern black nightshade (<i>Solanum ptycanthum</i>)  Kochia (<i>Kochia scoparia</i>) including Group 2, 4, and 9 resistant kochia</p> <p>Canada fleabane (<i>Conyza canadensis</i>)  Common chickweed (<i>Stellaria media</i>)  Palmer amaranth (<i>Amaranthus palmeri</i>)  Waterhemp, including biotypes resistant to herbicide groups 2, 5 and 9</p> <p><i>Suppression only:</i>  Green foxtail (<i>Setaria viridis</i>)  Volunteer canola (<i>Brassica napus</i>) including glyphosate, glufosinate and imidazolinone tolerant varieties</p>	<5% organic matter		<p>When weeds are already emerged, apply Valtera Herbicide as a tank mix<sup>2</sup> with a glyphosate product, present as potassium salt, at 900 g a.i./ha</p>
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<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

<b>FIELD PEA – Application Rates and Weed Claims for SPRING APPLICATION</b>			
<b>WEEDS CONTROLLED</b>	<b>Soil Type<sup>1</sup></b>	<b>RATE<sup>2</sup> (g/ha)</b>	<b>COMMENTS</b>
<p>Redroot pigweed (<i>Amaranthus retroflexus</i>)  Green pigweed (<i>Amaranthus powellii</i>)  Common ragweed (<i>Ambrosia artemisiifolia</i>)  Common lamb's-quarters (<i>Chenopodium album</i>)  Hairy nightshade (<i>Solanum sarachoides</i>)  Dandelion (<i>Taraxacum officinale</i>)  Eastern black nightshade (<i>Solanum ptycanthum</i>)  Kochia (<i>Kochia scoparia</i>) including Group 2, 4, and 9 resistant kochia</p> <p>Canada fleabane (<i>Conyza canadensis</i>)  Common chickweed (<i>Stellaria media</i>)</p> <p>Palmer amaranth (<i>Amaranthus palmeri</i>)  Waterhemp, including biotypes resistant to herbicide groups 2, 5 and 9</p> <p><i>Suppression only:</i>  Green foxtail (<i>Setaria viridis</i>)  Volunteer canola (<i>Brassica napus</i>) including glyphosate, glufosinate and imidazolinone tolerant varieties</p>	Coarse-textured and Medium-textured, with <5% organic matter	140	<p>Preemergence:  Apply prior to weed emergence.</p> <p>Postemergence:  When weeds are already emerged, apply Valtera Herbicide as a tank mix<sup>3</sup> with a glyphosate product, present as potassium salt, at 900 g a.i./ha.</p>

<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: The duration of residual control may be reduced with 140 g/ha in medium textured soils <5% in OM.

<sup>3</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

## **DIRECTIONS FOR USE IN CHICKPEA**

Valtera Herbicide offers residual control of susceptible broadleaf and grass weeds listed on this label and assists in the control of acetolactate synthase (ALS) resistant weeds. The length of residual control is dependent on the application rate as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase and on soils of high organic matter and/or high clay content.

Moisture is necessary to activate Valtera Herbicide in soil for residual weed control. Dry weather following applications of Valtera Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, Valtera Herbicide will control susceptible germinating weeds. Valtera Herbicide may not control weeds that germinate after application but before an activating rainfall/irrigation or plants that germinate through cracks resulting from dry soil.

When adequate moisture is not received after a Valtera Herbicide application, weed control may be improved by irrigation with at least ½ to 1 cm of water. Control will be reduced if there is mechanical incorporation into the soil or if emerged weeds are controlled by cultivation.

Do not perform any tillage operations after application or weed control will be reduced.

Apply only once during a single growing season.

DO NOT apply using aerial application equipment. Apply using ground application equipment only.

### **APPLICATION TIMING**

#### **Preemergence Applications (Spring)**

Valtera Herbicide provides preemergence control of susceptible weeds in chickpea. Apply Valtera Herbicide with ground equipment prior to planting or within 3 days after planting and prior to emergence. Application after the chickpeas have begun to crack, or are emerged, will result in severe crop injury.

#### **Burndown Applications (Spring and Fall)**

Valtera Herbicide, applied as part of a burndown program, may be used for residual weed control where chickpeas will be planted directly into previous crop residues. For control of emerged weeds, tank mix with glyphosate, present as isopropyl amine or potassium salt. Reduced weed control may occur when burndown applications are made to fields where heavy crop and/or weed residue exist.

For fall burndown: Application should be made in the fall, just before freeze-up and when winter annuals and perennial weeds are still growing to allow for optimum herbicide absorption and activity. Applications made after a killing frost will result in reduced perennial and winter annual weed control. Do not apply to snow covered or frozen soil. Abnormally warm winters may reduce the length of weed control observed in the spring.

<b>CHICKPEA – Application Rates and Weed Claims for FALL APPLICATION</b>			
<b>WEEDS CONTROLLED</b>	<b>Soil Type<sup>1</sup></b>	<b>RATE (g/ha)</b>	<b>COMMENTS</b>
Redroot pigweed ( <i>Amaranthus retroflexus</i> ) Green pigweed ( <i>Amaranthus powellii</i> ) Common ragweed ( <i>Ambrosia artemisiifolia</i> ) Common lamb's-quarters ( <i>Chenopodium album</i> ) Hairy nightshade ( <i>Solanum sarachoides</i> ) Dandelion ( <i>Taraxacum officinale</i> ) Eastern black nightshade ( <i>Solanum ptycanthum</i> ) Kochia ( <i>Kochia scoparia</i> ) including Group 2, 4, and 9 resistant kochia  Canada fleabane ( <i>Conyza canadensis</i> ) Common chickweed ( <i>Stellaria media</i> ) Palmer amaranth ( <i>Amaranthus palmeri</i> ) Waterhemp, including biotypes resistant to herbicide groups 2, 5 and 9  <i>Suppression only:</i> Green foxtail ( <i>Setaria viridis</i> ) Volunteer canola ( <i>Brassica napus</i> ) including glyphosate, glufosinate and imidazolinone tolerant varieties	Coarse- textured, with <5% organic matter  Medium-textured, with <5% organic matter	140  210	Preemergence: Apply prior to weed emergence.  Postemergence: When weeds are already emerged, apply Valtera Herbicide as a tank mix <sup>2</sup> with a glyphosate product, present as isopropyl amine or potassium salt, at 1.2 kg a.i./ha.

<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

<b>CHICKPEA – Application Rates and Weed Claims for SPRING APPLICATION</b>			
<b>WEEDS CONTROLLED</b>	<b>Soil Type<sup>1</sup></b>	<b>RATE<sup>2</sup> (g/ha)</b>	<b>COMMENTS</b>

<p>Redroot pigweed (<i>Amaranthus retroflexus</i>)  Green pigweed (<i>Amaranthus powellii</i>)  Common ragweed (<i>Ambrosia artemisiifolia</i>)  Common lamb's-quarters (<i>Chenopodium album</i>)  Hairy nightshade (<i>Solanum sarachoides</i>)  Dandelion (<i>Taraxacum officinale</i>)  Eastern black nightshade (<i>Solanum ptycanthum</i>)  Kochia (<i>Kochia scoparia</i>) including Group 2, 4, and 9 resistant kochia</p> <p>Canada fleabane (<i>Conyza canadensis</i>)  Common chickweed (<i>Stellaria media</i>)  Palmer amaranth (<i>Amaranthus palmeri</i>)  Waterhemp, including biotypes resistant to herbicide groups 2, 5 and 9</p> <p><i>Suppression only:</i>  Green foxtail (<i>Setaria viridis</i>)  Volunteer canola (<i>Brassica napus</i>) including glyphosate, glufosinate and imidazolinone tolerant varieties</p>	<p>Coarse- textured and medium-textured, with &lt;5% organic matter</p>	<p>140</p>	<p>Preemergence:  Apply prior to weed emergence.</p> <p>Postemergence:  When weeds are already emerged, apply Valtera Herbicide as a tank mix<sup>3</sup> with a glyphosate product, present as isopropyl amine or potassium salt, at 1.2 kg a.i./ha.</p>
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<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: The duration of residual control may be reduced with 140 g/ha in medium textured soils <5% in OM.

<sup>3</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

**DIRECTIONS FOR USE IN LENTIL [Small Red and Large Green Varieties]**

Valtera Herbicide offers residual control of susceptible broadleaf and grass weeds listed on this label and assists in the control of acetolactate synthase (ALS) resistant weeds. The length of residual control is dependent on the application rate as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase and on soils of high organic matter and/or high clay content.

Moisture is necessary to activate Valtera Herbicide in soil for residual weed control. Dry weather following applications of Valtera Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, Valtera Herbicide will control susceptible germinating weeds. Valtera Herbicide may not control weeds that germinate after application but before an activating rainfall/irrigation or plants that germinate through cracks resulting from dry soil.

When adequate moisture is not received after a Valtera Herbicide application, weed control may be improved by irrigation with at least ½ to 1 cm of water. Control will be reduced if there is mechanical incorporation into the soil or if emerged weeds are controlled by cultivation.

Do not perform any tillage operations after application or weed control will be reduced.

Apply only once during a single growing season.

DO NOT apply using aerial application equipment. Apply using ground application equipment only.

## **APPLICATION TIMING**

### **Preemergence Applications (Spring )**

Valtera Herbicide preemergent application provides control of susceptible weeds in small red and large green varieties of lentils. Apply Valtera Herbicide with ground equipment as early in the season as possible, a minimum of 7 days prior to planting small red or large green lentil varieties into no-till or minimum tillage fields. Lentils must be planted a minimum of 2.5 cm (1 inch) deep to maximize crop safety. Receiving an activating rainfall or irrigating with at least 1 cm of water prior to seeding will help minimize the potential for crop injury.

Do not apply other residual herbicides with, before, or after applying Valtera Herbicide in the spring prior to seeding lentils, as crop injury may result. Areas of fields with combinations of low organic matter, high pH, and or high sand content may exhibit crop injury symptoms. The use of optimal agronomics to support plant establishment will reduce crop injury potential - high quality seed, seed treatment, and using optimal seeding rates will minimize crop injury potential.

### **Fall Burndown Applications (With Glyphosate)**

Valtera Herbicide, applied as part of a burndown program, may be used for residual weed control where lentils will be planted directly into previous crop residues. For control of emerged weeds, tank mix with glyphosate, present as isopropyl amine or potassium salt. Reduced weed control may occur when burndown applications are made to fields where heavy crop and/or weed residue exist.

Application should be made in the fall, just before freeze-up and when winter annuals and perennial weeds are still growing to allow for optimum herbicide absorption and activity. Applications made after a killing frost will result in reduced perennial and winter annual weed control. Do not apply to snow covered or frozen soil. Abnormally warm winters may reduce the length of weed control observed in the spring.

## **CROP TOLERANCE**

Lentil varieties vary in their tolerance to Valtera Herbicide. Testing has shown that small-seeded red and large-seeded green varieties are most tolerant to applications of Valtera Herbicide. Other seed classes of lentils should not be planted into areas treated with Valtera Herbicide.

Environmental conditions, such as cold, saturated soils, and abnormally cool wet weather after seeding may also increase lentil injury following a spring or fall application of Valtera Herbicide. Crop injury symptoms are generally transient and will reduce as growing conditions return to normal. Valtera Herbicide is a very active herbicide and the user should exercise caution until gaining familiarity with this product.

**LENTIL [Small Red and Large Green Varieties] – Application Rates and Weed Claims for FALL APPLICATION**

<b>WEEDS CONTROLLED</b>	<b>Soil Type<sup>1</sup></b>	<b>RATE (g/ha)</b>	<b>COMMENTS</b>
Redroot pigweed ( <i>Amaranthus retroflexus</i> ) Green pigweed ( <i>Amaranthus powellii</i> ) Common ragweed ( <i>Ambrosia artemisiifolia</i> ) Common lamb's-quarters ( <i>Chenopodium album</i> ) Hairy nightshade ( <i>Solanum sarachoides</i> ) Dandelion ( <i>Taraxacum officinale</i> ) Eastern black nightshade ( <i>Solanum ptycanthum</i> ) Kochia ( <i>Kochia scoparia</i> ) including Group 2, 4, and 9 resistant kochia  Canada fleabane ( <i>Conyza canadensis</i> ) Common chickweed ( <i>Stellaria media</i> ) Waterhemp, including biotypes resistant to herbicide groups 2, 5 and 9 Palmer amaranth ( <i>Amaranthus palmeri</i> )  <i>Suppression only:</i> Green foxtail ( <i>Setaria viridis</i> ) Volunteer canola ( <i>Brassica napus</i> ) including glyphosate, glufosinate and imidazolinone tolerant varieties	Coarse- textured, with <5% organic matter	140	Preemergence: Apply prior to weed emergence.  Postemergence: When weeds are already emerged, apply Valtera Herbicide as a tank mix <sup>2</sup> with a glyphosate product, present as isopropyl amine or potassium salt, at 1.2 kg a.i./ha.
	Medium-textured, with <5% organic matter	210	

<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

**LENTIL [Small Red and Large Green Varieties] – Application Rates and Weed Claims for SPRING APPLICATION**

<b>WEEDS CONTROLLED</b>	<b>Soil Type<sup>1</sup></b>	<b>RATE (g/ha)</b>	<b>COMMENTS</b>
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<p>Redroot pigweed (<i>Amaranthus retroflexus</i>)  Green pigweed (<i>Amaranthus powellii</i>)  Common ragweed (<i>Ambrosia artemisiifolia</i>)  Common lamb's-quarters (<i>Chenopodium album</i>)  Hairy nightshade (<i>Solanum sarachoides</i>)  Dandelion (<i>Taraxacum officinale</i>)  Eastern black nightshade (<i>Solanum ptycanthum</i>)  Kochia (<i>Kochia scoparia</i>) including Group 2, 4, and 9 resistant kochia  Canada fleabane (<i>Conyza canadensis</i>)  Common chickweed (<i>Stellaria media</i>)  Waterhemp, including biotypes resistant to herbicide groups 2, 5 and 9  Palmer amaranth (<i>Amaranthus palmeri</i>)</p> <p><i>Suppression only:</i>  Green foxtail (<i>Setaria viridis</i>)  Volunteer canola (<i>Brassica napus</i>) including glyphosate, glufosinate and imidazolinone tolerant varieties</p>	<p>Coarse- textured and medium-textured with &lt;5% organic matter</p>	<p>140</p>	<p>Preemergence:  Apply prior to weed emergence, and at minimum 7 days prior to planting lentils into no-till or minimum tillage fields.</p> <p>Postemergence:  When weeds are already emerged, apply <b>Valtera Herbicide</b> as a tank mix<sup>2</sup> a glyphosate product, present as isopropyl amine or potassium salt, at 1.2 kg a.i./ha.</p>
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<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

**DIRECTIONS FOR USE AS A HARVEST AID IN CROP SUBGROUP 6C: Dried Shelled Pea and Bean (except soybean)**

**General Restriction and Limitations**

- For use as a desiccant, do not apply more than 105-140 g/ha of Valtera Herbicide.
- Do not apply more than a single application of 140 g/ha of Valtera Herbicide during a growing season.
- Do not harvest within 5 days of application.
- Do not plant canola a minimum of 9 months after using this product as harvest aid. Refer to previous Rotational Restrictions table for specific instructions.

**Application Rate and Timing – Valtera Herbicide + Adjuvant**

Apply Valtera Herbicide at a rate of 105-140 g/ha plus methylated seed oil (MSO Concentrate) at a rate of 2.5 L/ha when crop is physiologically mature and a minimum of 80% of the pods are yellow to tan in colour and 20% are yellow in colour. If crop is treated too early, a reduction in seed quality may occur. Do not spray Valtera Herbicide on any area of the field with a significant amount of plants with green colour. May also be applied with Carrier adjuvant at 0.5 L / 100 L water volume OR Nufarm Enhance non-ionic spray adjuvant at 1.25 - 2.5L/1000L; use the higher rate with denser crop canopies and/or with higher weed pressures. A spray grade nitrogen source (either ammonium sulphate at 2.24-2.8 kg/ha or a 28-32% nitrogen solution at 1-2 L/ha) may be added to the spray mixture along with adjuvant to enhance desiccation. The addition of a nitrogen source does not replace the need for an adjuvant. Crop can be harvested 5 days after application.

**Application Rate and Timing – Valtera Herbicide + Glyphosate**

Valtera Herbicide plus adjuvant treatment does not desiccate large weeds present in the field; tank mixing Valtera Herbicide 105-140 g/ha and an adjuvant with glyphosate present as isopropyl amine or potassium salt at 900 g a.i./ha increases control of emerged weeds and aids in harvest. Refer to glyphosate tankmix partner label for applicable pre-harvest intervals. DO NOT apply glyphosate to crops if grown for seed production.

To ensure thorough coverage, use 140-280 L spray solution per hectare. Nozzle selection should meet manufacturer's recommendation for post-emergence application.

<b>CROP SUBGROUP 6C: Dried Shelled Pea and Bean (including Bean (Lupinus spp.), Bean (Phaseolus spp.), Bean (Vigna spp.), Broad bean [fava bean], Chickpea, Guar, Lablab bean, Lentil, Pea (Pisum spp.), Pigeon pea– Application Rates</b>	
<b>TREATMENT + RATE</b>	<b>COMMENTS</b>
Valtera Herbicide at 105-140 g/ha + Adjuvant  (Carrier adjuvant at 0.5 L / 100 L water volume OR Nufarm Enhance non-ionic spray adjuvant, or other non-ionic surfactants, at 1.25 - 2.5L/1000L OR Methylated seed oil (MSO Concentrate) at a rate of 2.5 L/ha	Do not harvest within 5 days of application.  Do not subsequently seed canola to treatment area for a minimum of 9 months (see Rotational Restrictions table).  Will not desiccate large weeds present in the field
Valtera Herbicide 105-140 g/ha + Adjuvant (see above) + Glyphosate, present as isopropyl amine or potassium salt at 900 g a.i./ha	Refer to glyphosate tankmix partner label for applicable pre-harvest intervals.  Do not subsequently seed canola to treatment area for a minimum of 9 months (See Rotational Restrictions table).  Increases control of emerged weeds, depending on type and canopy size, and aids in harvest.  DO NOT apply glyphosate to crops if grown for seed production.

**DIRECTIONS FOR USE AS A HARVEST AID IN WHEAT**

**General Restriction and Limitations**

- For use as a desiccant, do not apply more than 105-140 g/ha of Valtera Herbicide.
- Do not harvest within 10 days of application.
- Do not apply more than a single application of 140 g/ha of Valtera Herbicide during a growing season.

- Do not plant canola a minimum of 9 months after using this product as harvest aid. Refer to previous Rotational Restrictions table for specific instructions.

#### **Application Rate and Timing – Valtera Herbicide + Adjuvant**

Apply Valtera Herbicide at a rate of 140 g/ha plus Nufarm Enhance non-ionic spray adjuvant, or other non-ionic spray adjuvants, at 1.25 - 2.5L/1000L, after the crop reaches the hard dough stage and grain has no more than 30% moisture; use the higher rate with denser crop canopies and/or with higher weed pressures. May also be applied with methylated seed oil (MSO Concentrate) at a rate of 2.5 L/ha. A spray grade nitrogen source (either ammonium sulphate at 2.24-2.8 kg/ha or a 28-32% nitrogen solution at 1-2 L/ha) may be added to the spray mixture along with adjuvant to enhance desiccation. The addition of a nitrogen source does not replace the need for an adjuvant. If crop is treated too early, a reduction in seed quality may occur. Crop can be harvested 10 days after application.

#### **Application Rate and Timing – Valtera Herbicide + Glyphosate**

Valtera Herbicide plus adjuvant treatment does not desiccate large weeds present in the field; tank mixing Valtera Herbicide 140 g/ha and an adjuvant with glyphosate present as isopropyl amine or potassium salt at 900 g a.i./ha increases control of emerged weeds and aids in harvest. Refer to glyphosate tankmix partner label for applicable pre-harvest intervals.

To ensure thorough coverage, use 140-280 L spray solution per hectare. Nozzle selection should meet manufacturer's recommendation for post-emergence application.

### **DIRECTIONS FOR USE IN SUNFLOWERS**

Valtera Herbicide offers residual control of susceptible broadleaf and grass weeds listed on this label and assists in the control of acetolactate synthase (ALS) resistant weeds. The length of residual control is dependent on the application rate as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase and on soils of high organic matter and/or high clay content.

Moisture is necessary to activate Valtera Herbicide in soil for residual weed control. Dry weather following applications of Valtera Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, Valtera Herbicide will control susceptible germinating weeds. Valtera Herbicide may not control weeds that germinate after application but before an activating rainfall/irrigation or plants that germinate through cracks resulting from dry soil.

When adequate moisture is not received after a Valtera Herbicide application, weed control may be improved by irrigation with at least ½ to 1 cm of water. Control will be reduced if there is mechanical incorporation into the soil or if emerged weeds are controlled by cultivation.

Do not perform any tillage operations after application or weed control will be reduced.

Apply only once during a single growing season.

DO NOT apply using aerial application equipment. Apply using ground application equipment only.

The maximum amount of product handled per day using groundboom equipment is 43 kg.

## APPLICATION TIMING

### Preemergence Applications (Spring)

Valtera Herbicide provides preemergence control of susceptible weeds in sunflower. Apply Valtera Herbicide with ground equipment a minimum of 30 days prior to planting. At least 2.5 cm of rainfall or irrigation must occur between application of Valtera Herbicide and planting. Do not apply to frozen or snow covered soils.

### Burndown Applications (Spring and Fall)

Valtera Herbicide, applied as part of a burndown program, may be used for residual weed control where sunflowers will be planted directly into previous crop residues. For control of emerged weeds, tank mix with glyphosate, present as isopropyl amine or potassium salt. Reduced weed control may occur when burndown applications are made to fields where heavy crop and/or weed residue exist.

For fall burndown: Application should be made in the fall, just before freeze-up and when winter annuals and perennial weeds are still growing to allow for optimum herbicide absorption and activity. Applications made after a killing frost will result in reduced perennial and winter annual weed control. Do not apply to snow covered or frozen soil. Abnormally warm winters may reduce the length of weed control observed in the spring.

Sunflower – Application Rates and Weed Claims for SPRING APPLICATION			
WEEDS CONTROLLED	Soil Type <sup>1</sup>	RATE <sup>2</sup> (g/ha)	COMMENTS
Redroot pigweed ( <i>Amaranthus retroflexus</i> ) Green pigweed ( <i>Amaranthus powellii</i> ) Common ragweed ( <i>Ambrosia artemisiifolia</i> ) Common lamb's-quarters ( <i>Chenopodium album</i> ) Hairy nightshade ( <i>Solanum sarachoides</i> ) Dandelion ( <i>Taraxacum officinale</i> ) Eastern black nightshade ( <i>Solanum ptycanthum</i> ) Kochia ( <i>Kochia scoparia</i> ) Canada fleabane ( <i>Conyza canadensis</i> ) Common chickweed ( <i>Stellaria media</i> )  <i>Suppression only:</i> Green foxtail ( <i>Setaria viridis</i> ) Volunteer canola ( <i>Brassica napus</i> ) including glyphosate tolerant varieties	Coarse- textured and medium-textured, with <5% organic matter	140	Preemergence: Apply prior to weed emergence.  Postemergence: When weeds are already emerged, apply Valtera Herbicide as a tank mix <sup>3</sup> with a glyphosate product, present as isopropyl amine or potassium salt, at 1.2 kg a.i./ha.

<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: The duration of residual control may be reduced with 140 g/ha in medium textured soils <5% in OM.

<sup>3</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

Sunflower – Application Rates and Weed Claims for FALL APPLICATION			
WEEDS CONTROLLED	Soil Type <sup>1</sup>	RATE (g/ha)	COMMENTS
Redroot pigweed ( <i>Amaranthus retroflexus</i> ) Green pigweed ( <i>Amaranthus powellii</i> ) Common ragweed ( <i>Ambrosia artemisiifolia</i> ) Common lamb's-quarters ( <i>Chenopodium album</i> ) Hairy nightshade ( <i>Solanum sarachoides</i> ) Dandelion ( <i>Taraxacum officinale</i> ) Eastern black nightshade ( <i>Solanum ptycanthum</i> ) Kochia ( <i>Kochia scoparia</i> ) Canada fleabane ( <i>Conyza canadensis</i> ) Common chickweed ( <i>Stellaria media</i> )  <i>Suppression only:</i> Green foxtail ( <i>Setaria viridis</i> ) Volunteer canola ( <i>Brassica napus</i> ) including glyphosate tolerant varieties	Coarse- textured, with <5% organic matter	140	Preemergence: Apply prior to weed emergence.  Postemergence: When weeds are already emerged, apply Valtera Herbicide as a tank mix <sup>2</sup> with a glyphosate product, present as isopropyl amine or potassium salt, at 1.2 kg a.i./ha.
	Medium- textured, with <5% organic matter	210	

<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

## DIRECTIONS FOR USE AS A HARVEST AID IN SUNFLOWER

### General Restriction and Limitations

- For use as a desiccant, apply 105-140 g/ha of Valtera Herbicide.
- Do not harvest within 5 days of application.
- Do not apply more than a single application of 210 g/ha of Valtera Herbicide during a growing season.
- Do not plant canola a minimum of 9 months after using this product as harvest aid. Refer to previous Rotational Restrictions table for specific instructions.

### Application Rate and Timing – Valtera Herbicide + Adjuvant

Apply Valtera Herbicide at a rate of 105-140 g/ha plus Nufarm Enhance non-ionic spray adjuvant, or other non-ionic spray adjuvants, at 1.25 - 2.5L/1000L, when crop is mature (when seed is 35% moisture or less), For many varieties, this is when the backs of heads are turning yellow and the bracts are turning brown. Use the higher rate with denser crop canopies and/or with higher weed pressures. May also be applied with methylated seed oil (MSO Concentrate) at a rate of 2.5 L/ha. A spray grade nitrogen source (either ammonium sulphate at 2.24-2.8 kg/ha or a 28-32% nitrogen solution at 1-2 L/ha) may be added to the spray mixture along with adjuvant to enhance desiccation. The addition of a nitrogen source does not replace the need for an adjuvant. If crop is treated too early, a reduction in seed quality may occur. Crop can be harvested 5 days after application.

To ensure thorough coverage, use 140-280 L spray solution per hectare. Nozzle selection should meet manufacturer's recommendation for post-emergence application.

**DIRECTIONS FOR USE IN BARE GROUND NON-CROP AREAS**

Valtera Herbicide, when used as directed, can be used on farms for non-selective vegetation control to maintain bare ground non-crop areas that must be kept weed-free.

Moisture is necessary to activate Valtera Herbicide in soil for residual weed control. Dry weather following applications of Valtera Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, Valtera Herbicide will control susceptible germinating weeds. Valtera Herbicide may not control weeds that germinate after application but before an activating rainfall/irrigation or weeds that germinate through cracks resulting from dry soil.

When adequate moisture is not received after a Valtera Herbicide application, weed control may be improved by irrigation with at least ½ to 1 cm of water. Weed control will be reduced if there is mechanical incorporation into the soil or if emerged weeds are controlled by cultivation.

Valtera Herbicide offers residual control of susceptible broadleaf and grass weeds listed on this label and assists in the control of acetolactate synthase (ALS) resistant weeds. The length of residual control is dependent on application rate as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase and on soils with high organic matter and/or high clay content.

- DO NOT apply using aerial application equipment. Ground application only.
- Do not apply to fine-textured soils.
- Do not apply to farm alleys or roads where traffic may result in treated dust settling onto crops or other desirable vegetation.
- Do not apply within 100 metres of non-dormant pears.
- Do not apply to powdery soils or soils that are susceptible to wind displacement unless irrigation can be applied immediately after application.
- Apply only once per growing season

<b>BARE GROUND NON-CROP AREAS - Application Rates and Weed Claims</b>			
<b>WEEDS CONTROLLED</b>	<b>Soil Type<sup>1</sup></b>	<b>RATE (g/ha)</b>	<b>COMMENTS</b>
Redroot pigweed ( <i>Amaranthus retroflexus</i> ) Green pigweed ( <i>Amaranthus powellii</i> ) Common ragweed ( <i>Ambrosia artemisiifolia</i> )	Coarse-textured, with <5% organic matter	280	Preemergence: Apply prior to weed emergence, in sufficient water for uniform coverage.
Common lamb's-quarters ( <i>Chenopodium album</i> ) Green foxtail ( <i>Setaria viridis</i> ) Hairy nightshade ( <i>Solanum sarachoides</i> ) Dandelion ( <i>Taraxacum officinale</i> )	Medium-textured, with <5% organic matter	420	
			Postemergence: When weeds are already

<p>Eastern black nightshade (<i>Solanum ptycanthum</i>)  Kochia (<i>Kochia scoparia</i>) including Group 2, 4, and 9 resistant kochia</p> <p>Canada fleabane (<i>Conyza canadensis</i>)  Common chickweed (<i>Stellaria media</i>)  Volunteer canola (<i>Brassica napus</i>) including glyphosate, glufosinate and imidazolinone tolerant varieties  Waterhemp, including biotypes resistant to herbicide groups 2, 5 and 9  Palmer amaranth (<i>Amaranthus palmeri</i>)</p>		<p>emerged, apply Valtera Herbicide as a tank mix<sup>2</sup> with a glyphosate product, present as isopropyl amine or potassium salt, at 1.2 kg a.i./ha</p>
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<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

**NOTE TO BUYER/USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR SPECIAL USE APPLICATIONS:**

The DIRECTIONS FOR USE for this product for the uses described in this section of the label were developed by persons other than Valent Canada, Inc. and accepted for registration by Health Canada under the User Requested Minor Use Label Expansion program. Valent Canada, Inc. itself makes no representation or warranty with respect to performance (efficacy) and/or crop tolerance (phytotoxicity) claims for this product when used in accordance with this label. Accordingly, the user assumes risk of damage or loss resulting from such use and agrees to hold Valent Canada, Inc. harmless from any claims based on efficacy and/or phytotoxicity in connection with the use described on this label.

**DIRECTIONS FOR USE IN ESTABLISHED ALFALFA GROWN FOR SEED**

Valtera Herbicide offers residual control of susceptible broadleaf and grass weeds listed on this label and assists in the control of acetolactate synthase (ALS) resistant weeds. The length of residual control is dependent on the application rate as well as on rainfall and temperature conditions. Length of residual control will decrease as temperature and precipitation increase and on soils of high organic matter and/or high clay content.

Moisture is necessary to activate Valtera Herbicide in soil for residual weed control. Dry weather following applications of Valtera Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, Valtera Herbicide will control susceptible germinating weeds. Valtera Herbicide may not control weeds that germinate after application but before an activating rainfall/irrigation or plants that germinate through cracks resulting from dry soil.

**APPLICATION TIMING**

**Preemergence Applications (Spring and Fall)**

Valtera Herbicide provides preemergence control of susceptible weeds in established, dormant alfalfa grown for seed production. Apply Valtera Herbicide with ground equipment to established, dormant alfalfa with a maximum of 15 cm of growth or less, for pre-emergent weed control. Application to alfalfa with greater than 15 cm of regrowth may cause unacceptable crop injury.

For fall applications: Application should be made in the fall, just before freeze-up. Do not apply to

snow covered or frozen soil. Abnormally warm winters may reduce the length of weed control observed in the spring

**RESTRICTIONS/PRECAUTIONS:**

- When adequate moisture is not received after a Valtera Herbicide application, weed control may be improved by irrigation with at least 1 cm of water. Irrigation must be applied if adequate activating rainfall has not occurred within 5 days of application to established, dormant alfalfa grown for seed production.
- Cultivation, renovation, or field burning should be done before Valtera Herbicide is applied. Control will be reduced if there is mechanical incorporation into the soil or if emerged weeds are controlled by cultivation.
- Apply only once during a single growing season.
- DO NOT apply using aerial application equipment. Apply using ground application equipment only.
- Use an appropriate water volume to ensure thorough spray coverage (minimum 100 L/ha).
- Do not use on intended mixed alfalfa-grass stands.
- Application will result in burning of treated leaves and stems. User should understand and accept this risk before using this product on alfalfa grown for seed production.
- Do not enter or allow entry into treated areas until the restricted entry interval of 7 days for hand-set irrigation and 3 days for scouting.

**FURTHER RESTRICTIONS FOR SEED PRODUCTION**

- All alfalfa seed screenings shall be disposed of in such a way that they cannot be distributed or used for human food or animal feed. Alfalfa seed cannot be distributed for human consumption or animal feed.
- Treated alfalfa seed shall bear a tag or container label which forbids use of the seed for human consumption or animal feed.
- When tank mixing Valtera Herbicide with other products registered for alfalfa grown for seed, the most restrictive labeling of any tank mix<sup>3</sup> product must be followed. Where applicable, follow any tank mix product restrictions against grazing or harvest of alfalfa forage and hay. Do not mix Valtera Herbicide with any product containing a label prohibition against such mixing.

<b>ESTABLISHED ALFALFA GROWN FOR SEED – Application Rates and Weed Claims for SPRING or FALL APPLICATIONS</b>			
<b>WEEDS CONTROLLED</b>	<b>Soil Type<sup>1</sup></b>	<b>RATE<sup>2</sup> (g/ha)</b>	<b>COMMENTS</b>



<p>Redroot pigweed (<i>Amaranthus retroflexus</i>)  Green pigweed (<i>Amaranthus powellii</i>)  Common ragweed (<i>Ambrosia artemisiifolia</i>)  Common lamb's-quarters (<i>Chenopodium album</i>)  Hairy nightshade (<i>Solanum sarachoides</i>)  Dandelion (<i>Taraxacum officinale</i>)  Eastern black nightshade (<i>Solanum ptycanthum</i>)  Kochia (<i>Kochia scoparia</i>)  Canada fleabane (<i>Conyza canadensis</i>)  Common chickweed (<i>Stellaria media</i>)</p> <p><i>Suppression only:</i>  Green foxtail (<i>Setaria viridis</i>)  Volunteer canola (<i>Brassica napus</i>) including glyphosate tolerant varieties</p>	<p>Coarse- textured, with &lt;5% organic matter  OR  Medium-textured, with &lt;5% organic matter</p>	<p>280</p>	<p>Apply to established, dormant alfalfa, with maximum growth of 15 cm.</p> <p>Apply prior to weed emergence.</p>
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<sup>1</sup>: Do not apply on soils with > 5% OM, or fine-textured soils.

<sup>2</sup>: The duration of residual control may be reduced with 280 g/ha in medium textured soils <5% in OM.

<sup>3</sup>: Refer to the respective tank mix partner label for additional recommendations, restrictions and precautions. Follow the most restrictive application directions for each of the tank mix partners.

Valtera is a trademark of Valent U.S.A. LLC.

{Base Container Label}

GROUP	14	HERBICIDE
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**Valtera™ Herbicide**

HERBICIDE  
Water Dispersible Granules  
COMMERCIAL

Pre-emergence weed control in soybean, field corn, spring wheat, chickpea, field pea, lentils [small red and large green varieties], sunflowers, established alfalfa grown for seed and to maintain bare ground non-crop areas, including bare ground non-crop areas on farms. Also for harvest aid for dried shelled pea and bean (except soybean) and wheat.

ACTIVE INGREDIENT:	
Flumioxazin.....	51.1%

**READ THE LABEL BEFORE USE**

Warning: This product contains the allergen sulfite.

REGISTRATION NO.: 29230  
PEST CONTROL PRODUCTS ACT



**CAUTION - POISON**

**Net Contents: 2.27 kg**

Valent Canada, Inc.  
201-230 Hanlon Creek Blvd.  
Guelph, Ontario, Canada  
N1C 0A1  
(519)-767-9262  
www.valent.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.

## FIRST AID

- 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.
- 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.

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

***IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL OR POISONING CALL  
1-800-682-5368***

## TOXICOLOGICAL INFORMATION

There is no specific antidote for this product. Apply symptomatic therapy.

## PRECAUTIONS

**KEEP OUT OF REACH OF CHILDREN.** Avoid breathing dust and spray mist. Avoid contact with skin, eyes or clothing. Harmful if inhaled.

Follow mixer/loader and applicator scenario on attached label.

In addition, wear coveralls over long-sleeved shirt and long pants, chemical-resistant gloves, socks and shoes, goggles or faceshield, during clean-up and repair activities.

## ENVIRONMENTAL PRECAUTIONS

This product is toxic to aquatic organisms and non-target terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE. Toxic to small wild mammals. Toxic to certain beneficial insects. Minimize spray drift to reduce harmful effects on beneficial insects in habitats next to the application site such as hedgerows and woodland.

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

## **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 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.

## **STORAGE**

Do not contaminate water, food or feed by storage. Keep pesticide in original container. Store in a cool, dry, secure place. Do not put formulation or dilute spray solution into food or drink containers. Do not store or transport near feed or food. Not for use or storage in or around the home. To prevent contamination, store this product away from food or feed.

Valtera is a trademark of Valent U.S.A. LLC.

[Booklet]

GROUP	2	HERBICIDE
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**NU-IMAGE HERBICIDE**

Solution

COMMERCIAL

**GUARANTEE:**

Imazethapyr ... 240 g/L

REGISTRATION No. 30420  
PEST CONTROL PRODUCTS ACT

**KEEP OUT OF REACH OF CHILDREN**

**READ THE LABEL AND BROCHURE BEFORE USING**

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**

## **DIRECTIONS FOR USE**

### **GENERAL INFORMATION**

**NU-IMAGE HERBICIDE** is a selective herbicide that can be applied as an early pre-plant, pre-plant incorporated, pre-emergent or post-emergent treatment in various crops. The application method depends upon the crop, anticipated weed spectrum and the preference of the applicator. With early pre-plant and pre-emergent treatments, susceptible weeds emerge, are present as stunted plants and then die. When **NU-IMAGE HERBICIDE** is applied post-emergence, absorption may occur through both the roots and foliage. Susceptible weeds stop growing and eventually die.

### **Eastern Canada Directions:**

Use **NU-IMAGE HERBICIDE** at 312 mL (75 g active) – 420 mL (100 g active) in 400 L of water per hectare. See appropriate rate tables for specific application rates for each crop.

NOTE: A NONIONIC SURFACTANT CONTAINING AT LEAST 80% ACTIVE INGREDIENT (e.g. AGRAL® 90, AG-SURF®) at the rate of 0.25% (v/v) MUST BE ADDED to the spray solution (2.5 L of surfactant per 1000 L of spray solution).

### **REGISTERED CROPS**

Adzuki Beans  
Alfalfa Grown for Seed Production  
Dry Common Beans (black, Dutch brown, kidney, white, yellow eye and cranberry beans only)  
Lima Beans (Ontario only)  
Processing Peas  
Snap Beans  
Snow Peas  
Soybeans

### **MOISTURE REQUIREMENTS**

As with most soil-applied herbicides, pre-emergent applications of **NU-IMAGE HERBICIDE** require moisture for activation. Soil-applied **NU-IMAGE HERBICIDE** requires sufficient water within 7 days of application to moisten the soil to a depth of 5 cm for activation. If adequate moisture is not received within 7 to 10 days of application, perform a shallow inter-row cultivation 5-8 cm deep using a roller or S-tine cultivator to control escaped weeds until the field receives adequate moisture. For early pre-plant applications (soybeans only), more than 7-10 days may elapse before the receipt of adequate precipitation to activate the herbicide and reduce the risk of weed escapes. Growers preferring surface applications of herbicides may choose this type of application of **NU-IMAGE HERBICIDE**.

### **PLANT BACK RESTRICTIONS AND ROTATIONAL CROPS**

In cases of crop failure, replant only soybeans, kidney beans, cranberry beans, Dutch brown beans, black beans, yellow eye beans, white beans, lima beans, adzuki beans and processing peas in the year of application. Winter wheat may also be re-planted in cases of crop failure or as a rotational crop 100 days following a **NU-IMAGE HERBICIDE** application. Soil preparation for re-planting should be no deeper than 10 cm.

Field corn, soybeans, winter wheat, spring wheat, spring barley, kidney beans, cranberry beans, Dutch brown beans, black beans, yellow eye beans, white beans, lima beans, adzuki beans and processing peas may be planted the season following a **NU-IMAGE HERBICIDE** application. Conduct a field bioassay (a test strip grown to maturity) the year BEFORE growing any other crop.

**APPLICATION INSTRUCTIONS**

CROP: SOYBEANS

Apply **NU-IMAGE HERBICIDE** as an early pre-plant, pre-plant incorporated, pre-emergent or postemergent treatment in soybeans.

For fields that contain weeds other than those listed in the “Weed Control in Soybeans: **NU-IMAGE HERBICIDE** Alone” table, tank mix for broad-spectrum weed control (see “Herbicide Tank Mix Options – Soybeans”). The choice of product for tank mixing will depend on the specific weed(s) to be controlled. Consult the labels of the tank mix products to determine which product will provide control of the specific weeds present in the field.

**Weed Control in Soybeans: NU-IMAGE HERBICIDE Alone**

Weeds	Application Timing					
	Early Pre-plant (prior to weed emergence)	Early Pre-plant (emerged weeds prior to 2 leaf stage)	Pre-plant Incorporated	Pre-Emergent	Early Post-emergent (before weeds reach 2 leaf stage)	Post-emergent (maximum leaf stage)
<b>Broadleaf weeds</b>						
Lamb’s quarters	C	PC	C <sup>2</sup>	C	PC	
Redroot pigweed	C	C	C	C	C	C(12)
Smartweed	C			C		
Lady’s thumb	C			C <sup>3</sup>		
Wild mustard	C	C	C	C	C	
Velvetleaf	C <sup>1</sup>	C <sup>1</sup>	C <sup>1</sup>	C <sup>1</sup>	C <sup>1</sup>	C(8)
Ragweed, common			PC <sup>2</sup>	C <sup>3</sup>		
Ragweed		PC			C <sup>4</sup>	
Eastern black nightshade	PC	C	C	C	C	
Wild buckwheat		PC			C	
Cocklebur		C <sup>1</sup>			C <sup>1,4</sup>	
<b>Grasses</b>						
Foxtail, green and yellow	C	C	C	C	C	C(4)
Barnyard grass	C	PC	PC <sup>2</sup>	C <sup>3</sup>	C <sup>4</sup>	C(6)
Old witchgrass	C			C <sup>3</sup>	C	
Proso millet	PC	PC	PC	PC	PC	
Crabgrass, large					PC	
<b>Perennials</b>						

Weeds	Application Timing					
	Early Pre-plant (prior to weed emergence)	Early Pre-plant (emerged weeds prior to 2 leaf stage)	Pre-plant Incorporated	Pre-Emergent	Early Post-emergent (before weeds reach 2 leaf stage)	Post-emergent (maximum leaf stage)
Yellow nutsedge					PC	

C = Control PC = Partial Control and Reduces Competition

1 Some plants of velvetleaf and/or cocklebur that germinate deeper in the soil and emerge late may escape treatment.

2 Tank mixing is recommended for fields with a history of heavy infestations of this weed species.

3 The higher label rate or tank mixing is recommended for fields with a history of heavy infestations of this weed species.

4 The higher label rate is required for heavy infestations of this weed species.

#### Herbicide Tank Mix Options - Soybeans

Tank Mix Option	Application Timing			
	Early Pre-plant	Pre-plant Incorporated	Pre-Emergent	Post-emergent
Gramoxone®	X <sup>1</sup>			
Roundup® <sup>4</sup> or Glyphos®	X <sup>1</sup>			X <sup>1, 3</sup>
Roundup + FirstRate®	X <sup>2</sup>			
Sencor®/Lexone®		X <sup>1,2</sup>	X <sup>1</sup>	
Treflan®/Rival®/Trifluralin® or Edge		X <sup>1</sup>		
Lorox®/Afolan®/Linuron®			X <sup>1</sup>	
Basagran®				X <sup>1,2</sup>
Basagran® Forte				X <sup>1,2</sup>

1 Refer to the label of the specific tank mix product for information regarding: rates, recommendations, precautions and restrictions.

2 Refer to Tank Mix Options under the appropriate Application Timing in this label.

3 Glyphosate Tolerant Soybeans only (i.e., varieties with the Roundup Ready®). Refer to CROP: GLYPHOSATE TOLERANT gene SOYBEANS section.

4 Roundup Original Liquid Herbicide, Roundup Transorb™ Liquid Herbicide or Roundup WeatherMax™ with Transorb 2 Technology Liquid Herbicide.

Timing	<p><b>Early Pre-plant Application - Soybeans</b>  Apply <b>NU-IMAGE HERBICIDE</b> up to 30 days before planting in conventional, reduced tillage or no-till soybeans. <b>NU-IMAGE HERBICIDE</b> alone may be applied as a surface application using this technique. Only one additional working of the soil to prepare the seedbed is recommended following the application. This final seedbed preparation should not work the soil deeper than 10 cm. Deeper tillage will result in reduced concentration of herbicide in the weed germination zone and reduction in weed control. <b>DO NOT</b> plow following the application.</p>
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Rate	Early Pre-plant – Prior to Weed Emergence	420 mL/ha				
	Early Pre-plant – to Emerged Weeds (before the weeds reach the 2 true leaf stage).	420 mL/ha + non-ionic surfactant. Nonionic surfactant <b>MUST BE ADDED</b> . Liquid fertilizer added to the spray solution will provide quicker burndown of weed				
Water Volume	100-400 L/ha					
Surfactant/ Adjuvant	For Early Pre-plant – to Emerged Weeds: Non-ionic surfactant – 0.25% v/v (e.g. 2.5 L/1000 L of spray solution) Liquid fertilizer solution - 2 L/ha					
Weeds Controlled	See “Weed Control in Soybeans” table above.					
Remark	Plant only soybeans during the season of application.					
Tank Mix Options	<p><b>NU-IMAGE HERBICIDE</b> may also be tank mixed with the herbicides listed in the “Herbicide Tank Mix Options – Soybeans” table. Always follow the most conservative rates, recommendations, precautions and restrictions on the tank mix labels.</p> <p>For the combined tank mix with ROUNDUP and FIRSTRATE, use the following:</p> <table border="1" data-bbox="418 907 1224 1089"> <tr> <td>Rates</td> <td><b>NU-IMAGE HERBICIDE</b> – 312 mL/ha ROUNDUP – 2.5 L/ha (0.900 kg ai/ha) FIRSTRATE – 21 g/ha (0.0175 kg ai/ha)</td> </tr> <tr> <td>Water Volume</td> <td>100-400 L/ha</td> </tr> </table> <p><b>Comments:</b> This tank mix provides control of emerged weeds found on the ROUNDUP herbicide label and residual control of germinating weeds found on the <b>NU-IMAGE HERBICIDE</b> and FIRSTRATE herbicide labels. Temporary crop injury may occur, however, yield will not normally be affected. Avoid sprayer overlap. Severe crop injury will occur.</p>		Rates	<b>NU-IMAGE HERBICIDE</b> – 312 mL/ha ROUNDUP – 2.5 L/ha (0.900 kg ai/ha) FIRSTRATE – 21 g/ha (0.0175 kg ai/ha)	Water Volume	100-400 L/ha
Rates	<b>NU-IMAGE HERBICIDE</b> – 312 mL/ha ROUNDUP – 2.5 L/ha (0.900 kg ai/ha) FIRSTRATE – 21 g/ha (0.0175 kg ai/ha)					
Water Volume	100-400 L/ha					

Timing	<b>Pre-plant Incorporated Application - Soybeans</b> Incorporate <b>NU-IMAGE HERBICIDE</b> evenly throughout the top 5 cm of the soil profile. Incorporation may be achieved with a double pass using discs or cultivator operated at 8 to 12 kph with the second pass at an angle to the first. Cultivators must have 3 or 4 rows of flexible sweeps staggered and spaced less than 15 cm apart followed by a drag or rolling basket to ensure no soil is left unturned.	
Rate	312 mL/ha	
Water Volume	100-400 L/ha	
Weeds Controlled	See “Weed Control in Soybeans” table above.	
Remark	DO NOT apply <b>NU-IMAGE HERBICIDE</b> as a pre-plant incorporated application more than one year in sequence. Allow at least 24 months between pre-plant incorporated applications.	

Tank Mix Options	For fields that contain heavy lamb's-quarters, common ragweed and/or barnyard grass infestations or weeds other than those listed under “ <b>NU-IMAGE HERBICIDE Alone</b> ”, tank mixing may be required to provide broad-spectrum weed control (see “Herbicide Tank Mix Options – Soybeans” table). Follow the most conservative rates, recommendations, precautions and restrictions on the tank mix labels. For SENCOR and LEXONE herbicide, refer to the following table for rates:		
	Soil Texture <sup>1</sup>	<b>Application Rate (g/ha)</b>	
		SENCOR 75DF	LEXONE 75 DF
	Medium (loam, silt loam, silt, sandy clay, sandy clay loam)	750	540
Heavy (silty clay, silty clay loam, clay and clay loam)	750	640	
1 Do not use on light (loamy sand, sandy loam) textured soils. Do not use on soil with less than 2% organic matter.			

Timing	<b>Pre-emergent Application - Soybeans</b> Pre-emergent applications of <b>NU-IMAGE HERBICIDE</b> may be applied before the crop and weeds emerge.	
Rate	312 - 420 mL/ha	
Water Volume	100-400 L/ha	
Weeds Controlled	See “Weed Control in Soybeans” table above.	
Tank Mix Options	For fields that contain heavy infestations of common ragweed, old witchgrass, barnyard grass, lady’s-thumb or weeds other than those listed under “ <b>NU-IMAGE HERBICIDE Alone</b> ”, tank mixing may be required to provide broad-spectrum weed control (see “Herbicide Tank Mix Options – Soybeans” table). Follow the most conservative rates, recommendations, precautions and restrictions on the tank mix labels.	
Timing	<b>Early and Late Post-emergent Application - Soybeans</b> Apply <b>NU-IMAGE HERBICIDE</b> early post-emergent after the crop has emerged and before the weeds reach the 2 true leaf stage. <b>NU-IMAGE HERBICIDE</b> may also be applied late post-emergent after the crop has emerged for control of certain weed species up to the growth stages indicated in the “Weed Control in Soybeans: <b>NU-IMAGE HERBICIDE Alone</b> ” table. To minimize weed competition with the crop, application should be made as early as possible after weed emergence.	
Rate	Early Post-emergent – (before the weeds reach the 2 true leaf stage)	312-420 mL/ha + non-ionic surfactant + liquid fertilizer
	Late Post-emergent	420 mL/ha + non-ionic surfactant + liquid Fertilizer.
Water Volume	100-400 L/ha	
Surfactant/	Non-ionic surfactant – 0.25% v/v (e.g. 2.5 L/1000 L of spray solution)	

Adjuvant	Liquid fertilizer solution (10-34-0, 28-0-0 or 32-0-0) - 2 L/ha
Weeds Controlled	See "Weed Control in Soybeans" table above.
Remark	Addition to the spray solution of a non-ionic surfactant plus liquid fertilizer is essential for post-emergent application, improving uptake of the product by weeds resulting in improved herbicidal activity. Avoid applications when weeds and/or crop are under growth stress. Stunting of the crop may result following post-emergence application. This condition is the result of stem internode shortening but will not result in yield reduction.
Tank Mix Options	<b>NU-IMAGE HERBICIDE</b> may also be tank mixed with the herbicides listed in the "Herbicide Tank Mix Options – Soybeans" table. Always follow the most conservative rates, recommendations, precautions and restrictions on the tank mix labels. <b>Comments:</b> Use the 312 mL/ha rate of <b>NU-IMAGE HERBICIDE</b> when tank mixed with Basagran or Basagran Forte herbicide. For <b>NU-IMAGE HERBICIDE</b> plus BASAGRAN herbicide, a non-ionic surfactant at the rate of 0.25% (v/v) and fertilizer solution at the rate of 2 L/ha <b>MUST BE ADDED</b> to the spray solution. For <b>NU-IMAGE HERBICIDE</b> plus BASAGRAN FORTE herbicide, only fertilizer solution <b>MUST BE ADDED</b> at the rate of 2 L/ha.

**CROP: GLYPHOSATE TOLERANT SOYBEANS  
(i.e., varieties with the Roundup Ready® gene)**

Timing	<b>Post-emergent Application</b> For broadleaf and grass weeds other than those listed in "Weed Control in Soybeans: <b>NU-IMAGE HERBICIDE</b> Alone" table, <b>NU-IMAGE HERBICIDE</b> may be tank mixed with ROUNDUP herbicide and applied to Roundup Ready soybeans. Follow the rates, application timings, recommendations, precautions and restrictions on the ROUNDUP herbicide label. Refer to the ROUNDUP herbicide label for adjuvant recommendations.
Rate	312 mL/ha
Water Volume	100-400 L/ha
Remarks	<b>WARNING</b> Apply <b>NU-IMAGE HERBICIDE</b> + ROUNDUP herbicide tank mix <b>ONLY</b> to glyphosate tolerant soybeans, i.e. varieties with the Roundup Ready® gene. <b>SOYBEANS WHICH ARE NOT DESIGNATED AS GLYPHOSATE TOLERANT WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.</b>

**CROP: EDIBLE BEANS (including kidney beans, cranberry beans, Dutch brown beans, black beans, lima beans (Ontario only), yellow eye beans, white beans and adzuki beans)**

Apply **NU-IMAGE HERBICIDE** as a pre-emergent treatment in kidney beans, cranberry beans, Dutch brown beans, black beans, yellow eye beans, white beans, adzuki beans and lima beans (Ontario only), and as a pre-plant incorporated treatment in white beans, kidney beans, cranberry beans and adzuki beans.

**Weed Control in Edible Beans: NU-IMAGE HERBICIDE Alone**

Weeds	Application Timing	
	Pre-Emergent	Pre-plant Incorporated (kidney beans, cranberry beans, white beans and adzuki beans only)
<b>Broadleaf weeds</b>		
Lamb's quarters	C	C
Redroot pigweed	C	C
Smartweed	C	C
Lady's thumb	C	C
Wild mustard	C	C
Velvetleaf	C <sup>1</sup>	C <sup>1</sup>
Ragweed, common	PC	PC
Eastern black nightshade	C	C
<b>Grasses</b>		
Foxtail, green and yellow	C	C
Proso millet	PC	PC

C = Control                      PC = Partial Control and Reduced Competition

1 Some plants of velvetleaf that germinate deeper in the soil and emerge late may escape treatment.

Timing	<b>Pre-emergent Application – Edible Beans</b>
Rate	312 mL/ha
Water Volume	100-400 L/ha
Tanks Mix Options	For fields that contain heavy infestations of broadleaf weeds other than those listed under “ <b>NU-IMAGE HERBICIDE Alone</b> ”, tank mixing may be required to provide broad-spectrum weed control. <b>Cranberry and Kidney Beans</b> Tank mix <b>NU-IMAGE HERBICIDE</b> with 1.15 – 1.75 L/ha (1.05-1.60 kg ai/ha) of DUAL® MAGNUM herbicide to control labelled broadleaf weeds and grasses in cranberry beans and kidney beans. Refer to the DUAL MAGNUM herbicide label for additional recommendations, precautions and restrictions not specified on this label.

Timing	<b>Pre-plant Incorporated Application (kidney beans, cranberry beans, white beans; adzuki beans in Eastern Canada only)</b>
Rate	312 mL/ha
Water Volume	100-400 L/ha
Tanks Mix Options	<b>White Beans</b> Tank mix <b>NU-IMAGE HERBICIDE</b> with 1.25-2.4 L/ha of TREFLAN® herbicide to control a broader spectrum of weeds in white beans only. Follow recommendations, precautions and restrictions on the TREFLAN herbicide label. Consult the tank mix partner label for weeds controlled other than those listed for <b>NU-IMAGE HERBICIDE</b> alone. <b>Cranberry and Kidney Beans</b> Tank mix <b>NU-IMAGE HERBICIDE</b> with 1.15 – 1.75 L/ha (1.05-1.60 kg ai/ha) of DUAL MAGNUM

	herbicide to control labelled broadleaf weeds and grasses in cranberry beans and kidney beans. Refer to the DUAL MAGNUM herbicide label for additional recommendations, precautions and restrictions not specified on this label.
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**CROP: PROCESSING PEAS**

Timing	<b>Pre-emergent or Pre-plant Incorporated Application</b>
Rate	312 mL/ha
Water Volume	200 L/ha
Weeds Controlled	See “ <b>NU-IMAGE HERBICIDE</b> Alone: Weed Control in Soybeans”

**CROP: SNOW PEAS**

Timing	<b>Pre-emergent or Pre-plant Incorporated Application</b>
Rate	312 mL/ha
Water Volume	100-400 L/ha
Weeds Controlled	See “ <b>NU-IMAGE HERBICIDE</b> Alone: Weed Control in Soybeans”

**CROP: SNAP BEANS**

Timing	<b>Pre-emergent or Pre-plant Incorporated Application</b>
Rate	312 mL/ha
Water Volume	200 L/ha
Weeds Controlled	See “ <b>NU-IMAGE HERBICIDE</b> Alone: Weed Control in Soybeans”

**CROP: ALFALFA GROWN FOR SEED PRODUCTION**

Timing	<b>Pre-emergent or Pre-plant Incorporated Application</b>
Rate	312-420 mL/ha
Water Volume	200 L/ha
Surfactant/ Adjuvant	A non-ionic surfactant at the rate of 0.25% (v/v) <b>MUST BE ADDED</b> to the spray solution (e.g., 2.5 L of surfactant per 1000 L of spray solution). Fertilizer Solutions <b>MUST BE ADDED</b> to the spray solution at the rate of 2 L/ha to provide quicker burndown of weeds.
Weeds Controlled	See “ <b>NU-IMAGE HERBICIDE</b> Alone: Weed Control in Soybeans”

**MIXING INSTRUCTIONS**

1. Ensure the spray tank is clean before use. Follow the clean-out recommendations stated on the label of the product that was previously used.
2. Fill the spray tank one-half full to three-quarters full of water and start agitation.
3. Using a calibrated measuring device, add the required amount of tank mix partner (refer to the tank mixture section of each crop for tank mixtures).
4. Mix thoroughly.

5. Using a separate calibrated measuring device, add the required amount of **NU-IMAGE HERBICIDE** to the tank while agitating the spray solution.
6. While the solution remains agitating, add the required amount of non-ionic surfactant if required.
7. If required, add the required amount of liquid fertilizer (28-0-0, 10-34-0 or 32-0-0) to the spray solution.
8. Continue agitation while filling the remainder of the spray tank with water.
9. Clean the spray tank after use.

## ENVIRONMENTAL PRECAUTIONS

**NU-IMAGE HERBICIDE** is toxic to aquatic organisms.

DO NOT apply this product directly to aquatic habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs, 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.

## RESTRICTIONS AND LIMITATIONS

1. DO NOT APPLY **NU-IMAGE HERBICIDE** BY AIR. APPLY WITH GROUND EQUIPMENT ONLY.
2. DO NOT over apply **NU-IMAGE HERBICIDE**. Over application may result in injury particularly if the crop is under stress.
3. Crop Pre-harvest Interval

Crop	Application to Harvest Interval (days)
Soybeans	100
Dry Beans <sup>1</sup>	100
Lima Beans	90
Processing Peas	50
Snow Peas	60
Snap Beans	40

<sup>1</sup> kidney, adzuki, Dutch brown, black, yellow eye, white and cranberry beans

4. CAUTION: Do not graze treated crops or cut for hay, sufficient data are not available to support such use.
5. DO NOT let spray drift contaminate crops in adjacent fields.
6. ONLY ONE (1) application of **NU-IMAGE HERBICIDE** may be made during the season.
7. DO NOT apply **NU-IMAGE HERBICIDE** as a pre-plant incorporated application in all crops more than one year in sequence. Allow at least 24 months between pre-plant incorporated applications.
8. Emerged weeds in pre-emergent applications which reach the 2 - 3 true leaf stage might be considered as escapes. Shallow cultivation or application of a post-emergent herbicide is recommended. DO NOT cultivate deeply.
9. DO NOT apply **NU-IMAGE HERBICIDE** when crop is under stress conditions because crop injury may result.
10. Post-emergent application of **NU-IMAGE HERBICIDE** to soybeans may cause stunting. This condition is the result of stem inter-node shortening and does not cause yield reductions if **NU-IMAGE HERBICIDE** has been used at label rates and following label recommendations.
11. **NU-IMAGE HERBICIDE** may cause stunting or delayed maturity in white beans and kidney beans. Stunting is the result of stem inter-node shortening and should not cause yield reductions if **NU-IMAGE HERBICIDE** has been used at label rates and following label recommendations.
12. Over-spray or drift to important wildlife habitats such as shelterbelts, water-bodies, wetlands, woodlots, vegetated ditch-banks, hedgerows and other cover on the edge of fields should be avoided. Leave a 15-meter buffer zone between the last spray swath and the edge of any of these habitats.

**Western Canada Directions:**

**DIRECTIONS FOR USE ON FIELD PEAS**

**NU-IMAGE HERBICIDE** is a selective herbicide that can be applied as an early post-emergence treatment in field peas. When **NU-IMAGE HERBICIDE** is applied early post-emergence, absorption may occur through both the roots and foliage. Susceptible weeds stop growing and eventually die.

**SOIL ZONES:** Black and grey wooded soils

**CROPS:** Field peas up until the sixth (6th) trifoliolate leaf stage

**ROTATIONAL CROPS**

There is the possibility of residual soil activity from **NU-IMAGE HERBICIDE** the year following application. Research studies have shown the following crops can be safely grown in black and grey wooded soil zones the year following a **NU-IMAGE HERBICIDE** application:

Spring barley, spring wheat, lentils, alfalfa, and field peas

Conduct a field bioassay (a test strip grown to maturity) the year BEFORE growing any crop other than those listed above.

**RATES**

Apply 50 grams active (a.e.) in 100 to 400 litres of water per hectare. Equivalent to 210 mL of product per hectare.

**NOTE: A NONIONIC SURFACTANT CONTAINING AT LEAST 80% ACTIVE INGREDIENT (AGRAL 90, AG-SURF) at the rate of 0.25% (v/v) MUST BE ADDED to the spray solution (e.g., 2.5 L of surfactant per 1000 L of spray solution). BROADLEAF WEED and GRASS CONTROL**

**EARLY POST-EMERGENCE APPLICATIONS**

**NU-IMAGE HERBICIDE**, by early post-emergence application (up to and including the 4 leaf stage of susceptible weeds) will control:

Broadleaf weeds:	Chickweed	Grasses:	Green foxtail
	Cleavers		Wild oats*
	Hemp-nettle		
	Shepherd's purse		
	Redroot pigweed		
	Smartweed		
	Stinkweed		
	Volunteer canola		
	Wild buckwheat**	Wild	
	mustard		

\*2 - 4 leaf stage \*\* Suppression only

In addition, **NU-IMAGE HERBICIDE** provides partial control of and reduces competition from:

Volunteer barley, Volunteer wheat

**MIXING INSTRUCTIONS**

Fill the spray tank one-half to three-quarters full with water. Using a calibrated measuring device, add the required amount of **NU-IMAGE HERBICIDE** while agitating the spray solution. While the solution remains agitating, add the required amount of non-ionic surfactant. Fill the remainder of the tank with water.



## **WARNINGS**

An interval of 60 days must follow the **NU-IMAGE HERBICIDE** application before field peas are harvested.

Field peas treated with **NU-IMAGE HERBICIDE** may be fed to livestock 30 days after application. DO NOT over-apply **NU-IMAGE HERBICIDE**. Over application may result in injury particularly if the crop is under stress.

DO NOT let spray drift contaminate crops other than those being sprayed.  
ONLY ONE (1) application of **NU-IMAGE HERBICIDE** may be made during the season.  
DO NOT tank-mix **NU-IMAGE HERBICIDE**.

In cases of crop failure, only field peas may be re-planted in the year of application.

DO NOT APPLY BY AERIAL APPLICATION - GROUND APPLICATION ONLY.

Over-spray or drift to important wildlife habitats such as shelterbelts, water bodies, wetlands and woodlots, vegetated ditch banks, hedgerows & other cover on the edge of the field should be avoided. Leave a 15-meter buffer zone between the last spray swath and the edge of any of these habitats.

## **DIRECTIONS FOR USE ON NEWLY SEEDED PURE STAND ALFALFA FOR FORAGE OR SEED PRODUCTION**

**NU-IMAGE HERBICIDE** is a selective herbicide that can be applied as an early post-emergence treatment in newly seeded pure stand alfalfa in the year of establishment. **NU-IMAGE HERBICIDE** may be applied when the crop has developed at least one (1) fully expanded trifoliate leaf and up to and including the 4 leaf stage of susceptible weeds. Do not spray before all weeds have emerged. When **NU-IMAGE HERBICIDE** is applied early post-emergence, absorption may occur through both the roots and foliage. Susceptible weeds stop growing and eventually die.

## **CROPS**

**NU-IMAGE HERBICIDE** may be used on pure stand alfalfa in the year of establishment in the black, grey wooded and irrigated brown soil zones.

## **USE**

**NU-IMAGE HERBICIDE** is intended for use on pure stand alfalfa in the year of establishment, on stands that will remain for 3 or more years.

## **ROTATIONAL CROPS**

In the event of crop failure, only field peas may be replanted during the same season as the **NU-IMAGE HERBICIDE** application. Do not apply 2 applications of **NU-IMAGE HERBICIDE** within the same year.

If necessary, spring wheat, lentils, field peas or alfalfa may be planted the season following a **NU-IMAGE HERBICIDE** application in the black, grey wooded and irrigated brown soil zones. Barley may also be planted in the black and grey wooded soil zones the season following application. Conduct a field bioassay (a test strip grown to maturity) BEFORE growing any other crop.

## **RATES**

Apply 50 grams active (a.e.) in 100 to 400 litres of water per hectare.

Equivalent to 210 mL of product per hectare.

**NOTE: For early post-emergence applications a NONIONIC SURFACTANT CONTAINING AT LEAST 80% ACTIVE INGREDIENT (AGRAL 90, AG-SURF) at the rate of 0.25% (v/v) MUST BE ADDED to the spray solution (e.g., 2.5 L of surfactant per 1000 L of spray solution).**

#### **BROADLEAF WEED and GRASS CONTROL**

#### **EARLY POST-EMERGENCE APPLICATIONS**

**NU-IMAGE HERBICIDE**, by early post-emergence application (up to and including the 4 leaf stage of susceptible weeds) will control:

**Broadleaf weeds:** Redroot pigweed, Wild mustard, Stinkweed, Volunteer canola and Green smartweed

In addition, **NU-IMAGE HERBICIDE** provides partial control of and reduces competition from: Common groundsel Green foxtail Shepherd's purse

#### **MIXING INSTRUCTIONS**

Fill the spray tank one-half to three-quarters full with water. Using a calibrated measuring device, add the required amount of **NU-IMAGE HERBICIDE** while agitating the spray solution. While the solution remains agitating, add the required amount of non-ionic surfactant. Fill the remainder of the tank with water.

#### **WARNINGS**

**Apply only in the year of establishment and only after the crop has one fully developed trifoliolate leaf.**

**DO NOT** over-apply **NU-IMAGE HERBICIDE**. Over application may result in injury particularly if the crop is under stress.

**DO NOT** let spray drift contaminate crops other than those being sprayed.

**ONLY ONE (1)** application of **NU-IMAGE HERBICIDE** may be made during the life of the alfalfa stand.

**DO NOT** tank-mix **NU-IMAGE HERBICIDE**.

In cases of crop failure, only field peas may be re-planted in the year of application.

**DO NOT** graze or harvest for forage until 14 days after treatment.

Mature seed from treated plants should not be used for human consumption.

Over-spray or drift to important wildlife habitats such as shelterbelts, water bodies, wetlands, woodlots, vegetated ditch banks, hedgerows and other cover should be avoided. Leave a 15 meter buffer zone between the last spray swath and the edge of any of these habitats.

**DO NOT APPLY BY AERIAL APPLICATION - GROUND EQUIPMENT ONLY.**

#### **DIRECTIONS FOR USE ON ESTABLISHED ALFALFA FOR SEED PRODUCTION PURPOSES**

<b>CROP</b>	<b>WEEDS CONTROLLED</b>	<b>RATE</b>	<b>DIRECTIONS</b>
Established alfalfa for seed production	Stinkweed, wild mustard, volunteer canola, redroot pigweed and suppression of green foxtail	50 g a.e./ha	One application per year; post-emergent; ground application; apply before alfalfa reaches 30 cm. Do not use <b>NU-IMAGE HERBICIDE</b> in the last year of the alfalfa stand.

#### **DIRECTIONS FOR USE ON DRY BEANS (PINTO, PINK, RED)**

CROP	PEST	RATE	DIRECTIONS
Dry beans – pinto, pink, red	Hairy nightshade	50 g a.e./ha	One application per year; ground sprayer; apply in 100 - 400 L water/ha; post-emergence; apply up to the 2nd trifoliolate leaf stage of the dry bean; up to 6 leaf stage of hairy nightshade; black, grey wooded and irrigated brown soil zones only; PHI of 75 days.

#### DIRECTIONS FOR USE ON CHICKLING VETCH (FOR SEED PRODUCTION ONLY)

CROP	PEST	RATE	DIRECTIONS
Chickling vetch/ grass pea	Labelled weeds	50 g a.e./ha	One application per year; post-emergent; ground application; PHI 60 days; apply at the 5-7 leaf stage of chickling vetch/grass pea.

#### DIRECTIONS FOR USE ON SOYBEANS (MANITOBA ONLY)

CROP	PEST	RATE	DIRECTIONS
Soybeans	Annual grass and broadleaf weeds	50 g a.e./ha plus non-ionic surfactant at 0.25% v/v	Apply as post-emergent application once per season at 1 to 3 leaves of soybean growth; ground application only; PHI 85 days.

#### RESISTANCE MANAGEMENT RECOMMENDATIONS:

For resistance management, **NU-IMAGE HERBICIDE** is a Group 2 herbicide. Any weed population may contain or develop plants naturally resistant to **NU-IMAGE HERBICIDE** and other Group 2 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 **NU-IMAGE HERBICIDE** or other Group 2 herbicides 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.
- Herbicide use should be based on an IPM program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical), cultural, biological and other chemical control practices.
- Monitor treated weed populations for resistance development.

- Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- 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 Nufarm Agriculture Inc. at 1-800-868-5444 or at [www.nufarm.ca](http://www.nufarm.ca).

## **PRECAUTIONS**

### **KEEP OUT OF REACH OF CHILDREN.**

This product may be harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or spray mist. Use with adequate ventilation. May cause eye damage. May cause skin irritation.

Wear dust and/or splash-proof goggles or face shield and chemically resistant gloves when mixing, loading and during application, clean-up and repair. Wear long-sleeved shirt and long-legged pants when handling.

Wash hands and face before eating, drinking, smoking and using the toilet. Wash thoroughly with soap and water after handling. Take a shower IMMEDIATELY after work.

Store and wash all protective clothing separately from normal laundry. Clean protective equipment (gloves, goggles, face shield) upon removal with soapy water. Clean spray equipment thoroughly after use. Wash in detergent and hot water before reuse. Wear freshly laundered clothes daily.

Do not contaminate food or feed products.

Do not eat, drink or smoke when using.

DO NOT APPLY BY AIR.

### **STORAGE**

Store the product in cool, dry, locked, well-ventilated areas without floor drain. Store the leftover product in original tightly closed container.

Keep product from freezing. DO NOT store below 0°C. If the product is exposed to temperatures below 0°C during shipment or storage, make sure the product has thawed completely, and shake the container vigorously.

DO NOT ship or store the product near food, feed, seed and fertilizers.

### **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.

## **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 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.

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

## **TOXICOLOGICAL INFORMATION**

Treat symptomatically.

## **EMERGENCY TELEPHONE NUMBERS**

For spills or transportation accidents, Chemtrec, 1-800-424-9300.

For health or environmental emergencies, ProPharma Group, 1-877-325-1840.

For product and use information, Nufarm Agriculture Inc., 1-800-868-5444.

## **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. The user assumes the risk to persons or property that arises from any such use of this product.

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