

GROUP	15	HERBICIDE
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METALLICA Herbicide

AGRICULTURAL

Emulsifiable Concentrate for Selective Weed Control

ACTIVE INGREDIENT:

S-Metolachlor and R-Enantiomer 915 g/L

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

POTENTIAL SKIN SENSITIZER

REGISTRATION NO.: **34054**
PEST CONTROL PRODUCTS ACT

NET CONTENTS: **10L - bulk**

Sharda Cropchem Limited
2nd Floor, Prime Business Park
Dashrathlal Joshi Road
Vile Parle (West)
Mumbai - 400056, India

Canadian Agent:
Sharda Cropchem Limited
63 Kingsview Blvd
Etobicoke, Ontario, CA
M9R1V1
1-844-810-5720
1-416-840-5639

LABEL

NOTICE TO USER

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.

FIRST AID

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. Potential skin sensitizer. Do not contaminate food, feed, domestic or irrigation water supplies, lakes, streams and ponds.

Wear a long-sleeved shirt, long pants, a hat, socks, enclosed boots, and chemical-resistant gloves during mixing, loading, application, clean-up, and repair. In addition, wear protective eyewear (goggles or face shield) during mixing and loading. Gloves are not required for closed-cab groundboom application. Avoid breathing vapours or spray mist. If ventilation is not adequate, wear a respirator with a NIOSH-approved organic-vapour-removing cartridge with a prefilter approved for pesticides, or a NIOSH-approved canister approved for pesticides. 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 PRECAUTIONS

TOXIC to aquatic plants and non-target terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE.

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 corn within 80 days of making a post-emergent application. Make only one application per season.

When tank-mixes are permitted, read and observe all label directions, including rates and restrictions 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 USING AERIAL APPLICATION EQUIPMENT.

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 Sharda Cropchem Limited at 1-844-810-5720.

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.

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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 corn within 80 days of making a post-emergent application. Make only one application per season.

When tank-mixes are permitted, read and observe all label directions, including rates and restrictions 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.

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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.
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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.

DIRECTIONS FOR USE

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

DO NOT APPLY USING AERIAL APPLICATION EQUIPMENT.**CROP INFORMATION:**

METALLICA Herbicide provides selective weed control in:

- Corn * (hybrid, silage, seed, sweet)
- Soybeans
- Dry common beans (*Phaseolus vulgaris*)
- Cranberry beans and kidney beans
- Snap common beans (yellow and green)
- Lima beans
- Potatoes
- Sugar 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)
 Pumpkin and Winter squash
 Eggplant (transplants only)
 Crop Group 9 – Cucurbit Vegetables
 Celery
 Parsnip

* METALLICA 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 METALLICA Herbicide will not provide improved crop safety on other labelled crops.

WEEDS CONTROLLED:

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

- ¹ Pre-emergent treatments sometimes give better control than pre-plant surface, pre-plant incorporated or post-emergent treatments.
- ² Pre-plant incorporated treatment only. Extended periods of dry hot weather following application may result in reduced nutsedge control.
- ³ 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:

EASTERN CANADA	PRAIRIES & INTERIOR B.C.	COASTAL B.C.
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 USING AERIAL APPLICATION EQUIPMENT.

PRE-PLANT SURFACE APPLICATION:

- For minimum tillage (reduced tillage), and no-till (zero-till) systems in corn and soybeans.
- 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.

INCORPORATION INSTRUCTIONS		
TYPE OF EQUIPMENT	MAXIMUM WORKING DEPTH	MINIMUM SPEED
"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

METALLICA 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 METALLICA Herbicide with fluid fertilizers, oils, oil concentrates or surfactants when applying post-emergent.
- Do not graze/feed or harvest 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 METALLICA Herbicide alone or in tank mixes in corn. Do not use fertilizer solutions for post-emergent applications. Always predetermine the compatibility of METALLICA Herbicide or labelled METALLICA 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 METALLICA 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 METALLICA Herbicide/fertilizer mixtures or METALLICA 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 METALLICA Herbicide alone or METALLICA Herbicide tank mixtures.

Do not impregnate METALLICA 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 METALLICA 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 METALLICA Herbicide and its tank mixes.

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

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE¹	RATE PER HECTARE/TANK MIX PARTNER²
Pre-plant Surface (up to 30 days before planting)	Annual Grasses and Broadleaf Weeds ³	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480
	Annual Grasses, Emerged Annual or Perennial Weeds	1.25 - 1.75 L	+ 2.35 - 2.5 L Roundup Transorb ^{®5} or 2.35 - 2.5 L Glyphos ^{®5} or 2.35 - 2.5 L Credit ^{®5} or 2.35 - 2.5 L Vantage Plus MAX ⁵ or 2.35 - 2.5 L Renegade HC Liquid ⁵
	Annual Grasses and Broadleaf Weeds, Emerged Annual or Perennial Weeds	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480 ⁶ or 2.35 - 2.5 L Roundup Transorb ⁵ or 2.35 - 2.5 L Glyphos ⁵ or 2.35 - 2.5 L Credit ⁵ or 2.35 - 2.5 L Vantage Plus MAX ⁵ or 2.35 - 2.5 L Renegade HC Liquid ⁵
Pre-plant Incorporated	Nutsedge, Annual Grasses	1.25 - 1.75 L	METALLICA Herbicide applied alone
	Nutsedge, Annual Grasses and Broadleaf Weeds	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480
Pre-emergent	Annual Grasses	1.25 - 1.75 L	METALLICA 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 [®] II ⁷ or 3.7 - 4.5 L Marksman ^{®7,8} OR + 2.1 - 3.1 L AATREX Liquid 480 + 1.25 L Banvel II ⁷ OR + 0.3 L CALLISTO [®] 480SC OR + 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	+ 2.35 - 2.5 L Glyphos ⁵ or 2.35 - 2.5 L Credit ⁵ or 2.35 - 2.5 L Vantage Plus MAX ⁵ or 2.35 - 2.5 L Renegade HC Liquid ⁵

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE ¹	RATE PER HECTARE/TANK MIX PARTNER ²
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 [®] 75WDG ^{7,9} + 1.1 L Converge 480 ^{7,9}
	Annual Grasses and Broadleaf Weeds, Emerged Annual or Perennial Weeds	1.25 - 1.75 L	+ 2.1 - 3.1 L AATREX Liquid 480 ⁶ or 2.35 - 2.5 L Roundup Transorb ⁵ or 2.35 - 2.5 L Glyphos ⁵ or 2.35 - 2.5 L Credit ⁵ or 2.35 - 2.5 L Vantage Plus MAX ⁵ or 2.35 - 2.5 L Renegade HC Liquid ⁵
Early Post Emergent (spike to 2-leaf stage)	Annual Grasses	1.25 - 1.75 L	METALLICA 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 ^{7,8} or 600 mL - 1.25 L Banvel II ⁷ OR + 2.3 L AATREX Liquid 480 + 600 mL - 1.25 L Banvel II ⁷ OR + 0.3 L CALLISTO 480SC ¹⁰ OR + 0.3 L CALLISTO 480SC + 2.1 - 3.1 L AATREX Liquid 480 ¹⁰
Post-Emergent (3 to 6-leaf stage) (hybrid and silage corn only)	Annual Grasses	1.25 - 1.75 L	METALLICA Herbicide applied alone ⁷
	Annual Grasses and Broadleaf Weeds including triazine tolerant weeds	1.25 - 1.75 L	+ 3.7 - 4.5 L Marksman ^{7, 8, 11} or 600 mL - 1.25 L Banvel II ^{7, 11} OR + 2.3 L AATREX Liquid 480 + 600 mL - 1.25 L Banvel II ^{7, 11}

¹ Use the higher rate of METALLICA Herbicide for heavier weed populations.

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

³ Apply pre-plant surface applications of METALLICA 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 Roundup, Glyphos, Credit, Vantage or Renegade herbicides prior to the tank mix application or make an application of a 3-way tank mix of METALLICA Herbicide plus AATREX plus

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

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 METALLICA Herbicide with AATREX Liquid 480 herbicide:

- Liquid fertilizer (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 Roundup, Glyphos, Credit, Vantage or Renegade herbicides in the tank mix (See preceding table).

TANK MIXTURES (WESTERN CANADA ONLY)

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE¹	RATE PER HECTARE/TANK MIX PARTNER²
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 METALLICA Herbicide for heavier weed problems.

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

SOYBEANS**TANK MIXTURES**

Pre-plant Surface (up to 30 days before planting)	Annual Grasses and Broadleaf Weeds including Nightshade ⁴	1.15 - 1.75 L	+ 1.0 - 2.2 L Sencor 480F or 670 g - 1.45 kg Sencor 75DF
	Annual Grasses, Nightshade, Emerged Annual or Perennial Weeds	1.15 - 1.75 L	+ 2.35 - 2.5 L Roundup Transorb ⁶ or 2.35 - 2.5 L Glyfos ⁶ or 2.35 - 2.5 L Credit ⁶ or 2.35 - 2.5 L Vantage Plus MAX ⁶ or 2.35 - 2.5 L Renegade HC Liquid ⁶
	Annual Grasses and Broadleaf Weeds including Nightshade, Emerged Annual or Perennial Weeds	1.15 - 1.75 L	+ 2.35 - 2.5 L Roundup Transorb ⁶ or 2.35 - 2.5 L Glyfos ⁶ or 2.35 - 2.5 L Credit ⁶ or 2.35 - 2.5 L Vantage Plus MAX ⁶ or 2.35 - 2.5 L Renegade HC Liquid ⁶ + 1.0 - 2.2 L Sencor 480F ⁷ or 670 g - 1.45 kg Sencor 75DF ⁷
Pre-plant Incorporated	Nutsedge, Annual Grasses and Nightshade	1.15 - 1.75 L	METALLICA 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 480F or 312 mL Pursuit ⁸
Pre-emergent	Annual Grasses and Nightshade	1.15 - 1.75 L	METALLICA Herbicide applied alone
Pre-emergent	Annual Grasses and Broadleaf Weeds including Nightshade	1.15 - 1.75 L	+ 850 mL - 2.25 L Sencor 480F or 550 g - 1.5 kg Sencor 75DF or 1.6 - 2.5 L Afolan F or 1.9 - 2.3 L Lorox L ⁵ or 312 - 420 mL Pursuit ⁸ or 465 - 665 g Sencor 75DF plus 1.5 - 2.0 L Lorox L ⁵ or 750 mL-1.0 L Sencor 480F plus 1.5 - 2.0 L Lorox L ⁵
	Annual Grasses, Nightshade, Emerged Annual or Perennial Weeds	1.15 - 1.75 L	+ 2.35 - 2.5 L Roundup Transorb ⁶ or 2.35 - 2.5 L Glyfos ⁶ or 2.35 - 2.5 L Credit ⁶ or 2.35 - 2.5 L Vantage Plus MAX ⁶ or 2.35 - 2.5 L Renegade HC Liquid ⁶
Pre-emergent	Annual Grasses and Broadleaf Weeds including Nightshade, Emerged Annual or Perennial Weeds	1.15 - 1.75 L	+ 2.35 - 2.5 L Roundup Transorb ⁶ or 2.35 - 2.5 L Glyfos ⁶ or 2.35 - 2.5 L Credit ⁶ or 2.35 - 2.5 L Vantage Plus MAX ⁶ or 2.35 - 2.5 L Renegade HC Liquid ⁶

			+ 850 mL - 2.25 L Sencor 480F ⁷ or 550 g – 1.5 kg Sencor 75DF ⁷ or 312 - 420 mL Pursuit ⁸
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- ¹ For optimum nightshade control, use the higher rate of METALLICA Herbicide applied pre-emergently and choose a tank-mix partner which is also registered for the control of nightshade.
- ² Use the higher rate of METALLICA Herbicide for heavier weed problems. For redroot pigweed suppression, apply a minimum of 1.25 L of METALLICA Herbicide per hectare.
- ³ Consult the label of the product(s) to be tank mixed with METALLICA Herbicide for specific instructions regarding broadleaf weeds, soil-type variations and rotational crop, grazing or other restrictions.
- ⁴ Apply pre-plant surface applications of METALLICA Herbicide plus Sencor herbicide only when emerged annual weeds are less than 6 cm tall. If emerged annual weeds are taller than 6 cm, apply Roundup, Glyphos, Credit, Vantage or Renegade herbicide prior to the tank mix application or make an application of a 3-way tank mix of METALLICA Herbicide plus Roundup, Glyphos, Credit, Vantage or Renegade herbicide plus Sencor. Consult the tank mix partner label for specific instructions regarding precautions, restrictions, recommended rates and additives.
- ⁵ Tank mixes with Lorox herbicide are for use in eastern Canada only.
- ⁶ Some perennial weeds may not be controlled with these rates of Roundup, Glyphos, Credit, Vantage or Renegade herbicide. Consult the Roundup, Glyphos, Credit, Vantage or Renegade herbicide label regarding perennial weeds controlled.
- ⁷ It is recommended that liquid formulations of products be used when tank mixing with Roundup, Glyphos, Credit, Vantage or Renegade herbicide. Consult the Roundup, Glyphos, Credit, Vantage or Renegade herbicide label for specific instructions regarding precautions, restrictions, recommended rates and additives.
- ⁸ 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 METALLICA 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 METALLICA Herbicide with Sencor 480F, Sencor 75DF, or Pursuit herbicide:

- Liquid fertilizer (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 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 METALLICA HERBICIDE ¹
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Pre-plant Incorporation	Annual Grasses and Nutsedge	1.15 - 1.75 L
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¹ Use the higher rate of METALLICA Herbicide for heavier weed problems. For redroot pigweed suppression apply a minimum of 1.25 L of METALLICA 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 METALLICA HERBICIDE ¹	RATE PER HECTARE/TANK MIX PARTNER ²
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 480F
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 480F or 1.9 - 2.3 L Lorox L

¹ Use the higher rate of METALLICA Herbicide for heavier weed problems.

² Consult the label of the product to be tank mixed with METALLICA Herbicide for specific instructions regarding soil-type variations and special restrictions.

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

SUGAR BEETS

TIMING OF APPLICATION:

METALLICA 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 METALLICA HERBICIDE ¹	RATE PER HECTARE/TANK MIX PARTNER ²
1.25 - 1.75 L	8.25 - 10.25 L Pyramin FL 430 g/L

¹ Use the higher rate of METALLICA Herbicide for heavier weed problems.

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

RUTABAGAS (EASTERN CANADA ONLY)

TIMING OF APPLICATION:

METALLICA Herbicide can be applied either as:

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

RATES PER HECTARE METALLICA HERBICIDE ¹
1.25 - 1.75 L

¹ Use the higher rate of METALLICA Herbicide for heavier weed problems.

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

TRANSPLANTED TOMATOES - GROWN FOR PROCESSING

TANK MIXTURES

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE ¹	RATE PER HECTARE/TANK MIX PARTNER ²
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 480F

¹ Use the higher rate of METALLICA Herbicide for heavier weed problems.

² Consult the label of the product to be tank mixed with METALLICA Herbicide for specific instructions regarding weeds, rates, soil-type and organic matter variations and other restrictions.

CAUTION: DO NOT APPLY METALLICA HERBICIDE ON DIRECT-SEEDED TOMATOES.

NOTE: METALLICA 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 METALLICA HERBICIDE ¹	REMARKS
Annual Grasses	Pre-emergent	1.10 - 1.75 L	Make one treatment per year with ground application equipment. Apply in 200 - 300 L of total volume per hectare.

¹Use the higher rate of METALLICA Herbicide for heavier weed problems. For redroot pigweed suppression apply a minimum of 1.25 L of METALLICA Herbicide per hectare.

(EASTERN CANADA ONLY)

WEEDS CONTROLLED	TIMING	RATE/HA ¹
Annual Grasses and Broadleaf Weeds including Nightshade ³	Pre-emergent	METALLICA Herbicide ² 1.10 - 1.75 L

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. Do not harvest lupins within 80 days of treatment.

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

SWEET WHITE LUPINS

TANK MIXTURE (MARITIMES ONLY)

WEEDS CONTROLLED	TIMING	RATE/HA ¹
Annual Grasses and Broadleaf Weeds including Nightshade ³	At planting or Pre-emergent	METALLICA Herbicide ² 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, 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.

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

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

TIMING	WEEDS CONTROLLED	RATE/HA	REMARKS
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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)	METALLICA ¹ 1.25 - 1.75 L plus PRINCEP NINE-T ^{®1} 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.
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¹ Use the higher rate of METALLICA 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, preemergent to weeds	Annual Grasses	METALLICA 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)	METALLICA 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.

PROCESSING PEAS (Eastern Canada only)

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE ¹	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.

¹ Use the higher rate of METALLICA 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 postemergent to weeds	Annual Grasses and Broadleaf Weeds	METALLICA Herbicide ¹ 1.25 - 1.75 L	Apply to spruce and pine in forest tree nurseries prior to budbreak. DO NOT APPLY METALLICA HERBICIDE WITHIN 4 WEEKS AFTER BURST OR UNTIL THE NEEDLES HAVE HARDENED. May be applied as a preemergent or early post-emergent application to weeds before they pass the 2-leaf stage. For Poplar Stoolbeds, apply to dormant and flushing stoolbeds.

¹
weed problems.

Use the higher rate of METALLICA Herbicide for heavier

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than Sharda Cropchem Limited under the User Requested Minor Use Label Expansion program. For these uses, Sharda Cropchem Limited has not fully assessed performance (efficacy) and/or crop tolerance (phytotoxicity) under all environmental conditions or for all crop varieties when used in accordance with the label. The user should test the product on a small area first, under local conditions and using standard practices, to confirm the product is suitable for widespread application.

TRANSPLANTED CABBAGE, TRANSPLANTED CAULIFLOWER, TRANSPLANTED BROCCOLI

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE¹	REMARKS
Post Transplant Apply within 2 days after transplanting and prior to weed emergence. Do not incorporate.	Nightshade, Annual Grasses and Redroot Pigweed ²	1.25 – 1.75 L	Make one application per year. Apply in 300 L water/ha. Apply by ground application equipment only.

¹Use the higher rate of METALLICA Herbicide for heavier weed problems.

²Suppression only.

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

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE¹	RATE PER HECTARE/TANK MIX PARTNER²
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 or Sencor 480 plus

¹ Use the higher rate of METALLICA Herbicide for heavier weed problems and for control of nightshade.

² Consult the label of the product to be tank mixed with METALLICA Herbicide for specific instructions regarding weeds, rates, soil-type and organic matter variations and other restrictions.

³ Use lower rates on light textured soils, higher rates on heavier soils.

⁴ Make Only One Application Per Year. Do Not Apply Within 60 Days of Harvest.

CAUTION: DO NOT APPLY ON DIRECT-SEEDED TOMATOES.

NOTE: METALLICA 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 METALLICA ¹ HERBICIDE	RATE PER HECTARE/TANK MIX PARTNER²
Pre-plant Incorporated	Annual Nightshades (American Nightshade, Eastern Black Nightshade), Nutsedge, and Annual Grasses	1.25 - 1.75 L	N/A
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 480F

¹ Use the higher rate of METALLICA herbicide for heavier weed problems.

² Consult the label of the product to be tank mixed with METALLICA 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 METALLICA HERBICIDE ON DIRECT-SEEDED TOMATOES.

NOTE: METALLICA 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 METALLICA Herbicide. **Since not all tomato varieties have been tested for tolerance to METALLICA Herbicide, first use of METALLICA 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 METALLICA Herbicide.**

TRANSPLANTED FIELD TOMATOES (FOR FRESH MARKET OR PROCESSING)

TIMING	WEEDS SUPPRESSED	RATE/HA METALLICA HERBICIDE	COMMENTS
Pre-plant Incorporated <i>followed by</i> Posttransplant	Smooth crabgrass, green foxtail, barnyard grass	0.87 L [preplant incorporation] + 0.44 – 0.87 L [posttransplant]	Apply in 150 – 300 L water/ha. Make the post-transplant application within 7 to 14 days after transplanting. The interval between preplant incorporation and post-transplant applications should be no longer than 14 days. Do not apply METALLICA Herbicide within 7 days of transplanting. Use the higher rates of METALLICA Herbicide for heavier weed problems. Do not exceed 1.75 L of METALLICA on tomatoes per year. Do not harvest within 30 days after application. DO NOT APPLY METALLICA HERBICIDE ON DIRECT-SEEDED TOMATOES.

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Use the higher rate of METALLICA herbicide for heavier weed problems.

NOTE: METALLICA 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 METALLICA Herbicide. **Since not all tomato varieties have been tested for tolerance to METALLICA Herbicide, first use of METALLICA 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 METALLICA Herbicide.**

SWEET CORN TANK MIXTURE

TIMING	WEED CONTROLLED	RATE/HA METALLICA HERBICIDE	RATE PER HECTARE/TANK MIX PARTNER	REMARKS
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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	Make only one application per year. Apply as pre-emergent treatment. Apply in 150 L water/ha minimum. Do not harvest sweet corn within 80 days of treatment. Apply by ground equipment only.
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DRY COMMON BEANS

CROP	TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE ¹	REMARKS
Dry Common Beans (<i>Phaseolus vulgaris</i> species only)	Pre-plant incorporated OR Pre-emergent soil application	American Nightshade ² Fall Panicum Eastern Black Nightshade ² Foxtail (green, yellow, giant) Crabgrass (smooth, hairy) Old Witchgrass Barnyard Grass Yellow Nutsedge ³ Redroot Pigweed ⁴	1.15 to 1.75 L	Make only one application per year. Apply in 150 L water/ha. Apply by ground application equipment only. NOTE: Dry common bean varieties may vary in their tolerance to herbicides, including to METALLICA Herbicide. Since not all dry common bean varieties have been tested for tolerance to METALLICA Herbicide, first use of METALLICA 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 METALLICA Herbicide. CAUTION: Beans should be seeded at least 4 cm deep or crop injury may result.

¹ Use the higher rate of METALLICA Herbicide for heavier weed problems.

² Pre-emergent treatments sometimes give better control than pre-plant incorporated.

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

⁴ Suppression only.

DRY COMMON BEANS TANK MIXTURE (EASTERN CANADA ONLY)

CROP	TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE ¹	RATE/HA TANK MIX PARTNER ²	REMARKS
Dry Common Beans	Pre-plant incorporated	American Nightshade, Eastern Black	1.15 to 1.75 L	0.312 L Pursuit Herbicide	Make only one application per year. Apply in 150 L – 400 L

<i>(Phaseolus vulgaris</i> species only)		Nightshade, Fall Panicum, Foxtail (green, yellow, giant), Crabgrass (smooth, hairy), Old Witchgrass, Barnyard Grass, Yellow Nutsedge ³ , Redroot Pigweed ⁴			water/ha. Apply by ground application equipment only. DO NOT harvest within 100 days of treatment. NOTE: Dry common bean varieties may vary in their tolerance to herbicides, including to METALLICA Herbicide. Since not all dry common bean varieties have been tested for tolerance to the tankmix of Pursuit plus METALLICA 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 METALLICA Herbicide. CAUTION: Beans should be seeded at least 4 cm deep or crop injury may result.
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¹ Use the higher rate of METALLICA Herbicide for heavier weed problems.

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

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

⁴ Suppression only.

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

CROP	TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE ¹	RATE/HA TANK MIX PARTNER ²	REMARKS
Cranberry Beans	Pre-plant incorporated OR Pre-emergent soil application	American Nightshade ³ Eastern Black Nightshade ³	1.15 to 1.75 L	+ 0.312 L Pursuit Herbicide	Make only one application per year. Apply by ground application

Kidney Beans	Pre-plant incorporated OR Pre-emergent soil application	Fall Panicum Foxtail (green, yellow, giant) Crabgrass (smooth, hairy) Old Witchgrass Barnyard Grass Yellow Nutsedge ⁴ Redroot Pigweed ⁵	1.15 to 1.75 L	+ 0.312 L Pursuit Herbicide	equipment only. CAUTION: Beans should be seeded at least 4 cm deep or crop injury may result.
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¹ Use the higher rate of METALLICA Herbicide for heavier weed problems.

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

³ Pre-emergent treatments sometimes give better control than pre-plant incorporated.

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

⁵ Suppression only.

SUGAR BEETS

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE ¹	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 120 days of treatment. DO NOT USE SUGAR BEET TOPS FOR FEEDING TO LIVESTOCK.

¹ Use the higher rate of METALLICA Herbicide for heavier weed problems.

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

FIELD PEPPERS

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE¹	REMARKS
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 80 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.

¹Use the higher rate of METALLICA Herbicide for heavier weed problems.

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

SOYBEANS – SUPPRESSION OF TALL WATERHEMP

TIMING	RATE/HA METALLICA HERBICIDE	REMARKS
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 METALLICA Herbicide when the product is applied according to the label.

Tolerance Plant Species

Plant Category	Common name	Scientific name
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.

METALLICA Herbicide may be applied to other non-listed plant species. However, non-listed plant species may vary in their tolerance to herbicides, including METALLICA Herbicide. First use of METALLICA 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 METALLICA HERBICIDE	REMARKS
Pre-emergence (prior to weed emergence) OR Early Post-emergent (12 leaf weed stage)	Nightshade, Annual Grasses and Redroot Pigweed ¹	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 METALLICA 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.

¹Suppression 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 METALLICA 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 METALLICA HERBICIDE	REMARKS
In the spring, apply to dormant asparagus beds prior to emergence OR Post-harvest	American Nightshade, Eastern Black Nightshade, Crabgrass (smooth, hairy), Barnyard Grass, Fall Panicum, Foxtail (green, yellow, giant), Old Witchgrass, and Redroot Pigweed ¹	1.55 – 1.75 L	Make only one application per year. Apply by ground application equipment only. PHI is 16 days.

¹Suppression only

CONIFERS (Established for field production)

METALLICA Herbicide has been tested on Balsam fir, Fraser fir, White pine, and White spruce. METALLICA Herbicide may be applied to other non-listed conifer species; however, non-listed conifer species may vary in tolerance to herbicides, including METALLICA Herbicide. First use of METALLICA 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 METALLICA HERBICIDE ¹	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.

¹Use higher rate for heavier weed infestations

CONIFERS (Established for field production)

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE ²	RATE/HA SIMAZINE 480 HERBICIDE ³	REMARKS
Pre-emergent or early postemergent (before 2 leaf stage) to weeds	Labelled weeds ¹	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.

¹ See Simazine 480 for further information.

² Use higher rate for heavier weed infestations.

³ 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 METALLICA HERBICIDE ¹	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. Yield losses may be observed when this product is applied to transplanted mustard greens.

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Reduced levels of weed control may be observed when weed densities are high.

HIGHBUSH BLUEBERRIES (new and established plantings)

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE	REMARKS
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 USING AERIAL APPLICATION EQUIPMENT , 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 truck 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 METALLICA Herbicide. Since not all strawberry cultivars have been tested for tolerance to METALLICA Herbicide, first use of METALLICA 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 METALLICA Herbicide. **Do not apply to the cultivar Joliette.**

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE ¹	REMARKS
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 ²	1.25 – 1.75 L	

¹ Use the higher rate of METALLICA Herbicide for heavier weed problems.

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

CARROTS

TIMING	WEEDS CONTROLLED OR SUPPRESSED	METALLICA HERBICIDE RATE	REMARKS
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>Make only one application per year. Do not follow a pre-emergent application with a post-emergent spray later in the season.</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. Use lower rates on medium-textured soils and higher rates on fine-textured soils. Do not apply more than 1.5 L/ha of METALLICA Herbicide to mineral soils. Do not apply more than 1.75 L/ha of METALLICA Herbicide to muck soils (organic matter > 20%).</p> <p>To help avoid crop injury, do not apply METALLICA Herbicide in areas where water is likely to pool.</p> <p>Apply in 150 – 300 L water/ha. Reduced levels of weed control may be observed when weed densities are high. Do not harvest carrots within 30 days of application.</p> <p>NOTE: LEVEL AND DURATION OF WEED SUPPRESSION MAY BE REDUCED IN MUCK SOILS WITH HIGHER ORGANIC MATTER CONTENT.</p> <p>NOTE: APPLICATIONS OF METALLICA MAY CAUSE SIGNIFICANT INJURY TO CARROTS, RESULTING IN REDUCED YIELDS.</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	1.2-1.5L/ha	

SWEET POTATOES

TIMING	WEEDS CONTROLLED OR SUPPRESSED	RATE/HA METALLICA HERBICIDE RATE	REMARKS
Early post-emergence (2 – 5 days after transplanting)	Labelled annual broadleaf and grass weeds	1.25-1.75L	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)

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE	REMARKS
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	<p>Make only one application per year. Apply by ground application only. DO NOT APPLY USING AERIAL APPLICATION EQUIPMENT. Apply in 200 L water/ha.</p> <p>Do not harvest pearl millet for forage within 45 days of application. Do not harvest pearl millet for grain within 130 days of application.</p> <p>For use in pearl millet for animal feed only. Treated grain millet is not intended for human consumption.</p> <p>Application of METALLICA will result in injury to the pearl millet crop which may include stand loss, delayed maturity and even loss of yield. AVOID SPRAY OVERLAP. 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.</p>

Crop Group 9 – Cucurbit Vegetables					
CROP	TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE	REMARKS	
<p>Crop Group 9 – Cucurbit Vegetables : 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>), 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), Pumpkin (<i>Cucurbita</i> spp.), Squash, summer (<i>Cucurbita pepo</i> var. <i>meloepo</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), excluding Cucumber (<i>Cucumis sativus</i>)</p>	<p>Transplanted: Prior to transplanting or within 48 hours after transplanting.</p> <p>Direct seeded: Preemergence or early postemergent to crop (1 to 2 leaf stage).</p> <p>All applications should be preemergent 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 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 METALLICA 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 METALLICA Herbicide as this can increase potential to cause crop injury. Avoid overspray. Reduced control in heavy weed populations may occur.</p>	

				<p>Do not use on sandy soils with less than 2% organic matter.</p> <p>The use of another registered herbicide as a tank mixture with METALLICA will increase the risk of crop injury.</p>
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EGGPLANT (TRANSPLANTS ONLY)

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE	REMARKS
Postemergent, apply within 48 hours of transplanting, but before weed emergence	Nightshade, Annual Grasses	1.15 – 1.25 L	<p>Use lower rate of METALLICA 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 METALLICA Herbicide on eggplant per year.</p> <p>Do not harvest eggplant within 60 days of application.</p>

CELERY

TIMING	WEEDS CONTROLLED	RATE/HA METALLICA HERBICIDE¹	REMARKS
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 postdirected than from post over-the-top posttransplanting applications. The use of a spray adjuvant or the addition of another registered herbicide as a tank mixture with METALLICA will increase the risk of crop injury from postemergence applications.</p> <p>METALLICA may also be used to treat row-middles in bedded crops, as long as the total amount of METALLICA applied does not exceed 1.75 L/ha in that crop.</p> <p>Use lower rates of METALLICA on coarse-textured soils and higher rates on fine-textured soils.</p> <p>On muck soils: 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. CAUTION: Use in soils with high organic matter will result in reduced efficacy. A representative bioassay of the field must be conducted with rotational crops to evaluate potential crop sensitivity.</p> <p>NOTE: METALLICA 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.</p>
	Suppression of the weeds listed above	Muck soils (organic matter >20%): 1.5-1.75 L/ha	

¹ Use the higher rate of METALLICA Herbicide for heavier weed problems.

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

¹Pre-emergent treatments sometimes give better control than post-emergent treatments.

RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, METALLICA Herbicide is a Group 15 herbicide. Any weed population may contain or develop plants naturally resistant to METALLICA 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 METALLICA 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 Sharda Cropchem Limited at 1-844-810-5720.

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Consult the label of products to be tank mixed or split applied with METALLICA 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.