

GROUP	15	HERBICIDE
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## DUAL II MAGNUM<sup>®</sup> Herbicide

AGRICULTURAL

Emulsifiable Concentrate for Selective Weed Control

**GUARANTEE:**

S-Metolachlor\* ..... 915 g/L

\* and R-enantiomer

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

**WARNING: EYE IRRITANT  
POTENTIAL SKIN SENSITIZER**

REGISTRATION NO.: **25729**  
PEST CONTROL PRODUCTS ACT

**Syngenta Canada Inc.**  
140 Research Lane, Research Park  
Guelph, Ontario  
N1G 4Z3  
Telephone: 1-877-964-3682

BOOKLET

## 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.

## FIRST AID

**IN CASE OF POISONING**, contact a physician or a poison control centre **IMMEDIATELY**. 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 IN EYES**, hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

**IF ON SKIN OR CLOTHING**, take off contaminated clothing. Rinse skin **IMMEDIATELY** with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

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

**NOTE:** This product may cause skin sensitization reactions in certain individuals.

## TOXICOLOGICAL INFORMATION

If swallowed, there is no specific antidote. Treat symptomatically. If a large amount has been ingested and emesis has been inadequate, lavage stomach. The active ingredient in this product, S-Metolachlor, has a high affinity for activated charcoal. A suspension of activated charcoal in water can be given to absorb the remaining toxicant. Skin reactions have been treated with antihistamines and ointments containing an anti-inflammatory agent. This product contains a petroleum distillate.

## PRECAUTIONS

**KEEP OUT OF THE REACH OF CHILDREN.** Harmful if swallowed. Avoid contact with eyes or prolonged contact with skin. Avoid inhalation of vapours or spray mist. Do not contaminate food, feed, domestic or irrigation water supplies, lakes, streams and ponds.

Wear a long-sleeve shirt, long pants, a hat, and enclosed boots during all activities. For application to ornamentals using hand-held application equipment, wear the previously mentioned

clothing plus chemical-resistant gloves. When handling the concentrate wear a long-sleeve shirt, long pants, a hat, enclosed boots, chemical-resistant gloves and goggles or a face shield. Avoid breathing vapours or spray mist. If ventilation is not adequate, wear an appropriate pesticide respirator. Do not eat, drink, smoke or apply cosmetics in areas where there is potential for exposure to this product. Wear freshly laundered clothes daily. Wash hands and face before eating, drinking, smoking or using the toilet. Store and wash all protective clothing separately from household laundry. Wash clothing in detergent and hot water before reuse.

DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

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

## ENVIRONMENTAL HAZARDS

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body. For the protection of aquatic plants, overspray or drift to important wildlife habitats such as wetlands, sloughs or dry slough borders and water bodies should be avoided. Leave a buffer zone of 29 metres between the last spray swath and the edge of any of these habitats. Drift to emerging vegetation or newly emerged vegetation in shelterbelts or woodlots should be avoided. For tank mixes, consult the label(s) of the tank mix partner(s), and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture.

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.

**CAUTION:** Do not graze treated immature crops or cut for hay. Sufficient data are not available to support such use. In the case of corn, immature means before ear emergence. Do not harvest sweet corn within 45 days of application. Do not harvest other corn within 80 days of application. Make only one application per season.

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

## DO NOT APPLY BY AIR.

If this pest control product is to be used on a commodity that may be exported to other countries in the world and you require information on acceptable residue levels in these

countries, please contact Syngenta Canada Inc. at 1-87-SYNGENTA / 1-877-964-3682.

## **DISPOSAL OF UNUSED, UNWANTED PRODUCT**

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.

### **CONTAINER DISPOSAL OR REFILLING:**

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

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

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

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

#### **For refillable containers:**

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

***IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL, FIRE OR POISONING,  
CALL 1-800-327-8633 (FASTMED)***

## **DIRECTIONS FOR USE**

### **CROP INFORMATION:**

DUAL II MAGNUM® Herbicide provides selective weed control in:

- Corn \* (hybrid, silage, seed, sweet)
- Soybeans
- Dry common beans (*Phaseolus vulgaris*)
- Snap common beans (yellow and green)
- Lima beans
- Potatoes
- Sugar beets
- Red beets
- Transplanted tomatoes
- Rutabagas
- Sweet white lupins
- Carrots

Peas (grown for processing)  
 Fruit trees (bearing and non-bearing)  
 Strawberries (bearing and newly planted)  
 Second-year or older poplar stoolbeds  
 Second-year or older transplant or seedling stock of:  
 White Spruce, Norway Spruce, Black Spruce, White Pine, Jack Pine and Red Pine  
 Transplanted broccoli, cabbage, cauliflower and mustard greens  
 Highbush blueberries (new and established plantings)  
 Field peppers  
 Outdoor Ornamentals (Woody and Herbaceous)  
 Asparagus (established beds)  
 Established conifers for field production  
 Sweet Potatoes  
 Pearl millet (animal feed only)  
 Peanut  
 Pumpkin and Winter squash  
 Eggplant (transplants only)  
 Asian radish  
 Crop Group 9 – Cucurbit Vegetables  
 Celery  
 Parsnip

\* DUAL II MAGNUM Herbicide contains benoxacor which has been shown to enhance S-Metolachlor metabolism in corn. This enhanced metabolism can reduce the potential of S-Metolachlor injury to corn seedlings when grown under unfavourable weather conditions such as cool temperature or water stress. Use of DUAL II MAGNUM Herbicide will not provide improved crop safety on other labelled crops.

#### **WEEDS CONTROLLED:**

American Nightshade <sup>1</sup>	Fall Panicum
Eastern Black Nightshade <sup>1</sup>	Foxtail (green, yellow, giant)
Crabgrass (smooth, hairy)	Old Witchgrass
Barnyard Grass	Yellow Nutsedge <sup>2</sup>
Redroot Pigweed <sup>3</sup> (suppression only)	

<sup>1</sup> Pre-emergent treatments sometimes give better control than pre-plant surface, pre-plant incorporated or post-emergent treatments.

<sup>2</sup> Pre-plant incorporated treatment only. Extended periods of dry hot weather following application may result in reduced nutsedge control.

<sup>3</sup> Pre-plant incorporated and pre-emergent treatments only.

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

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

**TIMING OF APPLICATION:**

<b>EASTERN CANADA</b>	<b>PRAIRIES &amp; INTERIOR B.C.</b>	<b>COASTAL B.C.</b>
Pre-plant Surface or Pre-plant Incorporated or Pre-emergent or Early Post-emergent	Pre-plant Incorporated or Pre-emergent if irrigated within 10 days	Pre-emergent

**APPLICATION INFORMATION**

DO NOT APPLY BY AIR.

**PRE-PLANT SURFACE APPLICATION:**

- For minimum tillage (reduced tillage), and no-till (zero-till) systems in corn and soybeans. Do not use for soybean, immature seed.
- Applications may be made up to 30 days before planting.
- To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished.

**PRE-PLANT INCORPORATION:**

- Immediate incorporation is not necessary.
- Incorporation equipment should include rolling or western harrows.
- On sandy soils, heavy rainfall following an incorporated treatment may cause leaching of the herbicide.

<b>INCORPORATION INSTRUCTIONS</b>		
<b>TYPE OF EQUIPMENT</b>	<b>MAXIMUM WORKING DEPTH</b>	<b>MINIMUM SPEED</b>
"S"-Tine (Danish) cultivator	10 cm	10 km/hr
"C"-Tine cultivator with overlapping sweeps	10 cm	10 km/hr
Tandem disc (maximum 18 cm spacing between discs)	10 cm	6 km/hr
Power driven cultivator	5 cm	any
Mulch Master	5 cm	10 km/hr

DUAL II MAGNUM Herbicide may be applied as an overall spray or as a band treatment. For band treatment, a suitable press wheel mounted ahead of the nozzle should be used for levelling the band. For band application, use proportionately less material.

**PRE-EMERGENT APPLICATION:**

- Apply evenly to a firm, lump-free seed bed.
- Rain is required within 10 days or a shallow cultivation or use of a rotary hoe is necessary.
- Pre-emergent applications may also be made in reduced tillage, ridge tillage, and no-till systems in corn and soybeans.
- Minimize exposure of untreated soil when cultivating or fertilizing.

**POST-EMERGENT APPLICATION:**

- CORN ONLY.
- Apply when corn is in the spike to 6-leaf stage and **before weeds pass the 2-leaf stage**.
- Some leaf burn may occur but yield will not be affected.
- DO NOT tank-mix DUAL II MAGNUM Herbicide with fluid fertilizers, oils, oil concentrates or surfactants when applying post-emergent.
- Do not graze treated immature crops or cut for hay. Do not harvest sweet corn within 45 days of application. Do not harvest other corn within 80 days of making a post-emergent application.

**CAUTION:**

Do not apply to soils that contain less than 1% or more than 10% organic matter. Winter cereals may be planted 4 1/2 months following application. If drought conditions persist after either a pre-plant surface, pre-plant incorporated or pre-emergent application, annual grass control may not be adequate.

**LIQUID FERTILIZERS:**

Nitrogen solutions or complete liquid fertilizers may replace water as a carrier for pre-plant surface, pre-plant incorporated or pre-emergent application of DUAL II MAGNUM Herbicide alone or in tank mixes in corn. Do not use fertilizer solutions for post-emergent applications. Always predetermine the compatibility of DUAL II MAGNUM Herbicide or labelled DUAL II MAGNUM Herbicide tank mixes with your water or liquid fertilizer carrier by mixing small proportional quantities in advance. Always consult the label of the tank mix partner if tank mixtures are to use liquid fertilizer as the carrier.

**DRY BULK GRANULAR FERTILIZERS:**

Many dry bulk granular fertilizers may be impregnated with DUAL II MAGNUM Herbicide plus AATREX® herbicide for pre-plant incorporated application to control weeds in corn. Prepare the herbicide/fertilizer mixtures by using any commonly used dry bulk fertilizer blender. Spray herbicide mixture uniformly onto fertilizer. If the herbicide/fertilizer mixture is too wet, the use of a highly absorptive powder (generally less than 2% by weight) such as Microcel E, diatomaceous earth or finely powdered clay is recommended.

For best results, apply DUAL II MAGNUM Herbicide/fertilizer mixtures or DUAL II MAGNUM Herbicide plus AATREX herbicide/fertilizer mixtures uniformly to the soil with properly calibrated equipment immediately after blending and incorporate according to label directions.

**Note:** Apply a minimum of 225 kg per hectare of dry granular fertilizer impregnated with recommended rates of DUAL II MAGNUM Herbicide alone or DUAL II MAGNUM Herbicide tank mixtures.

**Do not impregnate DUAL II MAGNUM Herbicide alone or with AATREX herbicide onto nitrate fertilizers, superphosphates, or limestone.**

**MIXING AND SPRAYING INSTRUCTIONS:**

- . Spray Pressure - 200 - 300 kPa
  - . Spray Volume - minimum 150 litres per hectare. The use of higher water volumes and larger spray tip sizes will generally increase spray deposition and reduce drift.
  - . Keep bypass line at bottom of tank to minimize foaming.
  - . Use 16 mesh suction screens, 50 mesh line and tip screens.
1. Fill sprayer 1/2 full of carrier. Start gentle agitation.
  2. Add wettable powder or wettable granule tank-mix partner, if applicable. Slurry with water first if using liquid fertilizers as the carrier.
  3. Add liquid flowable tank-mix partner, if applicable, and agitate thoroughly.
  4. Fill tank 9/10 full of carrier and add DUAL II MAGNUM Herbicide and other emulsifiable concentrate or solution tank-mix partners.
  5. Top off tank with carrier, maintain agitation and spray.
  6. Do not let stand without agitation.
  7. Sprayer equipment should be thoroughly flushed with clean water and drained before and after use of DUAL II MAGNUM Herbicide and its tank mixes.

**Note:** If using Fieldstar™ herbicide ensure that the water soluble packets and the Fieldstar herbicide are completely dissolved before proceeding to the next step.



**CORN**  
**TANK MIXTURES (EASTERN CANADA ONLY)**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	RATE PER HECTARE/TANK MIX PARTNER <sup>2</sup>
Pre-plant Surface (up to 30 days before planting)	Annual Grasses and Broadleaf Weeds <sup>3</sup>	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480 or 216 g Fieldstar <sup>4,7</sup>
	Annual Grasses, Emerged Annual or Perennial Weeds	1.25 - 1.75 L	+ 2.6 - 2.7 L TOUCHDOWN <sup>®</sup> 480 <sup>5</sup> or 2.0 L TOUCHDOWN 600 <sup>5</sup> or 1.7 - 1.8 L TOUCHDOWN TOTAL <sup>®5</sup> or 2.35 - 2.5 L TOUCHDOWN iQ <sup>®5</sup> or 2.35 - 2.5 L Roundup Original <sup>®5</sup> or 2.35 - 2.5 L Roundup Transorb <sup>®5</sup> or 1.23 - 1.30 kg Roundup Dry <sup>®</sup> (68.5% glyphosate) <sup>5</sup> or 2.35 - 2.5 L Glyfos <sup>®5</sup> or 2.35 - 2.5 L Credit <sup>®5</sup> or 2.35 - 2.5 L Vantage <sup>®5</sup> or 2.35 - 2.5 L Vantage Plus <sup>5</sup> or 2.35 - 2.5 L Renegade <sup>5</sup>
	Annual Grasses and Broadleaf Weeds, Emerged Annual or Perennial Weeds	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480 <sup>6</sup>  + 2.6 - 2.7 L TOUCHDOWN 480 <sup>5</sup> or 2.0 L TOUCHDOWN 600 <sup>5</sup> or 1.7 - 1.8 L TOUCHDOWN TOTAL <sup>5</sup> or 2.35 - 2.5 L TOUCHDOWN iQ <sup>5</sup> or 2.35 - 2.5 L Roundup Original <sup>5</sup> or 2.35 - 2.5 L Roundup Transorb <sup>5</sup> or 1.23 - 1.30 kg Roundup Dry (68.5% glyphosate) <sup>5</sup> or 2.35 - 2.5 L Glyfos <sup>5</sup> or 2.35 - 2.5 L Credit <sup>5</sup> or 2.35 - 2.5 L Vantage <sup>5</sup> or 2.35 - 2.5 L Vantage Plus <sup>5</sup> or 2.35 - 2.5 L Renegade <sup>5</sup>

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	RATE PER HECTARE/TANK MIX PARTNER <sup>2</sup>
Pre-plant Incorporated	Nutsedge, Annual Grasses	1.25 - 1.75 L	DUAL II MAGNUM Herbicide applied alone
	Nutsedge, Annual Grasses and Broadleaf Weeds	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480 or 216 g Fieldstar <sup>7</sup>
Pre-emergent	Annual Grasses	1.25 - 1.75 L	DUAL II MAGNUM Herbicide applied alone
	Annual Grasses and Broadleaf Weeds	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480
	Annual Grasses and Broadleaf Weeds including triazine tolerant weeds	1.25 - 1.75 L	+ 1.25 L Banvel <sup>®</sup> II <sup>7</sup> or 3.7 - 4.5 L Marksman <sup>®7,8</sup> <b>OR</b> + 2.1 - 3.1 L AATREX Liquid 480 + 1.25 L Banvel II <sup>7</sup> <b>OR</b> + 216 g Fieldstar <sup>7</sup> <b>OR</b> + 0.3 L CALLISTO <sup>®</sup> 480SC <b>OR</b> + 0.3 L CALLISTO 480SC + 2.1 - 3.1 L AATREX Liquid 480
	Annual Grasses, Emerged Annual or Perennial Weeds	1.25 - 1.75 L	+ 2.6 - 2.7 L TOUCHDOWN 480 <sup>5</sup> or 2.0 L TOUCHDOWN 600 <sup>5</sup> or 1.7 – 1.8 L TOUCHDOWN TOTAL <sup>5</sup> or 2.35 – 2.5 L TOUCHDOWN iQ <sup>5</sup> or 2.35 - 2.5 L Roundup Original <sup>5</sup> or 2.35 - 2.5 L Roundup Transorb <sup>5</sup> or 1.23 - 1.30 kg Roundup Dry (68.5% glyphosate) <sup>5</sup> or 2.35 - 2.5 L Glyphos <sup>5</sup> or 2.35 - 2.5 L Credit <sup>5</sup> or 2.35 - 2.5 L Vantage <sup>5</sup> or 2.35 - 2.5 L Vantage Plus <sup>5</sup> or 2.35 - 2.5 L Renegade <sup>5</sup>
Pre-emergent	Annual Grasses and the following annual Broadleaf Weeds including triazine tolerant weeds: Redroot Pigweed, Lamb's Quarters, Velvetleaf, Common Ragweed, Mustard (wild, wormseed), Eastern Black Nightshade	1.5 L	+ 70 g Converge <sup>®</sup> 75WDG <sup>7,9</sup>  + 1.1 L Converge 480 <sup>7,9</sup>

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	RATE PER HECTARE/TANK MIX PARTNER <sup>2</sup>
	Annual Grasses and Broadleaf Weeds, Emerged Annual or Perennial Weeds	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480 <sup>6</sup> + 2.6 - 2.7 L TOUCHDOWN 480 <sup>5</sup> or 2.0 L TOUCHDOWN 600 <sup>5</sup> or 1.7 – 1.8 L TOUCHDOWN TOTAL <sup>5</sup> or 2.35 – 2.5 L TOUCHDOWN iQ <sup>5</sup> or 2.35 - 2.5 L Roundup Original <sup>5</sup> or 2.35 - 2.5 L Roundup Transorb <sup>5</sup> or 1.23 - 1.30 kg Roundup Dry (68.5% glyphosate) <sup>5</sup> or 2.35 - 2.5 L Glyphos <sup>5</sup> or 2.35 - 2.5 L Credit <sup>5</sup> or 2.35 - 2.5 L Vantage <sup>5</sup> or 2.35 - 2.5 L Vantage Plus <sup>5</sup> or 2.35 - 2.5 L Renegade <sup>5</sup>
Early Post-Emergent (spike to 2-leaf stage)	Annual Grasses	1.25 - 1.75 L	DUAL II MAGNUM Herbicide applied alone
	Annual Grasses and Broadleaf Weeds	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480
	Annual Grasses and Broadleaf Weeds including triazine tolerant weeds	1.25 - 1.75 L	+ 3.7 - 4.5 L Marksman <sup>7,8</sup> or 600 mL - 1.25 L Banvel II <sup>7</sup> OR + 2.3 L AATREX Liquid 480 + 600 mL - 1.25 L Banvel II <sup>7</sup> OR + 0.3 L CALLISTO 480SC <sup>10</sup> OR + 0.3 L CALLISTO 480SC + 2.1 - 3.1 L AATREX Liquid 480 <sup>10</sup>
Post-Emergent (3 to 6-leaf stage) (hybrid and silage corn only)	Annual Grasses	1.25 - 1.75 L	DUAL II MAGNUM Herbicide applied alone <sup>7</sup>
	Annual Grasses and Broadleaf Weeds including triazine tolerant weeds	1.25 - 1.75 L	+ 3.7 - 4.5 L Marksman <sup>7,8,11</sup> or 600 mL - 1.25 L Banvel II <sup>7,11</sup> OR + 2.3 L AATREX Liquid 480 + 600 mL - 1.25 L Banvel II <sup>7,11</sup>
Post-Emergent (3 to 6-leaf stage) (hybrid, silage and sweet corn only)	Annual Grasses and Broadleaf Weeds	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480 <sup>12</sup>

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed populations.

<sup>2</sup> Consult the label of the product(s) to be tank mixed with DUAL II MAGNUM Herbicide for specific instructions regarding broadleaf weeds, soil-type variations, and rotational crop, grazing or other restrictions.

<sup>3</sup> Apply pre-plant surface applications of DUAL II MAGNUM Herbicide plus AATREX Liquid 480 Herbicide only when emerged annual weeds are less than 6 cm tall. If emerged annual weeds are taller than 6 cm, apply TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicides prior to the tank mix application or make an application of a 3-way tank mix of DUAL II

MAGNUM Herbicide plus AATREX plus TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicides. Consult the tank mix partner label for specific instructions regarding precautions, restrictions, recommended rates and additives.

4 Annual broadleaf weeds beyond the 2 leaf stage of growth will not be controlled by surface preplant applications of DUAL II MAGNUM Herbicide and Fieldstar herbicide.

5 Some perennial weeds may not be controlled with these rates of TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicides. Consult the TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicide labels regarding perennial weeds controlled.

6 It is recommended that liquid formulations of products be used when tank mixing with TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicide. Consult the TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicide labels for specific instructions regarding precautions, restrictions, recommended rates and additives.

7 **DO NOT USE THESE TIMINGS OR TANK MIXES ON SEED CORN, SWEET CORN OR POPCORN.**

8 Use the lower rate of Marksman herbicide on sand or sandy loam soil and the higher rate on loam or clay soils.

9 Follow all soil type restrictions on the Converge 75WDG herbicide label.

10 **FIELD CORN ONLY.**

11 Do not apply tank mixes containing Marksman or Banvel II beyond the 5 leaf stage of corn.

12 **DO NOT USE THIS TANK MIX ON SEED CORN OR POPCORN.**

#### NOTES for Pre-plant Surface and Pre-emergent Applications Only:

For improved burndown of **small** emerged annual weeds, the following additives may be applied in mixtures of DUAL II MAGNUM Herbicide with AATREX Liquid 480 herbicide:

- Crop Oil, 28-0-0 or 10-34-0 at 5% v/v
- Crop oil concentrate at 1% v/v
- Non-ionic surfactant at 0.1% v/v

If annual weeds are larger or perennial weeds are present, use TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicides in the tank mix (See preceding table).

#### TANK MIXTURES (WESTERN CANADA ONLY)

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	RATE PER HECTARE/TANK MIX PARTNER <sup>2</sup>
Pre-plant Incorporated	Green and Yellow Foxtail, Barnyard Grass and Broadleaf Weeds	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480
Pre-emergent with irrigation	Green and Yellow Foxtail, Barnyard Grass and Broadleaf Weeds	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480

1 Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

2 Consult the label of the product to be tank mixed with DUAL II MAGNUM Herbicide for specific instructions regarding soil-type variations and other restrictions.

**SOYBEANS  
TANK MIXTURES**

TIMING	WEEDS CONTROLLED <sup>1</sup>	RATE/HA DUAL II MAGNUM HERBICIDE <sup>2</sup>	RATE PER HECTARE/TANK MIX PARTNER <sup>3</sup>
Pre-plant Surface (up to 30 days before planting)	Annual Grasses and Broadleaf Weeds including Nightshade <sup>4</sup>	1.15 - 1.75 L	+ 1.0 - 2.2 L Sencor <sup>®</sup> 500F or Sencor 480F or 1.0 – 2.2 L Sencor Soybean or 670 g - 1.45 kg Sencor 75DF or 670 g - 1.45 kg Lexone <sup>™</sup> DF <sup>5</sup>
	Annual Grasses, Nightshade, Emerged Annual or Perennial Weeds	1.15 - 1.75 L	+ 2.6 - 2.7 L TOUCHDOWN 480 <sup>6</sup> or 2.0 L TOUCHDOWN 600 <sup>6</sup> or 1.7 – 1.8 L TOUCHDOWN TOTAL <sup>6</sup> or 2.35 - 2.5 L TOUCHDOWN iQ <sup>6</sup> or 2.35 - 2.5 L Roundup Original <sup>6</sup> or 2.35 - 2.5 L Roundup Transorb <sup>6</sup> or 1.23 - 1.30 kg Roundup Dry (68.5% glyphosate) <sup>6</sup> or 2.35 - 2.5 L Glyphos <sup>6</sup> or 2.35 - 2.5 L Credit <sup>6</sup> or 2.35 - 2.5 L Vantage <sup>6</sup> or 2.35 - 2.5 L Vantage Plus <sup>6</sup> or 2.35 - 2.5 L Renegade <sup>6</sup>
	Annual Grasses and Broadleaf Weeds including Nightshade, Emerged Annual or Perennial Weeds	1.15 - 1.75 L	+ 2.6 - 2.7 L TOUCHDOWN 480 <sup>6</sup> or 2.0 L TOUCHDOWN 600 <sup>6</sup> or 1.7 – 1.8 L TOUCHDOWN TOTAL <sup>6</sup> or 2.35 - 2.5 L TOUCHDOWN iQ <sup>6</sup> or 2.35 - 2.5 L Roundup Original <sup>6</sup> or 2.35 - 2.5 L Roundup Transorb <sup>6</sup> or 1.23 - 1.30 kg Roundup Dry (68.5% glyphosate) <sup>6</sup> or 2.35 - 2.5 L Glyphos <sup>6</sup> or 2.35 - 2.5 L Credit <sup>6</sup> or 2.35 - 2.5 L Vantage <sup>6</sup> or 2.35 - 2.5 L Vantage Plus <sup>6</sup> or 2.35 - 2.5 L Renegade <sup>6</sup>  + 1.0 - 2.2 L Sencor 500F <sup>7</sup> or Sencor 480F <sup>7</sup> or 1.0 – 2.2 L Sencor Soybean <sup>7</sup> or 670 g - 1.45 kg Sencor 75DF <sup>7</sup> or 670 g - 1.45 kg Lexone DF <sup>5,7</sup>
Pre-plant Incorporated	Nutsedge, Annual Grasses and Nightshade	1.15 - 1.75 L	DUAL II MAGNUM Herbicide applied alone
	Nutsedge, Annual Grasses and Broadleaf Weeds including Nightshade	1.15 - 1.75 L	+ 550 - 750 g Sencor 75DF or 850 mL - 1.1 L Sencor 500F or Sencor 480F or 850 mL - 1.1 L Sencor Soybean or 540 - 640 g Lexone DF <sup>5</sup> or 312 mL Pursuit <sup>®8</sup>
Pre-emergent	Annual Grasses and Nightshade	1.15 - 1.75 L	DUAL II MAGNUM Herbicide applied alone

TIMING	WEEDS CONTROLLED <sup>1</sup>	RATE/HA DUAL II MAGNUM HERBICIDE <sup>2</sup>	RATE PER HECTARE/TANK MIX PARTNER <sup>3</sup>
Pre-emergent	Annual Grasses and Broadleaf Weeds including Nightshade	1.15 - 1.75 L	+ 850 mL - 2.25 L Sencor 500F or Sencor 480F or 850 mL – 2.25 L Sencor Soybean or 550 g - 1.5 kg Sencor 75DF or 540 - 960 g Lexone DF <sup>5</sup> or 1.6 - 2.5 L Afolan F or 1.9 - 2.3 L Lorox L <sup>5</sup> or 1.75 - 2.25 kg Lorox DF <sup>5</sup> or 312 - 420 mL Pursuit <sup>8</sup> or 210 - 550 g Lexone DF <sup>5</sup> plus 1.4 - 2.0 kg Lorox DF <sup>5</sup> or 210 - 550 g Lexone DF <sup>5</sup> plus 1.5 - 2.0 L Lorox L <sup>5</sup> or 465 - 665 g Sencor 75DF plus 1.4 - 2.0 kg Lorox DF <sup>5</sup> or 465 - 665 g Sencor 75DF plus 1.5 - 2.0 L Lorox L <sup>5</sup> or 750 mL - 1.0 L Sencor 500F or Sencor 480F or Sencor Soybean plus 1.4 - 2.0 kg Lorox DF <sup>5</sup> or 750 mL-1.0 L Sencor 500F or Sencor 480F or Sencor Soybean plus 1.5 - 2.0 L Lorox L <sup>5</sup>
	Annual Grasses, Nightshade, Emerged Annual or Perennial Weeds	1.15 - 1.75 L	+ 2.6 - 2.7 L TOUCHDOWN 480 <sup>6</sup> or 2.0 L TOUCHDOWN 600 <sup>6</sup> or 1.7 – 1.8 L TOUCHDOWN TOTAL <sup>6</sup> or 2.35 - 2.5 L TOUCHDOWN iQ <sup>6</sup> or 2.35 - 2.5 L Roundup Original <sup>6</sup> or 2.35 - 2.5 L Roundup Transorb <sup>6</sup> or 1.23 - 1.30 kg Roundup Dry (68.5% glyphosate) <sup>6</sup> or 2.35 - 2.5 L Glyfos <sup>6</sup> or 2.35 - 2.5 L Credit <sup>6</sup> or 2.35 - 2.5 L Vantage <sup>6</sup> or 2.35 - 2.5 L Vantage Plus <sup>6</sup> or 2.35 - 2.5 L Renegade <sup>6</sup>

TIMING	WEEDS CONTROLLED <sup>1</sup>	RATE/HA DUAL II MAGNUM HERBICIDE <sup>2</sup>	RATE PER HECTARE/TANK MIX PARTNER <sup>3</sup>
Pre-emergent	Annual Grasses and Broadleaf Weeds including Nightshade, Emerged Annual or Perennial Weeds	1.15 - 1.75 L	+ 2.6 - 2.7 L TOUCHDOWN 480 <sup>6</sup> or 2.0 L TOUCHDOWN 600 <sup>6</sup> or 1.7 – 1.8 L TOUCHDOWN TOTAL <sup>6</sup> or 2.35 - 2.5 L TOUCHDOWN iQ <sup>6</sup> or 2.35 - 2.5 L Roundup Original <sup>6</sup> or 2.35 - 2.5 L Roundup Transorb <sup>6</sup> or 1.23 - 1.30 kg Roundup Dry (68.5% glyphosate) <sup>6</sup> or 2.35 - 2.5 L Glyphos <sup>6</sup> or 2.35 - 2.5 L Credit <sup>6</sup> or 2.35 - 2.5 L Vantage <sup>6</sup> or 2.35 - 2.5 L Vantage Plus <sup>6</sup> or 2.35 - 2.5 L Renegade <sup>6</sup>  + 850 mL - 2.25 L Sencor 500F <sup>7</sup> or Sencor 480F <sup>7</sup> or 850 mL - 2.25 L Sencor Soybean or 550 g – 1.5 kg Sencor 75DF <sup>7</sup> or 540 - 960 g Lexone DF <sup>5,7</sup> or 312 - 420 mL Pursuit <sup>8</sup>

<sup>1</sup> For optimum nightshade control, use the higher rate of DUAL II MAGNUM Herbicide applied pre-emergently and choose a tank-mix partner which is also registered for the control of nightshade.

<sup>2</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems. For redroot pigweed suppression, apply a minimum of 1.25 L of DUAL II MAGNUM Herbicide per hectare.

<sup>3</sup> Consult the label of the product(s) to be tank mixed with DUAL II MAGNUM Herbicide for specific instructions regarding broadleaf weeds, soil-type variations and rotational crop, grazing or other restrictions.

<sup>4</sup> Apply pre-plant surface applications of DUAL II MAGNUM Herbicide plus Sencor herbicide or DUAL II MAGNUM Herbicide plus Lexone herbicide only when emerged annual weeds are less than 6 cm tall. If emerged annual weeds are taller than 6 cm, apply TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicide prior to the tank mix application or make an application of a 3-way tank mix of DUAL II MAGNUM Herbicide plus TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicide plus Sencor or Lexone herbicide. Consult the tank mix partner label for specific instructions regarding precautions, restrictions, recommended rates and additives.

<sup>5</sup> Tank mixes with Lexone or Lorox herbicide are for use in eastern Canada only.

<sup>6</sup> Some perennial weeds may not be controlled with these rates of TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicide. Consult the TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicide label regarding perennial weeds controlled.

<sup>7</sup> It is recommended that liquid formulations of products be used when tank mixing with TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicide. Consult the TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicide label for specific instructions regarding precautions, restrictions, recommended rates and additives.

<sup>8</sup> Do not apply Pursuit herbicide as a pre-plant incorporated application more than one year in sequence. Only soybeans, field corn, spring barley, spring wheat and winter wheat may be planted the season following application of Pursuit herbicide. Winter wheat should not be planted within 120 days of the application of Pursuit herbicide.

**CAUTION:** Soybeans should be seeded at least 4 cm deep or crop injury may result. Do not apply DUAL II MAGNUM Herbicide if soybeans have emerged.

**Notes for Pre-plant Surface and Pre-emergent Applications ONLY:**

For improved burndown of **small** emerged annual weeds, the following additives may be applied in mixtures of DUAL II MAGNUM Herbicide with Sencor 500F, Sencor 480F, Sencor Soybean, Sencor 75DF, Lexone DF, or Pursuit herbicide:

- Crop oil, 28-0-0, or 10-34-0 at 5% v/v
- Crop oil concentrate at 1% v/v
- Non-ionic surfactant at 0.1% v/v

If annual weeds are larger or perennial weeds are present use TOUCHDOWN, Roundup, Glyphos, Credit, Vantage or Renegade herbicide in the tank mix (See preceding table).

**OTHER BEANS**

SNAP COMMON BEANS (Yellow and Green Only)  
AND LIMA BEANS

**Eastern Canada and B.C.**

TIMING	WEEDS CONTROLLED	RATE PER HECTARE DUAL II MAGNUM HERBICIDE <sup>1</sup>
Pre-plant Incorporation	Annual Grasses and Nutsedge	1.15 - 1.75 L

- <sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems. For redroot pigweed suppression apply a minimum of 1.25 L of DUAL II MAGNUM Herbicide per hectare.

**CAUTION:** Beans should be seeded at least 4 cm deep or crop injury may result.

**POTATOES****TANK MIXTURES**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	RATE PER HECTARE/TANK MIX PARTNER <sup>2</sup>
Pre-plant Incorporated	Nutsedge, Annual Grasses and Broadleaf Weeds	1.25 - 1.75 L	+ 750 g - 1.5 kg Sencor 75DF or 1.1 - 2.25 L Sencor 500F or Sencor 480F or 830 g - 1.2 kg Lexone DF
Pre-emergent	Annual Grasses and Broadleaf Weeds	1.25 - 1.75 L	+ 1.6 - 2.5 L Afolan F or 750 g - 1.5 kg Sencor 75DF or 1.1 - 2.25 L Sencor 500F or Sencor 480F or 830 g - 1.2 kg Lexone DF or 1.9 - 2.3 L Lorox L or 1.75 - 2.25 kg Lorox DF

- <sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

- <sup>2</sup> Consult the label of the product to be tank mixed with DUAL II MAGNUM Herbicide for specific instructions regarding soil-type variations and special restrictions.

**CAUTION:** Do not apply DUAL II MAGNUM Herbicide at ground crack or if potatoes have emerged. Do not use on the variety Superior.



**SUGAR BEETS****TIMING OF APPLICATION:**

DUAL II MAGNUM Herbicide can be applied as:

1. a pre-plant incorporated spray in tank mix combination with Pyramin® herbicide or,
2. a pre-emergent spray in tank mix combination with Pyramin herbicide or,
3. a pre-plant incorporated spray, followed by a pre-emergent spray of Pyramin herbicide.

RATE PER HECTARE DUAL II MAGNUM HERBICIDE <sup>1</sup>	RATE PER HECTARE/TANK MIX PARTNER <sup>2</sup>
1.25 - 1.75 L	8.25 - 10.25 L Pyramin FL 430 g/L

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

<sup>2</sup> Consult the Pyramin FL herbicide label for specific instructions regarding soil-type variations and other restrictions.

**RUTABAGAS (EASTERN CANADA ONLY)****TIMING OF APPLICATION:**

DUAL II MAGNUM Herbicide can be applied either as:

1. a pre-plant incorporated spray or,
2. a pre-emergent spray.

RATES PER HECTARE DUAL II MAGNUM HERBICIDE <sup>1</sup>
1.25 - 1.75 L

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

To control nutsedge, DUAL II MAGNUM Herbicide must be applied as a pre-plant incorporated spray.

**TRANSPLANTED TOMATOES - GROWN FOR PROCESSING  
TANK MIXTURES**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	RATE PER HECTARE/TANK MIX PARTNER <sup>2</sup>
Pre-plant Incorporated	Annual Nightshades (American Nightshade, Eastern Black Nightshade), Nutsedge, Annual Grasses and Broadleaf Weeds	1.25 - 1.75 L	+ 0.5 - 1.4 L Sencor 500F or Sencor 480F

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

<sup>2</sup> Consult the label of the product to be tank mixed with DUAL II MAGNUM Herbicide for specific instructions regarding weeds, rates, soil-type and organic matter variations and other restrictions.

**CAUTION:** DO NOT APPLY DUAL II MAGNUM HERBICIDE ON DIRECT-SEEDED TOMATOES.

**NOTE:** DUAL II MAGNUM HERBICIDE MAY DAMAGE TRANSPLANTS THAT HAVE BEEN WEAKENED BY ANY CAUSE RESULTING IN REDUCED CROP YIELD. TO PREVENT DAMAGE, PLANT ONLY HEALTHY TRANSPLANTS. DO NOT PLANT WHEN WET, COOL OR UNFAVOURABLE GROWING CONDITIONS EXIST.

FOLLOW ALL APPLICATION AND INCORPORATION DIRECTIONS EXACTLY.

### SWEET WHITE LUPINS

WEEDS CONTROLLED	TIMING	RATE/HA <sup>1</sup>	REMARKS
Annual Grasses	Pre-emergent	DUAL II MAGNUM Herbicide 1.10 - 1.75 L	Make one treatment per year with ground application equipment. Apply in 200 - 300 L of total volume per hectare.

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems. For redroot pigweed suppression apply a minimum of 1.25 L of DUAL II MAGNUM Herbicide per hectare.

### TANK MIXTURE (EASTERN CANADA ONLY)

WEEDS CONTROLLED	TIMING	RATE/HA <sup>1</sup>
Annual Grasses and Broadleaf Weeds including Nightshade <sup>3</sup>	Pre-emergent	DUAL II MAGNUM Herbicide <sup>2</sup> 1.10 - 1.75 L plus Lorox DF 2.0 - 3.0 kg

#### REMARKS:

Make one treatment per year using ground application equipment. Apply in 200 – 300 L of water/ha. **Do not spray after lupins have emerged.** Lupins should be planted at least 5 cm deep. Use the lower rate of Lorox DF herbicide on light coloured soils with less than 2% organic matter. Do not harvest lupins within 80 days of treatment.

- <sup>1</sup> Consult the label of the product to be tank mixed with DUAL II MAGNUM Herbicide for additional specific instructions regarding broadleaf weeds, soil-type variations and rotational crop, grazing or other restrictions.
- <sup>2</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems. For redroot pigweed suppression apply a minimum of 1.25 L of DUAL II MAGNUM Herbicide per hectare.
- <sup>3</sup> For optimum nightshade control, use the higher rate of DUAL II MAGNUM Herbicide.

### SWEET WHITE LUPINS

#### TANK MIXTURE (MARITIMES ONLY)

WEEDS CONTROLLED	TIMING	RATE/HA <sup>1</sup>
Annual Grasses and Broadleaf Weeds including Nightshade <sup>3</sup>	At planting or Pre-emergent	DUAL II MAGNUM Herbicide <sup>2</sup> 1.10 - 1.75 L plus Sencor 75DF 670 g

#### REMARKS:

Make one application per year. Apply as a broadcast spray during planting or as a separate operation after planting but **before** the crop has emerged. Lupin seed must be planted at least 4 cm below the soil surface. Do **not** apply to sandy or light soils with less than 2% organic matter or to muck soils. Better weed control will be obtained if light rainfall or irrigation follows application.

Rotational crops such as onions, celery, peppers, cole crops, lettuce, spinach, sugar beets, table beets, turnips, pumpkins, squash, cucumbers and melons, tobacco and non-triazine tolerant canola are sensitive to Sencor herbicide and may be injured if planted into soil treated

with Sencor herbicide during the year of application and the following year. After-harvest tillage practices which provide thorough mixing of the soil may be helpful in reducing the possibility of injury to succeeding crops. Do **not** use treated vines for feed and forage.

- <sup>1</sup> Consult the label of the product to be tank mixed with DUAL II MAGNUM Herbicide for additional specific instructions regarding broadleaf weeds, soil-type variations and rotational crop, grazing or other restrictions.
- <sup>2</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems. For redroot pigweed suppression apply a minimum of 1.25 L of DUAL II MAGNUM Herbicide per hectare.
- <sup>3</sup> For optimum nightshade control, use the higher rate of DUAL II MAGNUM Herbicide.

### FIRST-YEAR (NON-BEARING) APPLE, APRICOT, SWEET AND SOUR CHERRY, PEACH, PEAR, PLUM TREES

TIMING	WEEDS CONTROLLED	RATE/HA	REMARKS
Post planting, pre-emergent to weeds	Annual Grasses and Broadleaf Weeds (Late-season emerging fall panicum and crabgrass may not be controlled by this treatment)	DUAL II MAGNUM Herbicide <sup>1</sup> 1.25 - 1.75 L plus PRINCEP NINE-T <sup>®1</sup> 1.1 - 2.2 kg	Apply once per year. Avoid contact with trunk and leaves of trees. Do not use on sandy soils with less than 2% organic matter. Best results are obtained with applications made after rain has settled the soil around trees. Use only a tractor-mounted boom sprayer to apply.

- <sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide and PRINCEP Nine-T herbicide for heavier weed problems.

### ESTABLISHED (BEARING) APPLE, APRICOT, SWEET AND SOUR CHERRY, PEACH, PEAR, PLUM TREES

TIMING	WEEDS CONTROLLED	RATE/HA	REMARKS
Post planting, pre-emergent to weeds	Annual Grasses	DUAL II MAGNUM Herbicide 1.75 L	Apply once per year as a band under the trees. Avoid contact with trunk and leaves of trees. Do not use on sandy soils with less than 2% organic matter. Use only a tractor-mounted boom sprayer to apply.
	Annual Grasses and Broadleaf Weeds (Late-season emerging fall panicum and crabgrass may not be controlled by this treatment)	DUAL II MAGNUM Herbicide 1.75 L plus PRINCEP NINE-T 2.5 kg	Apply once per year as a band treatment under the trees. Avoid contact with trunk and leaves of trees. Do not use on sandy soils with less than 2% organic matter. Use only a tractor-mounted boom sprayer to apply.
	Annual Grasses and Broadleaf Weeds	DUAL II MAGNUM Herbicide 1.75 L plus Lexone DF 1.0 kg	Apply once per year as a band under the tree(s). Avoid contact with trunk and leaves of trees. Do not use on sandy soils with less than 2% organic matter. Use only a tractor-mounted boom sprayer to apply.

**PROCESSING PEAS (Eastern Canada only)**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	REMARKS
Pre-emergent	Eastern Black Nightshade, Annual Grasses	1.25 - 1.75 L	Make one application per year. Apply in 150 - 250 L water/ha. Apply by ground application equipment only.

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

**SECOND-YEAR OR OLDER WHITE SPRUCE, NORWAY SPRUCE, BLACK SPRUCE, WHITE PINE, JACK PINE AND RED PINE TRANSPLANT OR SEEDLING STOCK AND POPLAR STOOLBEDS**

TIMING	WEEDS CONTROLLED	RATE/HA	REMARKS
Pre-emergent or early post-emergent to weeds	Annual Grasses and Broadleaf Weeds	DUAL II MAGNUM Herbicide <sup>1</sup> 1.25 - 1.75 L	Apply to spruce and pine in forest tree nurseries prior to budbreak. DO NOT APPLY DUAL II MAGNUM HERBICIDE WITHIN 4 WEEKS AFTER BURST OR UNTIL THE NEEDLES HAVE HARDENED. May be applied as a pre-emergent or early post-emergent application to weeds before they pass the 2 leaf stage. For Poplar Stoolbeds, apply to dormant and flushing stoolbeds.

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

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

The DIRECTIONS FOR USE for this product for the uses described below were developed by persons other than Syngenta Canada Inc. and accepted for registration by Health Canada under the User Requested Minor Use Label Expansion program. Syngenta Canada 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 crops listed below.

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

**TRANSPLANTED CABBAGE, TRANSPLANTED CAULIFLOWER, TRANSPLANTED BROCCOLI**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	REMARKS
<b>Post Transplant</b> Apply within 2 days after transplanting and prior to weed emergence. Do not incorporate.	Nightshade, Annual Grasses and Redroot Pigweed <sup>2</sup>	1.25 – 1.75 L	Make one application per year. Apply in 300 L water/ha. Apply by ground application equipment only.

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

<sup>2</sup> Suppression only.

**TRANSPLANTED TOMATOES - GROWN FOR PROCESSING  
TANK MIXTURES**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	RATE PER HECTARE/TANK MIX PARTNER <sup>2</sup>
Pre-plant Incorporated	Annual Nightshades (American Nightshade, Eastern Black Nightshade), Nutsedge, Annual Grasses and Broadleaf Weeds	1.0 – 1.25 L	+ 330 - 660 g Sencor 75DF plus 1.0 – 2.0 L Treflan™ EC <sup>3,4</sup> or 500 mL - 1 L Sencor 500F or Sencor 480 plus 1.0 – 2.0 L Treflan EC <sup>3,4</sup>

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems and for control of nightshade.

<sup>2</sup> Consult the label of the product to be tank mixed with DUAL II MAGNUM Herbicide for specific instructions regarding weeds, rates, soil-type and organic matter variations and other restrictions.

<sup>3</sup> Use lower rates on light textured soils, higher rates on heavier soils.

<sup>4</sup> Make Only One Application Per Year. Do Not Apply Within 60 Days Of Harvest.

**CAUTION:** DO NOT APPLY ON DIRECT-SEEDED TOMATOES.

**NOTE:** DUAL II MAGNUM Herbicide MAY DAMAGE TRANSPLANTS THAT HAVE BEEN WEAKENED BY ANY CAUSE RESULTING IN REDUCED CROP YIELD. TO PREVENT DAMAGE, PLANT ONLY HEALTHY TRANSPLANTS; DO NOT PLANT WHEN WET, COOL OR UNFAVOURABLE GROWING CONDITIONS EXIST. FOLLOW ALL APPLICATION AND INCORPORATION DIRECTIONS EXACTLY.

**TRANSPLANTED TOMATOES – FIELD TOMATOES GROWN FOR FRESH MARKET**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM <sup>1</sup> HERBICIDE	RATE PER HECTARE/TANK MIX PARTNER <sup>2</sup>
Pre-plant Incorporated	Annual Nightshades (American Nightshade, Eastern Black Nightshade), Nutsedge, and Annual Grasses	1.25 - 1.75 L	
Pre-plant Incorporated	Annual Nightshades (American Nightshade, Eastern Black Nightshade), Nutsedge, Annual Grasses and Broadleaf Weeds	1.25 - 1.75 L	+ 0.5 - 1.4 L Sencor 500F or Sencor 480F

<sup>1</sup> Use the higher rate of DUAL II Magnum herbicide for heavier weed problems.

<sup>2</sup> Consult the label of the product to be tank mixed with DUAL II Magnum herbicide for specific instructions regarding weeds, rates, soil-type and organic matter variations and other restrictions.

**REMARKS:**

Apply in 150 - 300 L water/ha. Make only one application per year. Do not harvest within 60 days after application.

**CAUTION:** DO NOT APPLY DUAL II MAGNUM HERBICIDE ON DIRECT-SEEDED TOMATOES.

**NOTE:** DUAL II MAGNUM Herbicide MAY DAMAGE TRANSPLANTS THAT HAVE BEEN WEAKENED BY ANY CAUSE RESULTING IN REDUCED CROP YIELD. TO PREVENT DAMAGE, PLANT ONLY HEALTHY TRANSPLANTS. DO NOT PLANT WHEN WET, COOL OR UNFAVOURABLE GROWING CONDITIONS EXIST. FOLLOW ALL APPLICATION AND INCORPORATION DIRECTIONS EXACTLY. Tomato varieties differ in tolerance to DUAL II MAGNUM Herbicide. **Since not all tomato**

varieties have been tested for tolerance to DUAL II MAGNUM Herbicide, first use of DUAL II MAGNUM Herbicide should be limited to a small area of each variety to confirm tolerance prior to adoption as a general field practice. Additionally, consult your plant supplier for information on the tolerance of specific tomato varieties to DUAL II MAGNUM Herbicide.

**SWEET CORN TANK MIXTURE**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE	RATE PER HECTARE/TANK MIX PARTNER	REMARKS
Pre-emergent	Annual grasses and broadleaf weeds including triazine tolerant weeds	1.25 L	+ 2.1 – 3.1 l Aatrex LIQUID 480 + 790 mL– 1.56 L Afolan F or 790 mL – 1.56 L Lorox L or 750 g – 1.5 kg Lorox DF	Make only one application per year. Apply as pre-emergent treatment. Apply in 150 L water/ha minimum. Do not harvest sweet corn within 45 days of treatment. Apply by ground equipment only.

**DRY COMMON BEANS**

CROP	TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	REMARKS
Dry Common Beans ( <i>Phaseolus vulgaris</i> species only)	Pre-plant incorporated OR Pre-emergent soil application	American Nightshade <sup>2</sup> Fall Panicum Eastern Black Nightshade <sup>2</sup> Foxtail (green, yellow, giant) Crabgrass (smooth, hairy) Old Witchgrass Barnyard Grass Yellow Nutsedge <sup>3</sup> Redroot Pigweed <sup>4</sup>	1.15 to 1.75 L	Make only one application per year. Apply in 150 L water/ha. Apply by ground application equipment only. <b>NOTE:</b> Dry common bean varieties may vary in their tolerance to herbicides, including to DUAL II MAGNUM Herbicide. Since not all dry common bean varieties have been tested for tolerance to DUAL II MAGNUM Herbicide, first use of DUAL II MAGNUM Herbicide should be limited to a small area of each variety to confirm tolerance prior to adoption as a general field practice. Additionally, consult your seed supplier for information on the tolerance of specific varieties of dry common beans to DUAL II MAGNUM Herbicide. <b>CAUTION:</b> Beans should be seeded at least 4 cm deep or crop injury may result.

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

<sup>2</sup> Pre-emergent treatments sometimes give better control than pre-plant incorporated.

<sup>3</sup> Pre-plant incorporated treatment only. Extended periods of dry hot weather following application may result in reduced nutsedge control.

<sup>4</sup> Suppression only.

**DRY COMMON BEANS TANK MIXTURE (EASTERN CANADA ONLY)**

CROP	TIMING	WEEDS CONTROLLED	RATE/HA DUAL MAGNUM HERBICIDE <sup>1</sup>	RATE/HA TANK MIX PARTNER <sup>2</sup>	REMARKS
Dry Common Beans ( <i>Phaseolus vulgaris</i> species only)	Pre-plant incorporated	American Nightshade, Eastern Black Nightshade, Fall Panicum, Foxtail (green, yellow, giant), Crabgrass (smooth, hairy), Old Witchgrass, Barnyard Grass, Yellow Nutsedge <sup>3</sup> , Redroot Pigweed <sup>4</sup>	1.15 to 1.75 L	0.312 L Pursuit Herbicide	<p>Make only one application per year. Apply in 150 L – 400 L water/ha. Apply by ground application equipment only. DO NOT harvest within 100 days of treatment.</p> <p><b>NOTE:</b> Dry common bean varieties may vary in their tolerance to herbicides, including to DUAL II MAGNUM Herbicide. Since not all dry common bean varieties have been tested for tolerance to the tankmix of Pursuit plus DUAL II MAGNUM Herbicide, first use of this tankmix should be limited to a small area of each variety to confirm tolerance prior to adoption as a general field practice. Additionally, consult your seed supplier for information on the tolerance of specific varieties of dry common beans to the tankmix of Pursuit plus DUAL II MAGNUM Herbicide.</p> <p><b>CAUTION:</b> Beans should be seeded at least 4 cm deep or crop injury may result.</p>

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

<sup>2</sup> Refer to the Pursuit Herbicide label for additional recommendations, precautions and restrictions not specified on this label.

<sup>3</sup> Extended periods of dry hot weather following application may result in reduced nutsedge control.

<sup>4</sup> Suppression only.

**CRANBERRY BEANS AND KIDNEY BEANS  
FOR USE IN EASTERN CANADA ONLY**

CROP	TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	RATE/HA TANK MIX PARTNER <sup>2</sup>	REMARKS
Cranberry Beans	Pre-plant incorporated OR Pre-emergent soil application	American Nightshade <sup>3</sup> Eastern Black Nightshade <sup>3</sup> Fall Panicum	1.15 to 1.75 L	+ 0.312 L Pursuit Herbicide	Make only one application per year. Apply by ground application equipment only. <b>CAUTION:</b> Beans should be seeded at least 4 cm deep or crop injury may result.
Kidney Beans	Pre-plant incorporated OR Pre-emergent soil application	Foxtail (green, yellow, giant) Crabgrass (smooth, hairy) Old Witchgrass Barnyard Grass Yellow Nutsedge <sup>4</sup> Redroot Pigweed <sup>5</sup>	1.15 to 1.75 L	+ 0.312 L Pursuit Herbicide	

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

<sup>2</sup> Consult the label of the product to be tank mixed with DUAL II MAGNUM Herbicide for specific instructions regarding soil-type variations and other restrictions.

<sup>3</sup> Pre-emergent treatments sometimes give better control than pre-plant incorporated.

<sup>4</sup> Pre-plant incorporated treatment only. Extended periods of dry hot weather following application may result in reduced nutsedge control.

<sup>5</sup> Suppression only.

**SUGAR BEETS**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	REMARKS
Post-emergent, apply within the period from cotyledon to 4 leaf stage of sugar beets, but before weed emergence	Nightshade, Annual Grasses	1.25 – 1.75 L	Make only one application per year. Apply in 150 – 300 L water/ha. Apply by ground application equipment only. Do not use more than 1 application per year. Do not harvest within <b>120</b> days of treatment. <b>DO NOT USE SUGAR BEET TOPS FOR FEEDING TO LIVESTOCK.</b>

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

**NOTE:** DO NOT tank-mix DUAL II MAGNUM Herbicide with fluid fertilizers, oils, oil concentrates or surfactants when applying post-emergent.



**RED BEETS**

<b>TIMING</b>	<b>WEEDS CONTROLLED</b>	<b>RATE/HA DUAL II MAGNUM HERBICIDE</b>	<b>REMARKS</b>
Pre-emergent to weeds and crop	Nightshade (American and Eastern Black), Crabgrass (Smooth, Hairy), Barnyard Grass, Fall Panicum, Foxtail (Green, Yellow, Giant), Old Witchgrass, Redroot Pigweed <sup>1</sup>	1.25 L	<p>Make only one application per year. Apply in 150 L water/ha minimum. Apply by ground application equipment only. Do not use more than 1 application per year.</p> <p><b>DO NOT APPLY BY AIR.</b> Application of DUAL II MAGNUM Herbicide may result in injury to the red beet crop which may include stand loss, delayed maturity and even loss of yield. Irrigate after application to activate the herbicide if rainfall is not expected, but use only 0.5 inches of water to incorporate the herbicide. Excessive irrigation will increase the risk of crop injury. Mechanical incorporation of DUAL II MAGNUM Herbicide will increase the risk of crop injury. DO NOT use DUAL II MAGNUM Herbicide if the planting operation creates a furrow or trough over the seed-row into which rain or irrigation water will collect and thus concentrate the herbicide over the row.</p> <p>Do not enter or allow worker entry into the treated areas during the restricted entry interval (REI) of 12 hours.</p>

<sup>1</sup> Suppression only.

**FIELD PEPPERS**

<b>TIMING</b>	<b>WEEDS CONTROLLED</b>	<b>RATE/HA DUAL II MAGNUM HERBICIDE<sup>1</sup></b>	<b>REMARKS</b>
Post-emergent, apply within 48 hours of transplanting, but before weed emergence	Nightshade, Annual Grasses	1.15 – 1.25 L	Apply in a minimum of 150 L water/ha. Apply by ground application equipment only. Do not harvest within <b>80</b> days of treatment. Risk of crop injury increases with early transplanting and soil temperatures below 10°C. Applications made more than 48 hours after transplanting may increase the risk of foliar injury. Using the lower application rate for field peppers may result in reduced control in heavy weed populations.

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

**NOTE:** DO NOT tank-mix DUAL II MAGNUM Herbicide with fluid fertilizers, oils, oil concentrates or surfactants when applying post-emergent.

**SOYBEANS – SUPPRESSION OF TALL WATERHEMP**

<b>TIMING</b>	<b>RATE/HA DUAL II MAGNUM HERBICIDE</b>	<b>REMARKS</b>
Pre-emergent	1.75 L	Make only one application per year. Apply in a minimum of 150 L water/ha. Apply by ground application equipment only.

**OUTDOOR ORNAMENTALS (Woody and Herbaceous): Container-, Field- and Liner\*-Grown Plants and Plants in Landscape Plantings**

The following plant species have been tested results indicated that they are tolerant to Dual II MAGNUM Herbicide when the product is applied according to the label.

**Tolerance Plant Species**

<b>Plant Category</b>	<b>Common name</b>	<b>Scientific name</b>
Broadleaf	Burning bush	<i>Euonymous</i> spp.
	Rhododendron	<i>Rhododendron</i> spp.
Herbaceous	Daylily	<i>Hemerocallis</i> spp.
	Hosta	<i>Hosta</i> spp.
Conifer	Juniper	<i>Juniperus</i> spp.
	Eastern white-cedar	<i>Thuja</i> spp.

DUAL II MAGNUM Herbicide may be applied to other non-listed plant species. However, non-listed plant species may vary in their tolerance to herbicides, including DUAL II MAGNUM Herbicide. First use of DUAL II MAGNUM Herbicide to any non-listed plant species should be limited to a small number of plants to confirm tolerance prior to adoption as a large scale practice.

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE	REMARKS
Pre-emergence (prior to weed emergence) <b>OR</b> Early Post-emergent (1-2 leaf weed stage)	Nightshade, Annual Grasses and Redroot Pigweed <sup>1</sup>	1.25 – 1.75 L	Make only one application per year. Apply in a minimum of 150 – 200 L water/ha. Apply by ground application equipment only. To avoid plant injury, do not apply to seedbeds, cutting beds, or uprooted cuttings before transplanting and to plants until the soil has firmly settled around roots. When applied broadcast over-the-top of plant foliage, follow with sufficient overhead irrigation to wash DUAL II MAGNUM Herbicide from the foliage to reduce the chance of injury. Do not apply to trees or plants that will bear harvestable fruit within 12 months, or illegal residues may result. Do not use this product in residential areas where bystanders including children, may be potentially exposed during or after spraying.

<sup>1</sup>Suppression only

\*Plants transplanted normally in rows in a nursery or similar area for further growth before transplanting to final growing location (place of establishment).

#### **ASPARAGUS (Established beds)**

**WARNING:** Application of DUAL II MAGNUM Herbicide may result in injury to the asparagus crop, which may include potential stand loss, delayed maturity, and even loss of yield.

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE	REMARKS
In the spring, apply to dormant asparagus beds prior to emergence <b>OR</b> Post-harvest	American Nightshade, Eastern Black Nightshade, Crabgrass (smooth, hairy), Barnyard Grass, Fall Panicum, Foxtail (green, yellow, giant), Old Witchgrass, and Redroot Pigweed <sup>1</sup>	1.55 – 1.75 L	Make only one application per year. Apply by ground application equipment only. PHI is 16 days.

<sup>1</sup>Suppression only

**CONIFERS (Established for field production)**

DUAL II MAGNUM Herbicide has been tested on Balsam fir, Fraser fir, White pine, and White spruce. DUAL II MAGNUM Herbicide may be applied to other non-listed conifer species; however, non-listed conifer species may vary in tolerance to herbicides, including DUAL II MAGNUM Herbicide. First use of DUAL II MAGNUM Herbicide to any non-listed conifer species should be limited to a small number of plants to confirm tolerance prior to adoption as a large scale practice.

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	REMARKS
Pre-emergent to weeds as per label directions	Annual broadleaf and grass weeds	1.25 – 1.75 L	Make only one ground application per year, banded over top of trees. Apply in a minimum of 300 L water/ha.

<sup>1</sup>Use higher rate for heavier weed infestations.

**CONIFERS (Established for field production)**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>2</sup>	RATE/HA SIMAZINE 480 HERBICIDE <sup>3</sup>	REMARKS
Pre-emergent or early post-emergent (before 2 leaf stage) to weeds	Labelled weeds <sup>1</sup>	1.25 – 1.75 L	4.7 – 7.0 L	Make only one ground application per year. Apply in a minimum of 150 L water/ha.

<sup>1</sup> See Simazine 480 for further information.

<sup>2</sup> Use higher rate for heavier weed infestations.

<sup>3</sup> Use lowest rate in sandy or low organic matter soils; use highest rate in clay or high organic matter soils.

**MUSTARD GREENS – transplanted only (DO NOT apply to direct-seeded crop)**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	REMARKS
Pre-emergent or post-emergent (weeds at 2-leaf stage or less)	Labelled annual broadleaf and grass weeds	1.2 – 1.5 L	Make only one ground application per year. Apply in a minimum of 150-300 L/ha water. PHI is 30 days. <b>Yield losses may be observed when this product is applied to transplanted mustard greens.</b>

<sup>1</sup> Reduced levels of weed control may be observed when weed densities are high.

**Highbush Blueberries (new and established plantings)**

<b>TIMING</b>	<b>WEEDS CONTROLLED</b>	<b>RATE/HA DUAL II MAGNUM HERBICIDE</b>	<b>REMARKS</b>
Pre-emergent to labeled weeds	Nightshade (American and Eastern black), crabgrass (smooth, hairy), barnyard grass, fall panicum, foxtail (green, yellow, giant), old witchgrass  Redroot pigweed (suppression only)	1.25 – 1.75 L	Make only one application per year. Apply in 150 - 300 L water/ha. DO NOT APPLY BY AIR, ground application only. DO NOT harvest within 30 days of treatment. Apply to the soil as a banded application, directed to the base of the highbush blueberry plants. Avoid contact with the highbush blueberry trunk and foliage. Crop injury and yield reduction may occur if any part of the highbush blueberry plants are contacted through spray or drift.

**STRAWBERRIES**

Strawberry cultivars may vary in their tolerance to herbicides, including DUAL II Magnum Herbicide. Since not all strawberry cultivars have been tested for tolerance to DUAL II Magnum Herbicide, first use of DUAL II Magnum Herbicide should be limited to a small area of each variety to confirm tolerance prior to adoption as a general field practice. Additionally, consult your supplier for information on the tolerance of specific cultivars of strawberry to DUAL II Magnum Herbicide. **Do not apply to the cultivar Joliette.**

<b>TIMING</b>	<b>WEEDS CONTROLLED</b>	<b>RATE/HA DUAL II MAGNUM HERBICIDE<sup>1</sup></b>	<b>REMARKS</b>
Bearing years: After mulch removal but before weed emergence	Labelled annual broadleaf and grass weeds	1.25 – 1.75 L	Make only one application per year. Apply as either a pre-plant incorporated or pre-emergent (post-transplanting) treatment. Some initial injury may occur but will be outgrown with no reduction in yield. Apply by ground application equipment only. Apply in 150 L/ha of water. Do not harvest berries within 30 days of application.
Newly planted: Pre-plant Incorporated or Pre-emergent (post transplanting)	Labelled annual grasses and nutsedge <sup>2</sup>	1.25 – 1.75 L	

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

<sup>2</sup> Pre-plant incorporated treatment only. Extended periods of dry hot weather following application may result in reduced nutsedge control.

**CARROTS**

<b>TIMING</b>	<b>WEEDS CONTROLLED OR SUPPRESSED</b>	<b>DUAL II MAGNUM HERBICIDE RATE</b>	<b>REMARKS</b>
Pre-emergent (after planting, prior to carrot and weed emergence)	Control of American nightshade, fall panicum, eastern black nightshade, foxtail (green, yellow, giant), crabgrass (smooth, hairy), old witchgrass, and barnyard grass and suppression of redroot pigweed	Mineral soils: 1.2-1.5 L/ha	<p><b>Make only one application per year. Do not follow a pre-emergent application with a post-emergent spray later in the season.</b></p> <p>Apply by ground (broadcast) application (pre- or post-emergent application). Pre-emergent application can also be made by banded spray. Make pre-emergent applications to clean-tilled soils.</p> <p>Use lower rates on medium-textured soils and higher rates on fine-textured soils. Do not apply more than 1.5 L/ha of DUAL II MAGNUM Herbicide to mineral soils. Do not apply more than 1.75 L/ha of DUAL II MAGNUM Herbicide to muck soils (organic matter &gt; 20%).</p>
	Suppression of the weeds listed above	Muck soils (organic matter > 20%): 1.5-1.75 L/ha	
Post-emergent (crop at 3-5 leaf stage and weeds prior to 2-leaf stage)	Control of American nightshade, fall panicum, eastern black nightshade, foxtail (green, yellow, giant), crabgrass (smooth, hairy), old witchgrass, and barnyard grass and suppression of redroot pigweed	1.2-1.5 L/ha	<p>To help avoid crop injury, do not apply DUAL II MAGNUM Herbicide in areas where water is likely to pool.</p> <p>Apply in 150 – 300 L water/ha.</p> <p>Reduced levels of weed control may be observed when weed densities are high.</p> <p>Do not harvest carrots within 30 days of application.</p> <p><b>NOTE: LEVEL AND DURATION OF WEED SUPPRESSION MAY BE REDUCED IN MUCK SOILS WITH HIGHER ORGANIC MATTER CONTENT.</b></p> <p><b>NOTE: APPLICATIONS OF DUAL II MAGNUM MAY CAUSE SIGNIFICANT INJURY TO CARROTS, RESULTING IN REDUCED YIELDS.</b></p>

**SWEET POTATOES**

<b>TIMING</b>	<b>WEEDS CONTROLLED</b>	<b>RATE/HA DUAL II MAGNUM HERBICIDE</b>	<b>REMARKS</b>
Early post-emergence (2 – 5 days after transplanting)	Labelled annual broadleaf and grass weeds	1.25 – 1.75 L	Make only one application per year. Apply foliar by ground application only. Apply using a spray volume of 200 - 400 L water/ha. PHI is 105 days.

**PEARL MILLET GROWN FOR ANIMAL FEED (GRAIN OR FORAGE) (EASTERN CANADA ONLY)**

<b>TIMING</b>	<b>WEEDS CONTROLLED</b>	<b>RATE/HA DUAL II MAGNUM HERBICIDE</b>	<b>REMARKS</b>
Early post-emergent to crop (1-2 leaf stage); pre to early post-emergent to weeds (up to 1-leaf stage)	Suppression of: Smooth crabgrass, Green foxtail, Barnyard grass	0.625 L	Make only one application per year. Apply by ground application only. <b>DO NOT APPLY BY AIR.</b> Apply in 200 L water/ha. Do not harvest pearl millet for forage within 45 days of application. Do not harvest pearl millet for grain within 130 days of application. For use in pearl millet for animal feed only. Treated grain millet is not intended for human consumption. <b>Application of DUAL II MAGNUM will result in injury to the pearl millet crop which may include stand loss, delayed maturity and even loss of yield. AVOID SPRAY OVERLAP.</b> Millet should be seeded at least 2.5 cm deep or crop injury may result. Use on soil that has a minimum of 2.5% organic matter.

**PEANUT (ONTARIO ONLY)**

<b>TIMING</b>	<b>WEEDS CONTROLLED</b>	<b>RATE/HA DUAL II MAGNUM HERBICIDE<sup>1,2,3</sup></b>	<b>REMARKS</b>
Pre-plant incorporated or Pre-emergent to peanut germination and labelled weeds	Nutsedge, Annual Grasses and Nightshade	1.15 – 1.55 L	Make only one application per year. Apply in 150 L water/ha. <b>DO NOT APPLY BY AIR.</b> Ground application only. Do not graze or feed peanut forage or fodder to livestock for 30 days following application. Do not harvest crop within 90 days of application. For use in Ontario only. Application of DUAL II MAGNUM may result in injury to the peanut crop which may include stand loss, delayed maturity and even loss of yield.

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

<sup>2</sup> Pre-emergent treatments sometimes give better control than pre-plant incorporated treatments.

<sup>3</sup> To control nutsedge, DUAL II MAGNUM Herbicide must be applied as a pre-plant incorporated spray.

**SOYBEAN, IMMATURE SEED**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE <sup>1</sup>	REMARKS
Pre-plant incorporated (application and incorporation within 14 days of planting)	Nutsedge, Annual grasses and Nightshade	1.15 – 1.75 L	<p>Make only one application per year (either pre-plant or pre-emergence). Apply in 150 L water/ha. DO NOT APPLY BY AIR. Ground application only.</p> <p>Use lower rate of DUAL II MAGNUM on coarse-textured soil and higher rates on fine-textured and muck soils, or for heavier weed infestations. In general, the risk of crop injury is greater on lighter textured soils and with higher application rates.</p> <p><b>Pre-plant incorporated-</b> Follow incorporation instructions listed for soybeans in the main section of this label. Application and incorporation must occur within 14 days of planting. Use this application method if furrow irrigation is used or when a period of dry weather after application is expected. If crops are to be planted in beds, apply and incorporate after bed formation.</p> <p><b>Pre-emergent-</b> Apply during planting (behind planter) or after planting but before weed and crop emergence.</p>
Pre-emergence (before weed and crop emergence)	Annual grasses and Nightshade		

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems and for higher organic matter soils. For redroot pigweed suppression, apply a minimum of 1.25 L of DUAL II MAGNUM Herbicide per hectare. DUAL II MAGNUM Herbicide will not control emerged weeds.



**Crop Group 9 – Cucurbit Vegetables**

CROP	TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE	REMARKS
<p><b>Crop Group 9 – Cucurbit Vegetables :</b> Citron melon (<i>Citrullus lanatus</i> var. <i>citroides</i>), Muskmelon (hybrids and/or cultivars of <i>Cucumis melo</i>) (includes true cantaloupe, cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon and snake melon), Watermelon (includes hybrids and/or varieties of <i>Citrullus lanatus</i>), Chayote (fruit) (<i>Sechium edule</i>), Chinese waxgourd (Chinese preserving melon) (<i>Benincasa hispida</i>), Cucumber (<i>Cucumis sativus</i>), Gherkin (<i>Cucumis anguria</i>), Gourd, edible (<i>Lagenaria</i> spp.) (includes hyotan, cucuzza), Gourd, edible (<i>Luffa acutangula</i>, <i>L. cylindrica</i>) (includes hechima, Chinese okra), <i>Momordica</i> spp. (includes balsam apple, balsam pear, bitter melon, Chinese cucumber), Pumpkin (<i>Cucurbita</i> spp.), Squash, summer (<i>Cucurbita pepo</i> var. <i>melopepo</i>) (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini), Squash, winter (<i>Cucurbita maxima</i>, <i>C. moschata</i>) (includes butternut squash, calabaza, hubbard squash); (<i>C. mixta</i>, <i>C. pepo</i>) (includes acorn squash, spaghetti squash)</p>	<p>Transplanted: Prior to transplanting or within 48 hours after transplanting.</p> <p>Direct seeded: Pre-emergence or early post-emergent to crop (1 to 2 leaf stage).</p> <p>All applications should be pre-emergent to labeled weeds.</p>	<p>Control of nightshade and annual grasses and suppression of redroot pigweed</p>	<p>Banded to row middles after plastic mulch has been laid: 1.15 L/ha – 1.56 L/ha</p> <p>Broadcast: 1.15 L/ha</p>	<p>Ground application; Banded to row middles or broadcast.</p> <p>Make only 1 application per year.</p> <p>PHI is 30 days.</p> <p>Apply in a minimum of 150 L water/ha. Application of DUAL II MAGNUM Herbicide may result in injury to the crop which may include stand loss, delayed maturity and even loss of yield.</p> <p>Risk of crop injury increases with cool and wet conditions. Care should be taken to minimize foliar contact with DUAL II MAGNUM Herbicide as this can increase potential to cause crop injury. Avoid overspray. Reduced control in heavy weed populations may occur.</p>

**EGGPLANT (TRANSPLANTS ONLY)**

<b>TIMING</b>	<b>WEEDS CONTROLLED</b>	<b>RATE/HA DUAL II MAGNUM HERBICIDE</b>	<b>REMARKS</b>
Post-emergent, apply within 48 hours of transplanting, but before weed emergence	Nightshade, Annual Grasses	1.15 – 1.25 L	<p>Use lower rate of DUAL II MAGNUM on coarse-textured soil and higher rates on fine-textured soil or for heavier weed infestations. In general, the risk of crop injury is greater on lighter textured soils and with higher application rates.</p> <p>Risk of crop injury increases with early transplanting and soil temperatures below 10°C.</p> <p>Applications made more than 48 hours after transplanting may increase the risk of foliar injury.</p> <p>One application per year only.</p> <p>Ground application only. Apply in a minimum of 150 L of water.</p> <p>Do not apply more than 1.25 L of DUAL II MAGNUM Herbicide on eggplant per year.</p> <p>Do not harvest eggplant within 60 days of application.</p>

**Asian radish**

TIMING	WEEDS CONTROLLED	RATE/HA DUAL II MAGNUM HERBICIDE	REMARKS
Pre-plant incorporated or pre-emergent (to both crop and weeds)	Control of American Nightshade <sup>1</sup> , Fall Panicum, Eastern Black Nightshade <sup>1</sup> , Foxtail (green, yellow, giant), Crabgrass (smooth, hairy), Old Witchgrass, Barnyard Grass, Yellow Nutsedge <sup>2</sup> , Redroot Pigweed (suppression only)	Mineral soils: 1.2-1.5 L/ha	<p>Make only one application per year.</p> <p>Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.</p> <p>Apply in 150-300 L water/ha. Ground application only.</p> <p>Do not harvest within 40 days of application.</p> <p>Reduced levels of weed control may be observed when weed densities are high.</p> <p><b>On muck soils:</b> Irrigate immediately after application with 0.5 inches of water.</p> <p><b>CAUTION: Use in soils with high organic matter will result in reduced efficacy.</b></p>
	Suppression of the weeds listed above	Muck soils (organic matter >20%): 1.5-1.75 L/ha	<p>A representative bioassay of the field must be conducted with rotational crops to evaluate potential crop sensitivity.</p> <p><b>NOTE: LEVEL AND DURATION OF WEED SUPPRESSION MAY BE REDUCED IN MUCK SOILS WITH HIGHER ORGANIC MATTER CONTENT.</b></p>

- <sup>1</sup> Pre-emergent treatments sometimes give better control than pre-plant incorporated treatments.
- <sup>2</sup> Pre-plant incorporated treatment only. Extended periods of dry hot weather following application may result in reduced nutsedge control.

**CELERY**

<b>TIMING</b>	<b>WEEDS CONTROLLED</b>	<b>RATE/HA DUAL II MAGNUM HERBICIDE<sup>1</sup></b>	<b>REMARKS</b>
After transplanting celery and prior to weed emergence	Control of American nightshade, fall panicum, eastern black nightshade, foxtail (green, yellow, giant), crabgrass (smooth, hairy), old witchgrass, and barnyard grass and suppression of redroot pigweed	Mineral soils: 1.2-1.5 L/ha	<p>Apply in 150-200 L water/ha. Directed or broadcast spray. Ground application only.</p> <p>Do not harvest the crop within 62 days of application.</p> <p>In general, the risk of crop injury is less with post-directed than from post over-the-top post-transplanting applications. The use of a spray adjuvant or the addition of another registered herbicide as a tank mixture with DUAL II MAGNUM will increase the risk of crop injury from post-emergence applications.</p> <p>DUAL II MAGNUM may also be used to treat row-middles in bedded crops, as long as the total amount of DUAL II MAGNUM applied does not exceed 1.75 L/ha in that crop.</p>
	Suppression of the weeds listed above	Muck soils (organic matter >20%): 1.5-1.75 L/ha	<p>Use lower rates of DUAL II MAGNUM on coarse-textured soils and higher rates on fine-textured soils.</p> <p><b>On muck soils:</b> Apply prior to weed emergence. Use the higher rate of application. Irrigate immediately after application with 0.5 inches of water. Apply prior to weed emergence. <b>CAUTION: Use in soils with high organic matter will result in reduced efficacy.</b> A representative bioassay of the field must be conducted with rotational crops to evaluate potential crop sensitivity.</p> <p><b>NOTE: DUAL II MAGNUM HERBICIDE MAY DAMAGE TRANSPLANTS THAT HAVE BEEN WEAKENED BY ANY CAUSE RESULTING IN REDUCED CROP YIELD. TO PREVENT DAMAGE, PLANT ONLY HEALTHY TRANSPLANTS. DO NOT PLANT WHEN WET, COOL OR UNFAVOURABLE GROWING CONDITIONS EXIST. FOLLOW ALL APPLICATION AND INCORPORATION DIRECTIONS EXACTLY.</b></p>

<sup>1</sup> Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.

<b>PARSNIP</b>			
<b>TIMING</b>	<b>WEEDS CONTROLLED OR SUPPRESSED</b>	<b>DUAL II MAGNUM HERBICIDE RATE</b>	<b>REMARKS</b>
Pre-emergent (after planting, prior to parsnip and weed emergence)	Control of American nightshade <sup>1</sup> , fall panicum, eastern black nightshade <sup>1</sup> , foxtail (green, yellow, giant), crabgrass (smooth, hairy), old witchgrass, and barnyard grass and suppression of redroot pigweed	Mineral soils: 1.2-1.5 L/ha	<b>Make only one application per year. Do not follow a pre-emergent application with a post-emergent spray later in the season.</b>  Use the higher rate of DUAL II MAGNUM Herbicide for heavier weed problems.  Apply in 150-300 L water/ha. Ground application only.
	Suppression of the weeds listed above	Muck soils (organic matter >20%): 1.5-1.75 L/ha	Do not harvest within 60 days of application.  Reduced levels of weed control may be observed when weed densities are high.
Post emergent (crop at 3 – 5 leaf stage and weeds prior to the 2-leaf stage)	Control of American nightshade <sup>1</sup> , fall panicum, eastern black nightshade <sup>1</sup> , foxtail (green, yellow, giant), crabgrass (smooth, hairy), old witchgrass, and barnyard grass	Mineral soils: 1.2-1.5 L/ha	<b>On muck soils:</b> Apply prior to weed emergence. Irrigate immediately after application with 0.5 inches of water.  <b>CAUTION: Use in soils with high organic matter will result in reduced efficacy.</b> A representative bioassay of the field must be conducted with rotational crops to evaluate potential crop sensitivity.  <b>Application of DUAL II MAGNUM may result in injury to the crop which may include stand loss, delayed maturity, and even loss of yield.</b>

<sup>1</sup> Pre-emergent treatments sometimes give better control than post-emergent treatments.

### Resistance-Management Recommendations

For resistance management, DUAL II MAGNUM Herbicide is a Group 15 herbicide. Any weed population may contain or develop plants naturally resistant to DUAL II MAGNUM Herbicide and other Group 15 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 DUAL II MAGNUM Herbicide or other Group 15 herbicides within a growing season (sequence) or among growing seasons with different herbicide groups that control the same weeds in a field.

Use tank mixtures with herbicides from a different group when such use is permitted. To delay resistance, the less resistance-prone partner should control the target weed(s) as effectively as the more resistance-prone partner.

Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates; precision fertilizer application method and timing to favour the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.

Monitor weed populations after herbicide application for signs of resistance development (for example, only one weed species on the herbicide label not controlled). If resistance is suspected, prevent weed seed production in the affected area if possible by an alternative herbicide from a different group. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.

Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options.

Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.

For further information and to report suspected resistance, contact Syngenta Canada Inc. company representatives at 1-877-SYNGENTA (1-877-964-3682) or at [www.syngenta.ca](http://www.syngenta.ca).

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Consult the label of products to be tank mixed or split applied with DUAL II MAGNUM Herbicide for specific crop recommendations.

**ADHERE TO THESE PRODUCT LABELS FOR BROADLEAF WEEDS CONTROLLED, PRECAUTIONS, WARNINGS, RESTRICTIONS, TANK MIXING AND SPRAYING INSTRUCTIONS, ROTATIONAL CROPS AND DETAILED DIRECTIONS FOR USE REGARDING DOSAGE VARIATIONS ACCORDING TO SOIL TYPE.**