

**Product Name:**

**Guardian® Plus II Herbicide**

Guardian® Plus II Herbicide is a combination package of products:

Guardian® Plus WDG

PCP # 31494

Polaris \*

PCP # 29479

Labels are as attached.

**Manufacturer/Distributor:**

E.I. du Pont Canada Company  
1919 Minnesota Court  
Mississauga, Ontario, L5N OC9

**Telephone Numbers:**

Product Information: 1-800-667-3925

Medical Emergency: 1-800-441-3637 (24 hours)

Preparation Date: December 7, 2016

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E.I. du Pont Canada Company is a licensed user. Member of CroLife

\*All other products mentioned are trademarks of their respective companies.

PMRA APPROVED LABEL, JB  
2014-09-16, Sub. No. 2014-3535

[[PRIMARY DISPLAY PANEL]]

<b>GROUP</b>	<b>2, 14</b>	<b>HERBICIDE</b>
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**Guardian® Plus WDG Herbicide**

Wettable granules

FOR SALE FOR USE ON SOYBEANS IN EASTERN CANADA ONLY

COMMERCIAL

REGISTRATION NO. 31494 PEST CONTROL PRODUCTS ACT

READ THE LABEL AND THIS BOOKLET BEFORE USING

GUARANTEE: Chlorimuron-ethyl 5.14%  
Flumioxazin 40.59%

Warning: This product contains the allergen sulfite.

NET CONTENTS: 176g -bulk

E. I. DU PONT CANADA COMPANY  
AGRICULTURAL PRODUCTS  
P.O. BOX 2300, STREETSVILLE  
MISSISSAUGA, ONTARIO  
L5M 2J4  
1-800-667-3925

Skull&crossbones-triangle  
**CAUTION - POISON**

**PRECAUTIONS:** KEEP OUT OF REACH OF CHILDREN.  
Avoid breathing spray mist.  
Avoid contact with skin, eyes and clothing.  
Keep the outer container or bag and soluble bags away from water.  
Do not contaminate any body of water.  
Harmful if inhaled.

**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 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 INHALED:** Move the person to fresh air. If the 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.

For medical emergencies call 1-800-441-3637 (24 hours).

**TOXICOLOGICAL INFORMATION:** Treat symptomatically

**STORAGE:**

Store product in original container in a secure, dry area away from food or feed. Not for use or storage in or around the home. Keep container tightly closed.

**DISPOSAL:**

**For recyclable containers:**

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

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

**For returnable containers:**

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

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

**NOTICE TO USER:**

This pest control product is to be used only in accordance with the directions on this 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.

[[DIRECTIONS FOR USE LABEL]]

GROUP

2, 14

HERBICIDE

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Wettable granules

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Skull&crossbones-triangle

**CAUTION - POISON**

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

For medical emergencies call 1-800-441-3637 (24 hours).

**IMPORTANT:**

Injury to or loss of desirable trees or vegetation may result from failure to observe the following:

Do not apply, drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots. Do not use on lawns, walks, driveways, tennis courts or similar areas. Prevent drift of spray to desirable plants. Do not contaminate any body of water, including irrigation water that may be used on other crops. Carefully observe sprayer clean-up instructions, as spray tank residue may damage crops other than soybeans.

**DO NOT APPLY BY AIR.**

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.  
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 faceshield, during clean-up and repair activities.

Equipment	Personal Protective Equipment		Maximum amount of product handled per day (kg)
	Mixer/Loader	Applicator	
Groundboom	Chemical-resistant coveralls and chemical-resistant gloves, socks and shoes, and goggles or faceshield	Open cab, coveralls over long-sleeved shirt, long pants, socks and shoes, and chemical-resistant gloves, and respirator with a NIOSH/MSHA/BHSE approved organic vapour-removing cartridge with a prefilter approved for pesticides, or a NIOSH/MSHA/BHSE approved canister approved for pesticides	55 kg
		Closed cab, long-sleeved shirt, long pants, socks and shoes. (No gloves are required, but must be present in the cab for maintenance)	

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.

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.

Do not graze treated fields or feed treated forage or hay to livestock.

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.

**TOXICOLOGICAL INFORMATION:** Treat symptomatically

**ENVIRONMENTAL HAZARDS :**

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.

**GENERAL INFORMATION:**

GUARDIAN® PLUS WDG Herbicide is a pre-plant or post-plant pre-emergence soybean herbicide that will control or suppress select grassy and broadleaf weeds. GUARDIAN® PLUS WDG Herbicide must be applied pre-emergent to the main flush of actively growing weeds. When tank-mixed with a glyphosate herbicide as part of a pre-plant or post-plant burndown, emerged weeds will also be controlled. GUARDIAN® PLUS WDG Herbicide may only be applied using ground equipment. For best results, ensure thorough spray coverage of target weeds if present at the time of application.

Degree of control and duration of effect depend on weed sensitivity, weed size, growing conditions and spray coverage.

**DIRECTIONS FOR USE:**

GUARDIAN® PLUS WDG 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 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 GUARDIAN® PLUS WDG 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 pre-emergence applications. Treated soil that is splashed onto newly emerged crops may result in temporary crop injury.

Moisture is necessary to activate GUARDIAN® PLUS WDG Herbicide in soil for residual weed control. Dry weather following applications of GUARDIAN® PLUS WDG Herbicide may reduce effectiveness. However, when adequate moisture is received after dry conditions, GUARDIAN® PLUS WDG Herbicide will control susceptible germinating weeds. GUARDIAN® PLUS WDG 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.

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 GUARDIAN® PLUS WDG Herbicide within 3 days after 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.

**RATES AND TIMING:**

GUARDIAN® PLUS WDG 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.

GUARDIAN® PLUS WDG Herbicide provides pre-emergence control of susceptible weeds in soybeans. Apply GUARDIAN® PLUS WDG Herbicide with ground equipment before planting, during planting, or after planting, but before the crop emerges. Do not apply by air. Apply using ground application equipment only.

**GUARDIAN® PLUS WDG HERBICIDE APPLIED ALONE**

GUARDIAN® PLUS WDG Herbicide can be applied pre-plant or post-plant pre-emergence to soybeans. GUARDIAN® PLUS WDG Herbicide must be applied pre-emergent to the main flush of actively growing weeds.

Apply 176 g/ha of GUARDIAN® PLUS WDG Herbicide prior to the emergence of weeds. Do not apply to fine-textured soils.

## WEEDS CONTROLLED BY GUARDIAN® PLUS WDG HERBICIDE ALONE

WEEDS
Canada fleabane
Common chickweed
Common ragweed
Dandelion *
Eastern black nightshade
Fall panicum **
Green foxtail **
Green pigweed
Hairy nightshade
Lamb's-quarters
Redroot pigweed

\* Early-season control only on medium-textured soils.

\*\*Suppression only. Weed suppression is a visual reduction in weed competition (reduced population or vigour) as compared to an untreated area. Degree of suppression will vary with environmental conditions prior to and following treatment.

### GUARDIAN® PLUS WDG HERBICIDE PLUS GLYPHOSATE:

If weeds are present at the time of application, tank mix GUARDIAN® PLUS WDG Herbicide with a glyphosate herbicide for the burndown of emerged weeds. Apply the tank mix pre-plant or post-plant pre-emergence to soybeans, in conventional or glyphosate tolerant varieties.

Apply 176 g/ha of GUARDIAN® PLUS WDG Herbicide, plus a glyphosate herbicide (present as the potassium, isopropylamine, or di-ammonium salt) at 900 g ae/ha, (e.g., 2.5 L/ha for herbicides containing 360 g ae/L glyphosate or 1.67 L/ha for herbicides containing 540 g ae/L glyphosate).

### WEEDS CONTROLLED BY GUARDIAN® PLUS WDG HERBICIDE PLUS GLYPHOSATE

GUARDIAN® PLUS WDG Herbicide plus a glyphosate herbicide will control emerged weeds, including annual sowthistle, velvetleaf, and yellow nutsedge, as well as provide residual control or suppression of all weeds listed for GUARDIAN® PLUS WDG Herbicide applied alone. Consult the respective glyphosate herbicide label for specific instructions for 'Directions for Use', Precautions, and for other weeds controlled by glyphosate herbicide.

When applied as a tank-mix combination, read and observe all label directions, including rates, restrictions and grazing limitations for each product used in the tank-mix. Follow the more stringent label precautions measures for mixing, loading and applying stated on both product labels.

### MIXING INSTRUCTIONS:

1. Fill clean tank about 1/4 full with fresh water.
2. Turn on full agitation.
3. Add the proper amount of GUARDIAN® PLUS WDG Herbicide to the water in the spray tank with the agitator running. Continuous agitation is required to keep the product in suspension.
4. After GUARDIAN® PLUS WDG Herbicide has been well mixed and is in suspension, add the glyphosate tank mix partner.
5. Fill the remainder of the spray tank with clean water.

On repeat tank loads, ensure that the amount of spray solution left in the tank from the previous load is less than 10% of the volume about to be mixed.

Agitation is required for uniform mixing and application. The optimum water volume for GUARDIAN® PLUS WDG Herbicide application is 140-190 litres of water per hectare (minimum of 100 litres of water per hectare). For the tank-mix of GUARDIAN® PLUS WDG Herbicide with glyphosate, the recommended water volume is 100-120 litres per hectare. Flat fan nozzles are recommended. Use 50 mesh filter screens or larger. Use spray preparation of GUARDIAN® PLUS WDG Herbicide within 24 hours or product degradation may occur resulting in a loss of weed control. Use vigorous agitation to thoroughly disperse spray mixtures that have been allowed to stand in the tank.

**NOTE:** GUARDIAN® PLUS WDG Herbicide will degrade in acidic or highly alkaline water. Mix no more than can be used in one day. If spraying is interrupted, thoroughly re-agitate the spray mixture before resuming spraying.

Do not mix or load where there is potential to contaminate wells or aquatic systems.

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

DO NOT apply by air.

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.

#### **BUFFER ZONES:**

Overspray or drift to important aquatic and terrestrial wildlife habitats should be avoided. Leave a 16 metre buffer zone between the last spray swath and bodies of water such as ponds, lakes, rivers, and streams. Leave a 39 metre buffer zone between the last spray swath and wetlands, vegetated areas at the edges of bodies of water, woodlots and shelterbelts, and other terrestrial wildlife habitats.

#### **SPRAYER CLEANUP:**

To avoid subsequent injury to crops other than soybeans immediately after spraying and prior to spraying other crops, thoroughly remove all traces of GUARDIAN® PLUS WDG Herbicide from mixing and spray equipment as follows:

1. Drain tank; then flush tank, boom and hoses with clean water for a minimum of ten minutes. Visually inspect tank to assure removal of all visible residues of GUARDIAN® PLUS WDG Herbicide. If necessary, repeat step 1. DO NOT CLEAN SPRAY EQUIPMENT NEAR WELLS, AQUATIC SYSTEMS, OR OTHER WATER SOURCES, OR NEAR DESIRABLE VEGETATION.
2. Fill tank with clean water while adding 1 litre household ammonia (containing a minimum 3% ammonia) per 100 litres of water. Flush solution through boom and hoses, and then add more water to completely fill tank. Allow to sit for 15 minutes with agitation. Again flush the hoses, boom and nozzles with the cleaning solution and drain tank.

3. Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
4. Repeat Step 2.
5. Thoroughly rinse the tank with clean water for a minimum of 5 minutes, flushing water through the hoses and boom.

**REPLANTING TO OTHER CROPS:**

GUARDIAN® PLUS WDG Herbicide is degraded by natural soil processes, and field tests have shown that the following crops may safely be planted at the prescribed interval following soybeans that have been treated with GUARDIAN® PLUS WDG Herbicide. The recropping intervals are dependent on the pH of the soil, as well as the sensitivity of the specific rotational crop.

**Replanting Interval (Months)**

Soil pH	Winter Wheat	Field Corn, Soybeans	Alfalfa
≤7.0	4	10	11
>7.0≤7.4	4	10	11
>7.4≤7.8	4	10	Do Not Plant
>7.8≤8.0	4	Do Not Plant	

For other crops, a field bioassay is recommended before planting. A successful field bioassay means growing to maturity a test strip of the crop(s) intended for production the following year.

**FIELD BIOASSAY:**

Select a representative area or areas of the field previously treated with GUARDIAN® PLUS WDG Herbicide to plant your bioassay crop(s). Be sure to consider factors such as size of field, soil texture, drainage and turn-around areas when selecting the site(s) that are most representative of the soil conditions in the field. On large fields, more than one site may be needed in order to obtain reliable results.

Plant the test strips perpendicular to the direction in which the field was sprayed. The strips should be long enough to cross the width of several spray swaths. Large test strip areas are more reliable than small ones.

Use standard tillage and seeding equipment to plant the bioassay. Prepare a seed bed and plant the crops and varieties you want the option of growing the following year. It is important to use the same planting time, conditions, techniques and cultural practices you normally use to plant and grow the bioassay crop(s). Also plant into an adjacent area not treated with GUARDIAN® PLUS WDG Herbicide to use as a comparison.

As the crop(s) emerges and grows, examine these key points in GUARDIAN® PLUS WDG Herbicide treated and non-treated areas:

- crop stand
- plant colour and vigour
- root development
- yield
- rate of growth

Allow the bioassay crop(s) to grow to maturity while making your observations. Do not overspray the test strips with herbicides that may damage the bioassay crop(s). If the bioassay indicates that GUARDIAN® PLUS WDG Herbicide residues are still present, continue cropping only to those crops listed on the label and do not rotate to other crops until bioassay results indicate that susceptible crops are growing normally.

**USE PRECAUTIONS:**

Do not apply GUARDIAN® PLUS WDG Herbicide during periods of intense rainfall or to soils saturated with water. Do not apply directly to standing or running water. Do not apply in areas where surface water from the treatment site can run off to adjacent cropland, either planted or to be planted, or into bodies of water (such as streams, ponds, rivers, lakes, and irrigation water), wetlands, or wells. Applications should only be made when there is no hazard of spray drift contaminating non-target land areas since very small quantities of the GUARDIAN® PLUS WDG Herbicide spray solution may severely injure susceptible crops and other sensitive terrestrial habitats during both growing and dormant periods.

Under extreme weather conditions, such as hot, dry weather, excessive moisture, or frost, weed control may be reduced.

Rainfall within 4 hours after application of GUARDIAN® PLUS WDG Herbicide may reduce weed control.

Overspray or drift to important aquatic and terrestrial wildlife habitats should be avoided. Leave a 16 metre buffer zone between the last spray swath and bodies of water such as ponds, lakes, rivers, and streams. Leave a 39 metre buffer zone between the last spray swath and wetlands, vegetated areas at the edges of bodies of water, woodlots and shelterbelts, and other terrestrial wildlife habitats.

GUARDIAN® PLUS WDG Herbicide must not be applied within 60 days of harvest.

Make only one application of GUARDIAN® PLUS WDG Herbicide per season.

Do not graze the treated crop or cut for hay; sufficient data is not available to support such use.

Do not apply GUARDIAN® PLUS WDG Herbicide to soybean grown on soil of pH  $\geq$  8.0 due to risk of rotational crop injury.

**RESISTANCE-MANAGEMENT RECOMMENDATIONS**

For resistance management, please note that GUARDIAN® PLUS WDG Herbicide is both a Group 2 and Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to Group 2 and/or 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 GUARDIAN® PLUS WDG Herbicide or other Group 2 and/or Group 14 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 your local E. I. du Pont Canada Company representative or the E. I. du Pont Canada Company hotline at 1-800-667-3925.

## **STORAGE AND DISPOSAL:**

### **STORAGE:**

Store product in original container in a secure, dry area away from food or feed. Not for use or storage in or around the home. Keep container tightly closed.

### **DISPOSAL:**

#### **For recyclable containers:**

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

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

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\* All other products mentioned are trademarks of their respective companies.

<b>GROUP</b>	<b>9</b>	<b>HERBICIDE</b>
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# **POLARIS™**

**Liquid Herbicide**

**AGRICULTURAL and INDUSTRIAL**

**CAUTION – SKIN AND EYE IRRITANT**

**WATER SOLUBLE HERBICIDE FOR NON-SELECTIVE WEED CONTROL**

**REGISTRATION NO. 29479 PEST CONTROL PRODUCTS ACT.**

**GUARANTEE:** Glyphosate, present as isopropylamine salt ...360 g.a.e./L

**READ THE LABEL AND BOOKLET BEFORE USING.**

Nufarm Agriculture Inc.  
5507 1<sup>st</sup> Street SE  
Calgary, Alberta T2H 1H9

For more information please contact:  
E. I. du Pont Canada Company  
Agricultural Products  
Box 2300 Streetsville, Mississauga  
Ontario L5M 2J4  
1-800-667-3925

POLARIS™ is a trademark of E. I. du Pont de Nemours and Company. E. I. du Pont Canada Company is a licensed user. Member of CropLife.

## PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN. May cause eye irritation. Harmful if swallowed. Avoid contact with eyes or prolonged contact with skin. For good hygiene practice, wear a long-sleeved shirt, long pants and chemical resistant gloves during mixing, loading, cleanup or repair activities.

Do not enter or allow worker re entry into treated fields within 12 hours of treatment.

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., visit Croplife Canada's web site at: [www.croplife.ca](http://www.croplife.ca).

## ENVIRONMENTAL HAZARDS

Avoid direct applications to any body of water. Do not use in areas where adverse impact on domestic water or aquatic species is likely. Do not contaminate water by disposal of waste or cleaning of equipment. Avoid all drift to or contact with other vegetation for which treatment is not intended as damage or destruction may occur.

## PHYSICAL OR CHEMICAL HAZARDS

Spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminum, fibreglass, plastic and plastic-lined steel containers. **DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS.** This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas, which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

## 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 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**

Treat symptomatically.

## **EMERGENCY NUMBERS**

For product and use information, E.I. du Pont Canada Company, 1-800-667-3925.

## **STORAGE**

Avoid contamination of seed, feed, and foodstuffs.  
Soak up small amounts of spill with absorbent clays.

## **DISPOSAL**

### **RECYCLABLE CONTAINERS:**

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

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

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### **RETURNABLE CONTAINERS:**

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### **REFILLABLE CONTAINERS:**

For disposal, this container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not reuse this container for any other purpose.

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

## **NOTICE TO USER**

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *PEST CONTROL PRODUCTS ACT* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

12-0287

**POLARIS™**

**Liquid Herbicide**

**AGRICULTURAL and INDUSTRIAL**

**CAUTION – SKIN AND EYE IRRITANT**

**WATER SOLUBLE HERBICIDE FOR NON-SELECTIVE WEED CONTROL**

**REGISTRATION NO. 29479 PEST CONTROL PRODUCTS ACT.**

**GUARANTEE:** Glyphosate, present as isopropylamine salt ...360 g.a.e./L

**READ THE LABEL AND BOOKLET BEFORE USING.**

Nufarm Agriculture Inc.  
5507 1<sup>st</sup> Street SE  
Calgary, Alberta T2H 1H9

For more information please contact:  
E. I. du Pont Canada Company  
Agricultural Products  
Box 2300 Streetsville, Mississauga  
Ontario L5M 2J4  
1-800-667-3925

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## POLARIS

### **Part 1: Precautions and Handling Information**

#### **PRODUCT DESCRIPTION**

Water soluble herbicide for non-selective weed control in CROPLAND SYSTEMS and in NON-CROPLAND AREAS. For optimum weed control apply Polaris to actively growing weeds, thorough coverage of the weeds is important.

#### **PRECAUTIONS**

KEEP OUT OF REACH OF CHILDREN. May cause eye irritation. Harmful if swallowed. Avoid contact with eyes or prolonged contact with skin. For good hygiene practice, wear a long-sleeved shirt, long pants and chemical resistant gloves during mixing, loading, cleanup or repair activities.

Do not enter or allow worker re entry into treated fields within 12 hours of treatment.

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., visit Croplife Canada's web site at: [www.croplife.ca](http://www.croplife.ca).

#### **ENVIRONMENTAL HAZARDS**

Avoid direct applications to any body of water. Do not use in areas where adverse impact on domestic water or aquatic species is likely. Do not contaminate water by disposal of waste or cleaning of equipment. Avoid all drift to or contact with other vegetation for which treatment is not intended as damage or destruction may occur.

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

Spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminum, fibreglass, plastic and plastic-lined steel containers. **DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS.** This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas, which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

## **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 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**

Treat symptomatically.

## **EMERGENCY NUMBERS**

For product and use information, E.I. du Pont Canada Company, 1-800-667-3925.

## **STORAGE**

Avoid contamination of seed, feed, and foodstuffs.  
Soak up small amounts of spill with absorbent clays.

## **DISPOSAL**

### **RECYCLABLE CONTAINERS:**

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

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

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### **RETURNABLE CONTAINERS:**

Do not reuse container for any purpose. For disposal, this empty container may be returned to the point

of purchase (distributor/dealer).

**REFILLABLE CONTAINERS:**

For disposal, this container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not reuse this container for any other purpose.

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

**NOTICE TO USER:**

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *PEST CONTROL PRODUCTS ACT* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

**Part 2: General Directions for Use**

**RESISTANCE-MANAGEMENT RECOMMENDATIONS**

For resistance management, Polaris is a Group 9 herbicide. Any weed population may contain or develop plants naturally resistant to Polaris and other Group 9 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 Polaris or other Group 9 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 pesticides 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).

## GENERAL INFORMATION

- Do not apply this product using aerial spray equipment. except under conditions as specified within this label.
- This product is highly toxic to aquatic and terrestrial plants. A buffer zone of 15 metres is required between the downwind point of direct application and the closest edge of sensitive terrestrial habitats. A buffer zone of 15 metres is required between the downwind point of direct application and the closest edge of sensitive aquatic habitats, and wildlife habitat at the edge of these bodies of water. Do not contaminate these habitats when cleaning and rinsing spray equipment or containers. 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 mixtures.
- Visible effects on most annual weeds occur within 2 to 4 days but on most perennial weeds may not occur until 7 to 10 days.
- Extremely cool or cloudy weather at treatment time may slow down activity of this product and delay visual effects of control. Visible effects are a gradual wilting and yellowing of the plant that advances to complete browning of above ground growth and deterioration of underground plant parts.
- Unemerged plants arising from underground rhizomes or root stocks of perennials will not be affected by the spray and will continue to grow. For this reason best control of most perennial weeds is obtained when treatment is made at late growth stages approaching maturity.
- Always use the higher rate of this product per hectare within the recommended range when weed growth is heavy or dense, or weeds are growing in an undisturbed (non-cultivated) area.
- Do not treat weeds under poor growing conditions such as drought stress, disease or insect damage, as reduced weed control may result. Reduced control may also occur when treating weeds heavily covered with dust.
- This product does not provide residual weed control.
- Heavy rainfall immediately after application may wash the chemical off the foliage and a repeat treatment may be required. Do not apply if rainfall is forecast for the time of application.
- Do not mix with any surfactant, pesticide, herbicide oils or any other material other than water unless specified in this booklet. For best results, spray coverage should be uniform and complete. Do not spray weed foliage to the point of runoff.
- Do not apply in greenhouses

## MIXING AND APPLICATION

- Apply these spray solutions in properly maintained and calibrated equipment capable of delivering desired volumes.
- **AVOID DRIFT - EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURING DESIRABLE PLANTS AND CROPS.** Do not allow spray mist to drift since even minute quantities of spray can cause severe damage or destruction to nearby crops, plants or other areas on which treatment is not intended, or may cause other unintended consequences.
- Do not apply when winds are gusty or in excess of 8 kilometres per hour or when other

conditions, including lesser wind velocities, will allow drift to occur. When spraying, avoid combinations of pressure and nozzle type that will result in fine particles (mist) that are more likely to drift.

- **ATTENTION: AVOID CONTACT WITH FOLIAGE, GREEN STEMS, OR FRUIT OF CROPS, DESIRABLE PLANTS AND TREES SINCE SEVERE INJURY OR DESTRUCTION MAY RESULT.**
- Reduced results may occur if water containing soil is used, such as water from ponds and unlined ditches.
- Clean sprayer and parts immediately after using this product by thoroughly flushing with water. Do not contaminate water sources by disposal of wastes or cleaning of equipment.

## MIXING AND APPLICATION EQUIPMENT INFORMATION

### MIXING

For ground or industrial type sprayers:

- Fill the spray tank with one-half the required amount of water.
- Add the proper amount of herbicide. See "**Weeds Controlled**", "**In-Crop Treatments**" and "**Non-Cropland Treatments**" sections of this booklet
- Mix well before adding the remaining portion of water.

Placing the filling hose below the surface of the liquid solution will prevent excessive foaming. Removing hose from tank immediately will avoid back siphoning into water source. Use of mechanical agitators may cause excessive foaming. Bypass lines should terminate at the bottom of the tank.

For use in knapsack sprayers, it is suggested that the proper amount of this herbicide be mixed with water in a larger container. Fill sprayer with the mixed solution.

## APPLICATION INFORMATION FOR NON-CROPLAND USES

### Foliar Applications

- Spray coverage should be uniform and complete. Do not spray to the point of run off.
- For woody brush and trees, early season applications may take 30-45 days for symptoms to develop on target species. Late season application may be made to species that have some autumn colours provided no major leaf drop has occurred. Control will be observed the following spring.

### Ground Applications:

- Use ground boom or boomless, or mist blower equipment, or apply as a 1 to 2 percent solution using hand-held high volume equipment.
- Spray coverage should be uniform and complete. Do not spray to the point of runoff.
- If weeds have been mowed or tilled, do not treat until regrowth has reached the recommended stages.

### **Aerial Applications: (For industrial rights-of-way only)**

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

Apply only at the rate recommended for aerial application on this label.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices, or equivalent electronic positioning systems (GPS). The use of a spotter plane is recommended.

### **Use Precautions**

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

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

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

### **Operator Precautions**

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

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

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

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

### **Product Specific Precautions**

Read and understand the entire label before opening this product. If you have questions, call the E. I. du Pont Canada Company Product Info Line at 1-800-667-3925 or obtain technical advice from the distributor or your provincial agricultural representative. Application of this product must meet and/or conform to the following:

Volume: Apply the recommended rate, in a minimum spray volume 30-100 litres per hectare.

Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. **PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR ARE MOST SUSCEPTIBLE.** The maintenance of an organic coating (paint) that meets aerospace specification MIL-C-38412 may prevent corrosion.

### **Injection Applications: For All Non-Cropland Uses**

Woody vegetation may be controlled by injection application of this product. Apply using suitable equipment, which must penetrate into living tissue, at a rate of at least 0.5 mL (either undiluted or 1:1 with water) per 5cm tree diameter at breast height (DBH). The cuts should be spaced evenly around the tree and below all major branches. Application may be made at any time of year, except when cold temperatures prevent adequate penetration of injection equipment, or in the spring during periods of heavy sap flow. Control of tree species with tree diameters greater than 20 cm may not be acceptable at this rate.

Total control may not be evident for 1-2 years following treatment.  
A partial list of species controlled includes:

<b>ALDER</b>	<b>HEMLOCK</b>
<b>BIRCH</b>	<b>MAPLE*</b>
<b>CEDAR</b>	<b>PINE</b>
<b>CHERRY</b>	<b>POPLAR</b>
<b>DOUGLAS FIR</b>	<b>WILLOW</b>

\* This treatment may only provide suppression of Big-Leaf Maple. Late fall applications will provide optimum suppression of Big-Leaf Maple

### **Cut Stump Application**

Woody vegetation may be controlled by the application of this product to freshly cut stumps to prevent regrowth. Because the treatment uses a concentrated solution, application must be made using low-pressure equipment (eg. squirt bottle or similar device). This product must be applied immediately to the surface of the freshly cut stump (ie. within 5 minutes) for optimum control at the prescribed rates. Only the cambial tissues of the cut surface should be treated. Apply the herbicide solution at a rate equivalent to at least 0.5 mL product for every 5cm diameter at breast height (DBH). Do not cover the remaining area nor any exposed roots, as this product does not penetrate bark well. This treatment may be used at any time of year, except during periods of heavy sap flow or when low temperatures prevent solution application due to freezing. A water soluble colourant may be added to the solution as a means of indicating which surfaces have been treated. Total control may not be evident until 1-2 years after treatment.

See the “**Injection Applications**” of this label for a partial list of species controlled.

## **APPLICATION EQUIPMENT**

### **Boom Equipment**

For control of annual weeds listed on this booklet using conventional boom equipment:

- Apply this product in 50 to 100 litres of clean water per hectare as a broadcast spray, except as otherwise stated on this label using no more than 275 kPa pressure. See "**Weeds Controlled**" sections of this booklet for rates to control specific weeds.

For control of perennial weeds and woody brush and trees listed on this booklet using conventional boom equipment:

- Apply this product in 50 to 300 litres of clean water per hectare as a broadcast spray using no more than 275 kPa pressure. See "**Weeds Controlled**" sections of this booklet for rates to control specific weeds.

### **Hand Held and High Volume Equipment (use coarse sprays only)**

For control of weeds and woody brush and trees listed in the "Weeds Controlled" section of this label using knapsack sprayers or high volume spraying equipment utilizing handguns or other suitable nozzle arrangements:

- Unless otherwise specified, make a 1% solution of this product in water (1 litre of this product in 100 litres of water) and apply to foliage of vegetation to be controlled. For best results, use a 2% solution (2 litres of this product in 100 litres of water) on harder to control perennials such as field bindweed, hemp dog-bane, milkweed and Canada thistle.
- Applications should be made on a spray-to-wet basis. Spray coverage should be uniform and complete. Do not spray to point of runoff. Hand gun applications should be properly directed to avoid spraying desirable plants.

### **Selective Equipment**

Selective equipment such as **WIPER** and **ROLLER** applicators can be used for weed control in soy and dry beans, orchards, vineyards, cranberries, strawberries and non-crop areas.

This product may be applied with a wiper applicator, after dilution and thorough mixing with water, to listed weeds in soy and dry beans, grapes, orchards, cranberries and strawberry. Applications must be made before initial pod set in soy and dry beans. (It may also be used in any industrial, tree planting and non-crop site specified on this label.)

A wiper applicator applies the herbicide solution onto weeds by rubbing the weed with an absorbent material containing the herbicide solution. Wiper applicators include either roller or wick devices that physically wipe appropriate concentrations or amounts of this product directly onto the weed. Equipment must be designed, maintained and operated to prevent the herbicide solution from contacting desirable vegetation. Performance may be improved by reducing speed in areas of heavy weed infestations to insure adequate wiper saturation. Best results may be obtained if 2 applications are made in opposite directions.

Applicators used above desired vegetation should be adjusted so that wiper contact point is at least 5 cm above the desirable vegetation. Droplets or foam of the herbicide solution settling on desirable vegetation may result in discoloration, stunting or destruction.

Applications should be made when the weeds are a minimum of 15 cm above the desirable vegetation. Best results may be obtained when more of the weed is exposed to the herbicide solution. Weeds not contacted by the herbicide solution will not be affected. This may occur in dense clumps, severe infestations, or when the height of the weeds varies so that not all weeds are contacted. In these instances, repeat treatments may be necessary. See the “**Weeds Controlled**” tables in this label for recommended stage of growth for specific weeds.

## NOTES

- . Keep wiping surfaces clean.
- . Maintain recommended roller RPM on roller applicators while in use.
- . Keep wiper material at proper degree of saturation with herbicide solution.
- . DO NOT use wiper equipment when weeds are wet.
- . DO NOT operate equipment at ground speeds below 4 and greater than 10 km/h. Weed control may be affected by speed of application equipment. As weed density increases, reduce equipment ground speed to insure good coverage of weeds.
- . Be aware that on sloping ground the herbicide solution may migrate, causing dripping on the lower end and drying on the upper end of the wiper applicator.
  
- . Variation in equipment design may affect weed control. With wiper applicators, the wiping material and its orientation must allow delivery of sufficient quantities of the recommended herbicide solution directly to the weed.
- . Care must be taken with all types of wipers to insure that the absorbent material **does** not become over-saturated, causing the herbicide to drip onto desirable vegetation.
- . With all equipment, drain and clean wiper parts immediately after using this product, by thoroughly flushing with water.

**For Roller Applicators:** Mix 0.5 to 1.0 litres of this product in 10 litres water to prepare a 5 to 10

percent solution. Roller speed should be maintained at 50 to 150 rpm.

**For Wick or other Wiper Applicators:** Mix 1 litre of this product in 2 litres of water to prepare a 33 percent solution.

**Part 3: Weeds Controlled**

**ANNUAL WEED CONTROL WITH POLARIS**

- Polaris, applied by itself, will not control volunteers from crops containing genetic resistance to glyphosate.
- Allow at least 1 day after treatment before tillage
- Annual weeds generally will continue to germinate from seed throughout the growing season. Repeat treatments may be necessary to control later germinating weeds, in some situations.

<b>Product Rate (L/ha)</b>	<b>Weeds Controlled</b>	<b>Growth Stage</b>	<b>Comments (water volume of 50-100 L/ha)</b>
0.75	Wild oats Green foxtail Volunteer Wheat Volunteer Barley Lady's-thumb Stinkweed Volunteer canola* Wild mustard	Up to 8cm in height (wild oats 1-3 leaf)	Add 350 mL/ha of a surfactant registered for use such as Agral®90, AgSurf®, or Companion™  *non glyphosate tolerant only
1.0	Weeds listed above, plus: Kochia* Flixweed* Wild oats**	8-15 cm in height	Add 350 mL/ha of surfactant as listed above  *suppression only **heavy infestations
1.25-1.9	Weeds listed above, plus: Downy brome Giant foxtail Persian darnel Cleavers Lamb's quarters Redroot Pigweed Hempnettle Russian thistle Volunteer flax	Up to 15 cm in height	No surfactant required  *higher rate needed for plants above 8cm  ** 1.9L/ha rate for 3-4 leaf stage  *** 1.9L/ha rate for 8-15 cm in height

	Common ragweed* Flixweed Canada fleabane* Wild buckwheat** Narrow leaved hawk'sbeard***		
2.25	Weeds listed above, plus: Crabgrass Annual bluegrass Kochia Prickly lettuce Shepherd's purse Annual sowthistle Narrow leaved vetch	Up to 15 cm in height	
3.5	All weeds listed above	Over 15 cm high	

**NOTE:** For spot treatment, 0.75 - 3.5 L/ha is approximately equivalent to 8 - 35 mL/100 m<sup>2</sup>, respectively.

### Annual Weed Control With Polaris Tank Mixtures

#### Polaris + Pardner

Rates: Polaris 0.75-1.0 L/ha + Pardner 1.0 L/ha

Water Volume: 50-100 L/ha

Weeds Controlled: All annual weeds listed in the annual weeds controlled table above, plus: volunteer glyphosate tolerant canola, wild buckwheat\*, redroot pigweed \*

Weed Stage: less than 15 cm tall and actively growing (use higher rate if weeds are beyond 8 cm)

Crop Stage: Only for use prior to seeding wheat, oats and barley in minimum tillage situations. Add 350 mL/ha of surfactant, as listed in the annual weeds controlled table above.

\*use the 1.0 L/ha rate of Polaris for control of wild buckwheat and suppression of redroot pigweed.

#### Polaris + 2,4-D\*

Rates: Polaris 1.25-1.9 L/ha + 2,4-D 0.6-0.9\*\* L/ha or 1.25-1.5\*\*\* L/ha

Water Volume: 50-100 L/ha

Weeds controlled: All annual weeds listed in the annual weeds controlled table above, plus:

0.6-0.9 L/ha of 2,4-D: volunteer glyphosate tolerant canola (1-4 leaf), bluebur, burdock, cocklebur, common plantain, daisy fleabane, false flax, false ragweed, goat's beard, mustards (except dog and tansy), prickly lettuce, ragweeds, Russian pigweed, shepherd's purse, stinging nettle, sweet clover, thyme-leaved spurge, wild radish, wild sunflower.

1.25-1.5 L/ha of 2,4-D: all weeds listed above plus: volunteer glyphosate tolerant canola (4-6 leaf), annual sowthistle, common chickweed, common purslane, dog and tansy mustard, oak-leaved goosefoot,

groundsel, hairy galinsoga, hawkweed, heal-all, knotweed, peppergrass, pineappleweed, prostrate pigweed, purslane, sheep sorel, smartweed, tumble pigweed, velvetleaf

Weed Stage: less than 15 cm tall and actively growing (use higher rate if weeds are beyond 8 cm)

Crop Stage: Only for use prior to seeding or after seeding but before crop emergence of wheat, winter wheat, barley and rye.

\*Based on a 500 g/L formulation, adjust rates accordingly for other 2,4-D formulations. Use only low volatile ester or amine formulations of 2,4-D.

\*\*2,4-D at 0.6-0.9 L/ha (280-420 g ai/ha).

\*\*\* 2,4-D at 1.2-1.5 L/ha (560-700 g ai/ha).

### **Polaris + MCPA\***

Rates: Polaris 1.25-1.9 L/ha + MCPA 0.5-0.7\*\* L/ha or 0.5-1.0\*\*\* L/ha

Water Volume: 50-100 L/ha

Weeds Controlled: All annual weeds listed in the annual weeds controlled table above, plus:

0.5-0.7 L/ha of MCPA: volunteer glyphosate tolerant canola (1-4 leaf)

0.7-1.0 L/ha of MCPA: All weeds listed above, plus: bluebur, burdock (before 4 leaf stage), false flax, mustards (except dog and tansy), prickly lettuce, ragweeds, Russian pigweed, shepherd's purse, vetch, wild radish, wild sunflower

Weed Stage: less than 15 cm tall and actively growing (use higher rate if weeds are beyond 8 cm)

Crop Stage: Only for use prior to seeding or after seeding but before crop emergence of wheat, barley, rye, oats, corn (field and sweet) (MCPA Amine formulation only), flax, field peas (MCPA Amine formulation only).

\* Based on a 500 g/L formulation, adjust rates accordingly for other MCPA formulations.

\*\* Use 0.5-0.7 L/ha of MCPA (250-350 g ai/ha) prior to seeding field peas

\*\*\* MCPA at 0.5-1.0 L/ha (250-500 g ai/ha)

### **Polaris + Buctril M**

Rates: Polaris 0.75-1.0 L/ha + Buctril M 0.5-1.0 L/ha

Water Volume: 50-100 L/ha

Weeds Controlled: All annual weeds listed in the annual weeds controlled table above, plus:

0.5 L/ha of Buctril M: volunteer glyphosate tolerant canola (1-4 leaf)

1.0 L/ha of Buctril M: All weeds listed above, plus: Green smartweed, Pale smartweed, Cow cockle, bluebur, redroot pigweed, shepherd's purse, Russian thistle (before 5cm), Scentless Chamomile (annuals only), Volunteer sunflower, Night flowering catchfly, cocklebur, Velvetleaf (before 8 cm), ball mustard, American nightshade, wild buckwheat, tartary buckwheat, wild tomato, Canada thistle (top growth), Perennial sowthistle (top growth)

Weed Stage: less than 15 cm tall and actively growing (use higher rate if weeds are beyond 8 cm)

Crop Stage: Only for use prior to seeding or after seeding but before crop emergence of wheat, barley, rye, oats, corn, flax, canary seed and seedling grasses (including brome grass, crested wheatgrass, Intermediate wheatgrass, slender wheatgrass, tall wheatgrass, Russian wild rye, Timothy, Orchard grass, Creeping red fescue, Meadow fescue, Meadow foxtail, Seedling tall fescue, Seedling meadow brome grass, Seedling streambank wheatgrass and Reed canary grass).

### **PERENNIAL WEED CONTROL**

When applied as recommended under the conditions described, this product will control the perennial weeds listed below:

**Quackgrass Control:**

Light – Moderate Infestations:

Rate: 2.5 L/ha

Water Volume: 50-300 L/ha

Quackgrass Growth Stage: at least 3-4 green leaves

Notes: Allow 3 or more days after treatment before tillage. When using water volumes of 150-300 L/ha an approved surfactant must be used at a rate of 0.5% v/v. Quackgrass can be treated after a mild frost provided it is actively growing at the time of application with 3-4 green leaves. Do not apply after the first damaging frost in the fall.

Heavy Infestations / Long term control:

Rate: 2.5 – 7.0 L/ha

Water Volume: 50-300 L/ha

Quackgrass Growth Stage: at least 3-4 green leaves

Notes: Use rates higher than 2.5 L/ha for consistent, longer term control. When using water volumes of 150-300 L/ha an approved surfactant must be used at a rate of 0.5% v/v. Quackgrass can be treated after a mild frost provided it is actively growing at the time of application with 3-4 green leaves. Do not apply after the first damaging frost in the fall.

**Canada Thistle Control:**

Seasonal Control

Rate: 2.5 L/ha

Water Volume: 50-100 L/ha

Canada Thistle Growth Stage: rosette

Notes: Allow 10 or more days after treatment before tillage. Canada Thistle can be treated after a mild frost provided it is actively growing and the leaves are still green. Do not apply after the first damaging frost in the fall.

Long Term Control

Rate: 4.74-7.0 L/ha

Water Volume: 100-300 L/ha

Canada Thistle Growth Stage: bud stage or beyond

Notes: Allow 5 or more days after treatment before tillage.

Post Harvest Treatment

Rate: 1.7 L/ha + 1.25 L/ha of Banvel + 0.35 L/ha approved non-ionic surfactant

Water Volume: 100-200 L/ha

Application Stage: post harvest stubble; Canada Thistle actively growing

Notes: Grow only cereals, canola, soybeans, field corn, sweet corn or white beans after this application. If application is made after September 1<sup>st</sup>, or if soil moisture levels are extremely low after application, crop injury may occur in the spring following the application.

**Field Bindweed Control:**

Rate: 7-12 L/ha

Water Volume: 100-300 L/ha

Field Bindweed Growth Stage: at least full bloom  
Notes: Allow 7 or more days after treatment before tillage.

**Common Milkweed Control:**

Pre Harvest Treatment

Rate: 2.5 L/ha

Water Volume: 50-100 L/ha

Common Milkweed Growth Stage: bud to full bloom (preharvest)

Notes: Allow 7 or more days after treatment before tillage. Reduced control may occur after full bloom.

Long Term Control

Rate: 12 L/ha

Water Volume: 100-300 L/ha

Common Milkweed Growth Stage: bud to full bloom

Notes: Allow 7 or more days after treatment before tillage. Reduced control may occur after full bloom. Subsequent applications may be required, as not all plants may in the correct stage.

**Toadflax Control:**

In-season / Pre Harvest Control

Rate: 2.5 L/ha

Water Volume: 50-100 L/ha

Toadflax Growth Stage: bud to full bloom (preharvest); vegetative state

Notes: Toadflax can be treated after a mild frost provided it is actively growing and still green at the time of application. Do not apply after the first damaging frost.

**Alfalfa Control:**

Fall Treatment

Rate: 3.7-5 L/ha

Water Volume: 50-300 L/ha

Alfalfa Growth Stage: early bud to full bloom (fall applications only)

Notes: Allow at least 5 days after treatment before tillage. Use higher rates with high alfalfa populations and heavy grass infestations.

Rate: 2.5-5 L/ha + 1.2-2.4 L/ha of 2,4-D (500 g/L formulation of either amine or ester)

Water Volume: 100-200 L/ha

Application Stage: established alfalfa stands (fall control)

Notes: Adjust 2,4-D product rates for other formulations. Use the higher Polaris rates when perennial grasses are present.

Spring Treatment

Rate: 2.5-5 L/ha + 1.2 L/ha of 2,4-D (500 g/L formulation of either amine or ester)

Water Volume: 100-200 L/ha

Application Stage: established alfalfa stands (spring control)

Notes: Adjust 2,4-D product rates for other formulations. Only cereal crop, not underseeded to legumes may be planted following spring applications of this tankmix and a 14-day interval between application and seeding is required. Use the higher Polaris rates when perennial grasses are present.

**Dandelion Control:**

Early Spring Treatment; In-season Control

Rate: 2.5 L/ha

Water Volume: 50-100 L/ha

Dandelion Growth Stage: less than 15 cm rosette

Notes: Allow at least 3 days after treatment before tillage.

Spring Treatment; Long Term Control

Rate: 3.7-5 L/ha

Water Volume: 50-300 L/ha

Dandelion Growth Stage: greater than 15 cm rosette

Notes: Allow at least 3 days after treatment before tillage. Use the higher rate when infestations are heavy.

Late summer/fall Treatment; Pre Harvest Treatment

Rate: 2.5 L/ha

Water Volume: 50-100 L/ha

Dandelion Growth Stage: rosette to full bloom (preharvest)

Notes: Allow at least 7 days after treatment before tillage.

**Foxtail Barley Control:**

Rate: 2.5-5 L/ha

Water Volume: 50-100 L/ha

Foxtail Barley Growth Stage: seedling - heading

Notes: Allow a minimum of 1 day after treatment before tillage. Use higher rate for heavy infestations or if plants are more established or stressed.

**Other Perennials Control:**

Grass Species Include: Bluegrass (Canada, Kentucky), Smooth Bromegrass, Cattail, Wire-stemmed Muhly, Yellow Nutsedge

Broadleaf Species Include: Cottontop, Curled Dock, Hemp Dogbane, Hoary Cress, Japanese knotweed, Poison Ivy, Purple Loosestrife, Perennial Sowthistle, Absinth Wormwood

Rate: 7-12 L/ha

Water Volume: 100-300 L/ha

Growth Stage: early heading or early bud stage

Notes: Allow a minimum of 7 days after treatment before tillage.

Perennial Weed Control General Notes:

- For spot treatment, mix 120 mL of product in 5 L clean water per 100 m<sup>2</sup>. (2.5 - 12 L/ha is

- approximately equivalent to 25 - 120 mL/100 m<sup>2</sup>, respectively).
- **Rhizome Dormancy:** Reduced control may result if rhizomes have become dormant. Dormancy may occur if soil fertility is low and/or the land has not been tilled for several years.
  - **Mowing Effects:** Mowing prior to application will reduce effectiveness unless weeds are allowed to regrow to the proper stage before application.
  - **Regrowth from Germinating Seeds:** This product only controls emerged plants. Repeat treatments or other weed control measures may be required to control weeds regenerating from seeds or other underground parts.

**Part 4: In-Crop Treatments**

**PRIOR TO PLANTING AND EMERGENCE OF ALL CROPS**

This product may be applied prior to planting all crops for control of emerged weeds listed on this label. Ensure weeds are at the desired stage at the time of application. This product does not provide pre-emergent weed control and newly germinating weeds may be a problem in the crop. **APPLY BEFORE SEEDING OR TRANSPLANTING.**

This product may be applied prior to seeding or after seeding, but before crop emergence for control of emerged weeds in minimum and zero tillage cropping systems for all field crops. Applications made too far in advance of seeding may allow weeds to emerge between application and crop emergence, as this product does not provide residual weed control.

**WEED CONTROL IN GLYPHOSATE TOLERANT CANOLA  
(i.e. varieties with genetic resistance to glyphosate)**

**NOTE: ALWAYS USE PEDIGREED (CERTIFIED) CANOLA SEED DESIGNATED AS GLYPHOSATE TOLERANT. CANOLA WHICH IS NOT DESIGNATED AS GLYPHOSATE TOLERANT WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

**DO NOT APPLY BY AIR**

Some short term visual yellowing may occur when Polaris is applied at the late application (4 to 6 leaf) stage of the crop. This effect is temporary and will not influence crop growth, maturity or yield.

Weeds will be more easily controlled and early crop competition avoided with applications made when the weeds are small. Control of weeds greater than 25 cm in height will be inconsistent, although some weeds may be controlled.

<b>Product Rate (L/ha)</b>	<b>Weeds Controlled</b>	<b>Crop Growth Stage</b>	<b>Comments (water volume of 50-100 L/ha)</b>
0.825-1.875	wild oats	Up to and	*a single application rate

<p>(do not use more than 2.5 L/ha per season for post-emergent use)</p>	<p>green foxtail volunteer wheat volunteer barley barnyard grass stinkweed redroot pigweed wild mustard Russian thistle common lamb's quarters hempnettle volunteer canola (non-glyphosate tolerant) lady's-thumb kochia chickweed corn spurry wild tomato cleavers* wild buckwheat* shepherd's-purse* cow cockle* night flowering catchfly* smartweed* stork's bill* flixweed* narrowleaved hawk'sbeard* round leaved mallow**</p> <p>Suppression: Perennial sowthistle* Canada Thistle* Dandelion*</p> <p>Season long control: Quackgrass* Foxtail barley** Perennial sowthistle*** Canada Thistle***</p>	<p>including the 6 leaf stage</p>	<p>of 1.25 L/ha is required</p> <p>** Sequential applications of 1.25 L/ha are required.</p> <p>***Sequential applications of 1.25 L/ha or a single application of 1.875 L/ha is required.</p> <p>The second application must be made no later than 6<sup>th</sup> leaf stage of the canola.</p>
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## Tank Mixtures

### Polaris + Lontrel

Rates: Polaris 1.25 L/ha + Lontrel 0.28

Water Volume: 100 L/ha

Crop Stage: 2-6 leaf stage

Weeds Controlled: All weeds indicated in the weeds controlled table above, plus:

Season long top growth control of Canada thistle and control of wild buckwheat

Refer to the Lontrel herbicide label for further safety precautions and handling instructions.

**WEED CONTROL IN GLYPHOSATE TOLERANT SOYBEAN  
(i.e. varieties with genetic resistance to glyphosate)**

**NOTE: ALWAYS USE PEDIGREED (CERTIFIED) SOYBEAN SEED DESIGNATED AS GLYPHOSATE TOLERANT. SOYBEANS WHICH ARE NOT DESIGNATED AS GLYPHOSATE TOLERANT WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

DO NOT APPLY BY AIR

Weeds will be more easily controlled and early crop competition avoided with applications made when the weeds are small. Control of weeds greater than 25 cm in height will be inconsistent, although some weeds may be controlled.

Product Rate (L/ha)	Weeds Controlled	Crop Growth Stage	Comments (water volume of 100-200 L/ha)
2.5	Velvetleaf common ragweed common lamb's quarters redroot pigweed smooth pigweed cocklebur green smartweed lady's-thumb Pennsylvania smartweed Eastern black nightshade wild mustard wild buckwheat foxtail (green, yellow, giant) barnyard grass crabgrass (smooth, large) quackgrass milkweed* yellow nutsedge* fall panicum wild proso millet Perennial sowthistle* Canada Thistle*	First trifoliolate leaf stage through flowering	*suppression only with one application. Will be controlled with a sequential application.  A second 2.5 L/ha application may be used for late weed flushes emerging after the initial treatment. For best results on perennial weeds the second application should be at least 2 weeks after the first.  This second application must be made no later than the flowering stage of the soybean.  Perennial sowthistle and

	Wire-stemmed muhly*		<p>Canada thistle should be from the rosette stage to 50 cm in height and actively growing.</p> <p>Wire-stemmed muhly should be 10-20 cm in height and actively growing.</p> <p>Milkweed should be 15-60 cm in height and actively growing.</p> <p>Yellow nutsedge should be 5-15 cm in height and actively growing.</p>
5.0	All weeds listed above plus: field bindweed	First trifoliolate leaf stage through flowering	

## Tank Mixtures

### Polaris + Pursuit

Rates: Polaris 2.5 L/ha + Pursuit 0.16–0.21 L/ha (use the higher rate for heavier infestations)

Water Volume: 100-200 L/ha

Crop Stage: up to and including the 3<sup>rd</sup> trifoliolate leaf stage

Weeds Controlled: All weeds listed in the weeds controlled table above, plus:

Added residual control of Eastern black nightshade, lamb's quarters, redroot pigweed, velvetleaf, fall panicum and wild proso millet

Mixing: Add and mix the Pursuit and then add Polaris

Note: Recommended for soybean systems with row spacings of 50 centimetres (20 inches) or more where a single application timing is desired. Do not harvest soybeans for 100 days after applying this tankmixture. Do not apply more than one application of this tankmixture per growing season.

Refer to the Pursuit herbicide label for further safety precautions and handling instructions.

### Polaris + Assure II Herbicide

Rates: Polaris 2.5-5.0 L/ha + Assure II 0.25-0.38 L/ha

Water Volume: 100-300 L/ha

Crop Stage: 1st trifoliolate leaf stage to flowering

Weeds Controlled: All weeds listed in the weeds controlled table above, plus:

Volunteer glyphosate tolerant corn

Weed Stage: 2-6 leaf stage of corn

Mixing: Add and mix the Assure II and then add Polaris

Note: Do not harvest soybeans for 80 days after applying this tank mixture.

Refer to the Assure II herbicide label for further safety precautions and handling instructions.

**WEED CONTROL IN GLYPHOSATE TOLERANT CORN  
(i.e., varieties with genetic resistance to glyphosate)**

**NOTE: ALWAYS USE PEDIGREED (CERTIFIED) CORN SEED DESIGNATED AS GLYPHOSATE TOLERANT. CORN WHICH IS NOT DESIGNATED AS GLYPHOSATE TOLERANT WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

DO NOT APPLY BY AIR

<b>Product Rate (L/ha)</b>	<b>Weeds Controlled</b>	<b>Crop Growth Stage</b>	<b>Comments (water volume of 100-200 L/ha)</b>
2.5	Velvetleaf common ragweed common lamb's quarters redroot pigweed smooth pigweed cocklebur green smartweed lady's-thumb Pennsylvania smartweed Eastern black nightshade wild mustard wild buckwheat foxtail (green, yellow, giant) barnyard grass crabgrass (smooth, large) quackgrass fall panicum wild proso millet wild oats volunteer cereals (wheat, barley) stinkweed Russian thistle Hempnettle Kochia	Up to and including 8 leaf stage	*suppression only with one application. Will be controlled with a sequential application.  A second 2.5 L/ha application may be used for late weed flushes emerging after the initial treatment. For best results on perennial weeds the second application should be at least 2 weeks after the first.  This second application must be made no later than the 8 leaf stage of the corn.  Perennial sowthistle and Canada thistle should be from the rosette stage to 50 cm in height and

	Chickweed Corn spurry Wild tomato Cleavers Shepherd's-purse Cow cockle Night-flowering catchfly Stork's-bill Flixweed Narrow leaved hawk'sbeard Perennial sowthistle* Canada Thistle* Wire-stemmed muhly* milkweed* yellow nutsedge* round-leaved mallow* field bindweed*		actively growing.  Wire-stemmed muhly should be 10-20 cm in height and actively growing.  Milkweed should be 15-60 cm in height and actively growing.  Yellow nutsedge should be 5-15 cm in height and actively growing.
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## Tank Mixtures

### Polaris + atrazine

Rates: Polaris 2.5 L/ha + atrazine 0.75-1.0 kg ai/ha\*

Crop Stage: up to and including the 5<sup>th</sup> leaf stage

Weeds Controlled: All weeds listed in the weeds controlled table above, plus:

Residual control of lamb's quarters, redroot pigweed, common ragweed

Note: Only use when a single application timing is desired. Use the higher atrazine rate for heavier weed infestations.

\*0.75-1.0 kg ai atrazine/ha is equivalent to 1.56-2.08 L/ha Clean Crop Atrazine 480 or Aatrex Liquid 480, or 0.83-1.11 kg/ha Aatrex Nine-O

### Polaris + Marksman Herbicide

Rates: Polaris 2.5 L/ha + Marksman 2.5-3.7 L/ha

Crop Stage: up to and including the 5<sup>th</sup> leaf stage

Weeds Controlled: All weeds listed in the weeds controlled table above, plus:

Residual control of lamb's quarters, redroot pigweed, common ragweed, velvetleaf

Note: Only use when a single application timing is desired. Use the higher Marksman rate for heavier weed infestations.

## PRE-HARVEST APPLICATION

**Rate:** 2.5 L/ha (2.5-5.0 L/ha for forages)

**Water Volume:** 50-100 L/ha

**Weeds controlled:** quackgrass, Canada thistle, common milkweed, toadflax, dandelion and perennial sowthistle.

Weed Staging: quackgrass (4-5 green leaves and actively growing); Canada thistle and perennial sow thistle (at or beyond the bud stage and actively growing); Common milkweed (bud-bloom stage and actively growing)

**Crops and Staging (Do not apply to crops grown for seed production):**

<b>Crop(S)</b>	<b>Percent Grain Moisture</b>	<b>Visual Symptoms</b>
Wheat/Barley/Oats	Less than 30	Hard dough stage; a thumbnail impression remains on seed.
Canola	Less than 30	Pods are green to yellow; most seeds are yellow to brown.
Flax (Including Low Linolenic Acid Varieties)	Less than 30	Majority (75%-80%) of bolls are brown.
Peas	Less than 30	Majority (75%-80%) of pods are brown.
Lentils	Less than 30	Lowermost pods (bottom 15%) are brown and seeds rattle.
Dry Beans	Less than 30	Stems are green to brown in colour; pods are mature (yellow to brown in colour); 80%-90% leaf drop (original leaves).
Soybeans	Less than 30	Stems are green to brown in colour; pod tissue is dry and brown in appearance; 80%-90% leaf drop.
Forages	Not applicable (3-7 days prior to last cut before renovation)	Normal stage for forage harvesting.

**Harvest Management Benefits:** This treatment may also dry down crop and weed vegetative growth. Extremely cool, wet and/or cloudy weather conditions between the time of application and the anticipated harvest date may slow down activity of this product, thereby delaying crop drydown and harvest date.

**Note:** DO NOT APPLY BY AIRCRAFT; Earlier application may reduce crop yield and/or quality, and may lead to excess glyphosate residues in the crop.

**POST HARVEST APPLICATION**

This product may be applied in the fall as a postharvest stubble treatment for control of perennial weeds such as quackgrass and Canada thistle. Allow weeds to regrow to the desired stage (20-25 cm tall for quackgrass and Canada thistle) before application and ensure they have a high proportion of green coloration. Straw should be removed or evenly spread to allow for proper regrowth and spray coverage. Heavy frosts prior to application may decrease control.

## **IN CROP SPOT TREATMENT**

This product can be applied as an in-crop spot treatment in barley, corn, oats, soybeans, wheat, strawberry, blueberry, forage grasses and legumes including seed production. Applications should be made using the same rates and at the same growth stages as listed in the weed control tables above or use a 1 percent solution for annual weeds and quackgrass and a 2 percent solution for other perennial weeds (a 1% solution equals 1 litre Polaris in 100 litres of spray solution). One or 2% solution should be applied to wet, but not run-off. Applications can be made using a boom sprayer, hose and handgun, or hand sprayer in accordance with instructions in the "**Application Equipment**" section.

Spot treatments can be made up to heading of small grains, initial pod set on soy and dry beans, silking of corn and emergence of seed heads. The crop in the treated area will be killed. Take care to avoid drift for the same reason. **DO NOT APPLY IF CROP GROWTH HAS ADVANCED BEYOND SEED SET. ALLOW 3 TO 5 DAYS FOR POLARIS TO TRANSLOCATE INTO ALL PLANT PARTS BEFORE GRAZING OR HARVESTING TREATED AREAS**

## **PASTURE RENOVATION**

Use this product to control or suppress existing vegetation for zero-tillage seeding of legumes into established sod for pasture renovation. Delay spraying until weed growth is at least 20 cm in height and a maximum number of seedlings or shoots have emerged. Application can be made immediately before, during or after seeding, but before crop emergence.

## **SHELTERBELTS AND NURSERY STOCK (WOODY ORNAMENTALS)**

This product may be used to control listed annual or perennial weeds prior to planting, or as a post directed spray in established nurseries or shelterbelts of the following species:

### **Deciduous**

**Ash  
Caragana  
Cherry  
Elm  
Lilac  
Maple**

### **Coniferous**

**Fir  
Juniper  
Pine  
Spruce  
Yew**

**Mountain Ash  
Poplar  
Russian Olive  
Willow**

**NOTE:** This product is not recommended for use as an over-the-top broadcast spray in forest tree nurseries or in Christmas tree plantations. Application in such sites should be limited to directed sprays. **DO NOT** treat Christmas tree plantations in the year of anticipated harvest.

### **TREE, VINE, BERRY AND OTHER CROPS**

This product is recommended for annual and perennial weed control in various crops listed below, or for site preparation prior to transplanting tree and vine crops. Applications may be made with boom equipment, shielded sprayers, hand-held and high volume orchards guns, or with wiper applicator equipment (orchards, vineyards, cranberry and strawberry only). Do not apply more than 35 litres of this product per hectare per year.

**Extreme care must be exercised to avoid contact of herbicide solution, spray, drift, or mist with foliage or green bark of trunk, branches, suckers, fruit, canes of blueberry bushes, or other parts of trees or vines. Contact of this product with other than matured brown bark can result in serious crop damage.**

Specific Crop Information: (Weeds controlled can be found in the annual and perennial weed sections, unless otherwise stated)

**Crop: Apples, Apricot, Cherry (sweet/sour), Peaches, Pears, Plums**

Rate: 2.25-12 L/ha

Pre-Harvest interval: 30 days

Maximum Applications/Year: 3

**Crop: Grapes**

Rate: 2.25-12 L/ha

Pre-Harvest interval: 14 days

Maximum Applications/Year: 3

Note: Remove all sucker growth from the spray zone before spraying, except for the Concord variety of grape. Suckering should be conducted within 2 weeks prior to application. Do not apply to vines which have been established less than 3 years.

**Crop: Apples, Grapes**

Rate: 2.25-12 L/ha + 2.0-4.5 kg ai/ha Simazine\*

Maximum Applications/Year: 1

Note: Will provide season-long pre-emergent weed control. Do not apply to coarse, sandy or gravelly

soil. DO NOT apply to orchards or vineyards that have been established less than 1 or 3 years, respectively.

\* Simazine rate is equivalent to 2.25-5.0 kg/ha Princep® Nine-T®, or 4.0-9.0 kg/ha Simadex®.

**Crop: Cultivated Highbush Blueberry**

Rate: 2.8-5.6 L/ha

Pre-Harvest interval: 30 days

Maximum Applications/Year: 1

Note: Use as a directed spray with no more than 275 kPa pressure.

**Crop: Lowbush Blueberry**

Rate: 1-2% solution (see spot application section)

Pre-Harvest interval: apply in non-bearing year only

Maximum Applications/Year: 1

Note: Use as a directed spray in mid-summer of the non-bearing year.

**Crop: Cranberry**

Rate: 20% solution (1L of Polaris + 4L water)

Pre-Harvest interval: 30 days

Maximum Applications/Year: 1

Note: Apply using wick or wiper applicators

**Crop: Strawberry**

Rate: 1-2% solution (spot application); 33% solution (wiper application)

Pre-Harvest interval: 30 days

Maximum Applications/Year: 1

**Crop: Sugarbeets**

Rate: 1-2% solution (spot application)

Pre-Harvest interval: Treated crop MUST NOT be harvested

Maximum Applications/Year: 1

Weeds controlled: Dodder species

Note: Apply when dodder is vigorously growing but before flowering

**Crop: Asparagus**

Rate: 1.25-2.5 L/ha

Pre-Harvest interval: 7 days

Maximum Applications/Year: 1

Weeds controlled: Fall seeded ryegrass

Note: Apply in spring before emergence of crop shoots./

**Crop: Established plantations of Filberts, Hazelnuts**

Rate: 2.25-3.5 L/ha

Pre-Harvest interval: 14 days

Note: Use as a directed spray with no more than 275 kPa pressure.

**Crop: Walnut, Chestnut, Japanese heartnut**

Rate: 2.25-12 L/ha

Maximum Applications/Year: 2

Note: Apply late spring and fall, post-harvest but prior to a killing frost. Apply in 200-300 L water as a directed spray, using no more than 275 kPa pressure.

**Crop: North American Ginseng**

**NOTE TO USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR SPECIAL USE APPLICATIONS: (NORTH AMERICAN GINSENG)**

The DIRECTIONS FOR USE for this product described on the Label were developed by persons other than Nufarm Agriculture Inc. and accepted for registration by Health Canada under the User Requested Minor Use Label Expansion program. Nufarm Agriculture Inc. itself makes no representation or warranty with respect to performance (efficacy) and/or crop tolerance (phytotoxicity) claims for this product when used on the crop listed on this label.

Accordingly, the User assume all risks related to performance and crop tolerance arising, and agree to hold Nufarm Agriculture Inc. harmless from any claims based on efficacy and/or phytotoxicity in connection with the uses described on this Label.

**DIRECTIONS FOR USE**

**ALWAYS REFER TO THE PRODUCT LABEL FOR FURTHER INFORMATION ON WEEDS CONTROLLED, APPLICATION DIRECTIONS, AND USE PRECAUTIONS.**

**NORTH AMERICAN GINSENG**

**Existing/Established Gardens:** Apply this product in the spring before the crop has emerged above the soil. Apply when weeds are at the growth stages described in the product label. A maximum of two 2.5 L/ha applications in 50 to 100 L water/ha may be made in a season. **DO NOT USE A FALL APPLICATION IN ESTABLISHED/EXISTING GARDENS.**

**Part 5 : Non-Cropland Treatments**

**INDUSTRIAL, RIGHTS-OF-WAY, RECREATIONAL, AND PUBLIC AREAS**

This product can be used to control annual and perennial weeds and woody brush and trees listed on this label in non-crop areas such as railroad, pipeline, highway, power and telephone rights-of-way; petroleum tank farms and pumping installations; roadsides; storage areas; lumberyards; fence rows; industrial plant sites; parking areas; school yards, parks, golf courses, other public areas; airports and similar industrial or non-crop areas.

**NOTE:** For all industrial, rights-of-way, recreational and public areas, repeat treatments may be necessary to control regeneration or new growth.

When applied as recommended under the conditions described, this product will control weeds in non-cropland areas as listed.

### **Purple Loosestrife Control**

Rate: 6 L/ha (1-2% solution for hand held application or 33% solution for wiper application)

Water Volume: 300-600 L/ha

Weed Stage: at or beyond the bloom stage and actively growing

Note: DO NOT TREAT PLANTS OVER OPEN WATER. Where feasible, remove the flower heads before treatment to ensure prevention of seed set. For large (>1.6 ha) monocultures of loosestrife, work from the periphery inward in successive years to allow competing vegetation to invade the treated area. A long-term control strategy should include measures to control both established plants and seedlings. Sprayed areas should be monitored to determine the appropriate follow-up management. Early detection and treatment of second and third generation seedlings is important to prevent re-infestation of purple loosestrife. Desirable native plant communities will then have a chance to become re-established.

## **BRUSH AND TREE CONTROL**

### **Birch, Poplar, Cherry, Western Snowberry and Willow Control**

Rate: 3.0-6.0 L/ha (1-2% solution for hand held application)

Water Volume: 100-300 L/ha

Note: Summer through early fall

### **Maple, Raspberry/Salmonberry, Alder Control**

Rate: 6.0 L/ha (2% solution for hand held application)

Water Volume: 100-300 L/ha

Note: Late summer through fall

## **TURF RENOVATION**

Rate: 2.5-12.0 L/ha (1-2% solution for hand held application)

Water Volume: 100-300 L/ha

Note: Use higher end of the rate range for perennials. Do not disturb soil or underground plant parts before treatment. Where existing vegetation is growing under mowed turfgrass management, apply this product after omitting at least one regular mowing to allow sufficient growth for good interception of the spray and proper translocation into underground plant parts. Tillage or renovation techniques such as vertical mowing, coring or slicing should be delayed for 7 days after application to allow proper translocation into underground plant parts. For maximum control of existing vegetation, delay establishment to determine if regrowth from escaped underground plant parts occurs. When repeat treatments are necessary, sufficient regrowth must be attained prior to application. Desirable turfgrasses may be established following the above procedures.

## **ROADSIDE VEGETATION CONTROL**

**(1-2 meters wide along shoulders)**

Rate: 0.75-1.0 L/ha + 1.25-2.5 L/ha DyCleer 480

0.75-1.0 L/ha + 0.30 L/ha DyCleer 480 + 1.2 L/ha 2,4-D Amine 500

Water Volume: 25-150 L/ha

Weeds Controlled: Annual Weeds (refer to Annual weed Control table on this label and other labels for specific weeds)

Note: For other 2,4-D Amine formulations with a different guarantee, adjust the rate accordingly. **DO NOT APPLY TO STANDING WATER.**

## **RESIDUAL ANNUAL AND PERENNIAL WEED CONTROL**

Rate: 2.5-12 L/ha + 2.5-5.6 kg/ha Simazine 80W

2.5-12 L/ha + 4.0-9.0 L/ha Simadex Flowable

Water Volume: 200-400 L/ha

Note: Do not apply to coarse, sandy or gravelly soil. One application per year. The simazine component of this tank mixture will provide season long control of most germinating broadleaf weeds and grasses. It may also provide post-emergent activity on certain annual weeds.

- \* For more information on rates, water volumes and application, refer to the "Annual and Perennial Weed Control" sections of this booklet
- \*\* Aerial application may be used for brush and tree control in Industrial rights-of-way only. See aerial application.

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