

(Sleeve)

GROUP

14

HERBICIDE

# Goal<sup>®</sup> 2XL Herbicide

Emulsifiable Concentrate  
Restricted

Active Ingredient: Oxyfluorfen ....240 g/L

REGISTRATION NO. 24913 PEST CONTROL PRODUCTS ACT

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

**DANGER**  **POISON**

**DANGER SKIN IRRITANT**  
**DANGER EYE IRRITANT**  
**POTENTIAL SKIN SENSITIZER**

NET CONTENTS: 0.5 -10 L

Nufarm Agriculture Inc  
5101- 333, 96<sup>th</sup> Avenue NE  
Calgary, AB T3K 0S3  
Canada  
1-800-868-5444

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

Goal<sup>®</sup> is a registered trademark of Nutrichem Co, LTD and used under exclusive license by Nufarm Agriculture Inc.

## **DO NOT APPLY BY AIR**

### **PRECAUTIONS**

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

## **DO NOT APPLY BY AIR**

This material causes eye injury and skin irritation.

- Wear goggles or a face shield, chemical-resistant gloves, coveralls over a long sleeved shirt and long pants, chemical-resistant footwear such as rubber boots, and a chemical-resistant apron during mixing, loading, cleanup and repair activities. Applicators must wear chemical-resistant gloves, coveralls over a long-sleeved shirt and long pants, and chemical-resistant footwear such as rubber boots.
- Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours for broccoli, cabbage, cauliflower, *Populus* species (and their hybrids) or conifers, 24 hours for raspberries or strawberries, and 48 hours for dry bulb onions. For dry bulb shallots, do not enter or allow worker entry into treated areas during the REI of 6 days for handweeding and scouting activities; a 12 hour REI is required for all other activities.
- Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash hands (or any other skin that came into contact with the product) with soap and water and change into clean clothing.
- Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.
- Remove clothing/personal protective equipment immediately if pesticide comes in contact with skin through soaked clothing or spills. Then wash skin thoroughly and put on clean clothing. Wash contaminated clothing before reuse.
- Wash hands and exposed skin with soap and water thoroughly before eating, drinking, smoking or using toilet. Avoid breathing vapour or spray mist or contact with clothing.
- Apply to agricultural crops only where there is a low risk of drift to areas of human habitation or activity such as houses, cottages, schools, and recreational areas. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

## **FIRST AID**

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

**If swallowed:** Call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

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

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

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

## **TOXICOLOGICAL INFORMATION**

No specific antidote. Employ supportive care. Treatment should be based on judgment of the physician in response to reactions of the patient. Probable mucosal damage may contraindicate the use of gastric lavage. This product may pose an aspiration pneumonia hazard. Contains petroleum distillates.

## **AGRICULTURAL CHEMICAL**

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

## **ENVIRONMENTAL HAZARDS**

Toxic to aquatic organisms, small wild mammals, birds and terrestrial plants. This product is also 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. "Observe buffer zones specified under DIRECTIONS FOR USE.

DO NOT apply beyond the field boundary.

DO NOT apply directly to aquatic habitats (such as lakes, rivers, sloughs, ponds, coulees, prairie potholes, creeks, marshes, streams, reservoirs, and wetlands) or estuarine/marine habitats. This product contains a petroleum distillate which is moderately to highly toxic to aquatic organisms. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning equipment.

## **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.

## **STORAGE**

Do not contaminate water, food, or feed by storage or disposal. Keep from freezing. Store above 0° C.

## **DISPOSAL**

### **Recyclable Containers**

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

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

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

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

**NOTICE TO USER:** This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

(Booklet)

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2. Make the empty, rinsed container unsuitable for further use.

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

**Returnable Containers:**

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

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

**NATURE OF RESTRICTION:** Exposure to this product may be hazardous to your health. Care must be taken when handling to minimize exposure. Follow all label directions and precautions carefully. Only to be used by persons with government approval, where required, for application of pest control products.

**RESTRICTED USES**

**GENERAL INFORMATION**

Goal 2XL Herbicide is a selective herbicide for the control of certain broad-leaf weeds.

**GENERAL USE PRECAUTIONS**

- DO NOT APPLY BY AIR.
- DO NOT APPLY TO SANDY SOIL

**DIRECTIONS FOR USE**

READ ALL DIRECTIONS CAREFULLY BEFORE APPLYING. FAILURE TO FOLLOW LABEL INSTRUCTIONS MAY RESULT IN ERRATIC WEED CONTROL OR CROP DAMAGE.

**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 and Biological Engineers (ASABE) coarse classification. DO NOT overspray non-target terrestrial or aquatic habitats. DO NOT contaminate aquatic habitats when cleaning and rinsing spray equipment or containers.

**NOTE TO USER:** READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR THE INDICATED SPECIAL USE APPLICATIONS: The DIRECTIONS FOR USE for this product for the use(s) described below 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(s) listed below.

Accordingly, the Buyer and User assumes all risks related to performance and crop tolerance arising, and agrees to hold Nufarm Agriculture Inc. harmless from any claims based on efficacy and/or phytotoxicity in connection with the use(s) described on this label.

**FOR PRIMOCANE SUPPRESSION ON RED RASPBERRIES (BRITISH COLUMBIA ONLY)**

### **Application Directions**

Apply Goal 2XL Herbicide at a rate of 1.0 - 2.0 litres per ha to primocanes which have emerged to 10 to 15 centimetres. The higher rate should be used if the majority of primocanes have reached the maximum height of 15 centimetres or when hot, dry conditions precede the application. Apply only once per season. The addition of 2.5 litres of Companion (or equivalent surfactant) per 1000 litres of spray solution is recommended.

†Dosages listed are for broadcast or overall application. For banded applications (one metre wide), the amount of Goal 2XL Herbicide required per hectare should be reduced according to the following formula:

#### Band Width

Row Width X Broadcast Rate = Amount Required per Hectare

†for a one metre banded application

Goal 2XL Herbicide should be applied to the primocane row in a minimum of 500 litres of water per hectare. Restrict the spray application to the lower 15 cm of the fruiting canes to minimize crop injury from spray contact. Goal 2XL Herbicide must be applied using a low pressure mounted spray system (200 to 400 kPa). Follow manufacturer's recommendations for maintaining the minimum allowable boom height. The use of drift-reducing shrouds or spray shields is recommended. Spray equipment should be calibrated carefully before each use.

**DO NOT** apply Goal 2XL Herbicide to raspberry crops when wind speeds exceed 8 km/h.

Goal 2XL Herbicide provides temporary suppression of early season red raspberry primocane growth. Occasionally, after the use of Goal 2XL Herbicide, a spotting, crinkling or flecking may appear on the leaves of fruiting canes. These symptoms do not affect red raspberry plant health, performance or yield. Leaves of the fruiting canes which receive direct or indirect (drift) spray contact will be injured. Do not use Goal 2XL Herbicide on red raspberry plantings which are weak or under stress due to temperature, disease, fertilizer, insects, pesticides, drought or excessive moisture as primocane growth may be insufficient for the following year's crop.

Do not apply Goal 2XL Herbicide within 50 days of harvest.

### **DIRECTIONS FOR USE – BLUEBERRIES, Highbush**

For the post-emergence control of labelled weeds plus field pansy and wood sorrel.

Apply Goal 2XL Herbicide at the rate of 1 litre per broadcast hectare. This product is applied as a band on either side of the row of highbush blueberry. For band applications, reduce the rate according to the following formula:

#### Band Width

Row Width X Broadcast Rate = Product amount required

Timing: Apply as a directed band post-emergence to the crop when weeds are in the 2-4 leaf stage and actively growing.

Do not spray the crop directly. Apply in the equivalent of 500 litres of water per hectare. Apply only one ground application per year. Do not apply within 50 days of harvest.



Goal 2XL Herbicide should be thoroughly mixed with clean water at the recommended concentration and applied at 275 kPa in 500 litres of water per hectare. Heavy rainfall or heavy irrigation immediately following application to emerged weeds may reduce effectiveness.

Refer to the main Goal XL Emulsifiable Concentrate Herbicide label for additional details and instructions.

### **DIRECTIONS FOR USE – STRAWBERRIES**

For the control of labelled weeds plus field pansy and wood sorrell. Apply Goal 2XL Herbicide at a rate of 1.0 litre per hectare in 500 L of spray solution/ha. Apply as a single spray pre-mulching to dormant plants. Apply only one ground application per year. The preharvest interval is 150 days.

### **DIRECTIONS FOR USE – ESTABLISHED CONIFERS FOR FIELD PRODUCTION**

Goal 2XL Herbicide will provide postemergence weed control. To ensure effective postemergence weed control, apply Goal 2XL Herbicide when weeds are in the 2- to 4-leaf stage and actively growing.

Goal 2XL Herbicide should be thoroughly mixed with clean water at the recommended concentration and applied at 275 kPa in 200 to 500 litres of water per hectare. Heavy rainfall or heavy irrigation immediately following application to emerged weeds may reduce effectiveness.

Goal 2XL Herbicide has been tested on balsam fir, Fraser fir, white pine and white spruce. Goal 2XL Herbicide may be applied to other non-listed conifer species, however, non-listed conifer species may vary in tolerance to herbicides including Goal 2XL Herbicide. First use of Goal 2XL Herbicide to any non-listed conifer species should be limited to a small area of each variety to confirm tolerance prior to adoption as a general field practice.

Do not use handheld equipment to apply Goal 2XL Herbicide to field grown conifers.

### **Balsam Fir, Fraser Fir, White Spruce, and White Pine**

For control of labeled weeds on field grown conifers including balsam fir, Fraser fir, white spruce and white pine, apply Goal 2XL Herbicide at the rate of 0.5 or 1 litre of product per hectare. Apply in 200-500 litres of water per hectare. Goal 2XL Herbicide applications should be made before bud break or after new foliage has hardened off (approximately six weeks after bud break). Some temporary needle burn may occur. Apply to healthy trees that are not under stress. Repeat applications as required to control late-germinating weeds. Do not apply more than 2 litres of product per hectare per growing season.

### **DIRECTIONS FOR USE -CONIFERS SEEDLINGS**

Goal 2XL Herbicide will provide both postemergence and residual preemergence weed control. To ensure effective postemergence weed control, apply Goal 2XL Herbicide when weeds are in the 2- to 4-leaf stage and actively growing.

Goal 2XL Herbicide should be thoroughly mixed with clean water at the recommended concentration and applied at 275 kPa in 200 to 500 litres of water per hectare. Rain or 20 to 40 millimetres of water by sprinkler irrigation after application but prior to weed emergence will improve herbicide incorporation.

Heavy rainfall or heavy irrigation immediately following application to emerged weeds may reduce effectiveness.

Goal 2XL Herbicide works best when applied early. Preemergence or early postemergence treatments will give the best results. In addition to the weed species listed in previous parts of the Goal 2XL Herbicide label, the following weeds are controlled by Goal 2XL at 1 L/ha applied preemergence or early postemergence:

Redroot pigweed	<i>Amaranthus retroflexus</i>
Shepherd's-purse	<i>Capsella bursa-pastoris</i>
Lamb's-quarters	<i>Chenopodium album</i>
Common yellow wood sorrel	<i>Oxalis stricta</i>
Lady's-thumb	<i>Polygonum persicaria</i>
Purslane	<i>Portulaca oleracea</i>
Common groundsel	<i>Senecio vulgaris</i>
Dandelion	<i>Taraxacum officinale</i>
Low cudweed	<i>Gnaphalium uliginosum</i>

For season long control of the following weeds, apply Goal 2XL Herbicide twice, eight weeks apart in June and August at 1 – 2 L/ha:

Snapweed	<i>Cardamine oligosperma</i>
Bittercress	<i>Cardamine pennsylvanica</i>
Watson's willow herb	<i>Epilobium ciliatum</i> ssp. <i>Watsonii</i>
Wood sorrel	<i>Oxalis stricta</i>

Pearlwort *Sagina apetala* is suppressed at 2 L/ha.

Two or more postemergence applications may be necessary for season-long weed control, but do not apply more than 4.0 litres of Goal 2 XL Herbicide in any calendar year. Since Goal 2XL Herbicide works best on small weeds, nursery crops may have to be weeded before application for optimum weed control.

### CONIFEROUS WOODY PLANTS

Many conifers tolerate preemergence and postemergence applications of Goal 2XL Herbicide. Goal 2XL Herbicide may be applied to the following species:

Cedar, eastern white	<i>Thuja occidentalis</i>	Do not apply preemergence to cedar seedlings
Douglas-fir	<i>Pseudotsuga menziesii</i>	
Larch, eastern (tamarack)	<i>Larix laricina</i>	
Hemlock, western	<i>Tsuga heterophylla</i>	
Juniper, Chinese	<i>Juniperus chinensis</i>	
Juniper, creeping	<i>Juniperus horizontalis</i>	
Juniper, rocky mountain	<i>Juniperus scopularum</i>	
Juniper, savin	<i>Juniperus sabina</i>	
Pine, eastern white	<i>Pinus strobes</i>	
Pine, jack	<i>Pinus banksiana</i>	
Pine, lodgepole	<i>Pinus contorta</i>	
Pine, red	<i>Pinus resinosa</i>	
Pine, Scots	<i>Pinus sylvestris</i>	
Spruce, Alberta	<i>Picea glauca</i> var. <i>conica</i>	
Spruce, black	<i>Picea mariana</i>	
Spruce, Colorado	<i>Picea pungens</i>	
Spruce, Norway	<i>Picea abies</i>	
Spruce, red	<i>Picea rubens</i>	

Spruce, Serbian	<i>Picea omorika</i>
Spruce, white	<i>Picea glauca</i>
Yew, English	<i>Taxus baccata</i>
Yew, hybrid (intermediate)	<i>Taxus x media</i>
Yew, Japanese	<i>Taxus cuspidate</i>

## **TIMING AND METHOD OF PREEMERGENCE APPLICATIONS**

For establishment of conifer seedlings, a preemergence application of Goal 2XL Herbicide can be made after seeding but prior to conifer emergence. Do not apply Goal 2XL Herbicide to broadcast sown seedlings. Apply recommended rate of Goal 2XL Herbicide after seeding but at least 5 days prior to conifer emergence. Applications made within 5 days prior to emergence may cause injury to conifer seedlings. **DO NOT APPLY PREEMERGENCE TO CEDAR.**

Safety of preemergence and early postemergence applications may be improved with the addition of organic amendments such as peat moss to the soil. Higher rates of Goal 2XL Herbicide may be required for effective weed control on soils with high clay content.

## **TIMING AND METHOD OF POSTEMERGENCE APPLICATIONS TO SEEDLINGS**

Caution must be exercised with newly germinating seedlings. Apply recommended rate of Goal 2XL Herbicide to conifer seedlings only after the shoot apex has elongated above the whorl of cotyledon needles. This usually occurs within 6 weeks after emergence of the conifer seedlings, but additional care should be taken if cool weather occurs following emergence to make certain that seedlings have reached this growth stage prior to herbicide application.

Two or more postemergence applications may be necessary for season-long weed control, but do not apply more than 4.0 litres of Goal 2XL Herbicide per hectare in any calendar year. Since Goal 2XL Herbicide will only control seedling weeds up to the 4-leaf stage, beds may have to be weeded before application for optimum weed control.

## **TIMING AND METHOD OF APPLICATION TO ESTABLISHED AND TRANSPLANT CONIFERS.**

Goal 2XL Herbicide can be applied postemergence or after transplanting over the top of conifers to provide both postemergence and preemergence control of weeds. Goal 2XL Herbicide applications should be made before bud break or after new foliage has hardened off, approximately six weeks after bud break. Some temporary needle burn may occur. Conifers may be treated directly after being transplanted from seedbeds as long as bud break has not occurred.

Two or more postemergence applications may be necessary for season-long weed control, but do not apply more than 4.0 litres of Goal 2XL Herbicide per hectare in any calendar year. Since Goal 2XL Herbicide will only control seedling weeds up to the 4-leaf stage, beds may have to be weeded before application for optimum weed control.

## ***CONIFER SPECIFIC USE RESTRICTIONS AND PRECAUTIONS***

***NOT FOR CONIFER RELEASE IN FOREST MANAGEMENT PROGRAMS OR FOR FOREST REGENERATION APPLICATIONS.***

Do not apply preemergence to broadcast sown conifers.

Only apply Goal 2XL Herbicide to healthy conifer stock. Severe injury may result if Goal 2XL Herbicide is applied to conifers that are under stress from excessive fertilizer or soil salts, other pesticides, winter injury, frost, drought, flooding, nematodes, diseases or insects.

### **PLUG (SMALL CONTAINER) GROWN CONIFER SEEDLINGS**

Plug (small containers less than 500 ml) grown conifer seedlings may be treated with Goal 2XL Herbicide, but may be more sensitive than field-grown conifers. The following precautions should prevent serious injury, although some temporary needle burn may be experienced.

Do not apply preemergence.

Caution must be exercised with newly germinating seedlings. Apply recommended rate of Goal 2XL Herbicide to conifer seedlings only after the shoot apex has elongated above the whorl of cotyledon needles. This usually occurs within 6 weeks after emergence of the conifer seedlings.

When applying postemergence to new seedlings, treat only after the stock has been removed to outdoor holding areas.

Dormant applications at rates up to 2.0 litres Goal 2XL Herbicide per treated hectare are tolerated without major injury in the indicated species. Late fall applications are tolerated better than early spring dormant applications.

Do not apply within 1 month of covering plants for the winter. Do not apply Goal 2XL Herbicide in greenhouses or other covered structures.

Goal 2XL Herbicide can be applied to plugs (small containers less than 500 ml) of the following conifer species:

#### **Conifer species (small containers)**

Douglas-fir  
Larch, eastern (tamarack)  
Pine, eastern white  
Pine, jack  
Pine, red  
Spruce, black  
Spruce, Norway  
Spruce, red  
Spruce, white

Species not listed here (lodgepole pine, Scots pine, Colorado spruce) have not been fully tested in small containers, and tolerance should be established before use. Conifers grown outdoors in standard containers (500 ml or larger) perform like transplanted conifers, and the label recommendations for transplanted species of similar growth stage can be used (see previous section). Do not apply within 1 month of covering plants for the winter. Do not apply Goal 2XL Herbicide in greenhouses or other covered structures.

### **DIRECTIONS FOR USE - BROCCOLI/CABBAGE/CAULIFLOWER**

For pre-transplant (preplant) application for the preemergence control of redroot pigweed and common purslane and the suppression of lady's thumb and Eastern black nightshade.

Applications must be made after completion of soil preparation but prior to transplanting of broccoli, cabbage, or cauliflower plants. Transplanting should be completed with minimal soil disturbance. Treated soil surfaces should be left undisturbed after transplanting to obtain greatest benefit of Goal 2XL Herbicide on susceptible annual broadleaf weeds during the time period for which weed control is desired. However, timely cultivation after weed emergence will assist in weed control. Pre-transplant applications of Goal 2XL Herbicide in broccoli, cabbage, and cauliflower may result in a temporary initial crop response (leaf cupping or crinkling). Crop response may be enhanced if crop leaves come in direct contact with treated soil. Crops rapidly outgrow this condition and develop normally. Severe crop response may result from the use of transplants that are under stress due to temperature, disease, fertilizer, nematodes, insect, pesticides, or storage conditions. The use of young (less than 5 week old), extremely succulent transplants grown in containers less than 2.5 centimeters square, may increase the severity of crop injury. Hardening off, increasing the age of transplants or increase in the size of the rooting container will lessen the possibility and/or severity of crop injury.

Goal 2XL Herbicide is recommended for use at 1.13 to 2.0 litres of product per hectare applied pre-transplant (preplant). Use the lower rate for preemergence weed control on coarse texture soils with less than 1% organic matter. Use the highest rate for preemergence weed control on medium to fine texture soils or soils containing greater than 1% organic matter. Application to muck (high organic matter) soils may result in partial control or suppression of the weeds listed. Apply in a minimum of 200 litres of water per hectare using a conventional ground sprayer. Apply only one ground application per year. The preharvest interval is 60 days.

Research has shown that severe crop injury can occur if Goal 2XL Herbicide is applied to a field that has had an acetanilide herbicide such as Dual II Magnum® applied during the current growing season, therefore, it is not recommended.

Do not apply Goal 2XL Herbicide preemergence to direct seeded broccoli, cabbage or cauliflower. Do not apply Goal 2XL Herbicide post-transplant or postemergence (over the top) to broccoli, cabbage or cauliflower.

## **DIRECTIONS FOR USE - ONIONS (DRY BULB ONLY)**

### **Application Directions**

For best results, apply Goal 2XL Herbicide when weeds are small and growing conditions are favourable for vigorous growth. Apply 250-500 milliliters of Goal 2XL Herbicide in a minimum of 500 litres of water per hectare after there are two true leaves on the onions. Repeat applications as required to control late germinating weeds. Do not apply in excess of 2.0 litres per hectare in one year.

### **Weeds Controlled**

Common Purslane, Redroot Pigweed, Cupped Nightshade (Potatoweed), Wild Buckwheat, Lamb's-quarters, Oak-leaved Goosefoot, and Maple-leaved Goosefoot.

### **Mixing Instructions**

Maintain sufficient agitation during mixing and spraying to ensure a uniform spray mixture. Goal 2XL Herbicide should be applied only by ground equipment delivering a minimum of 500 litres of spray mixture per hectare using a pressure of 275 kPa. Do not add oils or surfactants to the spray mixture. Avoid drift onto susceptible crops.

**Application Timing**

To ensure effective weed control, apply Goal 2XL Herbicide when the weeds are in the 2 to 4 leaf stage and actively growing. The first application can be made when the onions have two fully developed true leaves. More than one application may be necessary to control late germinating weeds. Do not apply Goal 2XL Herbicide when the crop or weeds are under stress such as from excess or lack of moisture, extreme temperatures, or injury from previously applied herbicides. Do not apply within 56 days of harvest.

**Crop Tolerance**

Goal 2XL Herbicide can cause necrotic lesions, twisting, or pigtailling of the onion crop. This injury will be more severe if applications are made during periods of stress and/or if applications are made prior to the full development of two true leaves on the crop. Use only on dry bulb onions.

**DIRECTIONS FOR USE – DRY BULB SHALLOTS**

Apply 250 to 500 millilitres of Goal 2XL in a minimum of 500 litres of water per hectare after the shallots have two fully developed true leaves. For best results, weeds should be in the two to four leaf stage and actively growing. Use the lower rate at the two leaf stage of the crop. Repeat applications as required to control late germinating weeds. Retreatment interval is a minimum of 7 days. Do not add oils or surfactants to the spray mixture.

**Weeds Controlled**

Common purslane, redroot pigweed, cupped nightshade, (potatoweed), wild buckwheat, lamb's quarters, oak leaved goosefoot and maple leaved goosefoot.

Do not apply Goal 2XL when the crop or weeds are under stress such as from excess or lack of moisture, extreme temperature or injury from previously applied herbicides. Goal 2XL can cause necrotic lesions, twisting, or pigtailling of the shallot crop. This injury will be more severe if applications are made during periods of stress and/or if applications are made prior to the full development of two true leaves on the crop. Some types of shallots are more sensitive to herbicide injury. Ideally apply after two or more sunny days to reduce any potential crop injury.

Do not apply more than 2 litres in total for the year. Do not apply within 56 days of harvest.

**DIRECTIONS FOR USE – POPULUS SPECIES (POPLARS AND ASPENS)**

For new and established plantings of Populus species (poplars and aspens) and their hybrids including short rotation intensive culture crops.

Goal 2XL Herbicide should only be applied to dormant, healthy plants. Do not apply Goal 2XL Herbicide to plants that have been weakened or are under stress from excessive fertilizer or soil salts, disease, nematodes, frost, wind injury, drought, flooding, previously applied pesticides, insects, or winter injury as severe injury may result. Make only one application per year, using a low-pressure sprayer with flat can nozzles. Do not apply more than 7 litres per treated hectare per growing season.

Goal 2XL Herbicide is an effective herbicide for preemergence or postemergence control of certain broadleaf weeds. Applications may be made after transplanting, or to established trees. Applications must be made to dormant plants, prior to bud break, to avoid possible injury. Applications made after bud

break or to non-dormant plants may result in injury and are not recommended. Refer to the table below for specific details regarding application timing, application rate, and weeds controlled.

Goal 2XL Herbicide may be applied broadcast or directed to the base of the plant. When spraying only a band in the plant row (when using between-row cultivation), reduce the rate according to the following formula:

Band with

----- X Broadcast Rate = Amount of Goal 2XL Herbicide required per hectare

Row Width

Application Timing (Relative to the Weeds)	Application Rate	Weeds Controlled	Comments
Preemergence	7 L/ha	Narrow-leaved hawk's beard, pale smartweed, shepherd's-purse, stinkweed	Apply to dormant <i>Populus</i> plants, prior to budbreak, and prior to weed emergence
Postemergence	0.5 L/ha	Common purselane, redroot pigweed, cupped nightshade (potatoweed), wild buckwheat, lamb's-quarters, oak-leaved goosefoot, maple-leaved goosefoot	Apply to dormant <i>Populous</i> plants, prior to budbreak, when weeds are small (2-4 leaf stage) and actively growing.
	1.0 L/ha	Weeds controlled with 0.5 L/ha plus: field pansy, wood sorrel	

## 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, shelter belts, woodlots, hedgerows, rangelands 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			
		Aquatic Habitat of Depths			Terrestrial Habitat
		< 1m	1-3 m	>3m	
Field Sprayer	Strawberry	10	4	2	7
	Conifers	35	15	5	25
	Broccoli, cabbage, cauliflower	20	5	3	15
	Poplars and aspens (SRICS)	55	20	10	35
	Dry bulb onion Dry bulb shallots	20	5	3	15
	Raspberry (British Columbia only)*	1	1	1	1

Field Sprayer (Coarse)	Highbush blueberry	10	4	2	5
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\*Application to raspberry crops is restricted to windspeeds of 8 km/h or less.

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

Refer to the main Goal 2XL Herbicide label for additional details, instruction and restrictions before using.

READ THE ROTATIONAL CROPPING RESTRICTIONS ON THE FULL LABEL BEFORE USING THIS PRODUCT.

### RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, Goal 2XL Herbicide is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to Goal 2XL 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 Goal 2XL Herbicide or other Group 14 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).
- **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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