

GROUP 22 HERBICIDE

GRAMOXONE®
LIQUID HERBICIDE WITH WETTING AGENT
(Contains Paraquat)

RESTRICTED

This product is only to be used by individuals holding an appropriate pesticide applicator certificate or license recognized by the provincial/territorial pesticide regulatory agency, where the pesticide application is to occur.

A non-residual Herbicide for the Control of Many Grasses and Broadleaf Weeds.
Inactivated on Contact with the Soil.

**FOR USE ONLY BY FARMERS AND PEST CONTROL OPERATORS.
NOT FOR USE BY HOME GARDENERS.**

GUARANTEE:

Paraquat ion..... 200 g per litre (present as dichloride)

KEEP OUT OF REACH OF CHILDREN AND UNAUTHROIZED PERSONNNEL

DANGER



POISON

CORROSIVE TO EYES AND SKIN

IN CASE OF ACCIDENTAL EXPOSURE, SEEK IMMEDIATE MEDICAL ATTENTION
READ THE LABEL AND BOOKLET BEFORE USING

WARNING

Danger - Fatal if swallowed or inhaled.

To avoid accidental ingestion, never transfer to a beverage container.

If swallowed, take **IMMEDIATE** action (see First Aid section).

Causes severe skin burns and eye injury. Effects can be delayed. Take **IMMEDIATE** action if splashed on skin or in eyes (see First Aid section).

Harmful or fatal if absorbed through skin.

Keep out of reach of children and animals.

Store tightly closed in original container under lock and key in a storage area accessible only by a certified applicator.

REGISTRATION NO. **8661**
PEST CONTROL PRODUCTS ACT

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

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.

NATURE OF RESTRICTION: The end use product is to be used by individuals holding an appropriate pesticide applicator certificate or license recognized by the provincial/territorial pesticide regulatory agency, where the pesticide application is to occur.

FIRST AID

IF INGESTED, CALL 911 or an ambulance, SPEED IS ESSENTIAL. IMMEDIATE medical attention is required. If available, give an adsorbent such as activated charcoal or bentonite. Never give anything by mouth to an unconscious person.

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

IF IN EYES, IMMEDIATELY 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 **IMMEDIATELY**.

IF INHALED, IMMEDIATELY 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 **IMMEDIATELY**.

Take container, Material Safety Data Sheet (MSDS), product label, or product name and Pest Control Product Registration Number with you when seeking medical attention. FOR FURTHER TREATMENT ADVICE, CALL 1-800-327-8633 (1-800-FASTMED).

TOXICOLOGICAL INFORMATION

Refer to the booklet 'Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Medical Management' (<http://www4.syngenta.com/what-we-do/crops-and-products/paraquat-safety>). Administer either activated charcoal (100 g for adults or 2 g/kg body weight for children) or bentonite clay (100 to 150 g for adults or 2 g/kg body weight for children). NOTE: the use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. **DO NOT USE SUPPLEMENTAL OXYGEN.**

Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. Symptoms may develop gradually over 24 hours. Severe damage may be caused by apparently trivial contact. There is a possibility of late onset corneal ulceration. Use treatment that is appropriate to chemical burns. Treatment may need to continue for several months.

Dermal contact can cause severe skin effects including blistering, dermal ulceration and full thickness burns. Symptoms develop gradually, usually 1 to 3 days after exposure. Nail damage, or

total loss of the nail may occur upon direct contact. Systemic toxicity can occur from dermal exposure (e.g., through cut or abraded skin, not washing after being splashed, wearing clothes soaked in spray, carrying a leaking backpack sprayer).

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN AND UNAUTHORIZED PERSONNEL.

Fatal if swallowed or inhaled. DO NOT inhale/breathe sprays, fumes or vapours.

Corrosive to eyes and skin. Causes severe skin burns and eye injury. Effects can be delayed. Take IMMEDIATE action if splashed on skin or in eyes (see First Aid section).

Harmful or fatal if absorbed through the skin.

DO NOT get on skin or clothing.

DO NOT get in eyes.

DO NOT USE GRAMOXONE® UNDILUTED. The maximum spray concentration used should not exceed 2.5 parts GRAMOXONE to 100 parts water. For non-spot applications with backpack sprayers, apply paraquat up to a maximum rate of 0.7 kg ai/ha (3.5 L GRAMOXONE/ha) in a minimum water volume of 187 L/ha.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

During mixing/loading, cleanup and repair, workers must wear chemical-resistant coveralls over a long-sleeved shirt and long pants, socks and chemical-resistant footwear, chemical-resistant gloves, protective eyewear and either a NIOSH approved organic-vapour-removing cartridge with a prefilter approved for pesticides OR a NIOSH approved canister approved for pesticides.

Applicators using groundboom equipment with:

- a closed cab must wear cotton coveralls over a long-sleeved shirt, long pants, shoes plus socks. Chemical-resistant coveralls over a long-sleeved shirt and long pants, chemical-resistant gloves, protective eyewear, and either a NIOSH approved organic-vapour-removing cartridge with a prefilter approved for pesticides OR a NIOSH approved canister approved for pesticides must be worn by applicators when leaving the closed cab for calibration, repair or cleanup. The closed cab must provide both a physical barrier and respiratory protection (i.e. dust/mist filtering and/or vapour/gas purification system). The closed cab must also have a chemical-resistant barrier that totally surrounds the occupant and prevents contact with pesticides outside the cab.
- an open cab must wear chemical-resistant coveralls over a long-sleeved shirt and long pants, socks and chemical-resistant footwear, chemical-resistant gloves, protective eyewear and either a NIOSH approved organic-vapour-removing cartridge with a prefilter approved for pesticides OR a NIOSH approved canister approved for pesticides.

Applicators using backpack sprayers for spot treatment must wear chemical-resistant coveralls over a long-sleeved shirt and long pants, socks and chemical-resistant footwear, chemical-resistant gloves, protective eyewear and either a NIOSH approved organic-vapour-removing cartridge with a

prefilter approved for pesticides OR a NIOSH approved canister approved for pesticides.

Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. REMOVE CONTAMINATED CLOTHING IMMEDIATELY. Launder contaminated clothing prior to reuse and separate from household laundry. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

AVOID WORKING IN SPRAY MIST AND CONTACT WITH SPRAY SOLUTION. Do not apply with a mist blower or high-pressure sprayer producing fine droplets. Overspray or drift to sensitive habitats should be avoided. DO NOT reenter treated areas within 24 hours.

Do not eat, drink, handle or use tobacco, or apply cosmetics in areas where there is potential for exposure to this product. Wash hands and face thoroughly before eating, drinking, handling tobacco or using the toilet. Store and wash all protective clothing separately from household laundry.

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

STORE IN ORIGINAL CONTAINER tightly closed in a safe place away from children.

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.

ENVIRONMENTAL HAZARDS

Toxic to aquatic organisms and terrestrial plants. Toxic to birds and small wild mammals. 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.

STORAGE

STORE ABOVE 0 °C. If crystallization occurs because of storage below 0 °C, warm to room temperature, agitate until reconstituted.

Store tightly closed in original container under lock and key in a storage area accessible only by a certified applicator. All unopened, empty or partially empty containers must be locked and stored away from food or feed.

DECONTAMINATION AND DISPOSAL

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:

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)***

PRODUCT INFORMATION

GRAMOXONE LIQUID HERBICIDE with WETTING AGENT is a non-volatile, fast acting herbicide. It is inactivated on contact with the soil, therefore, has no residual effect in the soil. The herbicidal effect varies with weed species; hence, repeat applications may be necessary upon certain perennial weeds. Annual weeds are generally killed with one application if the weed growth has been completely covered with the spray solution.

GRAMOXONE LIQUID HERBICIDE with WETTING AGENT works rapidly, and rain falling shortly after application normally will not reduce the effectiveness of the treatment. APPLICATIONS MADE ON CLOUDY DAYS, DURING DULL SUNLIGHT OR JUST PRIOR TO OR DURING PERIODS OF DARKNESS WILL GENERALLY INCREASE THE SUBSEQUENT EFFECTIVENESS OF THE TREATMENT.

Thoroughly wet all foliage. For dense weed growth, use the higher rate and the higher volume of water.

NOTE: Do not add AGRAL® 90 as this GRAMOXONE LIQUID HERBICIDE with WETTING AGENT formulation already contains a wetting agent.

CAUTIONS: Avoid application or drift onto crops, ornamental plants, lawns, grazing areas or other desirable growth. Use clean (non-turbid) water for spraying GRAMOXONE LIQUID HERBICIDE

with WETTING AGENT. Muddy water will reduce the effectiveness of the chemical. DO NOT APPLY THROUGH MIST BLOWERS. It is important to thoroughly wash equipment after spraying. Use a wetting agent (AGRAL 90 at 60 mL per 100 L of water), flush and spray out, then thoroughly rinse with clean water. When possible, the equipment should be filled with clean water and left overnight. Spray out before storing equipment or using for other materials.

DO NOT APPLY BY AIR.

DIRECTIONS FOR USE

DO NOT tank-mix this product with any pest control products other than those listed on the GRAMOXONE LIQUID HERBICIDE with WETTING AGENT label. GRAMOXONE LIQUID HERBICIDE with WETTING AGENT is compatible with the tank mix partners listed on this label.

Backpack sprayer applications are permitted only for spot treatment to control green suckers between filbert and hazelnut trees. DO NOT apply by hand-held equipment for other uses.

Groundboom applications to field crops must be made using lowboom sprayers.

GRASS AND WEED CONTROL IN FRUIT CROPS AND SHELTERBELTS:

Rate and Method of Application: Apply 5.5 L GRAMOXONE LIQUID HERBICIDE with WETTING AGENT in 1100 L of water per sprayed hectare. Applications of this product in fruit crops and shelterbelts must be made using low boom sprayers fitted with drift-reducing shrouds or shields. DO NOT APPLY using hand-held equipment. Follow manufacturer's recommendations for use of shrouds or shields with particular attention to maintaining the minimum allowable boom height. Use flat fan nozzles with the highest flow rate and lowest pressure that will provide good coverage, within the manufacturer's recommended range.

UNDER APPLES, APRICOTS, CHERRIES, RED CURRANTS, GOOSEBERRIES, Highbush BLUEBERRIES, PEACHES, PEARS AND PLUMS - Established one or more years: Repeat application as necessary.

UNDER GRAPE VINES - Established on trellises - Apply in May or early June and repeat if necessary. An area 1 m by 10,000 m of row equals one hectare.

UNDER BLACKBERRIES, LOGANBERRIES AND RED RASPBERRIES - Apply early in spring before new shoots emerge or in fall when canes are mature.

UNDER ESTABLISHED SHELTERBELTS - Repeat application if necessary.

For residual control of germinating annual weeds under Apples, Pears, Loganberries, Red Raspberries, Highbush Blueberries, Blackberries and Shelterbelts, GRAMOXONE LIQUID HERBICIDE with WETTING AGENT can be tank mixed with PRINCEP® NINE-T®. Use the appropriate rates for each crop and observe the precautions and limitations listed on the PRINCEP NINE-T label.

FILBERTS and HAZELNUTS: GREEN SUCKERS:

As a directed spot treatment at the base of each tree, apply 75 mL of GRAMOXONE LIQUID HERBICIDE with WETTING AGENT in 10 L of water on green suckers to runoff.

For inter-row general weed and green sucker control performed in one operation using a boom sprayer, apply 2.8 to 5.6 L of GRAMOXONE LIQUID HERBICIDE with WETTING AGENT in 550 to 1100 L of water per hectare.

For residual control of germinating annual weeds, apply GRAMOXONE LIQUID HERBICIDE with WETTING AGENT at 5.0 L per hectare tank mixed with PRINCEP NINE-T, at 2.0 to 2.5 kg per hectare. Apply under trees established one year or more. Apply only one (1) application per year, by ground. Consult the PRINCEP NINE-T label for additional information regarding choice of rate (as determined by soil type), precautions, restrictions and directions for mixing and application.

INTER-ROW SPRAYING IN STRAWBERRIES TO CONTROL EXCESS PLANTS AND WEEDS:

To obtain narrow strawberry rows in the planting year, or from just after harvest to fall in renovated plantings, apply 5.5 L of GRAMOXONE LIQUID HERBICIDE with WETTING AGENT in 550 to 1100 L of water per hectare to give thorough coverage of foliage. Determine width of the strawberry row to be retained and use shields to keep spray off the desired strawberry plants. Thus, the spray will be applied only to the area between the rows killing excess strawberry plants and weeds. In renovated plantings, 2 applications may be required - one just after harvest and one again in the fall. Apply on a calm day and use a spray nozzle arrangement and low pressure to avoid spray drift around the shields.

WEED CONTROL BY STALE SEED BED TECHNIQUE FOR VEGETABLES AND FIELD CROPS:

Pre-emergent to crop. Post emergent to weeds: For weed control in beans (all types) beets, carrots, cole crops, corn, cucumbers, onions, peas, potatoes, soybeans, and turnips, prepare a seed bed at least 2 to 4 weeks before seeding to stimulate weed growth. Seed without further cultivation and with a minimum disturbance of soil. To burn off emerged weeds apply 2.75 to 5.5 L GRAMOXONE LIQUID HERBICIDE with WETTING AGENT in 300 to 1100 L of water per hectare prior to or after seeding. Do not apply later than 3 days before crop emergence. Use 5.5 L rate when weeds are above 5 cm in height and higher volume of water on dense weed growth.

INTER-ROW DIRECTED CHEMICAL WEEDING OF VEGETABLE, FIELD AND ESTABLISHED NURSERY CROPS:

For weed and grass control between the rows after weed emergence, use equipment and nozzles designed to prevent spray contact with the green foliage or other green parts of plants. Apply 2.75 to 5.5 L GRAMOXONE LIQUID HERBICIDE with WETTING AGENT in 300 to 550 L of water per hectare. Use 4.25 to 5.5 L when weeds are above 5 cm in height and higher volume of water on dense weed growth.

ASPARAGUS:

Apply a GRAMOXONE LIQUID HERBICIDE with WETTING AGENT spray to emerged broadleaf weeds and grasses prior to, or after the cutting season. Do not apply to emerged spears which are to be used for human consumption. Apply 2.75 to 5.5 L GRAMOXONE LIQUID HERBICIDE with WETTING AGENT in 300 to 1100 L of water per hectare. Use 5.5 L rate when weeds are above 5 cm in height and higher volume of water on dense weed growth. For residual control of germinating annual weeds, GRAMOXONE LIQUID HERBICIDE with WETTING AGENT may be tank mixed with PRINCEP NINE-T at 2.5 to 3.75 kg/ha either 7 days before first cutting and/or after last harvest. Observe all precautions on the PRINCEP NINE-T label. **Do not spray the asparagus fern.**

WEED CONTROL IN POTATOES:

Apply 2.75 to 4.25 L in 300 to 550 L of water per hectare to control emerged quackgrass, annual grasses and broadleaf weeds. To control emerged seedling annual grasses and seedling annual broadleaf weeds only, apply 1.5 L in 300 to 550 L of water per hectare. Grasses and weeds germinating after spraying will require cultivation for control. For all rates of use, apply to potato varieties as follows: Netted Gem (Idaho Baker, Russett or Burbank) and Cherokee apply up to ground crack only (potato tops about to emerge). For other varieties, apply up to time first potato tops have reached 5 to 8 cm in height (this height is less than it often appears to the eye when observing an emerging field).

GRAMOXONE LIQUID HERBICIDE with WETTING AGENT - Tank mixed with residual herbicides - For residual control of annual broadleaf weeds and annual grasses tank mix with one of the following:*

PRODUCT	RATE
Lorox® L	2.25 - 4.5 L/ha
Lexone® DF	0.83 - 1.2 kg/ha
Sencor® 500 FL	1.1 - 1.75 L/ha

* Refer to the label of the residual herbicide used for specific rates on your soil type.

Apply to emerged weeds and grasses up to and including ground crack using the lower rate of residual herbicide on light soils and the higher rate on heavier and high organic matter soils. **Do not apply these tank mixes after ground crack when tops have emerged as excessive injury may result.** If quackgrass is present, use 2.75 to 4.25 L of GRAMOXONE LIQUID HERBICIDE with WETTING AGENT per hectare with the residual herbicide.

NOTE: OBSERVE ALL PRECAUTIONS AND USE DIRECTIONS FOR THE RESIDUAL HERBICIDE USED.

NOTE: Application to exposed or emerged potato foliage will cause temporary injury and chlorosis. Do not apply to emerged potato foliage in the evening, or when potatoes are under moisture stress due to extremely dry soil conditions or to early potatoes. The use of poor or diseased seed and cut seed with one eye will make potatoes more susceptible to injury by post-emergence GRAMOXONE LIQUID HERBICIDE with WETTING AGENT sprays. Treatment with GRAMOXONE LIQUID HERBICIDE with WETTING AGENT alone will normally eliminate several cultivations, but has no residual action and will not control growth of weeds which may take place following the application of GRAMOXONE LIQUID HERBICIDE with WETTING AGENT.

ESTABLISHED ALFALFA FOR DEHYDRATION, HAY AND FORAGE:

Apply GRAMOXONE LIQUID HERBICIDE with WETTING AGENT spray immediately (not later than 5 days) after cutting established alfalfa to control or suppress broadleaf weeds and grasses (including quackgrass) and release the alfalfa. Do not use a residual herbicide in the season prior to GRAMOXONE LIQUID HERBICIDE with WETTING AGENT application. Apply 2.75 to 5.5 L/ha in 300 to 1000 L of water.

ESTABLISHED BIRDSFOOT TREFOIL FOR SEED:

For improved seed yields and control of wild carrot, quackgrass and other broadleaf weeds and grasses, spray GRAMOXONE LIQUID HERBICIDE with WETTING AGENT at 2.75 to 5.5 L/ha in 300 to 500 L of water when the trefoil is 8 to 16 cm high and actively growing.

ESTABLISHED BIRDSFOOT TREFOIL FOR HAY AND FORAGE:

Apply GRAMOXONE LIQUID HERBICIDE with WETTING AGENT at 2.75 to 5.5 L/ha in 300 to 500 L of water immediately following the first cutting (within 5 days) in early June to control or suppress broadleaf weeds and grasses (including quackgrass) and release the legume.

WEED CONTROL IN ROUGHLAND PASTURE RENOVATION WITH BIRDSFOOT TREFOIL:

Apply a 2,4-D treatment in August to control perennial weeds prior to seeding with birdsfoot trefoil. Prior to full germination of birdsfoot trefoil in the spring, apply 5.5 L of GRAMOXONE LIQUID HERBICIDE with WETTING AGENT in 300 to 550 L of water per hectare to control grasses and annual weeds. This spray should be applied when the grasses are 5 to 10 cm high (early to mid-May) to give adequate suppression/control to allow establishment of the trefoil. Rotation grazing should be practiced in the establishment year to lessen injury to young seedlings.

PASTURE RENOVATION - MINIMUM TILLAGE:

Apply 2,4-D or a 2,4-D based treatment in August prior to treatment to control perennial broadleaf weeds. In May, after 5 to 10 cm of new growth has appeared apply 2.75 to 5.5 L of GRAMOXONE LIQUID HERBICIDE with WETTING AGENT in 300 to 500 L water per hectare to control annual weeds and grasses immediately prior to seeding trefoil or alfalfa with suitable sod seeding/minimum tillage equipment.

PRE- OR POST-SEEDING BURNDOWN FOR BARLEY, CANARY SEED, CANOLA, CORN (field, sweet and pop types, including crops grown for seed production), DRY COMMON BEANS, FIELD (dry) PEAS, FLAX (including low linolenic acid varieties), LENTILS, MUSTARD, OATS, POTATOES, RYE, SOYBEANS, SUNFLOWERS, TRITICALE, WHEAT:

For control of emerged annual grass and broadleaf weed seedlings, and top-growth control of perennial grass and broadleaf weeds apply 2.0 to 4.0 L per hectare. Apply in at least 100 L of water per hectare by ground sprayer. Apply before or after seeding, but prior to crop emergence to control emerged weeds. For spring control of winter annual weeds, or when weed growth is dense and weeds are greater than 10 cm in height, use at least 3.0 L per hectare and higher volumes of water. Do not graze or harvest crops within 30 days of treatment.

CONSERVATION TILLAGE CORN:

GRAMOXONE LIQUID HERBICIDE with WETTING AGENT may be applied in tank mixture with preemergence corn herbicides to control emerged annual grass and broadleaf weed seedlings and top growth of perennial grass and broadleaf weeds, and to provide residual control of weeds as claimed on the labels of the preemergence herbicides. Apply 2.75 to 4.0 L of GRAMOXONE LIQUID HERBICIDE with WETTING AGENT per hectare in 200 to 250 L water per hectare in combination with recommended rates of the following herbicides:

Product	Rate	Comments
AATREX® LIQUID 480	2.1 to 3.1 L/ha	Use higher rate in fine textured soils and heavier weed populations
DUAL™ MAGNUM® OR DUAL II MAGNUM®	1.25 to 1.75 L/ha	Use higher rate for heavier weed populations
DUAL MAGNUM or DUAL II MAGNUM plus AATREX LIQUID 480	1.25 to 1.75 L/ha plus 2.1 to 3.1 L/ha	Use higher rate of atrazine in fine textured soils
Frontier® Max	756 to 963 mL/ha	Use the higher rate of Frontier Max on fine-textured soil
Frontier Max plus AATREX LIQUID 480	756 to 963 mL/ha plus 2.1 to 3.1 L/ha	Use the higher rate of atrazine and Frontier Max on fine-textured soil
PRIMEXTRA® II MAGNUM	3.0 – 4.0 L/ha	Use higher rate for heavier weed populations

Read and follow all precautions, restrictions, and directions on the labels of the tank mix partner herbicides.

CONSERVATION TILLAGE SOYBEANS:

GRAMOXONE LIQUID HERBICIDE with WETTING AGENT may be applied in tank mixture with preemergence soybean herbicides to control emerged annual grass and broadleaf weed seedlings and top growth of perennial grass and broadleaf weeds, and to provide residual control of weeds as claimed on the labels of the preemergence herbicides. Apply 2.5 L of GRAMOXONE LIQUID HERBICIDE with WETTING AGENT per hectare in 200 to 250 L water per hectare in combination with recommended rates of the following herbicides:

Product	Rate	Comments
DUAL MAGNUM or DUAL II MAGNUM	1.15 to 1.75 L/ha	Use higher rate for heavier weed populations
DUAL MAGNUM or DUAL II MAGNUM plus Sencor 500	1.15 to 1.75 L/ha plus 1.1 to 2.25 L/ha	Use higher rate for heavier weed populations
DUAL MAGNUM or DUAL II MAGNUM plus Sencor 75 DF	1.15 to 1.75 L/ha plus 0.75 to 1.5 kg/ha	Use higher rate for heavier weed populations
DUAL MAGNUM or DUAL II MAGNUM plus Sencor Solupak	1.15 to 1.75 L/ha plus 0.75 to 1.5 kg/ha	Use higher rate for heavier weed populations
DUAL MAGNUM or DUAL II MAGNUM plus Afolan® F	1.15 to 1.75 L/ha plus 1.6 to 2.5 L/ha	Use higher rate for heavier weed populations
DUAL MAGNUM or DUAL II MAGNUM plus Lorox DF	1.15 to 1.75 L/ha plus 1.75 to 2.25 kg/ha	Use higher rate for heavier weed populations
Broadstrike™ Dual™ Magnum™	1.56 L/ha	
Frontier Max	756 to 963 mL/ha	Use higher rate of Frontier Max on fine-textured or high organic soils
Afolan F	2.7 to 5.0 L/ha	Use higher rate for muck and clay soils
Lorox DF	2.25 to 4.5 kg/ha	Use higher rate for muck and clay soils
Sencor 500 F	1.1 to 2.25 L/ha	Apply after planting but no later than 3 days prior to crop emergence. Apply when weeds are less than 4 cm in height.
Sencor 75 DF	0.75 to 1.5 kg/ha	
Sencor Solupak	0.75 to 1.5 kg/ha	
Pursuit®	0.312 to 0.42 L/ha	

Read and follow all precautions, restrictions, and directions on the labels of the tank mix partner herbicides.

USE PRECAUTIONS:

To reduce runoff from treated areas into aquatic habitats, consider the characteristics and conditions of the site before treatment. Site characteristics and conditions that may lead to runoff include, but are not limited to: heavy rainfall, moderate to steep slope, bare soil, poorly draining soil (e.g., soils that are compacted or fine textured such as clay). Avoid application of this product 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.

DO NOT apply this product directly to aquatic areas.

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

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 ASAE medium classification.

DO NOT APPLY BY AIR.

BUFFER ZONES:

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, rangelands, riparian areas and shrublands), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands).

Buffer zones are not required for use on fruit crops and shelterbelts, or for interrow directed chemical weeding of vegetable, field and established nursery crops as this product must be applied with low boom spray equipment fitted with drift-eliminating shrouds or shields specifically designed to prevent herbicide contact with sensitive vegetation.

Method of Application	Crop	Buffer Zones (metres) required for the protection of:			
		Freshwater habitats of depths			Terrestrial Habitats
		Less than 1 m	1-3 m	Greater than 3 m	
Field Sprayer*	Conservation Tillage Soybeans	40	30	20	15
	All Other Field Crops	50	40	30	20

*Field sprayers fitted with drift-reducing devices can have their buffer zones reduced by 70% with the use of shrouds or 30% with the use of cones.

When a tank mixture is used, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture.

Resistance-Management Recommendations

For resistance management, GRAMOXONE LIQUID HERBICIDE with WETTING AGENT is a Group 22 herbicide. Any weed population may contain or develop plants naturally resistant to GRAMOXONE LIQUID HERBICIDE with WETTING AGENT and other Group 22 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 GRAMOXONE LIQUID HERBICIDE with WETTING AGENT or other Group 22 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 treated weed populations after herbicide application for signs of resistance development (for example, only one weed species on the herbicide label not controlled). If resistance is suspected, prevent weed seed production in the affected area if possible by an alternative herbicide from a different group. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.

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

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

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

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