

16-MAR-2005

07-JUN-2007 Notification - Change in Registrant Address

1

GROUP

9

HERBICIDE

**ROUNDUP® DRY**  
Water Soluble Herbicide

**AGRICULTURAL and INDUSTRIAL**

**DANGER CORROSIVE TO EYES**

**CAUTION**



**POISON**

**REGISTRATION NO. 24874 PEST CONTROL PRODUCTS ACT**

**GUARANTEE:** Glyphosate acid equivalent - 68.5%; present as the mono-ammonium salt.  
Warning, contains the allergen sodium sulfite.

Notification Change

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

**MONSANTO CANADA, INC.**

~~67 Scurfield Blvd.~~  
~~Winnipeg, Manitoba R3Y 1G4~~

900 - One Research Road  
Winnipeg, MB R3T 6E3

Notification Change

**NET CONTENTS 10.4 kg**

© MONSANTO COMPANY 2005

**In case of an emergency involving this product**, Call Monsanto collect, day or night:

Accident/Spills/Medical Emergency.....(314) 694-4000  
or.....1-800-332-3111  
or CANUTEC.....(613) 996-6666

**Read NOTICE before buying or using. If notice terms are not acceptable, return at once unopened.**

For additional information on this or other Monsanto agricultural products, call the Monsanto Canada Custom Care Line at: 1-800-667-4944

## **PRECAUTIONS**

**KEEP OUT OF REACH OF CHILDREN.**

**CAUSES EYE BURNS.**

May be harmful if inhaled.

Avoid contact with eyes, skin or clothing.

Wear long sleeved shirt and pants, or coveralls, chemical resistant gloves and eye protection.

Wash thoroughly with soap and water after handling.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., contact [www.cropro.org/](http://www.cropro.org/)

## **TOXICOLOGICAL INFORMATION**

Treat symptomatically.

## **FIRST AID**

**IF IN EYES, IMMEDIATELY** flush with plenty of water. Get medical attention or contact a poison control centre **IMMEDIATELY** if irritation persists.

**IF SWALLOWED**, remove visible particles from mouth and rinse thoroughly with water. Swallow water to dilute. Get medical attention or contact a poison control centre **IMMEDIATELY**. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

**IF INHALED**, remove individual to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention **IMMEDIATELY**.

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

## **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.

### **STORAGE**

Avoid contamination of seed, feed, and foodstuffs.

### **DISPOSAL**

Make the empty container unsuitable for further use.

Dispose of the container in accordance with provincial requirements.

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 BUYER**--Seller's guarantee shall be limited to the terms set out on the label and, subject thereto, the buyer assumes the risk to persons or property arising from the use or handling of this product and accepts the product on that condition.

**NOTICE TO USER**--This 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 a control product under unsafe conditions.

GROUP	9	HERBICIDE
-------	---	-----------

**ROUNDUP® DRY**  
Water Soluble Herbicide

**AGRICULTURAL and INDUSTRIAL**



CAUTION

POISON

**DANGER CORROSIVE TO EYES**

**REGISTRATION NO. 24874 PEST CONTROL PRODUCTS ACT**

**GUARANTEE:** Glyphosate acid equivalent - 68.5%; present as the mono-ammonium salt.

Notification Change

**Warning, contains the allergen sodium sulfite.**

**READ THE LABEL BEFORE USING**

**MONSANTO CANADA, INC.**  
~~67 Scurfield Blvd.~~  
~~Winnipeg, Manitoba R3Y 1G4~~

900 - One Research Road  
Winnipeg, MB R3T 6E3

Notification Change

2005

## CONTENTS

Page (s)

<b>1.0 PRODUCT DESCRIPTION.....</b>	
<b>2.0 EMERGENCY NUMBERS.....</b>	
2.1 Information.....	
<b>3.0 PRECAUTIONS.....</b>	
3.1 First Aid.....	
3.2 Toxicological Information.....	
3.3 Environmental Hazards.....	
3.4 Physical and Chemical Hazards .....	
3.5 Storage .....	
3.6 Disposal.....	
<b>4.0 GENERAL INFORMATION.....</b>	
<b>5.0 MIXING AND APPLICATION</b>	
5.1 Precautions.....	
5.2 Mixing and Application Equipment.....	
<b>6.0 WEEDS CONTROLLED</b>	
6.1 Annuals.....	
6.2 Perennials.....	
6.3 Woody Brush and Trees.....	
<b>CROPLAND USES</b>	
<b>7.0 ANNUAL WEED CONTROL</b>	
7.1 Annual Weed Control with Roundup® Dry Herbicide.....	
7.2 Annual Weed Control with Tank Mixtures.....	
7.3 Surfactant Information.....	
7.4 Additional Important Information For Annual Weed Control.....	
<b>8.0 PERENNIAL WEED CONTROL</b>	
8.1 Perennial Weed Control With Roundup Dry Herbicide..	
8.2 Special Notes For Perennial Weed Control:	
8.2.1 Quackgrass.....	
8.2.2 Surfactant Information.....	
8.2.3 Canada Thistle.....	
8.2.4 Toadflax.....	
8.2.5 Dandelion.....	
8.2.6 Alfalfa Control with 2,4-D Tank Mix	
8.2.7 All Perennial Weeds.....	
<b>9.0 CROPLAND SITUATIONS SECTION</b>	
9.1 Prior to Planting - All Crops.....	
9.2 Post harvest Stubble Treatment.....	
9.3 Spot Treatment.....	

- 9.3.1 Grazing Restrictions.....
- 9.4 Summerfallow Treatment.....
- 9.5 Minimum and Zero Tillage Applications.....
  - 9.5.1 Roundup Dry plus 2,4-D amine or ester.....
  - 9.5.2 Roundup Dry Herbicide plus Pardner®.....
  - 9.5.3 Roundup Dry Herbicide plus Pursuit®.....
  - 9.5.4 Roundup Dry Herbicide plus MCPA .....
  - 9.5.5 Roundup Dry Herbicide plus Buctril M ®.....
- 9.6 Forage Legumes and Grasses.....
- 9.7 Pasture Renovation.....
- 9.8 Forage Seed Production.....
- 9.9 Preharvest Treatment.....
  - 9.9.1 Timing of Preharvest Applications.....
- 9.10 Tree Plantings.....
- 9.11 Tree, Vine and Berry Crops.....
- 9.12 Selective Equipment.....

**10.0 NON-CROPLAND USES: INDUSTRIAL, RIGHTS OF WAY, RECREATIONAL, AND PUBLIC AREAS**

- 10.1 Weed Control In Non-Cropland Areas .....
- 10.2 Application Information for Non-Cropland Uses.....
  - 10.2.1 Ground Applications.....
  - 10.2.2 Aerial application (rights-of-way only).....
  - 10.2.3 Purple Loosestrife Application.....
- 10.3 Selective Equipment for Non-Cropland Uses.....
- 10.4 Turfgrass.....
- 10.5 Injection Applications.....
- 10.6 Cut Stump Application.....

## **ROUNDUP® DRY HERBICIDE**

### **1.0 COMPLETE DIRECTIONS FOR USE**

**Water soluble herbicide for non-selective weed control in CROPLAND SYSTEMS AND IN NON-CROPLAND AREAS.**

#### **CROPLAND USES INCLUDE:**

In cropping systems before planting of all crops; in minimum tillage systems; preharvest applications in wheat, barley, oats, canola (rapeseed) (including glyphosate tolerant varieties), flax (including low linolenic acid varieties), peas, lentils, dry beans, soybeans (including glyphosate tolerant varieties) and forages; in pasture renovation; in forage, legume and grass establishments; in tree crops including apple, pear, cherry, plum, peach, apricot, filbert, hazelnut, walnut, chestnut; in grapes, cranberries, blueberries and strawberry; in sugar beets; in tree plantings; and grasses for seed production.

#### **NON-CROPLAND USES INCLUDE:**

Industrial; recreational, rights-of-way, and public areas; turf grass renovation.

Not for relabelling or repackaging.

Roundup is a registered trademark of Monsanto Company (USA). Monsanto Canada Inc. - Licensee.

© MONSANTO COMPANY 2004

### **2.0 EMERGENCY NUMBERS**

**In case of an emergency involving this product, Call Monsanto collect, day or night:**

Accident/Spills/Medical Emergency.....(314) 694-4000  
 or.....1-800-332-3111  
 or CANUTEC.....(613) 996-6666

**Read NOTICE before buying or using. If NOTICE terms are not acceptable, return at once unopened.**

### **2.1 INFORMATION**

For additional information on this or other Monsanto agricultural products, call the Monsanto Canada Custom Care Line at: 1-800-667-4944

### 3.0 PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

CAUSES EYE BURNS.

May be harmful if inhaled.

Avoid contact with eyes, skin or clothing.

Wear long sleeved shirt and pants, or coveralls, chemical resistant gloves and eye protection.

Wash thoroughly with soap and water after handling.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., contact [www.cropro.org/](http://www.cropro.org/)

### 3.1 FIRST AID

**IF IN EYES, IMMEDIATELY** flush with plenty of water. Get medical attention or contact a poison control centre **IMMEDIATELY** if irritation persists.

**IF SWALLOWED**, remove visible particles from mouth and rinse thoroughly with water. Swallow water to dilute. Get medical attention or contact a poison control centre **IMMEDIATELY**. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

**IF INHALED**, remove individual to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention **IMMEDIATELY**.

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

### 3.2 TOXICOLOGICAL INFORMATION

Treat symptomatically.

### 3.3 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.

### 3.4 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.

### 3.5 STORAGE



Avoid contamination of seed, feed, and foodstuffs.

### **3.6 DISPOSAL**

Make the empty container unsuitable for further use.

Dispose of the container in accordance with provincial requirements.

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 BUYER**--Seller's guarantee shall be limited to the terms set out on the label and, subject thereto, the buyer assumes the risk to persons or property arising from the use or handling of this product and accepts the product on that condition.

**NOTICE TO USER**--This 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 a control product under unsafe conditions.

### **DIRECTIONS FOR USE**

#### **4.0 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. Overspray or drift to sensitive habitats should be avoided. A buffer zone of 15 metres is required between the downwind point of direct application and the closest edge of sensitive terrestrial habitats including forested areas, shelter belts, woodlots, hedgerows, pastures, rangelands, and shrublands. A buffer zone of 15 metres is required between the downwind point of direct application and the closest edge of sensitive aquatic habitats including sloughs, coulees, ponds, prairie potholes, lakes, rivers, streams, reservoirs and wetlands, 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 label of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture.

Roundup Dry herbicide, a water soluble granule, mixes readily with water for application as a foliage spray for the control or destruction of most herbaceous plants. It may be applied through most standard industrial or field type sprayers after dissolution and thorough mixing with water in accordance with the booklet instructions.

This herbicide moves through the plant from the point of foliage contact to and into the root system. 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 which advances to complete browning of above ground growth and deterioration of underground plant parts.

Delay application until vegetation has emerged to the stages described for control of such vegetation under

the “**Annual and Perennial Weed Control**” (sections 7.0 and 8.0) to provide adequate leaf surface to receive the spray. 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 results may also occur when treating weeds heavily covered with dust.

This product does not provide residual weed control. For subsequent residual weed control follow a label approved herbicide program. Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

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.

#### RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, Roundup Dry Herbicide is a Group 9 herbicide. Any weed population may contain or develop plants naturally resistant to Roundup Dry Herbicide 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 Roundup Dry Herbicide 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 pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact Monsanto Canada at 1-800-667-4944 or at [www.Monsanto.ca](http://www.Monsanto.ca)

## 5.0 MIXING AND APPLICATION

### 5.1 PRECAUTIONS

**ATTENTION: AVOID CONTACT WITH FOLIAGE, GREEN STEMS, OR FRUIT OF CROPS, DESIRABLE PLANTS AND TREES SINCE SEVERE INJURY OR DESTRUCTION MAY RESULT.**

**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 km/h 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) which are more likely to drift.

**DO NOT USE IN GREENHOUSES. 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.

**NOTE:** Use of this product in any manner not consistent with this booklet may result in injury to persons, animals or crops, or other unintended consequences. Keep container closed to prevent spills and contamination.

### 5.2 MIXING AND APPLICATION EQUIPMENT

#### MIXING

For ground or industrial type sprayers, ensure bypass agitation is off and begin adding water to the spray tank. Add the proper amount of Roundup Dry as the spray tank fills with water, see "**Weed Control**" (sections 7.0 and 8.0). Turn on agitation only after all the Roundup Dry Herbicide has been added. Agitate at least 5 minutes before spraying. If using a tank-mix partner, add after Roundup Dry is dissolved and agitate a further 5 minutes, or until completely mixed.

**WHEN TANK MIXING ROUNDUP DRY HERBICIDE WITH 2,4-D FORMULATIONS, USE A MINIMUM OF 100 L WATER/HA AND 2.5 L/HA OR LESS OF A 500 G/L 2,4-D AMINE**

FORMULATION (adjust this rate accordingly for different 2,4-D formulations). DO NOT MIX WITH OTHER ADDITIVES (eg AMMONIUM SULFATE) UNLESS RECOMMENDED ON THIS LABEL. APPLY THE SOLUTION THE DAY IT IS MIXED. PRECIPITATE MAY FORM IF THESE GUIDELINES ARE NOT FOLLOWED.

In the mixing procedure, 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 EQUIPMENT

### BOOM EQUIPMENT

**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 "**Weed Control**" (sections of 8.0 and 10.0) for rates to control specific weeds.

**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 "**Weed Control**" (sections 7.0) 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 0.5% solution of this product in water (0.52 kg of this product in 100 litres of water) and apply to foliage of vegetation to be controlled. For best results, use a 1.0% solution (1.04 kg 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 orchards, vineyards, cranberries, strawberries, soy and dry beans, and non-crop areas. For information regarding use of this product with selective equipment, refer to "**Selective Equipment**" (section 9.12).

### AERIAL EQUIPMENT (NON-CROPLAND USE ONLY)

Aerial application can only be used for weed control in Industrial rights-of-way. Refer to section 10.2.2 for more information.

## 6.0 WEEDS CONTROLLED

This product controls many annual and perennial grasses, broadleaf weeds, and woody brush and trees when applied as recommended and under conditions described. For information on how to control specific weeds including herbicide rate refer to the "**Annual Weed Control**" and "**Perennial Weed Control**" (sections 7.1 and 8.1). The following is a partial list of weeds controlled.

### 6.1 ANNUAL WEEDS

#### Annual Grasses

**Blue Grass** (annual)

*Poa annua*

**Crab Grass**

*Digitaria sanguinalis*

**Downy Brome**

*Bromus tectorum*

**Giant Foxtail**

*Setaria faberii*

**Green Foxtail**

*Setaria viridis*

**Persian Darnel**

*Lolium persicum*

**Volunteer Barley**

*Hordeum* spp.

**Volunteer Corn**

*Zea Mays*

**Volunteer Wheat**

*Triticum* spp.

**Wild Oats**

*Avena fatua*

#### Other

**Dodder**

*Cuscuta* spp.

#### Annual Broadleaf Weeds

**Cleavers**

*Galium aparine*

**Fleabane (Canada)**

*Erigeron canadensis*

**Flixweed**

*Descurania sophia*

**Hempnettle**

*Galeopsis tetrahit*

**Kochia**

*Kochia scoparia*

**Lady's-Thumb**

*Polygonum persicaria*

**Lamb's-Quarters (common)**

*Chenopodium album*

**Narrow-leaved Hawk's Beard**

*Crepis tectorum*

**Narrow-leaved Vetch**

*Vicia angustifolia*

**Prickly Lettuce**

*Lactuca scariola*

**Ragweed (common)**

*Ambrosia artemisiifolia*

**Redroot Pigweed**

*Amaranthus retroflexus*

**Russian Thistle**

*Salsola pestifer*

**Shepherd's Purse**

*Capsella bursa-pastoris*

**Sowthistle (annual)**

*Sonchus oleraceus*

**Stinkweed**

*Thlaspi arvense*

**Volunteer Canola**

*Brassica* spp

**Volunteer Flax**

*Linaria* spp

**Wild Buckwheat**

*Polygonum convolvulus*

**Wild Mustard**

*Sinapsis arvensis*

### 6.2/6.3 PERENNIAL WEEDS

#### Perennial Grasses / Sedges

**Blue Grass (Canada)**

*Poa compressa*

**Blue Grass (Kentucky)**

*Poa pratensis*

**Brome Grass (smooth)**

*Bromus inermis*

**Cattail (common)**

*Typha latifolia*

**Foxtail Barley**

*Hordeum jubatum*

**Quackgrass**

*Agropyron repens*

**Yellow Nutsedge**

*Cyperus esculentus*

#### Perennial Broadleaved Weeds

**Alfalfa**

*Medicago* spp.

**Cottontop**

*Eriophorum chamissionis*

**Curled Dock**

*Rumex crispus*

**Dandelion**

*Taraxacum officinale*

**Field Bindweed**

*Convolvulus arvensis*

**Hemp Dogbane**

*Apocynum cannabinum*

**Hoary Cress**

*Cardaria draba*

**Knotweed (Japanese)**

*Polygonum cuspidatum*

**Milkweed (common)**

*Asclepias syriaca*

**Poison Ivy**

*Rhus radicans*

**Purple Loosestrife**

*Lythrum salicaria*

**Sow Thistle (perennial)**

*Sonchus arvensis*

**Thistle (Canada)**

*Cirsium arvense*

**Toad Flax**

*Linaria vulgaris*

**Wormwood (Absinth)**

*Artemisia absinthium*

**WOODY BRUSH AND TREES**

**Alder**

*Alnus* spp.

**Birch**

*Betula* spp.

**Broadleaved meadowsweet**

*Spiraea latifolia*

**Canadian rhododendron**

*Rhododendron canadense*

**Cedar**

*Thuja* spp.

**Cherry**

*Prunus* spp.

**Douglas Fir**

*Pseudotsuga* spp.

**Hemlock**

*Tsuga* spp.

**Maple**

*Acer* spp.

**Mountain-fly honeysuckle**

*Lonicera villosa*

**Pine**

*Pinus* spp.

**Poplar**

*Populus* spp.

**Raspberry / Salmonberry**

*Rubus* spp.

**Sheep laurel**

*Kalmia angustifolia*

**Snowberry (Western)**

*Symphoricarpos occidentalis*

**Sweet fern**

*Comptonia peregrina*

**Willow**

*Salix* spp.

**Withrod**

*Viburnum cassinoides*



## CROPLAND USES

**ALWAYS READ PRECAUTIONARY STATEMENTS, GENERAL INFORMATION AND MIXING AND APPLICATION SECTIONS (3.0, 4.0 AND 5.0) PRIOR TO SPECIFIC APPLICATION INFORMATION IN ANY LABEL SECTION.**

### 7.0 ANNUAL WEED CONTROL

The following tables provide rates and specific application instructions for control of the annual weeds listed.

#### 7.1 ANNUAL WEED CONTROL WITH ROUNDUP DRY HERBICIDE

<b>RATE KG/HA</b>	<b>GROWTH STAGE</b>	<b>WEEDS CONTROLLED</b>	<b>COMMENTS (Apply in 50 - 100 L/ha water)</b>
0.39	weeds up to 8 cm in height	wild oats, green foxtail, volunteer barley, volunteer wheat  non-glyphosate tolerant volunteer canola (rapeseed), wild mustard, lady's-thumb, stinkweed	. for wild oats apply at 1 - 3 leaf stage  . add 350 mL of a surfactant registered for use such as Agral® 90, Ag Surf®, or Companion®.  . for heavy wild oat infestations use 0.52 kg/ha rate.
0.52	weeds 8 cm to 15 cm in height	all annual grasses listed above plus foxtail barley* (suppression only)  all annual broad leaved weeds listed above plus flixweed* and kochia*	. add 350 mL of surfactant registered for use as listed above.  * apply before initiation of seed-head or senescence of the lower leaves  * suppression only. Refer to higher rates of this table or tank mix table (section 7.2) for control options.
0.66-1.0	weeds up to 15 cm in height	all annual grasses listed above plus downy brome, giant foxtail, and persian darnel  all annual broadleaved weeds listed above plus cleavers, lamb's quarters, redroot pigweed, hempnettle, flixweed, russian thistle, volunteer flax, common ragweed*, canada fleabane*, wild buckwheat**, narrow -	. No surfactant required  . for tankmix weed control options see section 7.2  * DO NOT use these rates on plants greater than 8 cm in height  ** for 3 - 4 leaf stage use 1.0 kg/ha rate

<b>RATE KG/HA</b>	<b>GROWTH STAGE</b>	<b>WEEDS CONTROLLED</b>	<b>COMMENTS (Apply in 50 - 100 L/ha water)</b>
		leaved hawk's beard***,	*** for weeds 8 cm to 15 cm in height use 1.0 kg/ha rate
1.18	weeds up to 15 cm in height	all annual grasses listed above plus crab grass and annual blue grass.  all annual broadleaved weeds listed above plus kochia, prickly lettuce, shepherd's purse, annual sow thistle, and narrow-leaved vetch	for additional annual broadleaved weed control options, refer to tank mix table (section 7.2).
1.83	weeds over 15 cm in height	All annual grasses and broadleaved weeds listed above	for additional annual broadleaved weed control options refer to tank mix table (section 7.2).

Agral is a registered trademark of Imperial Chemical Industries PLC, England.

Ag Surf is a registered trademark of Interprovincial Co-operatives Ltd.

Companion is a trademark of Dow AgroSciences

**NOTE:** For spot treatment, 0.39 - 1.83 kg/ha is approximately equivalent to 4 - 18 g/100 m<sup>2</sup>, respectively.

## **7.2 ANNUAL WEED CONTROL WITH ROUNDUP DRY HERBICIDE TANK MIXTURES FOR SUMMERFALLOW & MINIMUM TILLAGE SYSTEMS**

<b>TANK MIXTURES</b>	<b>RATE KG/HA</b>	<b>WEEDS CONTROLLED</b>	<b>COMMENTS (Apply in 50-100L/ha water; add 350 mL/ha of surfactant - see list in Section 7.3)</b>
Roundup Dry Herbicide  +  Banvel®	0.39-0.52  +  0.29 L/ha	volunteer cereal, wild oats, green foxtail,  non-glyphosate tolerant volunteer canola (rapeseed), wild mustard, flixweed*, lamb's quarters, lady's thumb, stinkweed, kochia, russian thistle, cow cockle, redroot pigweed**, wild buckwheat**.	This tank mix is registered for <b>summerfallow use only</b> . Weeds should be less than 15 cm tall and actively growing for best results.  Use higher rate if weeds are beyond 8 cm in height  *Roundup Dry Herbicide applied at 0.52 kg/ha rate only.  **Suppression only. See other tank mixtures for control options.

TANK MIXTURES	RATE KG/HA	WEEDS CONTROLLED**	COMMENTS (Apply in 50-100L/ha water; add 350 mL/ha of surfactant - see list in Section 7.3)
Roundup Dry Herbicide  +  Pardner®	0.39-0.52  +  1.25 L/ha	volunteer cereals, green foxtail,  volunteer canola (rapeseed), wild mustard, lady's thumb, stinkweed, wild buckwheat*  redroot pigweed**, kochia**, wild oats**	This tank mix is registered only for use in <b>summerfallow, and prior to wheat, oats and barley in minimum tillage systems</b> . Weeds should be less than 15 cm tall and actively growing for best results.  Use higher rate if weeds are beyond 8 cm in height  * use Roundup Dry Herbicide at 0.52 kg/ha rate only for wild buckwheat control.  ** 0.52 kg/ha rate, suppression only. See other tank mixtures for control options.
Roundup Dry Herbicide  +  2,4-D#	0.39-0.52  +  1.2 L/ha	volunteer cereals, wild oats* and green foxtail* volunteer canola (rapeseed), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia.  lamb's quarters**, russian thistle**	This tank mix is registered for <b>summerfallow use only</b> . Weeds should be less than 15 cm tall and actively growing for best results.  Use higher rate if weeds are beyond 8 cm in height  *use ROUNDUP DRY HERBICIDE at 0.52 kg/ha rate only for wild oat and green foxtail control.  **suppression only. See other tank mixtures for control options.
Roundup Dry Herbicide  +  2,4-D##	0.66 - 1.0  +  0.6 - 0.9 <sup>4</sup> or	volunteer cereals, wild oats, green foxtail, downy brome, giant foxtail, and persian darnel  volunteer canola (rapeseed) (non-Roundup Ready), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia, lamb's	Weeds should be less than 15 cm tall and actively growing for best results. Use higher rate if weeds are beyond 8 cm in height.  No surfactant required.  * DO NOT use these rates on plants greater than 8 cm in height.

TANK MIXTURES	RATE KG/HA	WEEDS CONTROLLED <sup>1</sup>	COMMENTS (Apply in 50-100L/ha water; add 350 mL/ha of surfactant - see list in Section 7.3)
	1.2 - 1.5 <sup>5</sup>	<p>quarters, hempnettle, Russian thistle, volunteer flax, common ragweed*, Canada fleabane, wild buckwheat**, narrow-leaved hawk's beard***</p> <p>volunteer Roundup Ready canola (1-4 leaf stage)<sup>4</sup>, bluebur<sup>4</sup>, burdock<sup>4</sup>, cocklebur<sup>4</sup>, common plantain<sup>4</sup>, daisy fleabane<sup>4</sup>, false flax<sup>4</sup>, false ragweed<sup>4</sup>, goat's beard<sup>4</sup>, mustards<sup>4</sup> (except dog and tansy), prickly lettuce<sup>4</sup>, ragweeds<sup>4</sup>, Russian pigweed<sup>4</sup>, shepherd's purse<sup>4</sup>, stinging nettle<sup>4</sup>, sweet clover<sup>4</sup>, thyme-leaved spurge<sup>4</sup>, wild radish<sup>4</sup>, wild sunflower<sup>4</sup></p> <p>volunteer Roundup Ready canola (4-6 leaf stage)<sup>5</sup>, annual sow thistle<sup>5</sup>, common chickweed<sup>5</sup>, common purslane<sup>5</sup>, dog and tansy mustard<sup>5</sup>, oak-leaved goosefoot<sup>5</sup>, groundsel<sup>5</sup>, hairy galinsoga<sup>5</sup>, hawkweed<sup>5</sup>, heal-all<sup>5</sup>, knotweed<sup>5</sup>, peppergrass<sup>5</sup>, pineapple weed<sup>5</sup>, prostate pigweed<sup>5</sup>, purslane<sup>5</sup>, sheep sore<sup>5</sup>, smartweed<sup>5</sup>, tumble pigweed<sup>5</sup>, velvetleaf<sup>5</sup>, volunteer canola<sup>5</sup></p>	<p>** for 3-4 leaf stage use 1.0 L/ha rate *** for weeds 8 cm to 15 cm in height use 1.0 L/ha rate</p> <p><sup>4</sup> 2,4-D at 0.6-0.9 L/ha (280-420 g ai/ha)</p> <p><sup>5</sup> 2,4-D at 1.2 - 1.5 L/ha (560-700 g ai/ha)</p> <p>Use this tank mix prior to seeding or after seeding but before crop emergence in <b>wheat, winter wheat, barley and rye.</b></p>
Roundup Dry Herbicide + MCPA ### 500 g/L formulation, if another formulation is	0.66 – 1.0 + 0.5 – 0.7 <sup>1</sup> L/ha OR 0.5 – 1.0 <sup>2</sup>	<p>Volunteer cereals, wild oats, green foxtail, downy brome, giant foxtail, and Persian darnel.</p> <p>Volunteer canola (rapeseed) (non-Roundup Ready), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia, lamb's</p>	<p>Weeds should be less than 15 cm tall and actively growing for best results.</p> <p>Use higher rate if weeds are beyond 8 cm in height.</p> <p>No surfactant required.</p> <p>* DO NOT use these rates on plants</p>

TANK MIXTURES	RATE KG/HA	WEEDS CONTROLLED <sup>1,2</sup>	COMMENTS (Apply in 50-100L/ha water; add 350 mL/ha of surfactant - see list in Section 7.3)
used, adjust rates accordingly.	L/ha	<p>quarters, hempnettle, Russian thistle, volunteer flax, common ragweed*, Canada fleabane, wild buckwheat**, narrow-leaved hawk's beard***</p> <p>Volunteer Roundup Ready canola (1-4 leaf stage)<sup>1,2</sup>, bluebur<sup>3</sup>, burdock<sup>3</sup> (before 4 leaf stage), false flax<sup>3</sup>, flixweed<sup>3</sup>, lamb's quarters<sup>3</sup>, mustards<sup>3</sup> (except dog and tansy), prickly lettuce<sup>3</sup>, ragweeds<sup>3</sup>, redroot pigweed<sup>3</sup>, Russian pigweed<sup>3</sup>, shepherd's purse<sup>3</sup>, stinkweed (field pennycress)<sup>3</sup>, vetch<sup>3</sup>, wild radish<sup>3</sup>, wild sunflower<sup>3</sup></p>	<p>greater than 8 cm in height.</p> <p>** For 3-4 leaf stage use 1.0 kg/ha rate.</p> <p>*** For weeds 8 cm to 15 cm in height use 1.0 kg/ha rate.</p> <p><sup>1</sup> MCPA amine at 0.5 – 0.7 L/ha (250-350 g ai/ha) prior to field peas.</p> <p><sup>2</sup> MCPA at 0.5 – 1.0 L/ha (250-500 g ai/ha) prior to wheat, barley, oats, corn (field and sweet)####, rye and flax.</p> <p><sup>3</sup> MCPA at 0.7 – 1.0 L/ha (350 – 500 g ai/ha) only.</p> <p>Use this tank mix prior to seeding in <b>wheat, barley, rye, oats, corn (field and sweet)####, flax, and field peas####.</b></p>
Roundup Dry Herbicide + Buctril M Herbicide	0.66 – 1.0 + 0.5 – 1.0 <sup>1</sup> L/ha	<p>Volunteer cereals, wild oats, green foxtail, downy brome, giant foxtail and Persian darnel.</p> <p>Volunteer canola (rapeseed) (non-Roundup Ready), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia, lamb's quarters, hempnettle, Russian thistle, volunteer flax, common ragweed*, Canada fleabane, wild buckwheat**, narrow-leaved hawk's beard***</p> <p>Volunteer Roundup Ready Canola (1-4 leaf stage)<sup>1,2</sup></p> <p>Seedlings up to the 4-leaf stage<sup>2</sup>:</p>	<p>Weeds should be less than 15 cm tall and actively growing for best results.</p> <p>Use higher rate if weeds are beyond 8 cm in height.</p> <p>No surfactant required.</p> <p>*DO NOT use these rates on plants greater than 8 cm in height.</p> <p>** For 3-4 leaf stage use 1.0 kg/ha rate.</p> <p>*** For weeds 8 cm to 15 cm in height use 1.0 kg/ha rate.</p> <p><sup>1</sup> Buctril M at 0.5 – 1.0 L/ha (280-560 g ai/ha) for all crops listed.</p>

TANK MIXTURES	RATE KG/HA	WEEDS CONTROLLED <sup>1</sup>	COMMENTS (Apply in 50-100L/ha water; add 350 mL/ha of surfactant - see list in Section 7.3)
		<p>green smartweed, pale smartweed, lady's thumb, cow cockle, redroot pigweed, flixweed, bluebur, shepherd's purse, kochia<sup>3</sup>, Russian thistle<sup>3</sup>, scentless chamomile<sup>4</sup>, volunteer sunflower, night flowering catchfly, cocklebur, velvetleaf<sup>5</sup>, ball mustard, American nightshade</p> <p>Seedlings up to the 6-leaf stage<sup>2</sup>: wild tomato</p> <p>Seedlings up to the 8-leaf stage<sup>2</sup>: wild buckwheat, tartary buckwheat, common buckwheat, stinkweed, wild mustard, wormseed mustard, lamb's quarters, common ragweed, common groundsel</p> <p>Perennials (top growth)<sup>2</sup>: Canada thistle, perennial sow thistle</p>	<p><sup>2</sup> Buctril M at 1.0 L/ha (560 g ai/ha only).</p> <p><sup>3</sup> Spray before plants are 5 cm high.</p> <p><sup>4</sup> Spring annuals only.</p> <p><sup>5</sup> Spray before plants are 8 cm high.</p> <p>Use this tank mix prior to seeding in <b>wheat, barley, rye, oats, corn, flax, canary seed and seedling grasses (including brome grass, crested wheatgrass, intermediate wheat grass, slender wheatgrass, tall wheatgrass, Russian wild rye, Timothy, orchard grass, creeping red fescue, meadow fescue, meadow foxtail, seedling tall fescue, seedling meadow bromegrass, seedling streambank wheatgrass and reed canary grass.</b></p>
<p>Roundup Dry Herbicide</p> <p>+ MCPA amine<sup>1</sup> (500 g/L formulation)</p>	<p>0.66 – 1.0 kg/ha</p> <p>+ 0.5 – 0.7 L/ha</p>	<p>Volunteer cereals, wild oats, green foxtail, downy brome, giant foxtail, and Persian darnel.</p> <p>Volunteer canola (rapeseed) (non Roundup Ready), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia, lamb's quarters, hempnettle, Russian thistle, volunteer flax, common ragweed*, Canada fleabane, wild buckwheat**, narrow-leaved hawk's beard***</p> <p>Volunteer Roundup Ready canola (1-4 leaf stage)<sup>2</sup>,</p>	<ul style="list-style-type: none"> <li>• Weeds should be less than 15 cm tall and actively growing for best results.</li> <li>• Use higher rate if weeds are beyond 8 cm in height.</li> <li>• No surfactant required.</li> </ul> <p>* DO NOT use these rates on plants greater than 8 cm in height.</p> <p>** For 3-4 leaf stage use 1.0 kg/ha rate.</p> <p>*** For weeds 8 cm to 15 cm in height use 1.0 kg/ha rate.</p>

TANK MIXTURES	RATE KG/HA	WEEDS CONTROLLED**	COMMENTS (Apply in 50-100L/ha water; add 350 mL/ha of surfactant - see list in Section 7.3)
		bluebur <sup>3</sup> , burdock <sup>3</sup> (before 4 leaf stage), false flax <sup>3</sup> , flixweed <sup>3</sup> , lamb's quarters <sup>3</sup> , mustards <sup>3</sup> (except dog and tansy), prickly lettuce <sup>3</sup> , ragweeds <sup>3</sup> , redroot pigweed <sup>3</sup> , Russian pigweed <sup>3</sup> , shepherd's purse <sup>3</sup> , stinkweed <sup>3</sup> (field pennycress), vetch <sup>3</sup> , wild radish <sup>3</sup> , wild sunflower <sup>3</sup>	<p><sup>1</sup> If another MCPA amine formulation is used, adjust rates accordingly.</p> <p><sup>2</sup> MCPA amine at 0.5 – 0.7 L/ha (250 – 350 g ai/ha) prior to lentils and chickpeas.</p> <p><sup>3</sup> MCPA amine at 0.7 L/ha (350 g ai/ha) only.</p> <ul style="list-style-type: none"> <li>• Use this tank mix prior to seeding in lentil and chickpea.</li> </ul>

\*\* For foxtail barley suppression, refer to "Perennial Weed Control" table (Section 8.1)

# 0.56 kg ai/ha of 2,4-D. ## Adjust rates accordingly for other 2,4-D formulations. Use only low-volatile ester or amine formulations of 2,4-D. Use a minimum of 100 L water/ha when mixing 2,4-D amine formulations with Roundup Dry herbicide (see section 5.2 for more details).

### Use only amine formulations of MCPA prior to corn and field peas.

Banvel is a registered trademark of BASF Ltd

Pardner is a registered trademark of Aventis CropScience

### 7.3 SURFACTANT INFORMATION

#### NOTE:

**Addition of Surfactant** - All Roundup Dry herbicide tank mixtures for annual weed control require the addition of a non-ionic surfactant registered for use such as Agral 90, Ag Surf, or Companion. Surfactant should be added at a rate of 350 mL per hectare, in 50-100 L of clean water.

### 7.4 ADDITIONAL IMPORTANT INFORMATION FOR ANNUAL WEED CONTROL

Roundup Dry Herbicide, applied by itself, will not control volunteers from crops containing the Roundup Ready Gene.

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.

For additional information and precautions, refer to the "**General Information**" and "**Mixing and Application**" (sections 4.0, 5.1 and 5.2).

## **8.0 PERENNIAL WEED CONTROL**

**ALWAYS READ PRECAUTIONARY STATEMENTS, GENERAL INFORMATION AND MIXING AND APPLICATION SECTIONS (3.0, 4.0 AND 5.0) PRIOR TO SPECIFIC APPLICATION INFORMATION IN ANY LABEL SECTION.**

When applied as recommended under the conditions described, this product will control the perennial weeds listed in the following table.

### **8.1 PERENNIAL WEED CONTROL WITH ROUNDUP DRY HERBICIDE**



WEED	APPLICATION			COMMENTS
	GROWTH STAGE	RATE OF ROUNDUP DRY (kg/ha)	WATER VOLUME (L/ha)	
<b>Quackgrass</b> (control, light to moderate infestations)	3 to 4 green leaves or more	1.31	50 - 300	<ul style="list-style-type: none"> <li>. Apply in clean water using flat fan nozzles.</li> <li>. Allow 3 or more days after treatment before tillage.</li> <li>. Refer to "<b>Quackgrass</b>" notes in section 8.2.1 for more information.</li> <li>. For higher water volumes (ie. 150 - 300 L/ha) an approved surfactant must be added at 0.5 litres per 100 litres of clean water (0.5% v/v). Refer to list in section 8.2.2. See also below.</li> </ul>
<b>Quackgrass</b> (long term control, heavy infestations, high water volumes)	3 to 4 green leaves or more	1.31 -3.69	50 - 300	<ul style="list-style-type: none"> <li>. Allow 3 or more days after treatment before tillage.</li> <li>. Rates higher than 1.31 kg/ha will provide more consistent, longer term control, especially with heavier infestations and/or higher water volumes (ie 150-300 L/ha).</li> <li>. Refer to "<b>Quackgrass</b>" notes in section 8.2.1 for more information.</li> </ul>
<b>Canada Thistle</b>	rosette stage (summer-fallow)	1.31	50 - 100	<ul style="list-style-type: none"> <li>. Apply in clean water using flat fan nozzles.</li> <li>. Allow 10 or more days after treatment before tillage.</li> <li>. Refer to "<b>Canada Thistle</b>" notes in section 8.2.3 for more information.</li> </ul>
<b>Canada Thistle</b>	bud stage or beyond	2.49 -3.69	100 - 300	<ul style="list-style-type: none"> <li>. Allow 5 or more days after treatment before tillage.</li> </ul>
<b>Field Bindweed</b>	full bloom or	3.69 -6.29	100 - 300	<ul style="list-style-type: none"> <li>. Allow 7 or more days after</li> </ul>

WEED	APPLICATION			COMMENTS
	GROWTH STAGE	RATE OF ROUNDUP DRY (kg/ha)	WATER VOLUME (L/ha)	
	beyond			treatment before tillage.
<b>Toadflax</b>	vegetative stage (summer-fallow)  Bud to Full Bloom (preharvest)	1.31	50-100	<ul style="list-style-type: none"> <li>. Apply in clean water using flat fan nozzles</li> <li>. Allow 7 or more days after treatment before tillage</li> <li>. For more information, see summerfallow control (section 8.2.4) or preharvest control (section 9.9)</li> </ul>
<b>Common Milkweed*</b>	bud to full bloom (preharvest)	1.31	50 - 100	<ul style="list-style-type: none"> <li>. See preharvest application section, 9.9.0</li> </ul>
	bud to full bloom	6.29	100 - 300	<ul style="list-style-type: none"> <li>. Allow 7 or more days after treatment before tillage.</li> <li>. Reduced control may occur after full bloom.</li> <li>. Milkweed may not all be in the correct stage, therefore, repeat treatments may be required.</li> </ul>
<b>Alfalfa</b>	Early bud to full bloom stage. Fall applications only	1.97- 2.62	50 - 300	<ul style="list-style-type: none"> <li>. Allow 5 or more days after treatment before tillage. Use the higher rates when alfalfa populations are high or when heavy grass infestations are also present.</li> <li>. For spring applications and control in minimum tillage systems using a 2,4-D tank mix, see section 8.2.6</li> </ul>
<b>Dandelion</b>	< 15 cm	1.31	50 - 100	<ul style="list-style-type: none"> <li>. Allow 3 or more days after treatment before tillage for all rates.</li> </ul>

WEED	APPLICATION			COMMENTS
	GROWTH STAGE	RATE OF ROUNDUP DRY (kg/ha)	WATER VOLUME (L/ha)	
	> 15 cm	1.97 -2.62	50 - 300	. Use the higher rate when the infestation is heavy. Refer to Dandelion notes in Section 8.2.5 for more information.
	Rosette to full bloom (preharvest)	1.31	50 - 100	. Allow 7 or more days after treatment before tillage. For more information, see preharvest control section (9.9.0)
<b>Foxtail Barley</b>	Seeding to heading	1.31 - 2.62	50 - 100	. Allow a minimum of 1 day after treatment before tillage or seeding. . User higher rates for larger, more established plants, heavy infestations, or if plants are stressed.
<b>Other Perennials</b> (see listing section 6.2).	early heading or early bud stage	3.69 -6.29	100 - 300	. Allow 7 or more days after application before tillage.

**\*NOTE:** For spot treatment, mix 63 grams product in 5 litres clean water per 100 m<sup>2</sup>. (1.31 - 6.29 kg/ha is approximately equivalent to 13 - 63 g/100 m<sup>2</sup>, respectively).

## 8.2 SPECIAL NOTES FOR PERENNIAL WEED CONTROL

### 8.2.1 QUACKGRASS

For season-long **control on fall tilled ground:** Apply 1.31 kg/ha of this product in spring prior to seeding. Apply in 50 to 100 L/ha of clean water as described in the preceding table. Delay application until the majority of quackgrass plants have 4-5 green leaves. This stage usually occurs 1 to 4 weeks later on fall tilled ground than on undisturbed ground. Reduced control may result on ground tilled deeper than 15 cm.

**NOTE:**

This treatment will provide season long control of quackgrass on fall tilled ground. Reduced control will be experienced on non-fall tilled ground. Repeat treatments may be necessary.

**Applications on forages** should be followed by tillage 3 days or later and should be made when good growing conditions exist.

**If a frost has occurred**, wait several days to determine if the quackgrass has recovered. Quackgrass can be treated after a mild frost provided there are 3 to 4 green leaves actively growing at the time of application. Do not apply after the first damaging frost in the fall.

### 8.2.2 SURFACTANT INFORMATION:

The following is a list of approved surfactants for use with Roundup Dry herbicide for control of quackgrass:

Agral 90	Ag Surf	Frigate®
Companion		

**Always refer to surfactant label for specific instructions regarding use of that product.**

Frigate is a registered trademark of Zeneca Group Company.

### 8.2.3 CANADA THISTLE

**Control of Canada Thistle at the rosette stage:** To ensure the proper timing of application the following steps must be followed:

1. Conduct summerfallow tillage as usual and perform the last tillage operation between July 15th and August 1.
2. Allow the thistles to regrow for a minimum of 5 weeks until they are a minimum of 15cm in diameter and in the rosette stage of growth.

**NOTE: Canada thistle can be treated after a mild frost** provided the leaves are still green and actively growing at the time of application. Do not apply after the first damaging frost in the fall.

### ROUNDUP DRY PLUS BANVEL TANK MIXTURES

For control of Canada thistle (and perennial sow thistle) in summerfallow or in post-harvest stubble, apply 0.89 kg/ha Roundup Dry Herbicide plus 1.25 L/ha Banvel in 100-200 L/ha of clean water. In addition, add 350 mL/ha of a non-ionic surfactant registered for use with this product, such as Agral 90, AgSurf, or Companion.

For best results in summerfallow, cultivate in the spring and apply when the majority of thistles are 15 cm to 25 cm tall and before the bud stage. Cultivate 3 weeks after application.

In post harvest stubble, apply this tank mixture to actively growing thistles at least 2 weeks prior to a killing frost.

#### **NOTE:**

Grow only cereals, canola (including rapeseed), soybeans, field corn, sweet corn, or dry beans after application of this tank mixture.

If application is made after September 1st, or if soil moisture levels are extremely low after application, crop

injury may occur in the spring following application.

#### **8.2.4 TOADFLAX**

##### **Control of Toadflax in a Summerfallow Vegetative Stage**

To ensure the proper timing of application, the following steps must be followed:

1. Conduct summerfallow tillage as usual and perform the last tillage operation between July 10-21.
2. Allow toadflax to regrow for a minimum of 4-5 weeks until they are minimum of 15 cm tall and at a lush green vegetative stage.

**Note:** Toadflax can be treated after a mild frost provided the leaves are still green and actively growing at the time of application. Do not apply after the first damaging frost.

#### **8.2.5 DANDELION**

Applications should be made up to and including bloom for best results. Follow-up control measures should be used to manage new dandelions germinating from seed to maintain control throughout the season.

#### **8.2.6 ALFALFA CONTROL WITH 2,4-D TANK MIX**

The addition of 2,4-D may improve alfalfa control in situations where control may be more difficult to obtain, such as in minimum tillage systems where populations are heavy, and with spring applications.

For fall control of established stands of alfalfa, apply 1.3 – 2.6 kg/ha Roundup Dry Herbicide and 1.2 - 2.4 L/ha of any 500 g/L 2,4-D amine or low volatile ester formulation in 100-200 L water/ha. (Adjust product rates accordingly for other 2,4-D formulations).

For spring applications, use only the low rate of 2,4-D (i.e. 1.2 L/ha) and 1.3 – 2.6 kg/ha Roundup Dry Herbicide. Only cereal crops not underseeded to legumes may be planted following spring applications of this tank mix, and a 14 day interval between application and planting is required.

Use the higher Roundup Dry Herbicide rates when perennial grasses are prevalent

#### **8.2.7 ALL PERENNIAL WEEDS**

**Weed Stages:** Weeds must be at the proper stage for effective control. Refer to "**Perennial Weed Control with Roundup Dry Herbicide**" (section 8.1).

**Nozzle Type:** For best results with conventional boom equipment, apply this product with 50 to 300 L/ha of clean water using flat fan nozzles and no more pressure than 275 kPa.

**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.

**Tillage Effects:** Fall or spring tillage prior to spring applications and tillage between harvesting and fall applications will reduce the effectiveness on perennial weeds. Follow-up tillage after application should be delayed 5-7 days for best results. See “**Perennial Weed Control**” table (section 8.1) for specific tillage interval for each weed.

**Rainfall Effects:** 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.

**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.

**Frost Effects:** Heavy frosts prior to application may reduce control. Do not apply after the first damaging frost in the fall.

## 9.0 CROPLAND SITUATIONS

**ALWAYS READ PRECAUTIONARY STATEMENTS, GENERAL INFORMATION AND MIXING AND APPLICATION SECTIONS (3.0, 4.0 and 5.0) PRIOR TO SPECIFIC APPLICATION INFORMATION IN ANY LABEL SECTION.**

This product can be applied as a broadcast spray or spot treatment prior to planting all crops, post harvest to annual crops, preharvest in wheat, barley, oats, canola (rapeseed), flax (including low linolenic acid varieties), lentils, peas, soybeans, dry beans and forages, and in summerfallow. It can also be applied as a directed spray in orchards, vineyards, blueberries, strawberries, and sugar beets, and using selective equipment in soy and dry beans, orchards, vineyards, cranberries and strawberry (refer to specific sections below for more information).

**For specific instructions on weed control in the following cropping situations, always refer to “Annual and Perennial Weed Control” (sections 7.0 and 8.0) for more information.**

### 9.1 PRIOR TO PLANTING – 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.**

### 9.2 POST HARVEST STUBBLE TREATMENT

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.

### 9.3 SPOT TREATMENT (IN-CROP)

This product can be applied as an in-crop spot treatment in barley, corn, oats, soybeans, wheat, forage grasses,

legumes, including seed production, strawberries, blueberries and sugarbeets. Applications should be made using the same rates and at the same growth stages as listed in the “**Weed Control**” tables (sections 7.1 and 8.1) or use a 0.5% solution for annual weeds and quackgrass and a 1.0% solution for other perennial weeds (a 0.5% solution equals 0.52 kg Roundup Dry Herbicide in 100 litres of spray solution). These solutions should be applied to wet, but not run-off. Applications can be made using boom sprayer, hose and handgun, or hand sprayer in accordance with instructions in the “**Application Equipment**” (section 5.2).

**9.3.1 Grazing Restrictions:** Applications 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 ROUNDUP DRY HERBICIDE TO TRANSLOCATE INTO ALL PLANT PARTS BEFORE GRAZING OR HARVESTING TREATED AREAS IN FORAGES.**

#### **9.4 SUMMERFALLOW TREATMENT**

This product, or labelled tank mixtures, may be applied in summerfallow to control weeds listed on this label. Ensure weeds are at the desired growth stage and actively growing at application for best results. Reduced control may result if weeds are drought stressed. Weeds will continue to germinate from seed throughout the growing season. Repeat treatments may be necessary to control later germinating weeds.

#### **9.5 MINIMUM AND ZERO TILLAGE CROPPING SYSTEMS ( ALL FIELD CROPS, INCLUDING CEREALS, OIL SEEDS, PULSES, FORAGES AND CORN)**

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 these 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.

##### **Minimum and Zero Tillage Tank Mixtures**

**9.5.1 Roundup Dry Herbicide plus 2,4-D amine or ester** can be applied prior to seeding or after seeding, but before crop emergence in **wheat, winter wheat, barley and rye**. Refer to “**Annual Weed Control with Roundup Dry Herbicide Tank Mixtures**” table for information (section 7.2).

**9.5.2 Roundup Dry Herbicide plus bromoxynil (Pardner)** can be applied prior to seeding or after seeding, but before crop emergence in **wheat, barley and oats**. Refer to “**Annual Weed Control with Roundup Dry Herbicide Tank Mixtures**” table for information (section 7.2).

**9.5.3 Roundup Dry Herbicide plus Pursuit®** can be applied prior to, or after, seeding, but before crop emergence in soybeans. Roundup Dry Herbicide will control emerged weeds listed on this label when applied as directed (refer to “**Annual and Perennial Weed Control**” sections 7.0 and 8.0). Pursuit will control weeds germinating from seed. Add the recommended rates of both products in 100 L water/ha, following the instructions on the Pursuit herbicide label.

**ALWAYS REFER TO THE PURSUIT LABEL FOR FURTHER INFORMATION ON WEEDS CONTROLLED, APPLICATION DIRECTIONS, AND USE PRECAUTIONS. ONLY SOYBEANS, FIELD CORN, SPRING BARLEY, SPRING WHEAT AND WINTER WHEAT MAY BE PLANTED**

**THE SEASON FOLLOWING A PURSUIT APPLICATION. WINTER WHEAT MAY BE PLANTED THE SAME YEAR AS A PURSUIT APPLICATION TO SOYBEANS, BUT NOT EARLIER THAN 120 DAYS AFTER THE APPLICATION.**

#### **DO NOT APPLY AFTER CROP EMERGENCE**

Pursuit is a registered trademark of BASF Canada Inc.

**9.5.4 Roundup Dry Herbicide plus MCPA** can be applied prior to seeding in **wheat, barley, rye, oats, corn (field and sweet; MCPA amine only), flax and field peas (MCPA amine only)**. Refer to “Annual Weed Control with Roundup Dry Herbicide Tank Mixtures” table for information (section 7.2).

**9.5.5 Roundup Dry Herbicide plus Buctril M<sup>Ò</sup>** can be applied prior to seeding in **wheat, rye, corn, barley, oats, flax, canary seed and seedling grasses (including brome grass, crested wheatgrass, intermediate wheat grass, 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)**. Refer to “Annual Weed Control with Roundup Dry Herbicide Tank Mixtures” table for information (section 7.2).

#### **9.6 FORAGES LEGUMES AND GRASSES**

This product may be applied for control of emerged weeds prior to emergence of forage legumes and grasses. If the forages are to be under-seeded with a cover crop, this product must be applied prior to planting the cover crop.

#### **9.7 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.

#### **9.8 FORAGE SEED PRODUCTION**

For spot treatment control of perennial weed problems such as quackgrass and Canada thistle in seed fields, apply as directed to vegetation that is at least 20 to 25 cm in height but before emergence of seed head. The crop in the treated areas will be killed. Take care to avoid drift outside target area for the same reason.

#### **9.9 PREHARVEST TREATMENT**

##### **CONTROL OF QUACKGRASS, CANADA THISTLE, MILKWEED, TOADFLAX AND DANDELION; SEASON-LONG CONTROL OF PERENNIAL SOW THISTLE, AND HARVEST MANAGEMENT**

For control of quackgrass, Canada thistle, common milkweed, toadflax and dandelion; and season-long control of perennial sow thistle, Roundup Dry Herbicide can be applied prior to harvest of wheat, barley (including malting barley), oats, canola (rapeseed) (including glyphosate tolerant varieties), flax (including low linolenic acid varieties), lentils, peas, dry beans, soybeans (including glyphosate tolerant varieties), and forages. **DO NOT** apply to crops if grown for seed production.



This treatment may also provide harvest management benefits, by drying down crop and weed vegetative growth, for example, where late flushes of annual weeds, green vegetative crop growth, or late tillering may interfere with harvest operations. **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.**

Roundup Dry Herbicide should be applied pre-harvest at 1.31 kg/ha in 50 to 100 L/ha of clean water, by ground application only. Apply only when the crop has 30% or less grain moisture content. This stage typically occurs 7 to 14 days before harvest. For forage crops, apply this product at 1.31 - 2.62 kg/ha 3-7 days prior to the last cut before rotation or forage renovation. Consult the table "**Guidelines for Timing of Preharvest Applications**" (section 9.91) for visual indicators of this stage in each crop. For the best weed control results quackgrass should be actively growing and have at least 4 to 5 green leaves. Canada thistle and perennial sow thistle should be actively growing and at or beyond the bud stage for best results. Common milkweed should be at the bud to bloom stage and actively growing for best results. Applications for weed control (not for harvest management) must be made at the correct stage of both weed and crop growth.

Apply only during the period 7-14 days before harvest (or 3-7 days for forage applications) to ensure best weed control and to maximize harvest management benefits. Earlier application may reduce crop yield and/or quality, and may lead to excess glyphosate residues in the crop.

Overspray or drift to important wildlife habitats such as bodies of water, wetlands (eg. sloughs), shelterbelts, woodlots and other cover on the edges of fields frequented by wildlife, should be avoided. Leave a 15 meter buffer zone between the last spray swath and the edge of any of these habitats.

Do not expose or contaminate any body of water or non-target vegetation by direct application, spray drift, or when cleaning and rinsing spray equipment.

**DO NOT APPLY BY AIR.**

### **9.9.1 GUIDELINES FOR TIMING OF PREHARVEST APPLICATIONS**

<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 (including glyphosate tolerant varieties)	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 pods are brown.
PEAS	Less than 30	Majority (75%-80%) of pods are

<b>CROP(S)</b>	<b>PERCENT GRAIN MOISTURE</b>	<b>VISUAL SYMPTOMS</b>
		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 color; pods are mature (yellow to brown in color); 80%-90% leaf drop (original leaves).
SOYBEANS (including glyphosate tolerant varieties)	Less than 30	Stems are green to brown in color; pod tissue is dry and brown in appearance; 80%-90% leaf drop.
FORAGES	Not applicable	Normal stage for forage harvesting.

## 9.10 TREE PLANTINGS

### Shelterbelts and Nursery Stock (Woody Ornamentals)

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

#### Deciduous

**Ash** - *Fraxinus spp.*  
**Caragana** - *Caragan spp.*  
**Cherry** - *Prunus spp.*  
**Elm** - *Ulmus spp.*  
**Lilac** - *Syringa spp.*  
**Maple** - *Acer spp.*  
**Mountain Ash** - *Sorbus spp.*  
**Poplar** - *Populus spp.*  
**Russian Olive** - *Elaeagnus spp.*  
**Willow** - *Salix spp.*

#### Coniferous

**Fir** - *Abies spp.*  
**Juniper** - *Juniperus spp.*  
**Pine** - *Pinus spp.*  
**Spruce** - *Picea spp.*  
**Yew** - *Taxus spp.*

**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.

## 9.11 TREE, VINE and BERRY CROPS

This product is recommended for annual and perennial weed control in established vineyards or orchards, in blueberry, cranberry and strawberry, 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). See "**Mixing and Application Equipment Information**" (section 5.2) and the following table for specific information on the use of equipment.

Repeat treatments may be necessary to control weeds originating from underground parts of untreated weeds or from seeds. This product does not provide residual or pre-emergent weed control. For subsequent weed control, follow a program using residual herbicides or use repeated applications of this product. Do not apply more than 18.3 kg 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.**

Reduced control may result when applications are made to annual or perennial weeds that have been mowed, grazed or cut and have not been allowed to regrow to the recommended stage for treatment.

**WEED CONTROL IN  
TREE, VINE and BERRY CROPS**

<b>Crop</b>	<b>Rate (kg/ha)</b>	<b>Pre-Harv Interval (days)</b>	<b>Max. Appl. per Yr.</b>	<b>Weeds Cont'd</b>	<b>Comments (Refer to sections 7.1 and 8.1 for specific rates for weed control)</b>
Apples Apricot Cherry (Sweet/ sour) Peaches Pears Plums	1.18 - 6.29	30	3	Annual and perennial weeds	
Apples Grapes	<u>Tank Mix</u> 1.18 - 6.29 + Simazine 2.0- 4.5 kg ai/ha	-	1	Annual and perennial weeds	- Will provide season- long pre-emergent control - Do not apply to coarse, sandy or gravelly soil - Use according to the more restrictive label direction for each product in the mix - DO NOT apply to orchards or vineyards that have been established less than 1 or 3 years, respectively

Crop	Rate (kg/ha)	Pre-Harv Interval (days)	Max. Appl. per Yr.	Weeds Cont'd	Comments (Refer to sections 7.1 and 8.1 for specific rates for weed control)
					- Simazine rate is equivalent to 2.25-5.0 kg/ha Princep® Nine-T®, or 4.0-9.0 kg/ha Simadex®
Grapes	1.18 - 6.29	14	3	Annual and perennial weeds	- 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
Highbush (cultivated) blueberry	1.47 - 2.93	30	1	Quack-grass	- Use as a directed spray, with no more than 275 kPa pressure
Lowbush blueberry	0.5-1.0% solution (spot application; 0.5-1.0 kg/100 L spray solution)	Apply in non-bearing year only	1	Woody brush on label (Section 6.3)	- Apply as a directed spray in mid-summer of the vegetative (non-bearing) year - See section 9.3 for instructions on spot treatments
Filberts Hazelnut (established plantations)	1.18 - 1.83	14	18.3 kg of product/h a/year	Annual weeds	- Use as a directed spray, with no more than 275 kPa pressure
Walnut Chestnut Japanese heartnut	1.18 - 6.29	-	2	Annual and perennial weeds	- 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 or - Apply as a 1.0% wiper

					solution (see Wiper Applications, section 9.12)
Strawberry	0.5-1.0% solution (spot application; 0.5-1.0 kg/100L spray solution)  17% solution (wiper application)	30	1	Emerged perennial weeds	- Apply when weeds are at a susceptible growth stage (see sections 8.1, 8.2) - See section 9.3 for instructions on spot treatments - See section 9.12 for instructions on wiper applications
Cranberry	10% Solution (0.10 kg + 1L water)	30	1	Annual and perennial weeds	- Apply using wick or wiper applicators (section 9.12)
Sugar beets	0.5-1.0% solution (spot application; 0.5-1.0 kg/100L spray solution)	Treated crop MUST NOT be harvested	1	Dodder species	- Apply when dodder is vigorously growing but before flowering. - See section 9.3 for instructions on spot treatments

Princep and Nine-T are registered trademarks of Syngenta Canada Ltd.  
Simadex is a trademark of Aventis CropScience.

## 9.12 SELECTIVE EQUIPMENT

### WIPER APPLICATORS

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 strawberries. 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. See sections 9.10, 10.1.)

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 which 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.

**AVOID CONTACT WITH DESIRABLE VEGETATION.** Contact of the herbicide solution with the desirable vegetation may result in damage or destruction. 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 “**Weed Control**” tables (sections 7.1 and 8.1) for recommended stage of growth for specific weeds.

## NOTES

- **Maintain equipment in good operating condition. Avoid leakage or dripping onto desirable vegetation.**
- **Adjust height of applicator to insure proper contact with weeds.**
- **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 0.26 to 0.52 kilograms of this product in 10 litres water to prepare a 2.6% percent to 5.2 percent solution. Roller speed should be maintained at 50 to 150 rpm.

**For Wick or other Wiper Applicators**--Mix 0.17 kilograms of this product per litre of water to prepare an 17 percent solution.

## 10.0 NON-CROPLAND USES

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

**ALWAYS READ PRECAUTIONARY STATEMENTS, GENERAL INFORMATION AND MIXING AND APPLICATION SECTIONS (3.0, 4.0 and 5.0) PRIOR TO SPECIFIC APPLICATION INFORMATION IN ANY LABEL SECTION.**

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 in the following table:

### 10.1 WEED CONTROL IN NON-CROPLAND AREAS WITH ROUNDUP DRY HERBICIDE

WEEDS	GROUND APPLICATION**			COMMENTS
	BOOM APPLICATION		Hand Held High Volume Application % Solution	
	Rate * Kg / ha	Water Vol.* L /ha		
<b>Annual grasses and broadleaves</b>	1.18 - 1.83	50 - 100	0.5	. Actively growing weeds
<b>Perennial Weeds</b>				
Quackgrass	1.31	50 - 300	0.5	. Actively growing weeds . Add 0.5% v/v of a recommended surfactant when using water volumes greater than 150 L (see section 8.2.2)
	2.49 - 3.69	50 - 300	1.0	. Higher rate for long term control and for heavy infestations . See section 10.2.3 for instructions on purple loosestrife applications
Canada Thistle (Bud Stage)	2.49 - 3.69	100 - 300	1.0	. Summer through fall is optimum

WEEDS	GROUND APPLICATION**			COMMENTS
	BOOM APPLICATION		Hand Held High Volume Application % Solution	
	Rate * Kg / ha	Water Vol.* L /ha		
Purple Loosestrife	3.14	300-600	0.5 - 1.0 (or 17% solution for wiper application)	
<b>Other Perennials</b>	3.69 - 6.29	100 -300	1.0	
<b>Brush and Trees</b>				
Birch, Cherry, Poplar, Western Snowberry, Willow	1.57 -3.14	100 - 300	0.5 - 1.0	. Summer through early fall (see section 10.2)
Maple, Raspberry/ Salmonberry, Alder	3.14	100 - 300	1.0	. Late Summer through fall . Fall is optimum
<b>Turf Renovation</b>	1.31 - 6.29	100 - 300	0.5 - 1.0	. Use higher end of the rate range for perennials
Annual and Perennial Weeds				
<b>Roadside Vegetation</b> (1-2 m wide along shoulders) Annual Weeds (refer to Tank-Mix sections on product labels for specific weeds controlled)	1)0.39-0.52 + 1.25-2.5L DyCleeR®48 0  or 2)0.39-0.52 + 0.30 L DyCleeR 480 + 1.2L 2,4-D amine 500	25-150	-	. Refer to annual weed control table in this label (section 7.1) for appropriate product rate for specific weeds  . For 2,4-D amine formulations with a different guarantee, adjust the rate accordingly  . No application to standing water.



WEEDS	GROUND APPLICATION**			COMMENTS
	BOOM APPLICATION		Hand Held High Volume Application % Solution	
	Rate * Kg / ha	Water Vol.* L /ha		
<b>Residual Control Annual and Perennial Weeds</b> (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)	1.31 - 6.29 + a) 2.5-5.6 kg Simazine 80W or + b)4.0-9.0 L Simadex® Flowable	200-400	-	. Do not apply to coarse sandy or gravelly soil. One application per year. . Use according to the most restrictive label directions for each product in the mixture. . For other simazine formulations registered for industrial/ non-cropland areas, use equivalent rates; i.e. 2.0-4.5 kg simazine/ha

\* For more information on rates, water volumes and application, refer to the "Annual and Perennial Weed Control" sections of this booklet (7.1 and 8.1 respectively).

\*\* Aerial application may be used for brush and tree control in Industrial rights-of-way only. See aerial application section (10.2.2).

DyCleer is a registered trademark of BASF Ltd.  
Simadex is a registered trademark of AgrEvo Ltd.

## 10.2 APPLICATION INFORMATION FOR NON-CROPLAND USES

### FOLIAR APPLICATIONS

Spray coverage should be uniform and complete. Do not spray to the point of run off. Do not allow spray drift to contact desirable vegetation as severe injury or destruction may occur. 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.

**EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF SPRAY WITH FOLIAGE OF DESIRABLE TURFGRASSES, TREES, SHRUBS, OR OTHER DESIRABLE VEGETATION SINCE SEVERE DAMAGE OR DESTRUCTION MAY RESULT.**

This product does not provide residual weed control. For subsequent weed control, follow a label approved herbicide program. Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

### 10.2.1 GROUND APPLICATIONS: For all non-cropland uses

For woody brush and trees, apply 1.57 to 3.14 kg of this product per hectare. Use ground boom or boomless, or mist blower equipment, or apply as a 0.5 to 1.0% solution (0.5 - 1.0 kg/100 L spray solution) using hand-held high volume equipment. Apply as directed in the recommended volume of clean water to foliage of actively growing vegetation. Use the 3.14 kg/ha rate for Maple, Alder and Willow\* species, as well as for hard to control perennial weed species. (\* suppression only)

Spray coverage should be uniform and complete. Do not spray to the point of runoff. Do not allow spray drift to contact desirable vegetation as severe injury or destruction may occur. If weeds have been mowed or tilled, do not treat until regrowth has reached the recommended stages.

### 10.2.2 AERIAL APPLICATIONS (FOR INDUSTRIAL RIGHTS-OF-WAY ONLY)

#### Directions for use

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

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

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices, 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 coverage. Apply only under conditions of good practice specific to aerial application as outlined in *the Basic Knowledge Requirements for Pesticide Education in Canada: Applicator Core and Aerial Module*, developed by CAPCO.

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 the production of fine particles (mist). Do not spray 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 Monsanto Canada Custom Care Line at 1-800-667-4944 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) which meets aerospace specification MIL-C-38412 may prevent corrosion.

For woody brush and trees, apply 1.57 to 3.14 kilograms of this product per hectare. Use the 3.14 kg/ha rate for Maple, Alder and Willow species, as well as for hard to control perennial weed species. Use the recommended rates of this herbicide in 30 to 100 litres of water per hectare. As density of vegetation increases, spray volume should be increased within the recommended range to ensure complete coverage. (\* Suppression only).

### **10.2.3 Purple Loosestrife Control**

- DO NOT TREAT PLANTS OVER OPEN WATER. Roundup Dry herbicide is not registered for direct application to bodies of water.
- Treat when plants are actively growing at or beyond the bloom stage. If using hand-held equipment, spray-to-wet.
- For wiper applications, see section 9.12
- Where feasible, remove 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.

### **10.3 SELECTIVE APPLICATION FOR ALL NON-CROPLAND USES**

Selective equipment such as **WIPER** and **ROLLER** applicators can be used to control emerged weeds in non-crop areas and tree plantings. See "**Selective Equipment**" (section 9.11) for more information.

### **10.4 TURFGRASS**

When applied as directed, under conditions described, this product controls most existing vegetation. Apply this product at rates specified in the "**Weed Control in Non-Cropland Areas**" (section 10.1).

**DO NOT DISTURB SOIL OR UNDERGROUND PLANT PARTS BEFORE TREATMENT.**

Where existing vegetation is growing in a field or unmowed situation, apply this product to actively growing weeds at the stages of growth given in the "**Weeds Controlled**" section of this booklet. 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.

### **10.5 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. Prepare a 52% solution of this product (0.52 kg in 1 L of water) and apply at a rate of at least 0.5 mL of this solution per 5 cm 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:

**ALDER**

*Alnus spp.*

**HEMLOCK**

*Tsuga spp.*

**BIRCH**

*Betula spp.*

**MAPLE\***

*Acer spp.*

**CEDAR**

*Thuja spp.*

**PINE**

*Pinus spp.*

**CHERRY**

*Prunus spp.*

**POPLAR**

*Populus spp.*

**DOUGLAS FIR**

*Pseudotsuga spp.*

**WILLOW**

*Salix spp.*

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

### **10.6 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 e.g. squirt bottle or similar device. This product must be applied immediately to the surface of the freshly cut stump i.e 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 0.18 g glyphosate (0.5 mL of a 52% solution) for every 5cm of 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 “Injection Applications” (section 10.5) of this label for a partial list of species controlled.

\*\*\*\*\*

This label transcript service is offered by the Pest Management Regulatory Agency to provide efficient searching for label information. This service and this information do not replace the official hard-copy label. The PMRA does not provide any guarantee or assurance that the information obtained through this service is accurate, current or correct, and is therefore not liable for any loss resulting, directly or indirectly, from reliance upon this service.