

GROUP	15	HERBICIDE
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FRONTIER® HERBICIDE

For weed control in field corn, sweet corn, seed corn (inbred lines grown in Southern Ontario only), soybeans, dry common beans, dry bulb onions, transplanted cabbage, peanuts grown in Ontario, and established 1st year and 2nd year non-bearing grape vines

COMMERCIAL (AGRICULTURAL)

GUARANTEE: Dimethenamid 900 g/L

REGISTRATION NO. 23462

PEST CONTROL PRODUCTS ACT

**IN CASE OF EMERGENCY ENDANGERING LIFE OR PROPERTY
INVOLVING THIS PRODUCT, CALL DAY OR NIGHT
1-800-454-2673**



CAUTION

POISON

**WARNING - EYE IRRITANT AND
POTENTIAL SKIN SENSITIZER**

**READ THE LABEL AND BOOKLET BEFORE USING
KEEP OUT OF REACH OF CHILDREN. DO NOT FREEZE**

NET CONTENTS: 3 L to 10 L, 55 to 1000 L

BASF Canada Inc.
100 Milverton Drive
5th Floor
Mississauga, Ontario
L5R 4H1
1-877-371-2273

FRONTIER® is a registered trademark of BASF Corporation, used under license by BASF Canada Inc.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

Harmful if swallowed. Eye irritant. May cause skin sensitization reactions in certain individuals. Do not get in eyes, on skin, or on clothing. Avoid breathing spray mist. Wear goggles or face shield. Wear protective clothing (long sleeved shirt and pants, coveralls, chemical resistant gloves and rubber boots) while handling or using this product.

DO NOT apply by air. Reduce spray drift to areas adjacent to the treated crop by using correct spray pressure, water volume and boom height recommended for nozzles used. DO NOT spray under conditions of high wind. DO NOT plant winter wheat prior to 120 days following FRONTIER herbicide application. Refer to grazing restrictions under each crop section on this label.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's web site at www.croplife.ca.

FIRST AID

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

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

If 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.

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

2.2 TOXICOLOGICAL INFORMATION

FRONTIER herbicide is a potential skin sensitizer. If irritation develops, avoid further exposure. FRONTIER herbicide can cause moderate eye irritation.

This product contains petroleum distillates. Vomiting may cause aspiration pneumonia.

STORAGE

DO NOT FREEZE.

STORE UNDER HEATED WAREHOUSE CONDITIONS.

Do not contaminate water, food, or feed by storage or disposal.

DISPOSAL

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

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

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

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

NOTICE TO USER

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

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1.0 GENERAL INFORMATION

FRONTIER herbicide will control most annual grass weeds and certain broadleaf weeds in field corn, sweet corn, seed corn (inbred lines grown in Southern Ontario only), soybeans, dry common beans, transplanted cabbage, peanuts grown in Ontario, and established 1st year and 2nd year non-bearing grape vines. FRONTIER herbicide will also suppress yellow nutsedge (*Cyperus esculentus*) in dry bulb onions grown on muck soils when applied at the loop stage.

FRONTIER herbicide will provide most effective weed control when applied and subsequently incorporated into soil by rainfall or mechanical tillage prior to weed seedling emergence from soil. FRONTIER herbicide can be applied as a pre-plant incorporated or pre-emergence treatment in field corn, sweet corn, seed corn (inbred lines grown in Southern Ontario only), soybeans, dry common beans, and peanuts grown in Ontario. FRONTIER herbicide can also be applied as a pre-transplant treatment in transplanted cabbage, and an early post-emergence treatment in field corn.

FRONTIER herbicide can also be used for control of annual broadleaf weeds and grasses as a directed spray under the vines on established 1st year and 2nd year non-bearing grape vines.

FRONTIER herbicide can be mixed with other herbicides for additional weed control in field corn and soybeans only. FRONTIER herbicide tank mixes are also effective in minimum, reduced, or no-till systems in field corn and soybeans.

2.0 PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

Harmful if swallowed. Eye irritant. May cause skin sensitization reactions in certain individuals. Do not get in eyes, on skin, or on clothing. Avoid breathing spray mist. Wear goggles or face shield. Wear protective clothing (long sleeved shirt and pants, coveralls, chemical resistant gloves and rubber boots) while handling or using this product.

DO NOT apply by air. Reduce spray drift to areas adjacent to the treated crop by using correct spray pressure, water volume and boom height recommended for nozzles used. DO NOT spray under conditions of high wind. DO NOT plant winter wheat prior to 120 days following FRONTIER herbicide application. Refer to grazing restrictions under each crop section on this label.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's web site at www.croplife.ca.

2.1 FIRST AID

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

2.2 TOXICOLOGICAL INFORMATION

FRONTIER herbicide is a potential skin sensitizer. If irritation develops, avoid further exposure. FRONTIER herbicide can cause moderate eye irritation.

This product contains petroleum distillates. Vomiting may cause aspiration pneumonia.

2.3 STORAGE

DO NOT FREEZE.

STORE UNDER HEATED WAREHOUSE CONDITIONS.

Do not contaminate water, food, or feed by storage or disposal.

2.4 DISPOSAL

Recyclable Containers

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

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

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

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

Returnable-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 reuse this container for any other purpose.

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

2.5 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.

3.0 GENERAL APPLICATION INFORMATION

FRONTIER herbicide can be applied in pre-plant incorporated or pre-emergent applications in field corn, sweet corn, seed corn (inbred lines grown in Southern Ontario only), soybeans, dry common beans and peanuts grown in Ontario. FRONTIER herbicide can also be applied as a pre-transplant treatment in transplanted cabbage, and an early post-emergence treatment in field corn. FRONTIER herbicide can be used alone in field corn, sweet corn, soybeans, dry common beans, dry bulb onions, transplanted cabbage, peanuts grown in Ontario and established 1st year and 2nd year non-bearing grape vines, or at labeled rates in tank mixes to control additional weeds in field corn and soybeans.

DO NOT apply this product directly to aquatic habitats (such as lakes, rivers, sloughs, ponds, coulees, prairie potholes, creeks, marshes, streams, reservoirs, ditches and wetlands), estuaries or marine habitats.

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

Buffer Zones

A buffer zone of 15 metres* is required between the point of direct application and the closest downwind edge of:

- (1) sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, pastures, rangelands and shrublands),
- (2) sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, coulees, prairie potholes, creeks, marshes, streams, reservoirs and wetlands), and
- (3) estuaries or marine habitats.

* For field sprayers, buffer zones can be reduced by 70% when using shrouds or 30% when using cones.

3.1 ENVIRONMENTAL HAZARDS

This product contains aromatic petroleum distillates which are toxic to aquatic organisms.

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, fine textured or low in organic matter 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 (buffer zone) between the treated area and the edge of the water body.

3.2 MIXING AND SPRAYING INSTRUCTIONS

- Spray pressure -- 200 - 300 kPa
- Spray volume -- minimum of 170 litres per hectare for Eastern Canada and minimum of 100 L/ha for Prairie Provinces.
- Keep bypass line on or near bottom of tank to minimize foaming.
- Use 16 mesh suction screen, 50 mesh elsewhere on sprayer.
- Select proper nozzle to avoid spraying fine mist. For best results, use flat fan or flood jet nozzle.
- Mix FRONTIER herbicide or labeled tank mixes as follows:
 1. Place a 20 to 35 mesh screen or wetting basket over filling port.
 2. Through the screen fill sprayer tank one-half full with water. Start gentle agitation.
 3. If wettable powder or water dispersible granule tank mix partner is used, make a slurry, and add it slowly through the screen into the tank. Continue agitation.
 4. If liquid flowable tank mix partner is used, pre-mix one part liquid flowable with one part water. Add diluted mixture slowly through the screen into the tank.
 5. Fill tank 9/10 full with water and add FRONTIER herbicide and other emulsifiable concentrate or solution tank mix partners.

6. Top off tank mix with water, maintain agitation and spray. If spray mixture is allowed to settle at any time, thorough gentle agitation is required to re-suspend the mixture before spraying is resumed.
7. Do not let stand without agitation.

3.3 WEEDS CONTROLLED

For Eastern Canada, FRONTIER herbicide alone applied as directed will control the following weeds:

Foxtail (green, yellow, giant)	Fall panicum
Crabgrass (smooth, large)	Redroot pigweed*
Old witchgrass	Eastern black nightshade**
Barnyard grass	Nutsedge, yellow***

* pre-plant incorporated (1.25 - 1.4 L/ha) or pre-emergence (1.4 L/ha) only.

** pre-plant incorporated or pre-emergence only (1.4 L/ha).

*** pre-plant incorporated only (1.4 L/ha. Lower rates provide suppression only)

For soybeans grown in Eastern Canada, FRONTIER herbicide can be applied as a single pre-emergence application at a rate of 1.4 L/ha for suppression of tall waterhemp.

For Prairie Provinces, FRONTIER herbicide alone applied as directed will control green foxtail.

4.0 FACTORS AFFECTING FRONTIER HERBICIDE PERFORMANCE

If drought conditions persist after a pre-plant incorporated or pre-emergent application, annual grass control may not be adequate.

Rainfall is required within 7 to 10 days of treatment to activate and move FRONTIER herbicide into the soil zone. If dry conditions persist a shallow cultivation or the use of a rotary hoe is necessary to move the chemical into moist soil and control weed escapes. If cultivation is necessary because of soil crusting or compaction, tillage should be shallow to minimize dilution of the herbicide.

5.0 CORN (Eastern Canada Only)

Notes

- DO NOT apply to sweet corn, popcorn or field corn grown for seed (except inbred lines grown in southern Ontario only).
- Refer to section 4.0 Factors Affecting FRONTIER Herbicide Performance.
- Consult the labels of the product to be tank mixed with FRONTIER herbicide for specific instructions regarding application rate for specific soil type, precautions and other restrictions.
- DO NOT graze or feed the treated immature corn to livestock prior to 40 days after application of FRONTIER herbicide.

5.1 CONSERVATION TILLAGE SYSTEMS

The application of FRONTIER herbicide tank mixes is recommended for use in minimum, reduced or no-till systems for control of annual grasses, broadleaf weeds and perennial weeds. These tank mixes can be applied pre-plant, or after seeding but before crop emergence (pre-emergence). No incorporation of these tank mixes is recommended.

Apply FRONTIER herbicide at 1.1 to 1.4 L/ha in tank mix with the appropriate tank mix partner. Use the higher label rate of FRONTIER herbicide on fine-textured or high-organic soils for heavier weed problems.

Timing: Pre-Plant

Weeds controlled	Tank mix partner	Rate per hectare
Annual grasses and annual broadleaf weeds	Aatrex* 90 herbicide	1.1 – 1.7 kg
Annual grasses, emerged annual and perennial weeds	Roundup	2.5 L
Annual grasses, broadleaf weeds, emerged annual or perennial weeds	Roundup + Banvel II herbicide or Roundup + Marksman herbicide or Roundup + Aatrex* 90 herbicide	2.5 + 1.25 L 2,5 + 4,5 L 2.5 + 1.1-1.7 kg

* Other atrazine formulations may require rate calculation adjustment according to percent of active ingredient.

Timing: Pre-emergence

Weeds controlled	Tank mix partner	Rate per hectare
Annual grasses and broadleaf weeds	Banvel II herbicide or Marksman herbicide or Aatrex* 90 herbicide	1.25 L 4.5 L 1.1 - 1.7 kg
Annual grasses, emerged annual or perennial weeds	Roundup	2.5 L
Annual grasses, broadleaf weeds, emerged annual or perennial weeds	Roundup + Banvel II herbicide or Roundup + Marksman herbicide or Roundup + Aatrex* 90 herbicide	2.5 L + 1.25 L 2.5 L + 4.5 L 2.5 L + 1.1-1.7 kg

* Other atrazine formulations may require rate calculation adjustment according to percent of active ingredient.

Notes

1. When a tank mixture containing Roundup is used, the Roundup susceptible weeds must be emerged at time of application.
2. The tank mix FRONTIER herbicide + Roundup, applied pre-plant or pre-emergence, can be followed by a sequential early post-emergence application of Banvel II herbicide at 1.25 L/ha to improve broadleaf weed control.

3. Use the higher label rate of FRONTIER herbicide on fine-textured or high-organic soils and for heavier weed problems.
4. Consult labels of all tank mix components. Follow the most restrictive precautions, directions and recropping/rotating limitations that appear on all product labels.

5.2 FIELD CORN

FRONTIER herbicide can be used alone or in tank mixes listed for general weed control in field corn when applied in pre-plant incorporated, pre-emergence or early post-emergence treatments.

5.2.1 PRE-PLANT INCORPORATED TREATMENT

Apply FRONTIER herbicide at the higher label rate on fine textured or high organic soils and for heavier weed problems.

RATE PER HECTARE IN LITRES 1.25 to 1.4 L

Apply FRONTIER herbicide as a broadcast treatment and incorporate using a harrow, rolling cultivator or other implement capable of giving uniform shallow incorporation into the top 5 cm of soil within 7 days of planting. Avoid deeper incorporation or reduced weed control and/or crop injury may result. Immediate incorporation after application is not necessary.

FRONTIER herbicide can be used with the following tank mixes.

Tank mix partner	Rate per hectare
Aatrex* Nine-0 (90 WG) herbicide	1.1 - 1.7 kg
Bladex 90 DF herbicide	2.0 - 3.0 kg
Bladex Liquid (480 g/L) herbicide	3.75 - 5.5 L

* Other atrazine formulations may require rate calculation adjustment according to percent of active ingredient.

5.2.2 PRE-EMERGENCE TREATMENT

Apply FRONTIER herbicide at the higher rates illustrated in the Table below on fine textured or high organic soils and for heavier weed problems.

RATE PER HECTARE IN LITRES			
Organic Matter			
Soil Type	Less than 3 %	3 to 6 %	7 to 10 %
Coarse Textured Soils	1.1	1.1	1.25
Medium Textured Soils	1.1	1.25	1.4
Fine Textured Soils	1.1	1.25	1.4

TANK MIXES

Tank mix partner	Rate per hectare
Aatrex* Nine-0 (90 WG) herbicide	1.1 - 1.7 kg
Banvel II herbicide	1.25 L
Bladex 90 DF herbicide	2.0 - 3.0 kg
Bladex liquid (480 g/L) herbicide	3.75 - 5.5 L
Marksman herbicide	4.5 L

* Other atrazine formulations may require rate calculation adjustment according to percent of active ingredient.

5.2.3 EARLY POST-EMERGENCE TREATMENT

Do not apply beyond the 2-leaf stage of weeds. Apply from corn emergence up to and including the 3-leaf stage of corn.

Do not apply within 100 days of harvest.

Notes:

- Some leaf burn may occur, but yield will not be affected.
- DO NOT mix FRONTIER herbicide with fluid fertilizers, oils, oil concentrates or surfactants when applying post-emergent as severe crop injury may occur.
- DO NOT use Bladex Liquid herbicide in tank mix with FRONTIER herbicide applied early post-emergent.

Apply FRONTIER herbicide at higher rates on fine textured or high organic soils as illustrated in the Table below and for heavier weed problems.

RATE PER HECTARE IN LITRES			
Organic Matter			
Soil Type	Less than 3 %	3 to 6 %	7 to 10 %
Coarse Textured Soils	1.1	1.25	1.25
Medium Textured Soils	1.1	1.25	1.4
Fine Textured Soils	1.1	1.25	1.4

TANK MIXES

Tank mix partner	Rate per hectare	Corn stage
Aatrex* Nine-0 (90 WG) herbicide	1.7 kg	emergence to 3-leaf
Banvel II herbicide	1.25 L	emergence to 3-leaf
Bladex 90 DF herbicide	2.5 kg	emergence to 3-leaf
Marksman herbicide	3.7 – 4.5 L	emergence to 3-leaf

* Other atrazine formulations may require rate calculation adjustment according to percent of active ingredient.

5.3 SWEET CORN - Eastern Canada only

FRONTIER herbicide can only be used alone in pre-plant incorporated or pre-emergence treatments.

5.3.1 PRE-PLANT INCORPORATED TREATMENT

Apply FRONTIER herbicide at the higher label rate on fine textured or high organic soils and for heavier weed problems.

RATE PER HECTARE IN LITRES 1.25 to 1.4 L

Apply FRONTIER herbicide as a broadcast treatment and incorporate using a harrow, rolling cultivator or other implement capable of giving uniform shallow incorporation into the top 5 cm of soil within 7 days of planting. Avoid deeper incorporation or reduced weed control and/or crop injury may result. Immediate incorporation after application is not necessary.

5.3.2 PRE-EMERGENCE TREATMENT

Apply FRONTIER herbicide at the higher rates illustrated in the Table below on fine textured or high organic soils and for heavier weed problems.

RATE PER HECTARE IN LITRES			
Organic Matter			
Soil Type	Less than 3 %	3 to 6 %	7 to 10 %
Coarse Textured Soils	1.1	1.1	1.25
Medium Textured Soils	1.1	1.25	1.4
Fine Textured Soils	1.1	1.25	1.4

5.4 SEED CORN – Inbred Lines Grown in Southern Ontario only

FRONTIER herbicide can only be applied once a year by ground and pre-emergent at the rate of 1.0 kg ai/ha on soils of lower organic matter and at the rate of 1.125 kg/ha on medium and fine textured soils.

Consult the seed supplier for information on the tolerance of seed corn inbred lines prior to the use of FRONTIER herbicide.

6.0 CORN - Prairie Provinces of Western Canada only

Notes

- DO NOT apply to sweet corn, popcorn or field corn grown for seed.
- Refer to section 4.0 Factors Affecting FRONTIER Herbicide Performance.
- Consult the labels of the product to be tank mixed with FRONTIER herbicide for specific instructions regarding application rate for specific soil type, precautions and other restrictions.
- DO NOT graze or feed the treated immature corn to livestock prior to 40 days after application of FRONTIER herbicide.

6.1 FIELD CORN

FRONTIER herbicide can be used alone when applied in the spring in pre-plant incorporated treatments.

6.1.1 PRE-PLANT INCORPORATED TREATMENT

Apply FRONTIER herbicide at the higher label rate on fine textured or high organic soils and for heavier weed problems.

RATE PER HECTARE IN LITRES
1.25 to 1.4 L

Apply FRONTIER herbicide as a broadcast treatment and incorporate using a harrow, rolling cultivator or other implement capable of giving uniform shallow incorporation into the top 5 cm of soil within 7 days of planting. Avoid deeper incorporation or reduced weed control and/or crop injury may result. Immediate incorporation after application is not necessary.

7.0 LIQUID FERTILIZER

FRONTIER herbicide may be applied in a nitrogen solution or complete liquid fertilizer carrier as a replacement for water for pre-plant incorporated or pre-emergence application. DO NOT use fertilizer carriers for post emergence application. Follow the tank mix partner product label for instructions regarding application in liquid fertilizers. Compatibility of FRONTIER herbicide with the liquid fertilizer should be determined by mixing a small quantity of herbicide with a proportional quantity of liquid fertilizer in a jar test prior to loading the spray tank.

8.0 DRY BULK FERTILIZER

For pre-plant incorporated application, dry bulk fertilizers may be impregnated with FRONTIER herbicide or FRONTIER herbicide plus atrazine. The herbicide should be sprayed directly onto the fertilizer using a common dry bulk fertilizer blend. A highly absorptive powder such as a diatomaceous earth or finely powdered clay may be applied if the herbicide/fertilizer mixture is excessively wet. A minimum of 225 kg per hectare of dry bulk fertilizer should be applied.

The herbicide/fertilizer mixture should be incorporated immediately after application. DO NOT impregnate FRONTIER herbicide on nitrate fertilizers, superphosphates or limestone.

9.0 SOYBEANS - Eastern Canada only

Notes

- Soybeans should be seeded at least 4 cm deep or crop injury may result.
- DO NOT apply FRONTIER herbicide if soybeans have emerged.
- Refer to section 4.0 Factors Affecting FRONTIER Herbicide Performance.
- Consult the labels of the product to be tank mixed with FRONTIER herbicide for specific instructions regarding soil type and other restrictions.
- DO NOT graze the treated crop or feed soybean forage, hay or straw to livestock; sufficient data are not available to support such use.

9.1 CONSERVATION TILLAGE SYSTEMS

The application of FRONTIER herbicide + Roundup tank mix is recommended for use in minimum, reduced or no-till systems for control of annual grasses, broadleaf weeds and perennial weeds. This tank mix can be applied pre-plant or after seeding but before crop emergence. The Roundup susceptible weeds must be emerged at time of application. No incorporation of this tank mix is recommended.

Apply FRONTIER herbicide at 1.1 to 1.4 L/ha with 2.5 L/ha Roundup. Use the higher label rate of FRONTIER herbicide on fine-textured or high-organic soils and for heavier weed problems.

FRONTIER herbicide can be used alone or in tank mixes listed for general weed control in soybeans when applied in pre-plant incorporated and pre-emergence treatments.

9.1.1 PRE-PLANT INCORPORATED TREATMENT

Apply FRONTIER herbicide at the higher label rate on fine textured or high organic soils and for heavier weed problems.

RATE PER HECTARE IN LITRES
1.25 - 1.4 L

Apply FRONTIER herbicide as a broadcast treatment and incorporate using a harrow, rolling cultivator or other implement capable of giving uniform shallow incorporation into the top 5 cm of soil within 7 days of planting. Avoid deeper incorporation or reduced weed control and/or crop injury may result. Immediate incorporation after application is not necessary.

TANK MIXES

Tank mix partner	Rate per hectare
Lexone DF	540 - 750 g
Sencor 500 F	850 mL – 1.1 L
Sencor 75 DF	550 - 750 g

The 1.1 - 1.25 L/ha rate of FRONTIER herbicide can be tank mixed with 312 mL/ha of Pursuit herbicide on medium and coarse textured soils only.

9.1.2 PRE-EMERGENCE TREATMENT

Apply FRONTIER herbicide at the higher label rate on fine textured or high organic soils as illustrated in the Table below and on fields with heavier weed problems.

RATE PER HECTARE IN LITRES			
Organic Matter			
Soil Type	Less than 3 %	3 to 6 %	7 to 10 %
Coarse Textured Soils	1.1	1.1	1.25
Medium Textured Soils	1.1	1.25	1.4
Fine Textured Soils	1.1	1.25	1.4

TWO PRODUCT TANK MIXES

Tank mix partner	Rate per hectare
Afolan F	1.9 – 2.3 L
Lexone DF	540 - 750 g
Lorox DF	1.9 – 2.3 kg
Pursuit	312 - 420 mL
Sencor 500 F	850 mL – 1.1 L
Sencor 75 DF	550 - 750 g

THREE PRODUCT TANK MIXES (Rate per ha)

Product	Soil Texture			
	Medium Soils (loam, silt loam, silt, sandy clay, sandy clay loam)		Heavy Soils (silt clay, silt clay loam, clay, clay loam)	
	2 - 4% Organic Matter	Over 4% Organic Matter	2 - 4% Organic Matter	Over 4% Organic Matter
	Rate per hectare			
SENCOR 75DF + LOROX DF	0.48-0.56 kg + 1.4-1.5 kg	0.56-0.67 kg + 1.5-1.7 kg	0.67-0.75 kg + 1.7-1.8 kg	0.67-0.75 kg + 1.8-2.0 kg
SENCOR 75DF + AFOLAN F	0.48-0.56 kg + 1.5-1.6 L	0.56-0.67 kg + 1.6-1.8 L	0.67-0.75 kg + 1.8-1.9 L	0.67-0.75 kg + 1.9-2.1 L
LEXONE DF + LOROX DF	0.48-0.56 kg + 1.4-1.5 kg	0.56-0.67 kg + 1.5-1.7 kg	0.67-0.75kg + 1.7-1.8 kg	0.67-0.75 kg + 1.8-2.0 kg
LEXONE DF + AFOLAN F	0.48-0.56 kg + 1.5-1.6 L	0.56-0.67 kg + 1.6-1.8 L	0.67-0.75 kg + 1.8-1.9 L	0.67-0.75 kg + 1.9-2.1 L
SENCOR 500F + LOROX DF	0.72-0.84 L + 1.4-1.5 kg	0.84-1.0 L + 1.5-1.7 kg	1.0-1.12 L + 1.7-1.8 kg	1.0-1.12 L + 1.8-2.0 kg
SENCOR 500F + AFOLAN F	0.72-0.84 L + 1.5-1.6 L	0.84-1.0 L + 1.6-1.8 L	1.0-1.12 L + 1.8-1.9L	1.0-1.12 L + 1.9-2.1 L

10.0 DRY COMMON BEANS

Apply FRONTIER herbicide alone as a pre-plant incorporated or single pre-emergence treatment in dry common beans (*Phaseolus vulgaris* only).

Dry common bean varieties may vary in their tolerance to herbicides, including FRONTIER herbicide. Since not all dry common bean varieties have been tested for tolerance to FRONTIER herbicide, first use of FRONTIER 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 FRONTIER herbicide.

Research indicates that the incorporation of FRONTIER herbicide, particularly in the seed zone, will minimize the potential for any crop injury. This can be accomplished by applying the product prior to planting.

Notes

- Beans should be seeded at least 4 cm deep or crop injury may occur.
- Do not apply FRONTIER herbicide if beans have emerged.
- Refer to section 4.0 Factors Affecting FRONTIER Herbicide Performance.
- Do not graze the treated crop or feed bean forage, hay or straw to livestock; sufficient data are not available to support such use.

10.1 PRE-PLANT INCORPORATED TREATMENT

Apply FRONTIER herbicide at the higher label rate on fine textured or high organic soils and for heavier weed problems.

RATE PER HECTARE IN LITRES 1.25 - 1.4 L

Apply FRONTIER herbicide as a broadcast treatment and incorporate using a harrow, rolling cultivator or other implement capable of giving uniform shallow incorporation into the top 5 cm of soil within 7 days of planting. Avoid deeper incorporation or reduced weed control and/or crop injury may result. Immediate incorporation after application is not necessary.

10.2 PRE-EMERGENCE TREATMENT

Apply FRONTIER herbicide at the higher label rate on fine textured or high organic soils as illustrated in the Table below and on fields with heavier weed problems.

RATE PER HECTARE IN LITRES			
Organic Matter			
Soil Type	Less than 3 %	3 to 6 %	7 to 10 %
Coarse Textured Soils	1.1	1.1	1.25
Medium Textured Soils	1.1	1.25	1.4
Fine Textured Soils	1.1	1.25	1.4

11.0 Transplanted Cabbage

FRONTIER herbicide can be applied as a single pre-transplant treatment at the rate of 1.1-1.4 L/ha to control annual grass weeds and certain broadleaf weeds in transplanted cabbage. Apply FRONTIER herbicide as a soil application prior to transplanting of cabbage and before weed emergence.

Do not apply within 60 days of harvest.

12.0 Peanuts Grown in Ontario

Apply FRONTIER herbicide alone as a single pre-plant incorporated treatment at the rate of 1.25 L/ha or as a single pre-emergence treatment at the rate of 1.1 to 1.25 L/ha to control labelled annual grass weeds and certain broadleaf weeds in peanuts grown in Ontario.

Do not apply within 80 days of harvest.

Notes

- Peanuts should be seeded at least 4 cm deep or crop injury may occur.
- DO NOT apply FRONTIER herbicide if peanuts have emerged.
- Refer to Section 4.0 Factors Affecting FRONTIER Herbicide Performance.

13.0 NON-BEARING GRAPE VINES

FRONTIER herbicide can be applied as a single application directed under the vines at the rate of 1.26 kg ai/ha with a minimum 2-year pre-harvest interval (PHI) when applied to 1st year non-bearing grape vines and a minimum of 1-year PHI when applied to 2nd year non-bearing grape vines.

14.0 DRY BULB ONIONS

FRONTIER herbicide will suppress yellow nutsedge (*Cyperus esculentus*) when applied to dry bulb onions grown on muck soils only. Apply as a single application at the rate of 1.87 L product/ha (1.68 kg a.i./ha) to dry bulb onions at the loop stage and before yellow nutsedge emerges.

Pre-harvest interval (PHI) of 60 days.

DO NOT apply more than one application of 1.87 L FRONTIER herbicide/ha per season.

DO NOT apply during periods of dead calm or when winds are gusty.

Buffer Zones

Overspray or drift to sensitive habitats should be avoided. A buffer zone of 25 metres* is 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, pastures, rangelands and shrublands).

A buffer zone of 25 metres* is required between the point of direct application and the closest downwind edge of sensitive aquatic habitats (such as lakes, rivers, sloughs, ponds, coulees, prairie potholes, creeks, marshes, streams, reservoirs and wetlands), and estuarine/marine habitats.

*For field sprayers, buffer zones can be reduced by 70% when using shrouds or 30% when using cones.

DO NOT contaminate sensitive habitats when cleaning and rinsing spray equipment or containers.

14.1 ROTATIONAL CROP RESTRICTIONS

The table below outlines the interval required between the application of **FRONTIER** herbicide and seeding of rotational crops.

Crop	Crop Rotation Interval
Carrot	11 months
Celery (transplanted)	11 months
Onion	11 months

Warning: Early crop development may be delayed for carrots and celery, however, this should not have a negative effect on yield.

15.0 RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, FRONTIER herbicide is a Group 15 herbicide. Any weed population may contain or develop plants naturally resistant to FRONTIER 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 FRONTIER herbicide or other Group 15 herbicides with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group when such use is permitted.
- Herbicide use should be based on an IPM program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical), cultural, biological and other chemical control practices.
- Monitor treated weed populations for resistance development.
- Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact BASF at 1-877-371-2273.

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