

Approved English Label  
Sub. No. 2025-3936  
2025-10-21

**GROUP**

**9**

**HERBICIDE**

## **SMOKE 540 2.0**

**Liquid Herbicide**

**COMMERCIAL**



**POISON**

**WARNING - EYE AND SKIN IRRITANT**

**REGISTRATION NO. 33697 PEST CONTROL PRODUCTS ACT**

**ACTIVE INGREDIENT:** Glyphosate, 540 grams acid equivalent per litre, present as potassium salt.

Water Soluble Herbicide for non-selective weed control

**READ THE LABEL AND ATTACHED BROCHURE BEFORE USING.**

**For Emergency Medical Assistance (Human or Animal) contact Rocky Mountain Poison Control at 1-866-767-5041.**

**For Chemical Emergency Assistance (Spill, Leak, Fire or Accident) contact CHEMTREC at 1-800-424-9300 (North America) or 1-703-527-3887 (International).**

**NET CONTENTS: 1 L to 1000 L**

Farmer's Business Network Canada, Inc.  
PO Box 5607  
High River, Alberta  
T1V 1M7  
1-844-200-FARM (3276)

## PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

HARMFUL IF SWALLOWED.

HARMFUL IF INHALED.

CAUSES EYE AND SKIN IRRITATION.

Avoid contact with eyes, skin or clothing.

Avoid inhaling spray mist.

Wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, socks and chemical resistant footwear during mixing, loading, application, clean-up and repair.

Gloves are not required during application within a closed cab. In addition, wear protective eyewear (goggles or face shield) during mixing and loading.

The restricted entry interval is 12 hours after application for all agricultural uses.

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 directions, temperature inversions, application equipment and sprayer settings.

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 website at: [www.croplife.ca](http://www.croplife.ca).

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.

## FIRST AID

**If swallowed:** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. 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 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.

**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.

## TOXICOLOGICAL INFORMATION

Treat symptomatically.

## ENVIRONMENTAL PRECAUTIONS

- **TOXIC** to aquatic organisms and non-target terrestrial plants. Observe spray 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 filter strip between the treated area and the edge of the water body.

## PHYSICAL OR CHEMICAL HAZARDS

Spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminum, fiberglass, plastic and plastic-lined steel containers. **DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS.** This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

**In case of an emergency involving this product, call:**

Rocky Mountain Poison Control at 1-866-767-5041

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

For additional information on this or other Farmer's Business Network Canada, Inc. agricultural products, call 1-844-200-FARM (3276).

## STORAGE

Store this product away from food or feed. Soak up small amounts of spill with absorbent clays.

## 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.

### RETURNABLE CONTAINERS:

DO NOT reuse this container for any purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

### 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 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.

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**9**

**HERBICIDE**

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# Smoke 540 2.0

## 1.0 PRODUCT DESCRIPTION

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

### **CROPLAND USES INCLUDE:**

In cropping systems before planting of all crops; in minimum tillage systems; postemergent in TruFlex™ Roundup Ready® canola, Roundup Ready® 2 Yield soybeans, Roundup Ready® 2 Xtend™ soybeans, Roundup Ready® canola, soybean, corn and sugar beet; preharvest applications in wheat, barley, oats, canola (rapeseed), flax (including low linolenic acid varieties), peas, lentils, dry beans, soybeans, chickpeas, dried lupin, dried fava beans, canary seed and forages; in pasture renovation; in forage, legume and grass establishments; in tree crops including apple, pear, cherry, plum, peach, nectarines, apricot, filbert, hazelnut, walnut, chestnut, Japanese heartnut; in grapes, cranberries, blueberries and strawberry; in sugar beets; in asparagus; in North American ginseng; in tree plantings; and grasses for seed production.

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

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

Not for relabelling or repackaging.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Roundup Ready®, Roundup Ready 2 Xtend®, Transorb®, VaporGrip® and XtendiMax® are registered trademarks of Bayer Group. Used under license. ©2020 Bayer Group. All rights reserved.

## 2.1 EMERGENCY NUMBERS

**In case of an emergency involving this product, call:**

Rocky Mountain Poison Control at 1-866-767-5041

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

## 2.2 INFORMATION

For additional information on this or other Farmer's Business Network Canada, Inc. agricultural products, call: 1-844-200-FARM (3276).

## 3.1 PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

HARMFUL IF SWALLOWED.  
HARMFUL IF INHALED.  
CAUSES EYE AND SKIN IRRITATION.  
Avoid contact with eyes, skin or clothing.  
Avoid inhaling spray mist.

Wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, socks and chemical resistant footwear during mixing, loading, application, clean-up and repair. Gloves are not required during application within a closed cab. In addition, wear protective eyewear (goggles or face shield) during mixing and loading.

The restricted entry interval is 12 hours after application for all agricultural uses.

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 website at: [www.croplife.ca](http://www.croplife.ca)

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.

### 3.2 FIRST AID

**If swallowed:** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. 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 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.

**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.

### 3.3 TOXICOLOGICAL INFORMATION

Treat symptomatically.

### 3.4 ENVIRONMENTAL PRECAUTIONS

• **TOXIC** to aquatic organisms and non-target terrestrial plants. Observe spray 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.

### 3.5 PHYSICAL OR CHEMICAL HAZARDS

Spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminum, fiberglass, plastic and plastic-lined steel containers. **DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS.** This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

### 3.6 STORAGE

Store this product away from food or feed. Soak up small amounts of spill with absorbent clays.

### 3.7 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.

#### RETURNABLE CONTAINERS:

DO NOT reuse this container for any purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

#### 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 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.

SPECIMEN

**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.

## DIRECTIONS FOR USE

### 4.0 GENERAL INFORMATION

Glyphosate is not to be applied using hand-wicking or hand-daubing methods.

Do not apply this product using aerial spray equipment except under conditions as specified within this booklet.

Observe spray buffer zones specified in Section 5.3.

Smoke 540 2.0, a water soluble liquid, mixes readily with water for application as a foliage spray for the control or destruction of most herbaceous plants. It may be applied through most standard industrial or field type sprayers after dilution and thorough mixing with water in accordance with the booklet instructions.

This herbicide moves through the plant from the point of foliage contact to and into the root system. Visible effects on most annual weeds occur within 2 to 4 days but on most perennial weeds may not occur until 7 to 10 days. Extremely cool or cloudy weather at treatment time may slow down activity of this product and delay visual effects of control. Visible effects are a gradual wilting and yellowing of the plant which advances to complete browning of above ground growth and deterioration of underground plant parts.

Delay application until vegetation has emerged to the stages described for control of such vegetation under the “**Annual and Perennial Weed Control**” (section 7.0 and 8.0) to provide adequate leaf surface to receive the spray. Unemerged plants arising from underground rhizomes or root stocks of perennials will not be affected by the spray and will continue to grow. For this reason best control of most perennial weeds is obtained when treatment is made at late growth stages approaching maturity.

Always use the higher rate of this product per hectare within the recommended range when weed growth is heavy or dense, or weeds are growing in an undisturbed (noncultivated) area.

Do not treat weeds under poor growing conditions such as drought stress, disease or insect damage, as reduced weed control may result. Reduced results may also occur when treating weeds heavily covered with dust.

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

Rainfall occurring within 60 minutes of treatment may result in reduced weed control. Heavy rainfall immediately after application may wash the chemical off the foliage and a repeat treatment may be required. Do not apply if rainfall is forecast for the time of application.

Do not mix with any surfactant, pesticide, herbicide oils or any other material other than water unless specified in this booklet. For best results, spray coverage should be uniform and complete. Do not spray weed foliage to the point of run-off.

## **RESISTANCE-MANAGEMENT RECOMMENDATIONS**

For resistance management, Smoke 540 2.0 is a Group 9 herbicide. Any weed population may contain or develop plants naturally resistant to Smoke 540 2.0 and other Group 9 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance:

- Where possible, rotate the use of Smoke 540 2.0 or other Group 9 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 or to report suspected resistance, contact Farmer's Business Network Canada, Inc. at 1-844-200-FARM (3276).

## 5.0 MIXING AND APPLICATION

### 5.1 PRECAUTIONS

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

**APPLY THESE SPRAY SOLUTIONS IN PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF DELIVERING DESIRED VOLUMES.**

**DO NOT USE IN GREENHOUSES. REDUCED RESULTS MAY OCCUR IF WATER CONTAINING SOIL IS USED, SUCH AS WATER FROM PONDS AND UNLINED DITCHES.**

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

Clean sprayers and parts immediately after using this product by thoroughly flushing with water.

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

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 directions, temperature inversions, application equipment and sprayer settings.

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

### 5.2 MIXING AND APPLICATION EQUIPMENT

#### MIXING WITH WATER

For ground or industrial type sprayers, fill the spray tank with one-half the required amount of water. Add the proper amount of herbicide, see “**Weed Control**” (sections 7.1 and 8.1) and mix well before adding the remaining portion of water. Placing the filling hose below the surface of the liquid solution will prevent excessive foaming. Removing hose from tank immediately will avoid back siphoning into water source. Use of mechanical agitators may cause excessive foaming. Bypass lines should terminate at the bottom of the tank.

For use in knapsack sprayers, it is suggested that the proper amount of this herbicide be mixed with water in a larger container. Fill sprayer with the mixed solution.

## TANK MIXING PROCEDURE

**The following steps should be followed when adding tank mix partners, using a herbicide loading system or adding product directly into the tank:**

1. Fill spray tank 3/4 full of water.
2. Start agitation and run for entire mixing and spraying operation.
3. Add required amount of the tank mix partner.
4. Flush herbicide loading tank and herbicide containers with water.
5. If using a herbicide loading system - ensure that the loading tank and lines to the pump are empty and flushed out with water before adding tank mix partner.
6. Add required amount of Smoke 540 2.0.
7. Flush herbicide loading tank and herbicide containers with water.
8. If using a herbicide loading system - ensure that the loading tank and lines to the pump are flushed with water and empty before starting spray operation.

Always start and end the mixing and spraying operation with a clean system.

## APPLICATION EQUIPMENT

### BOOM EQUIPMENT

**For control of perennial weeds and woody brush and trees listed in this booklet using conventional boom equipment** – apply this product in 50 to 300 litres of clean water per hectare as a broadcast spray using no more than 275 kPa pressure. See “Weed Control” (sections 7.1 and 8.1) for rates to control specific weeds.

**For control of annual weeds listed in this booklet using conventional boom equipment** – Apply this product in 50 to 100 litres of clean water per hectare as a broadcast spray, except as otherwise stated on this label using no more than 275 kPa pressure. See “Weed Control” (sections 7.1 and 8.1) for rates to control specific weeds.

### HAND HELD AND HIGH VOLUME EQUIPMENT (use coarse sprays only)

**For control of weeds and woody brush and trees listed in the “Weed Control” section 6.0 of this label using knapsack sprayers or high volume spraying equipment utilizing handguns or other suitable nozzle arrangements** – Unless otherwise specified, make a 0.67 percent solution of this product in water (0.67 litres of this product in 100 litres of water) and apply to foliage of vegetation to be controlled. For best results, use a 1.34 percent solution (1.34 litres of this product in 100 litres of water) on harder to control perennials such as field bindweed, hemp dogbane, milkweed and Canada thistle.

Applications should be made on a spray-to-wet basis. Spray coverage should be uniform and complete. Do not spray to point of run-off. Handgun applications should be properly directed to avoid spraying desirable plants.



## SELECTIVE EQUIPMENT

Selective equipment such as **WIPER** and **ROLLER** applicators can be used for weed control in soy and dry beans, orchards, vineyards, cranberries, strawberries and non-crop areas. For information regarding use of this product with selective equipment, refer to “**Selective Equipment**” (section 9.12).

## AERIAL EQUIPMENT

Do not use human flaggers.

Aerial application can only be used for weed control in preharvest situations. Refer to sections 5.3, and 9.9.2 for more information.

### Directions for use

Apply only by fixed-wing or rotary aircraft which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label. Ensure that the maximum boom width does not exceed 65% of the wing span. Nozzle type, size and orientation must be configured to deliver a droplet size VMD in the coarse (400 – 600 microns) or very coarse (600 - 1000) range. Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate(s) recommended for aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices, or equivalent electronic positioning systems (GPS). The use of spotter planes is recommended.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. **PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR IS MOST SUSCEPTIBLE.** The maintenance of an organic coating (paint) which meets aerospace specification MIL-C-38412 may prevent corrosion.

### Use Precautions

Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in the *National Aerial Pesticide Application Manual*, developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides.

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified spray buffer zones should be observed.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Do not apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. Do not spray when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as

shelter-belt) or aquatic habitat.

Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure.

### **Operator Precautions**

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking.

Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

### **Product Specific Precautions**

Read and understand the entire label before opening this product. If you have questions, call Farmer's Business Network Canada, Inc. at 1-844-200-FARM (3276) or obtain technical advice from the distributor or your provincial agricultural representative.

Application of this specific product must meet and/or conform to the following:

Volume: Apply the recommended rate in a minimum spray volume of 30-100 litres per hectare.

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) coarse classification. Boom height must be 60 cm or less above the crop or ground.

Airblast or mist blower application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** direct spray above plants to be treated. **DO NOT** apply when wind speed is greater than 16 km/h at the application site as measured outside of the treatment area on the upwind side. For airblast applications, turn off outward pointing nozzles at row ends and outer rows.

Aerial application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply when wind speed is greater than 16 km/h at flying height at the site of application. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) coarse classification. To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wing- or rotorspan.

### 5.3 SPRAY BUFFER ZONES

Use of the following spray methods or equipment **DO NOT** require a spray buffer zone: hand-held or backpack sprayer and spot treatment, inter-row hooded sprayer, low-clearance hooded or shielded sprayers that ensure spray drift does not come in contact with orchard crop fruit or foliage, soil drench and soil incorporation.

For application to rights-of-way and for forestry uses, spray buffer zones for protection of sensitive terrestrial habitats are not required; however, the best available application strategies which minimize off-site drift, including meteorological conditions (for example, wind direction, low wind speed) and spray equipment (for example, coarse droplet sizes, minimizing height above canopy), should be used. Applicators must, however, observe the specified spray buffer zones for protection of sensitive aquatic habitats.

The spray 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, riparian areas and shrublands) and sensitive aquatic habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs, wetlands and estuarine/marine water bodies).

Agricultural and non-cropland systems	Maximum number of applications	Spray Buffer Zones (metres) Required for the Protection of:	
		Aquatic habitats	Terrestrial habitats
<b>Agricultural crop system and ground boom application method</b>			
Pre-seeding applications for all crops. Established pasture and summer fallow. Ginseng new garden	1	1	1
Ginseng - existing established garden, Canola – Roundup Ready hybrid for seed production	2	1	1
Filberts or hazelnut, sugar beets (glyphosate tolerant varieties)	4	1	1
Corn (glyphosate non-tolerant varieties including grain, silage and ornamental types), sugar beet (glyphosate non-tolerant varieties), strawberry, blueberry highbush and lowbush, walnut, chestnut, Japanese heartnut, Turf grass (prior to establishment or renovation)	2	1	2

Wheat, barley, oats, soybean (glyphosate non-tolerant varieties), corn-sweet (glyphosate tolerant varieties), canola (glyphosate non-tolerant varieties), peas, dry beans, flax (including low linoleic acid varieties), lentils, chickpea, lupin (dried), fava bean (dried), mustard (yellow/white, brown, oriental), pearl millet, sorghum (grain) not for use as a forage group), asparagus, corn (glyphosate tolerant varieties), forage grasses and legume including seed production		3	1	2
Canola (glyphosate tolerant varieties), soybean (glyphosate tolerant varieties)		4	1	2
Apple, apricot, cherry (sweet/sour), peaches, pears, plums, grapes		3	1	3
<b>Agricultural crop system and airblast application method (including mist blower)</b>				
Pasture		1	20	30
Turfgrass (Prior to establishment or renovation)		2	25	35
<b>Non-cropland system and ground boom application method</b>				
Non-crop land and industrial uses: Industrial and rights of way areas, Recreational and public areas		3	1	3*
<b>Non-cropland system and airblast application method (including mist blower)</b>				
Non-crop land and industrial uses: Industrial and rights of way areas, Recreational and public areas		3	20	30*
<b>Agricultural crop system and aerial application method</b>	<b>Wing type</b>			
Rye, corn (glyphosate non-tolerant varieties), corn-sweet (glyphosate tolerant varieties), chickpea, lupin (dried), fava bean (dried), mustard (yellow/white, brown, oriental), pearl millet, sorghum (grain) (not for use as a forage crop), sugar beet (glyphosate non-tolerant varieties), all other crops for pre-seeding treatments	Fixed and rotary wing	1	15	20

Canola (glyphosate tolerant varieties)	Fixed and rotary wing	3	20	40
Sugar beets (glyphosate tolerant varieties)	Fixed wing	2	20	30
	Rotary wing	2	15	30
Wheat, barley, oats, soybean (glyphosate non-tolerant varieties), canola (glyphosate non-tolerant varieties), peas, dry beans, flax (including low linoleic acid varieties), lentils	Fixed wing	2	20	35
	Rotary wing	2	20	30
Forage grasses and legume including seed production	Fixed and rotary wing	1	20	40
Soybean (glyphosate tolerant varieties)	Fixed wing	3	20	45
	Rotary wing	3	20	40
Summer Fallow	Fixed wing	1	20	45
	Rotary wing	1	20	40
Corn (glyphosate tolerant varieties)	Fixed wing	2	20	50
	Rotary wing	2	20	45
Pasture	Fixed wing	1	30	70
	Rotary wing	1	30	55

\* Spray buffer zones for the protection of terrestrial habitats are not required for use on rights-of-way including railroad ballast, rail and hydro rights-of-way, utility easements, roads, and training grounds and firing ranges on military bases.

When tank mixes are permitted, consult the labels of the tank-mix partners and observe the largest (most restrictive) spray buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

The spray buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Spray Buffer Zone Calculator on the Pesticides portion of the Canada.ca website.

## 6.0 WEEDS CONTROLLED

This product controls many annual and perennial grasses, broadleaf weeds, and woody brush and trees when applied as recommended and under conditions described. For information on how to control specific weeds including herbicide rate, refer to “**Annual Weed Control**” and “**Perennial Weed Control**” (sections 7.0 and 8.0). The following is a partial list of weeds controlled:

### 6.1 ANNUAL WEEDS

#### ANNUAL GRASSES

<b>Barnyard Grass</b> <i>Echinochloa crusgalli</i>	<b>Persian Darnel</b> <i>Lolium persicum</i>
<b>Blue Grass (annual)</b> <i>Poa annua</i>	<b>Volunteer Barley</b> <i>Hordeum spp.</i>
<b>Crab Grass (large)</b> <i>Digitaria sanguinalis</i>	<b>Volunteer Corn</b> <i>Zea mays</i>
<b>Crab Grass (smooth)</b> <i>Digitaria ischaemum</i>	<b>Volunteer Wheat</b> <i>Triticum spp.</i>
<b>Downy Brome-grass</b> <i>Bromus tectorum</i>	<b>Wild Oats</b> <i>Avena fatua</i>
<b>Fall Panicum</b> <i>Panicum dichotomiflorum</i>	<b>Wild Proso Millet</b> <i>Panicum miliaceum</i>
<b>Giant Foxtail</b> <i>Setaria faberii</i>	<b>Yellow Foxtail</b> <i>Setaria glauca</i>
<b>Green Foxtail</b> <i>Setaria viridis</i>	<b>OTHER</b> <b>Dodder</b> <i>Cuscuta spp.</i>

#### ANNUAL BROADLEAF WEEDS

<b>Chickweed</b> <i>Stellaria media</i>	<b>Pennsylvania Smartweed</b> <i>Polygonum pensylvanicum</i>
<b>Cleavers</b> <i>Galium aparine</i>	<b>Prickly Lettuce</b> <i>Lactuca scariola</i>
<b>Cocklebur</b> <i>Xanthium strumarium</i>	<b>Ragweed (common)</b> <i>Ambrosia artemisiifolia</i>
<b>Corn Spurry</b> <i>Spergula arvensis</i>	<b>Redroot Pigweed</b> <i>Amaranthus retroflexus</i>
<b>Cow Cockle</b> <i>Saponaria vaccaria</i>	<b>Round-Leaved Mallow</b> <i>Malva pusilla</i>

<b>Eastern Black Nightshade</b> <i>Solanum ptycanthum</i>	<b>Russian Thistle</b> <i>Salsola pestifer</i>
<b>Fleabane (Canada)</b> <i>Erigeron canadensis</i>	<b>Shepherd's Purse</b> <i>Capsella bursa-pastoris</i>
<b>Flixweed</b> <i>Descurainia sophia</i>	<b>Smooth Pigweed</b> <i>Amaranthus hybridus</i>
<b>Green Smartweed</b> <i>Polygonum scabrum</i>	<b>Sowthistle (annual)</b> <i>Sonchus oleraceus</i>
<b>Hempnettle</b> <i>Galeopsis tetrahit</i>	<b>Stinkweed</b> <i>Thlaspi arvense</i>
<b>Kochia</b> <i>Kochia scoparia</i>	<b>Storksbill</b> <i>Erodium cicutarium</i>
<b>Lady's-Thumb</b> <i>Polygonum persicaria</i>	<b>Velvetleaf</b> <i>Abutilon theophrasti</i>
<b>Lamb's-quarters (common)</b> <i>Chenopodium album</i>	<b>Volunteer Canola (rapeseed)</b> <i>Brassica spp.</i>
<b>Narrow-leaved Hawk's Beard</b> <i>Crepis tectorum</i>	<b>Volunteer Flax</b> <i>Linum spp.</i>
<b>Narrow-leaved Vetch</b> <i>Vicia angustifolia</i>	<b>Wild Buckwheat</b> <i>Polygonum convolvulus</i>
<b>Night-flowering Catchfly</b> <i>Silene noctiflora</i>	<b>Wild Mustard</b> <i>Sinapis arvensis</i>
	<b>Wild Tomato</b> <i>Solanum triflorum</i>

## 6.2 PERENNIAL WEEDS PERENNIAL GRASSES/SEDGES

<b>Blue Grass (Canada)</b> <i>Poa compressa</i>	<b>Foxtail Barley</b> <i>Hordeum jubatum</i>
<b>Blue Grass (Kentucky)</b> <i>Poa pratensis</i>	<b>Quackgrass</b> <i>Elytrigia repens</i>
<b>Brome Grass (smooth)</b> <i>Bromus inermis</i>	<b>Wire-Stemmed Muhly</b> <i>Muhlenbergia frondosa</i>
<b>Cattail (common)</b> <i>Typha latifolia</i>	<b>Yellow Nutsedge</b> <i>Cyperus esculentus</i>
<b>Cottongrass</b> <i>Eriophorum chamissonis</i>	

## PERENNIAL BROADLEAVED WEEDS

<b>Alfalfa</b> <i>Medicago spp.</i>	<b>Milkweed (common)</b> <i>Asclepias syriaca</i>
<b>Curled Dock</b> <i>Rumex crispus</i>	<b>Poison Ivy</b> <i>Rhus radicans</i>
<b>Dandelion</b> <i>Taraxacum officinale</i>	<b>Purple Loosestrife</b> <i>Lythrum salicaria</i>
<b>Field Bindweed</b> <i>Convolvulus arvensis</i>	<b>Sow Thistle (perennial)</b> <i>Sonchus arvensis</i>
<b>Hemp Dogbane</b> <i>Apocynum cannabinum</i>	<b>Thistle (Canada)</b> <i>Cirsium arvense</i>
<b>Hoary Cress</b> <i>Cardaria draba</i>	<b>Toad Flax</b> <i>Linaria vulgaris</i>
<b>Knotweed (Japanese)</b> <i>Polygonum cuspidatum</i>	<b>Wormwood (Absinth)</b> <i>Artemisia absinthium</i>

### 6.3 WOODY BRUSH AND TREES

<b>Alder</b> <i>Alnus spp.</i>	<b>Pine</b> <i>Pinus spp.</i>
<b>Birch</b> <i>Betula spp</i>	<b>Poplar</b> <i>Populus spp.</i>
<b>Broadleaved meadowsweet</b> <i>Spiraea latifolia</i>	<b>Raspberry/Salmonberry</b> <i>Rubus spp.</i>
<b>Cedar</b> <i>Thuja spp.</i>	<b>Rhododendron (Canadian)</b> <i>Rhododendron canadense</i>
<b>Cherry</b> <i>Prunus spp.</i>	<b>Sheep laurel</b> <i>Kalmia angustifolia</i>
<b>Douglas Fir</b> <i>Pseudotsuga spp.</i>	<b>Snowberry (Western)</b> <i>Symphoricarpos occidentalis</i>
<b>Hemlock</b> <i>Tsuga spp.</i>	<b>Sweet fern</b> <i>Comptonia peregrina</i>
<b>Maple</b> <i>Acer spp.</i>	<b>Willow</b> <i>Salix spp.</i>
<b>Mountain-fly honeysuckle</b> <i>Lonicera villosa</i>	<b>Withrod</b> <i>Viburnum cassinoides</i>

### CROPLAND USES

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

**DO NOT apply by air.**

### 7.0 ANNUAL WEED CONTROL

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



## 7.1 ANNUAL WEED CONTROL WITH SMOKE 540 2.0

<b>RATE (L/ha)</b>	<b>GROWTH STAGE</b>	<b>WEEDS CONTROLLED</b>	<b>COMMENTS (Apply in 50-100 L/ha water)</b>
0.5	Weeds up to 8 cm in height	Wild oats, green foxtail, volunteer barley, volunteer wheat  Non-Roundup Ready volunteer canola (rapeseed), wild mustard, lady's-thumb, stinkweed	For wild oats apply at 1- to 3- leaf stage.  Add 350 mL of a surfactant registered for use such as Agral 90, Ag Surf, or Companion  For heavy wild oat infestations use 0.67 L/ha rate.
0.67	Weeds 8 cm to 15 cm in height	All annual grasses listed above.  All annual broadleaved weeds listed above plus flixweed*, and kochia*	Add 350 mL of surfactant registered for use as listed above.  * Suppression only. Refer to higher rates of this table or tank mix table (section 7.2) for control options.
0.83 – 1.27	Weeds up to 15 cm in height	All annual grasses listed above plus downy brome, giant foxtail, and Persian darnel.  All annual broadleaved weeds listed above plus cleavers, lamb's-quarters, redroot pigweed, hempnettle, flixweed, Russian thistle, volunteer flax, common ragweed*, Canada fleabane*, wild buckwheat**, and narrowleaved hawk's beard***	No surfactant required.  For tank mix weed control options see section 7.2.  * DO NOT use these rates on plants greater than 8 cm in height.  ** For 3- to 4-leaf stage use 1.27 L/ha rate.  *** For weeds 8 cm to 15 cm in height use 1.27 L/ha rate.
1.5	Weeds up to 15 cm in height	All annual grasses listed above plus crab grass and annual blue grass.  All annual broadleaved weeds listed above plus kochia, prickly lettuce, shepherd's purse, annual sowthistle, and narrowleaved vetch	For additional annual broadleaved weed control options, refer to tank mix table (section 7.2).

2.33	Weeds over 15 cm in height	All annual grasses and broadleaved weeds listed above	For additional annual broadleaved weed control options, refer to tank mix table (section 7.2).
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**NOTE:** For spot treatment, 0.5 to 2.33 litres per hectare is approximately equivalent to 5 – 23 mL/100m<sup>2</sup>, respectively.

Agral is a registered trademark of Syngenta Group Company.  
 Ag Surf is a registered trademark of Interprovincial Cooperative Ltd.  
 Companion is a trademark of Dow AgroSciences LLC.

## 7.2 ANNUAL WEED CONTROL WITH SMOKE 540 2.0 TANK MIXTURES

### FOR SUMMERFALLOW & MINIMUM TILLAGE SYSTEMS

TANK MIXTURES	RATE (L/ha)	WEEDS CONTROLLED*	COMMENTS (Apply in 50-100 L/ha water)
Smoke 540 2.0 +  Banvel® II Herbicide	0.5 – 0.67   +  0.29	Volunteer cereals, wild oats, green foxtail  Non- Roundup Ready® volunteer canola (rapeseed), wild mustard, flaxweed*, lamb's-quarters, lady's thumb, stinkweed, kochia, Russian thistle, cow cockle, redroot pigweed**, wild buckwheat**	This tank mix is registered for <b>summerfallow use only</b> . Weeds should be less than 15 cm tall and actively growing for best results.  Use higher rate if weeds are beyond 8 cm in height.  * Smoke 540 2.0 applied at 0.67 L/ha rate only.  ** Suppression only. See other tank mixtures for control options.  Add 350 mL/ha of surfactant-see list in section 7.3.

TANK MIXTURES	RATE (L/ha)	WEEDS CONTROLLED*	COMMENTS (Apply in 50-100 L/ha water)
Smoke 540 2.0 + Banvel® II Herbicide	0.61 – 1.27  +  0.31	Volunteer cereals, wild oats, green foxtail, downy brome, Persian darnel  Non- Roundup Ready® volunteer canola (rapeseed), wild mustard, flixweed, lamb's-quarters, lady'sthumb, stinkweed, kochia, Russian thistle, cow cockle, redroot pigweed, wild buckwheat*, smartweed	Use this tank mix prior to seeding in <b>wheat, barley, rye, oats, field corn only (do not apply to sweet corn)</b> .  Certain broadleaved crops such as lentils, peas, canola and flax can be injured by a pre-seeding application and so should not be planted to a field receiving this treatment.  Annual grasses - apply any time between emergence and heading.
			Weeds should be less than 15 cm tall and actively growing for best results.  The higher rate should be applied when weeds are under poor growing conditions such as drought.  *1- to 4- leaf stage.

TANK MIXTURES	RATE (L/ha)	WEEDS CONTROLLED*	COMMENTS (Apply in 50-100 L/ha water)
Smoke 540 2.0 + Pardner Herbicide	0.5 – 0.67  +  1.25	Volunteer cereals, green foxtail, volunteer canola (rapeseed), wild mustard, lady's-thumb, stinkweed, wild buckwheat*  Redroot pigweed**, kochia**, wild oats**	<p>This tank mix is registered <b>only for use in summerfallow, and prior to wheat, oats and barley in minimum tillage systems.</b></p> <p>Weeds should be less than 15 cm tall and actively growing for best results.</p> <p>Use higher rate if weeds are beyond 8 cm in height.</p> <p>* Use Smoke 540 2.0 at 0.67 L/ha rate only for wild buckwheat control.</p> <p>** 0.67 L/ha rate, suppression only. See other tank mixtures for control options.</p> <p>Add 350 mL/ha of surfactant- see list in section 7.3</p>

TANK MIXTURES	RATE (L/ha)	WEEDS CONTROLLED*	COMMENTS (Apply in 50-100 L/ha water)
Smoke 540 2.0 +  2,4-D <sup>A</sup>	0.83 – 1.27  +  0.6 – 0.9 <sup>4</sup> or 1.2 – 1.5 <sup>5</sup>	Volunteer cereals, wild oats, green foxtail, downy brome, giant foxtail, Persian darnel Volunteer canola, (rapeseed) (non-Roundup Ready), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia, lamb's-quarters, hempnettle, Russian thistle, volunteer flax, common ragweed*, Canada fleabane, wild buckwheat**, narrowleaved hawk's beard***, Volunteer Roundup Ready canola (1-4 leaf stage) <sup>4</sup> , bluebur <sup>4</sup> , burdock <sup>4</sup> , cocklebur <sup>4</sup> , common plantain <sup>4</sup> , daisy fleabane <sup>4</sup> , false flax <sup>4</sup> , false ragweed <sup>4</sup> , goat's beard <sup>4</sup> , mustards <sup>4</sup> (except dog and tansy), prickly lettuce <sup>4</sup> , ragweeds <sup>4</sup> , Russian pigweed <sup>4</sup> , shepherd's purse <sup>4</sup> , stinging nettle <sup>4</sup> , sweet clover <sup>4</sup> , thyme-leaved spurge <sup>4</sup> , wild radish <sup>4</sup> , wild sunflower <sup>4</sup>	Weeds should be less than 15 cm tall and actively growing for best results.  Use higher rate if weeds are beyond 8 cm in height.  No surfactant required.  * DO NOT use these rates on plants greater than 8 cm in height.  ** For 3- to 4-leaf stage use 1.27 L/ha rate.  *** For weeds 8 cm to 15 cm in height use 1.27 L/ha rate.  <sup>4</sup> 2,4-D at 0.6 – 0.9 L/ha (280 – 420 g ai/ha).  <sup>5</sup> 2,4-D at 1.2 – 1.5 L/ha (560 – 700 g ai/ha). Use a minimum of 80 L/ha water when using 2,4-D amine formulations at these rates.  Use this tank mix prior to seeding or after seeding but before crop emergence in <b>wheat, winter wheat, barley and rye.</b>

TANK MIXTURES	RATE (L/ha)	WEEDS CONTROLLED*	COMMENTS (Apply in 50-100 L/ha water)
		Volunteer Roundup Ready canola (4-6 leaf stage) <sup>5</sup> , annual sowthistle <sup>5</sup> , common chickweed <sup>5</sup> , common purslane <sup>5</sup> , dog and tansy mustard <sup>5</sup> , oak-leaved goosefoot <sup>5</sup> , common groundsel <sup>5</sup> , hairy galinsoga <sup>5</sup> , hawkweed <sup>5</sup> , heal-all <sup>5</sup> , knotweed <sup>5</sup> , peppergrass <sup>5</sup> , pineapple weed <sup>5</sup> , prostrate pigweed <sup>5</sup> , purslane <sup>5</sup> , sheep sorrel <sup>5</sup> , green smartweed <sup>5</sup> , tumble pigweed <sup>5</sup> , velvetleaf <sup>5</sup> , volunteer canola (rapeseed) <sup>5</sup>	
Smoke 540 2.0 + 2,4-D <sup>B</sup>	0.5 – 0.67  + 1.2	Volunteer cereals, wild oats*, green foxtail*  Volunteer canola (rapeseed), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia  Lamb's-quarters**, Russian thistle**	This tank mix is registered for summerfallow use only. Weeds should be less than 15 cm tall and actively growing for best results.  Use higher rate if weeds are beyond 8 cm in height.  * Use Smoke 540 2.0 at 0.67 L/ha rate only for wild oat and green foxtail control.  ** Suppression only. See other tank mixtures for control options.  Add 350 mL/ha of surfactant-see list in section 7.3

TANK MIXTURES	RATE (L/ha)	WEEDS CONTROLLED*	COMMENTS (Apply in 50-100 L/ha water)
Smoke 540 2.0 +  MCPA <sup>C</sup> 500 g/L formulation; if another formulation is used, adjust rate accordingly.	0.83 – 1.27  +  0.5 – 0.7 <sup>1</sup>  OR 0.5 – 1.0 <sup>2</sup>	Volunteer cereals, wild oats, green foxtail, downy brome, giant foxtail, Persian darnel  Volunteer canola (rapeseed) (non- Roundup Ready), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia, lamb's quarters, hempnettle, Russian thistle, volunteer flax, common ragweed*, Canada fleabane, wild buckwheat**, narrowleaved hawk's beard***  Volunteer Roundup Ready canola (1-4 leaf stage) <sup>1,2</sup> , bluebur <sup>3</sup> , burdock <sup>3</sup> (before 4 leaf stage), false flax <sup>3</sup> , flixweed <sup>3</sup> , lamb's quarters <sup>3</sup> , mustards <sup>3</sup> (except dog and tansy), prickly lettuce <sup>3</sup> , ragweeds <sup>3</sup> , redroot pigweed <sup>3</sup> , Russian pigweed <sup>3</sup> , shepherd's purse <sup>3</sup> , stinkweed (field pennycress) <sup>3</sup> , vetch <sup>3</sup> , wild radish <sup>3</sup> , wild sunflower <sup>3</sup>	Weeds should be less than 15 cm tall and actively growing for best results.  Use higher rate if weeds are beyond 8 cm in height.  No surfactant required.  * DO NOT use these rates on plants greater than 8 cm in height.  ** For 3- to 4-leaf stage use 1.27 L/ha rate.  *** For weeds 8 cm to 15 cm in height use 1.27 L/ha rate.  <sup>1</sup> MCPA amine at 0.5 – 0.7 L/ha (250 – 350 g ai/ha) prior to peas.  <sup>2</sup> MCPA at 0.5 – 1.0 L/ha (250 – 500 g ai/ha) prior to wheat, barley, oats, corn (field and sweet) <sup>C</sup> , rye and flax.  <sup>3</sup> MCPA at 0.7 – 1.0 L/ha (350 – 500 g ai/ha) only.  Use this tank mix prior to seeding in wheat, barley, rye, oats, corn (field and sweet) <sup>C</sup> , flax and field peas <sup>C</sup> .

TANK MIXTURES	RATE (L/ha)	WEEDS CONTROLLED*	COMMENTS (Apply in 50-100 L/ha water)
Smoke 540 2.0 +  Buctril M Herbicide	0.83 – 1.27  +  0.5 – 1.0 <sup>1</sup>	<p>Volunteer cereals, wild oats, green foxtail, downy brome, giant foxtail, Persian darnel.</p> <p>Volunteer canola (rapeseed) (non-Roundup Ready), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia, lamb's quarters, hempnettle, Russian thistle, volunteer flax, common ragweed*, Canada fleabane, wild buckwheat**, narrowleaved hawk's beard***</p> <p>Volunteer Roundup Ready Canola (1-4 leaf stage)<sup>1,2</sup></p> <p>Seedlings up to the 4-leaf stage<sup>2</sup>: green smartweed, pale smartweed, lady's thumb, cow cockle, redroot pigweed, flixweed, bluebur, shepherd's purse, kochia<sup>3</sup>, Russian thistle<sup>3</sup>, scentless chamomile<sup>4</sup>, volunteer sunflower, night flowering catchfly, cocklebur, velvetleaf<sup>5</sup>, ball mustard, American nightshade</p> <p>Seedlings up to the 6leaf stage<sup>2</sup>: wild tomato</p> <p>Seedlings up to the 8 leaf stage<sup>2</sup>: wild buckwheat, tartary</p>	<p>Weeds should be less than 15 cm tall and actively growing for best results.</p> <p>Use higher rate if weeds are beyond 8 cm in height.</p> <p>No surfactant required.</p> <p>* DO NOT use these rates on plants greater than 8 cm in height.</p> <p>** For 3- to 4-leaf stage use 1.27 L/ha rate.</p> <p>*** For weeds 8 cm to 15 cm in height use 1.27 L/ha rate.</p> <p><sup>1</sup> Buctril M at 0.5 – 1.0 L/ha (280 – 560 g ai/ha) for all crops listed.</p> <p><sup>2</sup> Buctril M at 1.0 L/ha (560 g ai/ha only).</p> <p><sup>3</sup> Spray before plants are 5 cm high.</p> <p><sup>4</sup> Spring annuals only.</p> <p><sup>5</sup> Spray before plants are 8 cm high.</p> <p>Use this tank mix prior to seeding in <b>wheat, barley, rye, oats, corn, flax, canary seed and seedling grasses (including brome grass, crested wheatgrass, intermediate wheat grass, slender wheatgrass, tall wheatgrass, Russian wild rye, timothy, orchard grass, creeping red fescue, meadow fescue,</b></p>



		buckwheat, common buckwheat, stinkweed, wild mustard, wormseed mustard, lamb's quarters, common ragweed, common groundsel  Perennials (top growth) <sup>2</sup> : Canada thistle, perennial sowthistle	<b>meadow foxtail, seedling tall fescue, seedling meadow brome grass, seedling streambank wheatgrass and reed canary grass.</b>
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TANK MIXTURES	RATE (L/ha)	WEEDS CONTROLLED*	COMMENTS (Apply in 50-100 L/ha water)
Smoke 540 2.0 +  MCPA amine (500 g/L formulation; if another formulation is used, adjust rate accordingly).	0.83 – 1.27  +  0.5 – 0.7	<p>Volunteer cereals, wild oats, green foxtail, downy brome, giant foxtail, Persian darnel.</p> <p>Volunteer canola (rapeseed)(non Roundup Ready), wild mustard, flixweed, redroot pigweed, lady's thumb, stinkweed, kochia, lamb's quarters, hempnettle, Russian thistle, volunteer flax, common ragweed*, Canada fleabane, wild buckwheat**, narrowleaved hawk's beard***</p> <p>Volunteer Roundup Ready canola (1-4 leaf stage)<sup>3</sup>, bluebur<sup>4</sup>, burdock<sup>4</sup> (before 4-leaf stage), false flax<sup>4</sup>, flixweed<sup>4</sup>, lamb's quarters<sup>4</sup>, mustards<sup>4</sup> (except dog and tansy), prickly lettuce<sup>4</sup>, ragweeds<sup>4</sup>, redroot pigweed<sup>4</sup>, Russian pigweed<sup>4</sup>, shepherd's purse<sup>4</sup>, stinkweed<sup>4</sup> (field pennycress), vetch<sup>4</sup>, wild radish<sup>4</sup>, wild sunflower<sup>4</sup></p>	<p>Weeds should be less than 15 cm tall and actively growing for best results.</p> <p>Use higher rate if weeds are beyond 8 cm in height.</p> <p>No surfactant required.</p> <p>* DO NOT use these rates on plants greater than 8 cm in height.</p> <p>** For 3- to 4-leaf stage use 1.27 L/ha rate.</p> <p>*** For weeds 8 cm to 15 cm in height use 1.27 L/ha rate.</p> <p><sup>3</sup> MCPA amine at 0.5 – 0.7 L/ha (250 – 350 g ai/ha) prior to lentils and chickpeas.</p> <p><sup>4</sup> MCPA amine at 0.7 L/ha (350 g ai/ha) only.</p> <p>Use this tank mix prior to seeding in <b>lentil and chickpea. Under drought conditions, deep seeding and/or brief rain showers after seeding may cause injury to emerging seedlings in sprayer overlaps.</b></p> <p>No surfactant required.</p>

TANK MIXTURES	RATE (L/ha)	WEEDS CONTROLLED*	COMMENTS (Apply in 50-100 L/ha water)
Smoke 540 2.0 + Express Toss-N-Go Herbicide Or Express Toss-N-Go Dry Flowable 75% Herbicide	0.83 – 1.27  +  10 g/ha (7.5 g ai/ha)	Volunteer cereals, Canada thistle (suppression), cow cockle, wild buckwheat, Canada fleabane common ragweed narrow-leaved hawk's beard, dandelion, downy brome, flixweed, giant foxtail, green foxtail, hempnettle, kochia, lady's thumb, lamb's quarters, persian darnel, redroot pigweed, Russian thistle, stinkweed, volunteer canola, volunteer flax, wild mustard, wild oats	Use this tank mix in summerfallow or prior to seeding <b>wheat and barley</b> .  Refer to Express Toss-N-Go label for the appropriate weed growth stage.  Add 350 mL/ha of surfactant –see list in section 7.3

\* For foxtail barley, refer to “**Perennial Weed Control**” table (section 8.1).

<sup>B</sup> 0.56 kg ai/ha of 2,4-D. <sup>B</sup>, <sup>A</sup> Adjust rates accordingly for other 2,4-D formulations. Use only low volatile ester or amine formulations of 2,4-D.

<sup>C</sup> Use only amine formulations of MCPA prior to seeding in corn and field peas.

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Pardner and Buctril are registered trademarks of Bayer CropScience Inc.

Express and Toss-N-Go are registered trademarks of FMC Corporation.

### 7.3 SURFACTANT INFORMATION

#### NOTE:

**Addition of Surfactant** – Smoke 540 2.0 tank mixtures for annual weed control may require the addition of a surfactant registered for use such as Agral 90, AgSurf or Companion. Refer to Section 7.2 for recommendations. Surfactant should be added at a rate of 350 millilitres per hectare, in 50 100 litres of clean water.

### 7.4 ADDITIONAL IMPORTANT INFORMATION FOR ANNUAL WEED CONTROL

Smoke 540 2.0 applied alone will not control volunteers from crops containing the Roundup Ready varieties.

Allow at least 1 day after treatment before tillage.

Annual weeds generally will continue to germinate from seed throughout the growing season. Repeat treatments may be necessary to control later germinating weeds, in some situations.

For additional information and precautions, refer to “**General Information**” and “**Mixing and Application**” (sections 4.0 and 5.0, respectively).

## 7.5 WEED CONTROL IN TRUFLEX ROUNDUP READY CANOLA VARIETIES

**WARNING: APPLY SMOKE 540 2.0 TO TRUFLEX ROUNDUP READY CANOLA VARIETIES ONLY.**

**NOTE: ALWAYS USE PEDIGREED (I.E., CERTIFIED) TRUFLEX ROUNDUP READY CANOLA SEED. CANOLA NOT DESIGNATED AS TRUFLEX ROUNDUP READY WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

- For additional information and precautions refer to “**General Information**” and “**Mixing and Application**” (sections 4.0 and 5.0, respectively).
- Apply to TruFlex Roundup Ready canola only as directed.

DO NOT APPLY BY AIR

The following table describes the rate and specific application instructions for weed control in TruFlex Roundup Ready canola varieties.

### WEED CONTROL IN TRUFLEX ROUNDUP READY CANOLA VARIETIES

<b>RATE (L/ha)</b>	<b>GROWTH STAGE OF CROP</b>	<b>WEEDS CONTROLLED</b>	<b>COMMENT S (Apply in 50 –100 L/ha water)</b>
0.55-0.83 Single application	Emergence to first flower*	<p><b>Annual Grasses</b> Wild oats, green foxtail, volunteer barley, volunteer wheat, barnyard grass</p> <p><b>Annual Broadleaves</b> Stinkweed, redroot pigweed, wild mustard, Russian thistle, lamb’s quarters, non-Roundup Ready volunteer canola (rapeseed), hempnettle, lady’s thumb, kochia, chickweed, corn spurry, wild tomato, cleavers, wild buckwheat, shepherd’s purse<sup>1</sup>, cow cockle<sup>1</sup>, night flowering catchfly<sup>1</sup>, smartweed<sup>1</sup>,</p>	<sup>1</sup> The 0.55 L/ha rate can be used for control of shepherd’s purse, cow cockle and night-flowering catchfly at the 1 – 3 leaf stage of the

		<p>stork's-bill, flixweed, narrow-leaved hawk's beard</p> <p><b>Perennials: (Suppression)</b> Canada thistle, perennial sow thistle and dandelion</p> <p><b>Perennials: (Season-long control)</b> Quackgrass,</p>	<p>crop or for control of smartweed at the 4 – 6 leaf stage.</p> <p>Repeat applications may be required if a second flush of weeds germinates prior to canopy closure.</p>
1.27 Single application	Emergence to first flower*	<p><b>All the above weeds plus:</b> <b>Perennials (season-long control)</b> Canada thistle, and perennial sow thistle</p>	
0.83 Sequential applications	Emergence to first flower*	<p><b>All the above weeds plus:</b> <b>Annual Broadleaves</b> round-leaved mallow</p> <p><b>Perennials (season-long control)</b> foxtail barley, Canada thistle, and perennial sow thistle</p>	For sequential applications, ensure the crop has not advanced beyond the recommended growth stage.
1.67 Single application	Emergence to first flower*	<p><b>All the above weeds plus:</b> Foxtail barley, smooth pigweed, common ragweed, cocklebur, eastern black nightshade, pennsylvannia smartweed, foxtail (yellow and giant), fall panicum, wild proso millet, crabgrass (smooth and large), velvet leaf, biennial wormwood<sup>2</sup> wire-stemmed muhly, volunteer adzuki beans<sup>3</sup></p> <p><b>(Suppression only)</b> Common Milkweed Yellow nutsedge</p>	<p><sup>2</sup>Biennial wormwood should be at 2-8 leaf stage and actively growing.</p> <p><sup>3</sup>For control of volunteer adzuki beans (unifoliolate to the 4<sup>th</sup> trifoliolate leaf stage) apply 1.67 L/ha. A second 1.67 L/ha application may be used for late flushes emerging after the</p>

			initial treatment. Adzuki beans should be at unifoliate to fourth trifoliate leaf stage and actively growing.
1.67 Sequential applications	Emergence to first flower*	<p><b>All the above weeds plus:</b></p> <p><b>Perennials (season-long control)</b></p> <p>Dandelion Common Milkweed Field Bindweed Yellow nutsedge Horsenettle Tall waterhemp Bur cucumber</p>	<p>A sequential application may be made at least 2 weeks after the first application.</p> <p>A second 1.67 L/ha application may be used for late weed flushes emerging after the initial treatment.</p> <p>Common milkweed should be 15-60 cm in height and actively growing.</p> <p>Yellow nutsedge should be 5-15 cm in height and actively growing.</p> <p>Horse-nettle (2-12-leaf stage).</p> <p>Tall waterhemp (up to and</p>

			including the 18 leaf stage).  Bur Cucumber from the 1-18 leaf stage.
3.33 Single application	Emergence to 6 leaf	All the above weeds	One application allowed in crop per season

\* First flower is when 50% of the plants in the field have no more than one flower.

Ensure the crop has not advanced beyond the recommended growth stage for all applications.

**Guidelines:**

Repeat applications may be required if a second flush of weeds germinates prior to canopy closure.

Maximum 3.33L/ha is allowed for the postemergence use.

**7.5.1 TRUFLEX ROUNDUP READY HYBRID CANOLA SEED PRODUCTION  
For Use only in TRUFLEX ROUNDUP READY Canola Seed Production Systems**

Apply using ground boom spray equipment.

Smoke 540 2.0 may be applied for the control of non-glyphosate tolerant canola pollen parental line(s) in hybrid canola seed production fields containing both TruFlex Roundup Ready line(s) and non-TruFlex Roundup Ready line(s).

When pollination is complete or near completion, non-TruFlex Roundup Ready pollen parental line(s) may be controlled with an application of 0.83 to 1.67 litres per hectare of Smoke 540 2.0 applied in 50 to 200 litres per hectare water.

Sequential applications (**maximum 2 applications**) may be used for the control of pollen parental line(s) but the total maximum rate applied must not exceed 1.67 litres per hectare. Allow at least 5 days between sequential applications.

**7.6 WEED CONTROL IN ROUNDUP READY® CANOLA VARIETIES**

**WARNING: APPLY SMOKE 540 2.0 ON ROUNDUP READY® CANOLA VARIETIES ONLY**

**NOTE: ALWAYS USE PEDIGREED (I.E., CERTIFIED) ROUNDUP READY® CANOLA SEED. CANOLA WHICH IS NOT DESIGNATED AS ROUNDUP READY® WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

- **For additional information and precautions refer to “General Information”**

**and “Mixing and Application” (sections 4.0 and 5.0).**

- Apply Smoke 540 2.0 in Roundup Ready® canola varieties only as directed in the following weed control table.
- Some short-term, visual yellowing may occur when Smoke 540 2.0 is applied at the late application (4 to 6 leaf stage) of the crop. This effect is temporary and will not influence crop growth, maturity or yield.

DO NOT apply by air.

The following table describes the rate and specific application instructions for control of annual and perennial weeds in Roundup Ready® canola varieties.

SPECIMEN



## WEED CONTROL IN ROUNDUP READY CANOLA VARIETIES

RATE (L/ha)	GROWTH STAGE OF CROP	WEEDS CONTROLLED	COMMENTS (Apply in 50 –100 L/ha water)
0.55 – 1.27	0 to 6 leaf	<p><b><u>Annual Grasses</u></b> Wild oats, green foxtail, volunteer barley, volunteer wheat, barnyard grass</p> <p><b><u>Annual Broadleaves</u></b> Stinkweed, redroot pigweed, wild mustard, Russian thistle, lamb's quarters, non- Roundup Ready volunteer canola (rapeseed), hempnettle, lady's-thumb, kochia, chickweed, corn spurry, wild tomato, cleavers*, wild buckwheat*, shepherd's purse*, cow cockle*, night- flowering catchfly*, smartweed*, stork's-bill*, flixweed*, narrow-leaved hawk's beard*, round- leaved mallow***</p> <p><b><u>Perennials (suppression)**</u></b> Canada thistle, perennial sow thistle, dandelion</p> <hr/> <p><b><u>Perennials (season-long control)</u></b> Quackgrass**, foxtail barley***, Canada thistle****, perennial sow thistle****</p>	<p>Repeat applications may be required if a second flush of weeds germinates prior to canopy closure.</p> <p>Ensure the crop has not advanced beyond the recommended growth stage.</p> <p>* <b>Use 0.83 L/ha for control of these weeds at all crop growth stages.</b> The lower rate can be used for control of shepherd's purse, cow cockle and nightflowering catchfly at the 1– to 3leaf stage of the crop or for control of smartweed at the 4– to 6-leaf stage.</p> <p>** A single application of 0.83 L/ha rate is required.</p> <p>*** Sequential applications of 0.83 L/ha rate are required.</p> <p>**** Sequential applications of 0.83 L/ha or a single application of 1.27 L/ha are required.</p> <p>For sequential applications, ensure the crop has not advanced beyond the recommended growth stage.</p> <p>Maximum 1.66 L/ha is allowed for the postemergence use.</p>

## 7.6.1 TANK MIXTURES

For season long control of top growth of Canada thistle and control of wild buckwheat in Roundup Ready® canola varieties, apply a tank mixture of 0.28 L/ha of Lontrel 360 Herbicide with 0.83 L/ha of Smoke 540 2.0, in 100 litres of water per hectare. Apply when canola is in the 2- to 6-leaf stage. When applied as a tank-mix combination, read and observe all label directions, including rates, personal protective equipment, restrictions and precautions for each product used in the tank-mix. Always use in accordance with the most restrictive label restrictions and precautions.

Lontrel® is a registered trademark of Dow AgroSciences LLC.

## 7.6.2 ROUNDUP READY® HYBRID CANOLA SEED PRODUCTION

**For Use only in Roundup Ready® Hybrid Canola Seed Production Systems** Apply

using ground boom spray equipment.

Smoke 540 2.0 may be applied for the control of non- Roundup Ready® canola pollen parental line(s) in hybrid canola seed production fields containing both Roundup Ready® line(s) and non-Roundup Ready® line(s).

When pollination is complete or near completion, non- Roundup Ready® canola pollen parental line(s) may be controlled with an application of 0.83 to 1.67 litres per hectare of Smoke 540 2.0 applied in 50 to 200 litres per hectare water.

Sequential applications (**maximum 2 applications**) may be used for the control of pollen parental line(s) but the total maximum rate applied must not exceed 1.67 litres per hectare. Allow at least 5 days between sequential applications.

## 7.6.3 WEED CONTROL IN SECOND GENERATION GLYPHOSATE TOLERANT CANOLA (INCLUDING OPTIMUM GLY<sup>R</sup> CANOLA VARIETY)

**WARNING:** APPLY THE FOLLOWING USE PATTERN FOR SMOKE 540 2.0 ON SECOND GENERATION GLYPHOSATE TOLERANT CANOLA VARIETIES ONLY. SMOKE 540 2.0 APPLIED AT THE TIMING AND RATES INDICATED BELOW WILL HARM FIRST GENERATION GLYPHOSATE TOLERANT CANOLA.

**NOTE:** ALWAYS USE PEDIGREED (I.E. CERTIFIED) SECOND GENERATION GLYPHOSATE TOLERANT CANOLA SEED. CANOLA WHICH IS NOT DESIGNATED AS SECOND GENERATION GLYPHOSATE TOLERANT WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.

DO NOT APPLY BY AIRCRAFT.

Early crop injury may be observed with the higher application rates. However the final seed yield would not be affected.

The following table describes the rate and specific application instructions for control of annual and perennial weeds in glyphosate tolerant canola varieties.

<b>WEED CONTROL IN SECOND GENERATION GLYPHOSATE TOLERANT CANOLA (INCLUDING OPTIMUM GLY<sup>R</sup> CANOLA VARIETY)</b>			
<b>Rate (L/ha)</b>	<b>Growth Stage of Crop</b>	<b>Weeds Controlled</b>	<b>Comments (Apply in 50-100 L/ha water)</b>
0.55-1.25	Emergence to first flower <sup>1</sup>	<p><b>Annual Grasses</b> Wild oats, green foxtail, volunteer barley, volunteer wheat, barnyard grass</p> <p><b>Annual Broadleaves</b> Stinkweed, redroot pigweed, wildmustard, Russian thistle, lamb's quarters, non-glyphosate tolerant canola (rapeseed), hempnettle, lady's thumb, kochia, chickweed, corn spurry, wild tomato, cleavers<sup>2</sup>, wild buckwheat<sup>2</sup>, shepherd's purse<sup>2</sup>, cow</p>	<p>For all applications, ensure the crop has not advanced beyond the recommended growth stage.</p> <p>Repeat applications may be required if a second flush of weeds germinates prior to canopy closure.</p>

WEED CONTROL IN SECOND GENERATION GLYPHOSATE TOLERANT CANOLA (INCLUDING OPTIMUM GLY <sup>R</sup> CANOLA VARIETY)			
Rate (L/ha)	Growth Stage of Crop	Weeds Controlled	Comments (Apply in 50-100 L/ha water)
		cockle <sup>2</sup> , night-flowering catchfly <sup>2</sup> , smartweed <sup>2</sup> , stork's-bill <sup>2</sup> , flixweed <sup>2</sup> , narrow-leaved hawk's beard <sup>2</sup> , round-leaved mallow <sup>4</sup>  Perennials: (Suppression) <sup>3</sup> Canada thistle, perennial sow thistle and dandelion  Perennials: (Season-long control) Quackgrass <sup>3</sup> , Canada thistle <sup>4</sup> , perennial sow thistle <sup>5</sup> , foxtail barley <sup>4</sup>	
1.66	Emergence to first flower <sup>1</sup>	<b>All the above weeds plus:</b> Foxtail barley <sup>6</sup> , smooth pigweed, common ragweed, cocklebur, eastern black nightshade, Pennsylvania smartweed, foxtail (yellow and giant), fall panicum, wild proso millet, crabgrass (smooth and large), velvet leaf, wire-stemmed muhly, dandelion <sup>7</sup> , common milkweed <sup>7</sup>  <b>Suppression only:</b> Common milkweed and yellow nutsedge	For listed weeds up to 15 cm in height.  For all applications, ensure the crop has not advanced beyond the recommended growth stage.  Repeat applications may be required if a second flush of weeds germinates prior to canopy closure.
3.33	Emergence to 6 leaf	All weeds listed above plus field bindweed and yellow Nutsedge (5 – 15 cm and actively growing)	One application at the 3.33 L/ha rate allowed per season.  Field bindweed and yellow nutsedge will also be controlled by sequential application of 1.66 L/ha. Application should be at least two weeks apart for optimum control.

<sup>1</sup> First flower is when 50% of the plants in the field have no more than one flower.

<sup>2</sup> Use the 0.83 L/ha rate for control of these weeds at all crop growth stages. The 0.55 L/ha

rate can be used for control of shepherd's purse, cow cockle and night-flowering catchfly at the 1 – 3leaf stage of the crop or for control of smartweed at the 4 – 6 leaf stage.

<sup>3</sup> A single application at the 0.83 L/ha rate is required.

<sup>4</sup> Sequential applications at the 0.83 L/ha rate are required.

<sup>5</sup> Sequential applications at the 0.83 L/ha rate are required or a single application of 1.25 /ha.

<sup>6</sup> Foxtail barley must be small, actively growing, and at low populations.

<sup>7</sup> A second 1.66 L/ha application may be used for late weed flushes emerging after the initial treatment. A sequential application may be made at least 2 weeks after the first application. Common milkweed should be 15-60 cm in height and actively growing. Yellow nutsedge should be 5-15 cm in height and actively growing. Dandelion must be less than 15 cm in height.

Ensure the crop has not advanced beyond the recommended growth stage for all applications.

### **Guidelines:**

Repeat applications may be required if a second flush of weeds germinates prior to canopy closure.

Maximum 3.33 L/ha is allowed for total post-emergent application timings.

## **7.7 WEED CONTROL IN ROUNDUP READY OR ROUNDUP READY 2 YIELD® SOYBEAN VARIETIES**

### **7.7.1 WEED CONTROL IN ROUNDUP READY 2 YIELD SOYBEAN VARIETIES**

**WARNING: APPLY SMOKE 540 2.0 ON ROUNDUP READY SOYBEAN VARIETIES ONLY.**

**NOTE: ROUNDUP READY 2 YIELD SOYBEAN VARIETIES ARE TOLERANT OF GLYPHOSATE, THE ACTIVE INGREDIENT IN SMOKE 540 2.0. ALWAYS USE PEDIGREED (I.E., CERTIFIED) SOYBEAN SEED DESIGNATED AS ROUNDUP READY 2 YIELD. SOYBEANS WHICH ARE NOT DESIGNATED AS ROUNDUP READY 2 YIELD WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

DO NOT apply by air.

RATE (L/ha)	GROWTH STAGE OF CROP	WEEDS CONTROLLED*	COMMENTS (Use 100 – 200 L/ha water volumes)
1.67	First trifoliolate leaf stage through flowering	Velvetleaf, common ragweed, common lamb's quarters, redroot pigweed, smooth pigweed, cocklebur, green smartweed, lady's-thumb, Pennsylvania smartweed, Eastern black nightshade, wild mustard, wild buckwheat, foxtail (green, yellow, giant), barnyard grass, crabgrass (smooth, large), quackgrass, fall panicum,	<p><sup>1</sup> A single application of 1.67 L/ha will provide suppression only.</p> <p><sup>2</sup> For control of common milkweed, yellow nutsedge, round-leaved mallow and field bindweed, a second sequential application may be applied at least 2 weeks after the first application.</p>

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RATE (L/ha)	GROWTH STAGE OF CROP	WEEDS CONTROLLED*	COMMENTS (Use 100 – 200 L/ha water volumes)
		<p>wild proso millet, wild oats, volunteer barley, volunteer wheat, stinkweed, Russian thistle, non- Roundup Ready® canola (rapeseed), hempnettle, kochia, chickweed, corn spurry, wild tomato, cleavers, shepherd's purse, cow cockle, night flowering catchfly, stork's bill, flixweed, narrow leaved hawk's-beard</p> <p>common milkweed<sup>1,2</sup>, yellow nutsedge<sup>1,2</sup>, field bindweed<sup>2</sup>, perennial sow thistle, Canada thistle. wire-stemmed muhly.</p> <p>Bur cucumber (<i>Sicyos angulatus</i>)<sup>3</sup></p> <p>Volunteer adzuki beans (<i>Vigna angularis</i>)<sup>4</sup></p> <p>Biennial Wormwood (<i>Artemisia biennis</i>)<sup>5</sup></p>	<p>A second 1.67 L/ha application may be used for late weed flushes emerging after the initial treatment.</p> <p>Any second application made must be applied no later than the flowering stage of the soybean.</p> <p>Common milkweed should be 15-60 cm in height and actively growing.</p> <p>Yellow nutsedge should be 5 - 15 cm in height and actively growing.</p> <p>Perennial sow thistle and Canada thistle should be from the rosette stage to 50 cm in height and actively growing.</p> <p>Wire-stemmed muhly should be 10-20 cm in height and actively growing.</p> <p>Plants not fully emerged at the time of application will escape treatment.</p> <p><sup>3</sup>Sequential applications of 1.67 L/ha followed by 1.67 L/ha at the 1-18 leaf stage. Applications should be at least 2 weeks apart for best results.</p>

			<p><sup>4</sup>For control of volunteer adzuki beans (unifoliolate to the 4<sup>th</sup> trifoliolate leaf stage) apply 1.67 L/ha. A second 1.67 L/ha application may be used for late flushes emerging after the initial treatment. Adzuki beans should be at unifoliolate to fourth trifoliolate leaf stage and actively growing</p> <p><sup>5</sup> Only one application per season at 1.67L/ha. Biennial wormwood should be at 2-8 leaf stage and actively growing.</p>
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SPECIMEN



RATE (L/ha)	GROWTH STAGE OF CROP	WEEDS CONTROLLED*	COMMENTS (Use 100 – 200 L/ha water volumes)
3.33	First trifoliolate leaf stage through flowering	All weeds listed above plus horse-nettle <sup>6</sup> and tall waterhemp <sup>67</sup>	<ul style="list-style-type: none"> <li>• Only one application per season at 3.33 L/ha.</li> <li>• Common milkweed should be 15-60 cm in height and actively growing.</li> <li>• Yellow nutsedge should be 5- 15 cm in height and actively growing.</li> <li>• Plants not fully emerged at the time of application will escape treatment.</li> </ul> <p><sup>6</sup>For season-long control of horse-nettle (<i>Solanum carolinense</i>) (2- to 12-leaf stage) or, for control of tall waterhemp (<i>Amaranthus tuberculatos</i>) (up to and including the 18-leaf stage) apply 3.33 L/ha. Alternatively, sequential applications of 1.67 L/ha followed by 1.67 L/ha may be applied. Applications should be at least 2 weeks apart for best results.</p> <p><sup>7</sup>For the control of tall waterhemp use the higher rate if weeds are beyond the 6-leaf stage.</p>
RATE (L/ha)	GROWTH STAGE OF CROP	WEEDS CONTROLLED	COMMENTS (Use 100 – 200 L/ha water volumes)

4.67	First trifoliate leaf stage through flowering	All weeds listed above plus control of volunteer alfalfa and bromegrass	<p>Only one application per season at 4.67 L/ha.</p> <p>Alfalfa should have 9 or more leaves and be at least 10-15 cm tall.</p> <p>Bromegrass should be at least 3-5 leaves and be at least 10-15 cm tall.</p> <p>Short term yellowing may occur in sprayer overlap areas with the 4.67 L/ha application rate. This effect is temporary and will not influence crop growth or yield.</p>
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\*Weeds will be more easily controlled and early crop competition avoided with applications made when the weeds are small. Control of annual weeds greater than 25 cm in height will be inconsistent, although some weeds may be controlled.

#### **7.7.2 WEED CONTROL IN ROUNDUP READY SOYBEAN VARIETIES**

**WARNING: APPLY SMOKE 540 2.0 ON ROUNDUP READY SOYBEAN VARIETIES ONLY.**

**NOTE: ALWAYS USE PEDIGREED (I.E., CERTIFIED) SOYBEAN SEED DESIGNATED AS ROUNDUP READY. SOYBEANS WHICH ARE NOT DESIGNATED AS ROUNDUP READY WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

DO NOT APPLY BY AIR.

Apply 1.67 – 3.33 L/ha of Smoke 540 2.0 to Roundup Ready soybean varieties.

See Section 7.7.1 for use directions.

The 4.67 L/ha rate can only be applied to soybeans designated as Roundup Ready 2 Yield.

### 7.7.3 TANK MIXTURES

**Tank mixtures may be applied to both Roundup Ready 2 Yield and Roundup Ready soybean varieties.**

#### **Smoke 540 2.0 Plus Pursuit® Herbicide**

For added residual control of late germinating eastern black nightshade, common lamb's quarters, redroot pigweed, velvetleaf, fall panicum and wild proso millet, Pursuit herbicide may be tank mixed with Smoke 540 2.0 at a rate of 1.67 litres per hectare. Use 0.16 to 0.21 litres per hectare of Pursuit and apply up to and including the 3<sup>rd</sup> trifoliolate leaf stage of the Roundup Ready soybeans varieties in 100-200 litres per hectare of clean water. The higher rate is recommended for heavier infestations. This tank mix is recommended primarily for soybean systems with row spacings of 50 centimetres (20 inches) or more where a single application timing is desired.

Mixing: Add and mix Pursuit as per instructions on the Pursuit label and then add Smoke 540 2.0 as per instructions on this label.

A PHI of 100 days is required for the tank mix of Smoke 540 2.0 and Pursuit herbicide on Roundup Ready soybeans.

Only one application per season of Smoke 540 2.0 at 1.67 litres per hectare tank mixed with Pursuit herbicide at 0.16 to 0.21 litres per hectare is permitted.

When applied as a tank-mix combination, read and observe all label directions, including rates, personal protective equipment, restrictions and precautions for each product used in the tank-mix. Always use in accordance with the most restrictive label restrictions and precautions.

#### **Smoke 540 2.0 Plus FirstRate™ Herbicide Water Dispersible Granule (For Use in Eastern Canada Only)**

For added residual control of common ragweed, velvetleaf, cocklebur, jimsonweed and giant ragweed, FirstRate Herbicide Water Dispersible Granule may be tank mixed with Smoke 540 2.0 at a rate of 0.83 - 1.67 liters per hectare. Use 20.8 grams per hectare of FirstRate Herbicide Water Dispersible Granule.

Do not harvest soybean plants for forage or hay. Do not harvest soybeans for 65 days after application.

Only one application per season of Smoke 540 2.0 tank mixed with FirstRate Herbicide Water Dispersible Granule is permitted.

When applied as a tank-mix combination, read and observe all label directions, including rates, personal protective equipment, restrictions and precautions for each product used in the tank-mix. Always use in accordance with the most restrictive label restrictions and precautions.

**Smoke 540 2.0 plus Sencor® 75 DF Herbicide for Control of Spreading Atriplex (Eastern Canada only)**

For the control of spreading atriplex, apply a preplant application of Sencor 75 DF Herbicide at 0.75 - 1.11 kg product per hectare on medium textured soils or 1.11 – 1.5 kg product per hectare on fine textured soils plus Smoke 540 2.0 at 1.67 litres per hectare. Do not apply on coarse textured soils. Apply when spreading atriplex is up to the 10-leaf stage of growth. Only one application per year is permitted.

Refer to the Sencor 75 DF Herbicide label for further use directions, safety precautions and handling instructions. Consult Table entitled "Sencor 75 DF Alone: Preemergence Application" for specific rates based on soil types and organic matter.

**Volunteer Roundup Ready Corn Control**

For control of volunteer Roundup Ready corn, Assure II herbicide may be tank mixed with Smoke 540 2.0. Use 1.67 to 3.33 litres per hectare Smoke 540 2.0 and 0.25 - 0.38 litre per hectare of Assure II herbicide.

The higher rate of Assure II may be required when there are high populations of volunteer Roundup Ready corn, other grass weeds are present or when conditions at application are not favorable for weed growth.

Apply in 100 to 300 litres per hectare of clean water.

**Smoke 540 2.0 plus Assure® II Herbicide**

<b>RATE</b>	<b>GROWTH STAGE OF CROP</b>	<b>WEEDS CONTROLLED*</b>	<b>COMMENTS</b>
1.67 – 3.33 L/ha Smoke 540 2.0 + 0.25 - 0.38 L/ha Assure II Herbicide	First trifoliolate leaf stage through flowering.	Volunteer Roundup Ready corn.  Apply at the 2- to 6leaf stage of the weed.	See additional information following this table.

\*Sure Mix may or may not be added to this tank mix

\* Weeds will be more easily controlled and early crop competition avoided with applications made when the weeds are small. Control of annual weeds greater than 25 centimetres in height will be inconsistent, although some weeds may be controlled.

**Volunteer Roundup Ready Corn Control**

For control of volunteer Roundup Ready corn, Assure II herbicide may be tank mixed with Smoke 540 2.0. Use 1.67 to 3.33 litres per hectare Smoke 540 2.0 and 0.25 – 0.38 litre per hectare of Assure II herbicide.

The higher rate of Assure II may be required when there are high populations of volunteer Roundup Ready corn, other grass weeds are present or when conditions at application are not favorable for weed growth.

Apply in 100 to 300 litres per hectare of clean water.

**Mixing:** Add and mix Assure II herbicide as per instructions on the Assure II herbicide label and then add Smoke 540 2.0 as per instructions on this label.

This tank mix is to be applied when the crop is from the first trifoliolate leaf stage through flowering and when the volunteer Roundup Ready corn is at the 2- to 6-leaf stage.

A PHI (preharvest interval) of 80 days is required for the tank-mix of Smoke 540 2.0 and Assure II herbicide on Roundup Ready soybeans.

When applied as a tank-mix combination, read and observe all label directions, including rates, personal protective equipment, restrictions and precautions for each product used in the tank-mix. Always use in accordance with the most restrictive label restrictions and precautions.

**Smoke 540 2.0 plus Venture® L Herbicide**

<b>RATE</b>	<b>GROWTH STAGE OF CROP</b>	<b>WEEDS CONTROLLED♦</b>	<b>COMMENTS</b>
1.67 – 3.33 L/ha Smoke 540 2.0 + 0.45 – 0.60 L/ha Venture L Herbicide**	First trifoliolate leaf stage through third trifoliolate leaf stage	Volunteer Roundup Ready corn. Apply at the 2- to 5-leaf stage of the weed.	See additional information following this table.

\*Turbocharge may or may not be added to this tank mix.

♦Weeds will be more easily controlled and early crop competition avoided with applications made when the weeds are small. Control of annual weeds greater than 25 centimetres in height will be inconsistent, although some weeds may be controlled.

For control of volunteer Roundup Ready corn, Venture L Herbicide may be tank mixed with Smoke 540 2.0. Use 1.67 to 3.33 litres per hectare Smoke 540 2.0 and 0.45 - 0.60 litre per hectare of Venture L Herbicide.

The higher rate of Venture L Herbicide may be required when there are high populations of volunteer Roundup Ready corn, other grass weeds are present or when conditions at application are not favorable for weed growth.

Apply in 100 to 200 litres per hectare of clean water.

**Mixing:** Add and mix Venture L Herbicide as per instructions on the Venture L Herbicide label and then add Smoke 540 2.0 as per instructions on this label.

This tank mix is to be applied when the crop is from the first trifoliolate leaf stage through third trifoliolate leaf stage and when the volunteer Roundup Ready corn is at the 2- to 5-leaf stage.

A PHI (preharvest interval) of 90 days is required for the tank-mix of Smoke 540 2.0 and Venture L Herbicide on Roundup Ready 2 Yield and Roundup Ready Soybeans.

Refer to the Venture L Herbicide label for further safety precautions and handling instructions.

FirstRate is a trademark of Dow AgroSciences LLC.

Pursuit is a registered trademark of BASF.

Sencor is a registered trademark of Bayer CropScience Inc.

Assure is a registered trademark of E.I. du Pont de Nemours and Company.

Venture is a registered trademark of a Syngenta group company.

**7.8 WEED CONTROL IN ROUNDUP READY 2™ XTEND SOYBEANS****Smoke 540 2.0 and XtendiMAX with VaporGrip Technology Herbicide Use In Roundup Ready 2 Xtend Soybeans**

**WARNING: THIS TANK MIXTURE CAN ONLY BE APPLIED TO SOYBEAN VARIETIES DESIGNATED AS ROUNDUP READY 2 XTEND. DO NOT APPLY THIS TANK MIXTURE TO ROUNDUP READY 2 YIELD OR ROUNDUP READY SOYBEAN VARIETIES.**

For control of many annual and perennial broadleaf weeds, as well as residual suppression or control of small seeded broadleaf weeds, apply Xtendimax with VaporGrip Technology at 823 mL to 1.71 L/ha plus Smoke 540 2.0 at 1.67 L/ha to 4.67 L/ha in a minimum spray volume of 100 L/ha.

**Pre-Harvest Interval(s):**

- 7-10 days for soybean forage and 13–15 days for soybean hay.

Apply XTENDIMAX WITH VAPORGRIP TECHNOLOGY HERBICIDE to weeds < 10 cm

Do not apply this tank mixture to Roundup Ready 2 Xtend soybean using aerial spray equipment.

Refer to the Xtendimax with VaporGrip Technology herbicide label for general precautions, directions on spray drift management, list of weeds controlled and for further safety precautions and handling instructions.

**7.9 WEED CONTROL IN CORN VARIETIES WITH ROUNDUP READY® 2 TECHNOLOGY**

**WARNING: APPLY SMOKE 540 2.0 ON ONLY CORN VARIETIES THAT ARE DESIGNATED AS CONTAINING ROUNDUP READY® 2 TECHNOLOGY (I.E. CONTAINS A ROUNDUP READY GENE).**

**NOTE: CORN VARIETIES CONTAINING ROUNDUP READY® 2 TECHNOLOGY ARE TOLERANT OF GLYPHOSATE, THE ACTIVE INGREDIENT IN SMOKE 540 2.0. ALWAYS USE PEDIGREED (I.E. CERTIFIED) CORN SEED DESIGNATED AS CONTAINING ROUNDUP READY® 2 TECHNOLOGY. CORN WHICH IS NOT DESIGNATED AS CONTAINING ROUNDUP READY® 2 TECHNOLOGY MAY BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

DO NOT APPLY BY AIR

RATE (L/ha)	GROWTH STAGE OF CROP	WEEDS CONTROLLED♦	COMMENTS (Use 100-200 L/ha water volumes)
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1.67	Up to and including 8 leaf stage	Velvetleaf, common ragweed, common lamb's quarters, redroot pigweed, smooth pigweed, cocklebur, green smartweed, lady's-thumb, Pennsylvania smartweed, Eastern black nightshade, wild mustard, wild buckwheat, foxtail (green, yellow, giant), barnyard grass, crabgrass (smooth, large), quackgrass, fall panicum, wild proso millet, wild oats, volunteer barley, volunteer wheat, stinkweed, wild mustard, Russian thistle, non Roundup Ready canola (rapeseed), hemp-nettle, kochia, chickweed, corn spurry, wild tomato, cleavers, shepherd's purse, cow cockle, night flowering catchfly, stork's-bill, flixweed, narrow-leaved hawk's beard, common milkweed <sup>1,2</sup> , yellow nutsedge <sup>1,2</sup> , round leaved mallow <sup>2</sup> , field bindweed <sup>2</sup> , perennial sow thistle, Canada thistle, wire-stemmed muhly	<p><sup>1</sup> A single application of 1.67 L/ha will provide suppression only.</p> <p><sup>2</sup> For control of common milkweed, yellow nutsedge, round leaved mallow and field bindweed, a second sequential application may be at least 2 weeks after the first application.</p> <ul style="list-style-type: none"> <li>• A second 1.67 L/ha application may be used for late weed flushes emerging after the initial treatment.</li> <li>• Any second application must be applied no later than the 8 leaf stage of the corn.</li> <li>• Common milkweed should be 15-60 cm in height and actively growing.</li> <li>• Yellow nutsedge should be 5-15 cm in height and actively growing.</li> <li>• Perennial sow thistle and Canada thistle should be from the rosette stage to 50 cm in height and actively growing.</li> <li>• Wire-stemmed muhly should be 10-20 cm in height and actively growing.</li> <li>• Plants not fully emerged at the time of application will escape treatment.</li> </ul>
3.33	Up to and including 6 leaf stage	All weeds listed above	<ul style="list-style-type: none"> <li>• Only one application per season at 3.33 L/ha.</li> <li>• Common milkweed should be 15-60 cm in height and actively growing.</li> <li>• Yellow nutsedge should be 5-15 cm in height and actively growing.</li> <li>• Plants not fully emerged at the</li> </ul>



			time of application will escape treatment.
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◆Weeds will be more easily controlled and early crop competition avoided with applications made when the weeds are small. Control of weeds greater than 25 cm in height will be inconsistent, although some weeds may be controlled.

### 7.9.1 TANK MIXTURES

For tank mixtures, add herbicide according to instructions on the product label, and then add Smoke 540 2.0 according to instructions on this label (section 5). Refer to the tank mix herbicide labels for further safety precautions, use recommendations and product handling instructions.

DO NOT APPLY BY AIR

<b>RATE</b>	<b>GROWTH STAGE OF CROP</b>	<b>WEEDS CONTROLLED◆</b>	<b>COMMENTS (Use 100-200 L/ha water volumes)</b>
1.67 L/ha Smoke 540 2.0 + 0.75 – 1.0 kg ai/ha atrazine*	Up to and including the 5-leaf stage.	Residual control of lamb's-quarters, redroot pigweed, common ragweed.	Tank-mix should be used when only a single application timing is desired. Use the higher rate of atrazine for heavier weed infestations.
1.67 L/ha Smoke 540 2.0 + 2.5 – 3.7 L/ha Marksman Herbicide	Up to and including the 5-leaf stage.	Residual control of lamb's-quarters, redroot pigweed, common ragweed, velvetleaf.	Tank-mix should be used when only a single application timing is desired. Use the higher rate of Marksman for heavier weed infestations.
1.67 L/ha Smoke 540 2.0 + 0.56 – 1.12 L/ha 2,4-D Herbicide**	Before the corn is 15 cm tall (leaf extended) and/or before the 6 leaf stage.	Volunteer Roundup Ready canola – up to the 4 leaf stage.	Tank mix is most effective when treating small (4 leaf or less) canola plants.
Two applications:  First application: 1.67 L/ha Smoke 540 2.0 + 0.56 L/ha 2,4-D Herbicide**  Second application: 1.67 L/ha Smoke 540 2.0	Before the corn is 15 cm tall (leaf extended) and/or before the 6 leaf stage.	Volunteer Roundup Ready canola – up to the 4 leaf stage.	Tank mix is most effective when treating small (4 leaf or less) canola plants.

+ 0.42-0.56 L/ha 2,4-D Herbicide**			
1.67 L/ha Smoke 540 2.0 + 13.3 g/ha Peak 75WG Herbicide + 0.3 L/ha Banvel II Herbicide + non ionic surfactant (0.2% v/v)	Spike up to and including the 5 leaf stage.	Volunteer Roundup Ready canola – up to the 4 leaf stage.	Tank mix is most effective when treating small (4 leaf or less) canola plants.
1.67 L/ha Smoke 540 2.0 + 1.1 L/ha Dyvel DSp Liquid Herbicide	Before the corn is 15 cm tall (leaf extended)	Volunteer Roundup Ready canola – up to the 4 leaf stage.	Tank mix is most effective when treating small (4 leaf or less) canola plants.
1.67 L/ha Smoke 540 2.0 + 0.21 L/ha Callisto® 480SC Herbicide	3 - 8 leaf stage of corn	Eastern black nightshade, velvetleaf, redroot pigweed, common ragweed (suppression only) plus emerged annual and perennial weeds	Add Agral 90 at 0.2% v/v.  Apply up to the 8 leaf stage of broadleaf weeds.  Some perennial weeds may not be controlled with these rates.
1.67 L/ha Smoke 540 2.0 + 0.21 L/ha Callisto® 480SC Herbicide + 0.58 L/ha Aatrex Liquid 480 Herbicide	3 - 8 leaf stage of corn	Eastern black nightshade, velvetleaf, redroot pigweed, common ragweed plus emerged annual and perennial weeds	Add Agral 90 at 0.2% v/v.  Apply up to the 8 leaf stage of broadleaf weeds.  Some perennial weeds may not be controlled with these rates.
1.67 L/ha Smoke 540 2.0 + 2.5 L/ha Primextra® II Magnum® Herbicide	Apply up to and including 6 leaf stage of corn.	Annual grasses and broadleaf weeds, emerged annual or perennial weeds	This tank mix requires the use of a surfactant. AGRAL 90 or Ag-Surf may be used.  Do NOT apply this tank-mix to soils with less than 1% or more than

			10% organic matter.
1.67 L/ha Smoke 540 2.0 + 0.625 L/ha Banvel II Herbicide	Spike to 5 leaf	Weeds controlled by Smoke 540 2.0 plus improved control of Velvetleaf and extended control of late germinating, deep rooted annuals on the Banvel II Herbicide label.	
1.67 L/ha Smoke 540 2.0 + 285 g/ha Distinct Herbicide + Non ionic surfactant + 28% UAN	2 to 6 leaf	Weeds controlled by Smoke 540 2.0 plus extended control of late emerging weeds listed on the Distinct Herbicide label.	Non-ionic surfactant applied at 0.2% v/v 28% UAN applied at 1.25% v/v.
1.67 L/ha Smoke 540 2.0 + 1.25 L/ha Dual II Magnum Herbicide + 1.0 kg ai/ha atrazine*	Spike to 6 leaf	Weeds controlled by Smoke 540 2.0 plus extended control of annual grass and broadleaf weeds on the tank mix partner labels.	
1.67 L/ha Smoke 540 2.0 + 1.35 L/ha Frontier MAX Herbicide + 1.0 kg ai/ha atrazine*	Emergence to 3 leaf	Weeds controlled by Smoke 540 2.0 plus extended control of annual grass and broadleaf weeds on the tank mix partner labels.	
1.67 L/ha Smoke 540 2.0 + 2.8 kg/ha Prowl 60 WG Herbicide + 1.0 kg ai/ha atrazine*	Up to and including the 4 leaf stage of corn	Weeds controlled by Smoke 540 2.0 plus extended control of annual grass and broadleaf weeds on the tank mix partner labels.	
1.67 L/ha Smoke 540 2.0 + 0.21 L/ha Callisto® 480SC Herbicide	3 to 8 leaf stage of corn	Weeds controlled by Smoke 540 2.0 plus extended control of eastern black nightshade, velvetleaf, redroot	Add non ionic surfactant at 0.2%v/v.

+ Non ionic surfactant		pigweed, and common ragweed.	
1.67 L/ha Smoke 540 2.0 + 2.5 - 3.0 L/ha Primextra II Magnum Herbicide	Spike to 6 leaf stage of corn	Weeds controlled by Smoke 540 2.0 plus extended control of annual grass and broadleaf weeds on the Primextra II Magnum label.	

\* 0.75 to 1.0 kilogram active ingredient atrazine per hectare is equivalent to 1.56 to 2.08 litres per hectare of Atrazine 480™ or Aatrex Liquid 480™.

\*\* 500 g ai/litre of 2,4-D formulation. Adjust rates accordingly for other 2,4-D formulations. Use only low volatile ester or amine formulations of 2,4-D. Some corn hybrids may be injured by an application of 2,4-D. It is recommended that the corn seed provider be contacted regarding the tolerance of the corn hybrid to be treated, to 2,4-D prior to application of this tank mix.

◆ Weeds will be more easily controlled and early crop competition avoided with applications made when the weeds are small. Control of weeds greater than 25 centimetres in height will be inconsistent, although some weeds may be controlled.

Aatrex and Peak are registered trademarks of a Syngenta group company.  
Marksman, Banvel II and Dyvel DS are registered trademarks of BASF Corporation.

## 7.10 WEED CONTROL IN SWEET CORN VARIETIES WITH ROUNDUP READY 2 TECHNOLOGY

**WARNING: APPLY SMOKE 540 2.0 ON ONLY SWEET CORN VARIETIES THAT ARE DESIGNATED AS CONTAINING ROUNDUP READY 2 TECHNOLOGY (I.E. CONTAINS A ROUNDUP READY GENE).**

**NOTE: SWEET CORN VARIETIES CONTAINING ROUNDUP READY 2 TECHNOLOGY ARE TOLERANT OF GLYPHOSATE, THE ACTIVE INGREDIENT IN SMOKE 540 2.0. ALWAYS USE PEDIGREED (I.E. CERTIFIED) SWEET CORN SEED DESIGNATED AS CONTAINING ROUNDUP READY 2 TECHNOLOGY. SWEET CORN WHICH IS NOT DESIGNATED AS CONTAINING ROUNDUP READY 2 TECHNOLOGY MAY BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

### WEED CONTROL:

RATE (L/ha)	GROWTH STAGE OF CROP	WEEDS CONTROLLED◆	COMMENTS (Use 100-200 L/ha water volumes)
1.67	Up to and including 8 leaf stage	See Weeds Controlled in Section 7.7 Table	<ul style="list-style-type: none"> <li>• See Comments in Section 7.7 Table.</li> <li>• A second 1.67 L/ha application may be used for late weed flushes emerging after the initial</li> </ul>

			treatment. <ul style="list-style-type: none"> <li>• Any second application must be applied no later than the 8 leaf stage of the corn.</li> </ul>
3.33	Up to and including 6 leaf stage	See Weeds Controlled in Section 7.7 Table	<ul style="list-style-type: none"> <li>• See Comments in Section 7.7 Table.</li> <li>• Only one application per season at 3.33 L/ha.</li> </ul>

◆ Weeds will be more easily controlled and early crop competition avoided with applications made when the weeds are small. Control of weeds greater than 25 cm in height will be inconsistent, although some weeds may be controlled.

◆ Plants not fully emerged at the time of application will escape treatment.

### **TANK MIXES - Do not apply Tank Mixes to sweet corn varieties with Roundup Ready 2 Technology**

Allow a minimum of 30 days between application of this product and harvest.

DO NOT APPLY BY AIR.

### **7.11 WEED CONTROL IN ROUNDUP READY® SUGAR BEETS**

**WARNING: APPLY SMOKE 540 2.0 ON ROUNDUP READY SUGAR BEET VARIETIES ONLY.**

**NOTE: ALWAYS USE PEDIGREED (CERTIFIED) SUGAR BEET SEED DESIGNATED AS ROUNDUP READY. SUGAR BEETS WHICH ARE NOT DESIGNATED AS ROUNDUP READY WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

DO NOT APPLY BY AIR.

For weed control in Roundup Ready sugar beets apply 0.83 – 2.30 L/ha of Smoke 540 2.0 to emerged weeds. Refer to “**Annual Weed Control**” and “**Perennial Weed Control**” (Sections 7.1 and 8.1, respectively) for a listing of weeds controlled.

Apply Smoke 540 2.0 to emerged weeds up to 15 cm in height.

Up to four applications of Smoke 540 2.0 may be applied to Roundup Ready sugar beets. Allow a minimum of 10 days between applications.

Do not exceed a total maximum quantity of 7.31 L/ha of this product per season (e.g. the first application of up to 2.30 L/ha plus 3 applications of up to 1.67 L/ha).

Do not harvest Roundup Ready sugar beets within 30 days after the final application of Smoke 540 2.0.

### **7.12 AERIAL APPLICATION FOR WEED CONTROL IN TRUFLEX ROUNDUP READY CANOLA, ROUNDUP READY CANOLA, ROUNDUP READY 2 YIELD SOYBEANS, ROUNDUP READY SOYBEANS, CORN VARIETIES WITH ROUNDUP READY 2 TECHNOLOGY, AND ROUNDUP READY SUGAR BEETS– WET FIELD**

**CONDITIONS ONLY**

Refer to the general guidelines for aerial application in Sections 5.2 and 5.3 as well as specific instructions in this section.

**RESTRICTED USES****FOR USE IN THE PRAIRIE PROVINCES ONLY (including PEACE RIVER REGION OF B.C.)**

**NATURE OF RESTRICTION:** This product is to be used only in the manner authorized. For use only by aerial applicators and aerial application services approved by the provincial regulatory agency to apply this product with aerial application equipment. To qualify for consideration of provincial approval, the following requirements must be demonstrated to the provincial regulatory agency:

1. Aircraft used in the application of this product must have been configured and calibrated to acceptable standards at a recognized calibration (patternation) clinic within 20 months of the date of application. The spray system must not have been subjected to major changes (new nozzles, booms or configurations) since the calibration, and must meet critical drift management standards e.g. maximum boom width 65% of wing span; nozzle type, size and orientation to minimize drift and deliver droplet size VMD in the coarse (400 – 600 microns) or very coarse (600 – 1000 microns) range.
2. Aircraft used in the application of this product must carry a minimum of \$25,000 drift insurance in addition to any provincial requirements for general comprehensive insurance coverage.
3. Applicators using this product must have successfully completed a Smoke 540 2.0 aerial application training course.
4. Aerial application services applying this product must employ on staff at least one pilot applicator with at least 250 hours of actual aerial application time and a minimum of 100 hours within the last 24 month period. All pilots who do not meet the minimum experience standard must work under the *direct daily supervision* of a qualified pilot.

This product may be applied with aerial equipment only if ground equipment cannot be used due to flooded field conditions.

Smoke 540 2.0 may be applied with aerial application equipment for control of certain annual grass and broadleaf weeds and the suppression or season long control of certain perennial weeds.

**EXTREME CARE MUST BE TAKEN WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS.**

**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.

**Directions for use**

**THIS USE IS LIMITED TO SITUATIONS WHERE FIELD CONDITIONS ARE EXTREMELY WET SUCH THAT GROUND SPRAYERS (TRACTOR & FIELD SPRAYER, HIGH CLEARANCE SPRAYERS OR ANY KIND OF GROUND SPRAYER) CANNOT TRAVEL ACROSS THE FIELD TO MAKE EFFECTIVE WEED CONTROL APPLICATIONS.**

**DO NOT TANK MIX SMOKE 540 2.0 WITH ANY OTHER PRODUCT WHEN APPLIED BY AERIAL APPLICATION.**

Apply only by fixed-wing or rotary aircraft which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label. Ensure that the maximum boom width does not exceed 65% of the wing span. Nozzle type, size and orientation must be configured to deliver a droplet size VMD in the coarse (400-600 microns) or very coarse (600-1000) range.

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

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices, or equivalent electronic positioning systems (GPS). The use of spotter planes is recommended.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. **PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR IS MOST SUSCEPTIBLE.** The maintenance of an organic coating (paint) which meets aerospace specification MIL-C-38412 may prevent corrosion.

#### **Use Precautions**

Use only when meteorological conditions at the treatment site allow for complete and even target coverage. Apply only under conditions of good practice specific to aerial application as outlined in the *National Aerial Pesticide Application Manual*, developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides.

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified spray buffer zones should be observed.

Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure.

#### **Operator Precautions**

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent

label precautions in cases where the operator precautions exceed generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

### **Product Specific Precautions**

Read and understand the entire label before opening this product. If you have questions, call Farmer's Business Network Canada, Inc. at 1-844-200-FARM (3276) or obtain technical advice from the distributor or your provincial agricultural representative.

Application of this product must meet and/or conform to the following:

Volume: Apply the recommended rate in a minimum spray volume 30-100 litres per hectare.

Spray Buffer Zones: Refer to Section 5.3 for required spray buffer zones.

#### **7.12.1 AERIAL APPLICATION FOR WEED CONTROL IN TRUFLEX ROUNDUP READY CANOLA – WET FIELD CONDITIONS ONLY**

**WARNING: APPLY SMOKE 540 2.0 TO TRUFLEX ROUNDUP READY CANOLA VARIETIES ONLY.**

**NOTE: ALWAYS USE PEDIGREED (I.E., CERTIFIED) TRUFLEX ROUNDUP READY CANOLA SEED. CANOLA NOT DESIGNATED AS TRUFLEX ROUNDUP READY WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

Apply 0.55 – 3.33 L/ha of Smoke 540 2.0 from the 0 to 6 leaf stage of the crop. Repeat applications may be required if a second flush of weeds germinates prior to canopy closure. For sequential applications, a maximum of 1.67 L/ha may be applied twice up to the first flower stage. Ensure the crop has not advanced beyond the recommended growth stage. A total maximum of 3.33 L/ha Smoke 540 2.0 allowed for postemergence use. Refer to Section 7.5 for weeds controlled and application rates.

DO NOT apply tank mixtures of Smoke 540 2.0 with any other product by aerial application.

#### **7.12.2 AERIAL APPLICATION FOR WEED CONTROL IN ROUNDUP READY CANOLA – WET FIELD CONDITIONS ONLY**

**WARNING: APPLY SMOKE 540 2.0 ON ROUNDUP READY CANOLA VARIETIES ONLY.**

**NOTE: ALWAYS USE PEDIGREED (I.E., CERTIFIED) ROUNDUP READY CANOLA SEED. CANOLA WHICH IS NOT DESIGNATED AS ROUNDUP READY WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

Some short-term, visual yellowing may occur when Smoke 540 2.0 is applied at the late application (4 to 6 leaf stage) of the crop. This effect is temporary and will not influence crop growth, maturity or yield.

Apply 0.55 – 1.27 L/ha of Smoke 540 2.0 at the 0 to 6 leaf stage of the crop. Repeat applications may be required if a second flush of weeds germinates prior to canopy closure.



For sequential applications, ensure the crop has not advanced beyond the recommended growth stage. A total maximum of 1.66 L/ha Smoke 540 2.0 allowed for postemergence use. Refer to Section 7.5 for weeds controlled and application rates.

DO NOT apply tank mixtures of Smoke 540 2.0 with any other product by aerial application.

### **7.12.3 AERIAL APPLICATION FOR WEED CONTROL IN ROUNDUP READY 2 YIELD SOYBEANS AND ROUNDUP READY SOYBEANS – WET FIELD CONDITIONS ONLY**

**WARNING: APPLY SMOKE 540 2.0 ON ROUNDUP READY 2 YIELD SOYBEANS AND ROUNDUP READY SOYBEAN VARIETIES ONLY.**

**NOTE: ALWAYS USE PEDIGREED (I.E., CERTIFIED) SOYBEAN SEED DESIGNATED AS ROUNDUP READY. SOYBEANS WHICH ARE NOT DESIGNATED AS ROUNDUP READY WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

Apply 1.67 L/ha of Smoke 540 2.0 from the first trifoliolate leaf stage through flowering stage of the crop. Repeat application may be required for late weed flushes emerging after the initial treatment. Any second application must be applied no later than the flowering stage of the soybean. A total maximum of 3.34 L/ha Smoke 540 2.0 Maximum is allowed for postemergence use. Refer to Section 7.6 for weeds controlled and application rates.

DO NOT apply tank mixtures of Smoke 540 2.0 with any other product by aerial application.

### **7.12.4 AERIAL APPLICATION FOR WEED CONTROL IN CORN VARIETIES WITH ROUNDUP READY 2 TECHNOLOGY – WET FIELD CONDITIONS ONLY**

**WARNING: APPLY SMOKE 540 2.0 ON CORN VARIETIES WITH ROUNDUP READY 2 TECHNOLOGY**

**NOTE: ALWAYS USE PEDIGREED (I.E., CERTIFIED) CORN SEED DESIGNATED AS ROUNDUP READY. CORN WHICH IS NOT DESIGNATED AS ROUNDUP READY MAY BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

Apply 1.67 L/ha of Smoke 540 2.0 up to and including the 8 leaf stage of corn. Repeat application may be required for late weed flushes emerging after the initial treatment. Any second application must be applied no later than the 8 leaf stage of corn. A total maximum of 3.34 L/ha Smoke 540 2.0 is allowed for postemergence use. Refer to Section 7.7 for weeds controlled and application rates.

DO NOT apply tank mixtures of Smoke 540 2.0 with any other product by aerial application.

### **7.12.5 AERIAL APPLICATION FOR WEED CONTROL IN ROUNDUP READY SUGAR BEETS – WET FIELD CONDITIONS ONLY**

**WARNING: APPLY SMOKE 540 2.0 ON ROUNDUP READY SUGAR BEET VARIETIES ONLY.**

**NOTE: ALWAYS USE PEDIGREED (CERTIFIED) SUGAR BEET SEED DESIGNATED AS ROUNDUP READY. SUGAR BEET WHICH ARE NOT**

**DESIGNATED AS ROUNDUP READY WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

Apply 0.83-1.67 L/ha of Smoke 540 2.0. A single repeat application may be required for late weed flushes emerging after the initial treatment. Allow a minimum of 10 days between applications. A total maximum of 3.34 L/ha Smoke 540 2.0 is allowed for postemergence use. Refer to Section 7.11 for additional information.

Do not harvest Roundup Ready sugar beets within 30 days after the final application of Smoke 540 2.0.

**7.13 WEED CONTROL IN ALFALFA VARIETIES WITH ROUNDUP READY TECHNOLOGY (DO NOT APPLY TO ALFALFA GROWN FOR SEED PRODUCTION)**

**WARNING: APPLY SMOKE 540 2.0 TO ALFALFA VARIETIES WITH ROUNDUP READY TECHNOLOGY ONLY.**

**NOTE: ALWAYS USE PEDIGREED (I.E. CERTIFIED) ALFALFA SEED DESIGNATED AS ROUNDUP READY. ALFALFA SEED WHICH IS NOT DESIGNATED AS ROUNDUP READY WILL BE DAMAGED OR DESTROYED BY THIS TREATMENT.**

**ALFALFA VARIETIES WITH ROUNDUP READY TECHNOLOGY ARE TOLERANT OF GLYPHOSATE, THE ACTIVE INGREDIENT IN SMOKE 540 2.0.**

DO NOT APPLY BY AIR.

Applications can be made from emergence until 5 days prior to cutting.

A sequential treatment may be applied to alfalfa varieties with Roundup Ready Technology for control of late weed flushes.

Allow a minimum of 5 days between application and cutting of alfalfa.

Additional applications of this product should be at least 25 days apart.

**Total number of in-crop applications not to exceed 3 per growing season.**

**New Stand Establishment (Seedling Year):** Due to the biology and breeding constraints of alfalfa, up to 10 percent of the seedlings may not contain a Roundup Ready gene and will not survive or thrive after the first application of this product. To limit the undesirable effects of stand gaps created by the loss of alfalfa plants not containing a Roundup Ready gene, an application of this product should be applied at or before the 4 trifoliate leaf stage of alfalfa during the establishment (seedling) year.

Note: Where alfalfa with Roundup Ready Technology is grown with a companion or cover crop, or is overseeded with a second species, in-crop (over-the-top) applications of this product will eliminate the non-Roundup Ready (non-glyphosate tolerant) species.

**WEED CONTROL IN ALFALFA VARIETIES WITH ROUNDUP READY TECHNOLOGY**

<b>RATE (L/ha)</b>	<b>GROWTH STAGE OF CROP</b>	<b>WEEDS CONTROLLED</b>	<b>COMMENTS (Apply in 50 –100 L/ha water)</b>
1.67 single application	Emergence until 5 days prior to cutting	<p><b><u>Annual Grasses</u></b> Wild oats, green foxtail, volunteer barley, volunteer wheat, barnyard grass, giant and yellow foxtail, fall Panicum, wild proso millet, smooth and large crabgrass</p> <p><b><u>Annual Broadleaves</u></b> Stinkweed, redroot pigweed, wild mustard, Russian thistle, lamb's-quarters, non-Roundup Ready volunteer canola (rapeseed), hempnettle, lady's-thumb, kochia, chickweed, corn spurry, wild tomato, cleavers, wild buckwheat, shepherd's purse, cow cockle, night-flowering catchfly, smartweed, stork's-bill, flixweed, narrow-leaved hawk's beard, smooth pigweed, cocklebur, Eastern black nightshade, velvetleaf, biennial wormwood<sup>1</sup>.</p> <p><b><u>Perennials (season-long control)</u></b> Quackgrass, Canada thistle, and perennial sow thistle, foxtail barley, dandelion.</p>	<p>All weeds should be actively growing at time of application.</p> <p><sup>1</sup>Biennial wormwood should be at 2-8 leaf stage.</p>
3.33 single application	Emergence until 5 days prior to cutting	<p>All the above weeds plus:</p> <p><b><u>Annual Broadleaves</u></b> Round-leaved mallow</p> <p><b><u>Perennials (season-long control):</u></b> Foxtail barley<sup>2</sup>, dandelion<sup>2</sup>, common milkweed<sup>3</sup>, field bindweed, yellow nutsedge<sup>4</sup>, horsenettle<sup>5</sup>, tall waterhemp<sup>6</sup>, bur cucumber<sup>7</sup></p>	<p><sup>2</sup>3.33 L/ha rate is for large, more established plants, heavy infestation or if plants are stressed.</p> <p><sup>3</sup>Common milkweed should be 15-60 cm in height.</p> <p><sup>4</sup>Yellow nutsedge should be 5-15 cm in height.</p> <p><sup>5</sup>Horse-nettle from the 2 to 12 leaf stage).</p> <p><sup>6</sup>Tall waterhemp up to and including the 18-leaf stage.</p>

			<sup>7</sup> Bur cucumber from the 1-18 leaf stage.
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## 7.14 HYBRID CORN SEED PRODUCTION USING THE RHS® SYSTEM WITH ROUNDUP READY 2 TECHNOLOGY

### DO NOT APPLY BY AIR.

The RHS designation indicates that the corn contains technology that allows for tassel-only susceptibility to this product. Use of this product on corn hybrids or inbreds that are not designated as RHS or as corn containing Roundup Ready® 2 Technology may result in severe crop injury and yield loss.

#### Tassel Control

This product may be used as an over-the-top broadcast application for tassel control in RHS corn inbred recipient lines in seed production fields planted with corn containing Roundup Ready 2 Technology as the pollen donor.

**USE INSTRUCTIONS:** This product may be applied for tassel control up from the 8 to the 13 leaf stage before flowering at use rates from 1.67 to 2.34 L/ha per application. Up to two applications for tassel control are permitted.

#### Weed Control

**Refer Only to Section:** 7.9 WEED CONTROL IN CORN VARIETIES WITH ROUNDUP READY 2 TECHNOLOGY

**Tank mixes:** See section 7.9.1 TANK MIXTURES for use rates, timings and restrictions. Note that only those tank mixtures for which the tank mixture partner herbicide products are registered for use on seed (inbred) corn may be used for weed control on RHS corn inbred recipient lines and corn inbred donor lines containing Roundup Ready 2 Technology.

## 8.0 PERENNIAL WEED CONTROL

**ALWAYS READ PRECAUTIONS, GENERAL INFORMATION & MIXING AND APPLICATION SECTIONS (3.0, 4.0 AND 5.0) PRIOR TO SPECIFIC APPLICATION INFORMATION IN ANY LABEL SECTION. DO NOT apply by air.**

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

**8.1 PERENNIAL WEED CONTROL WITH SMOKE 540 2.0**

WEED	APPLICATION			COMMENTS
	GROWTH STAGE	RATE (L/ha)	WATER VOLUME (L/ha)	
<b>Quackgrass</b> (control, light to moderate infestations)	3 to 4 green leaves or more	1.67	50 - 300	<p>Apply in clean water using flat fan nozzles.</p> <p>Allow 3 or more days after treatment before tillage.</p> <p>Refer to “<b>Quackgrass</b>” notes in section 8.2.1 for more information.</p> <p>For higher volumes (i.e., 150 – 300 L/ha) an approved surfactant must be added at 0.5 L per 100 L of clean water (0.5% v/v). Refer to list in section 8.2.2. See also below.</p>

WEED	APPLICATION			COMMENTS
	GROWTH STAGE	RATE (L/h)	WATER VOLUME (L/ha)	
<b>Quackgrass</b> (long term control, heavy infestations, high water volumes)	3 to 4 green leaves or more	1.67 4.67	50 - 300	<p>Allow 3 or more days after treatment before tillage.</p> <p>Rates higher than 1.67 L/ha will provide more consistent, longer term control, especially with heavier infestations and/or higher water volumes (i.e., 150 – 300 L/ha).</p> <p>Refer to “<b>Quackgrass</b>” notes in section 8.2.1 for more information.</p>
<b>Canada Thistle</b>	Rosette stage (summerfallow)	1.67	50 - 100	<p>Apply in clean water using flat fan nozzles.</p> <p>Allow 10 or more days after treatment before tillage.</p> <p>Refer to “<b>Canada Thistle</b>” notes in section 8.2.3 for more information.</p>
<b>Canada Thistle</b>	Bud stage or beyond	3.1 7	100 - 300	<p>Allow 5 or more days after treatment before tillage.</p>
<b>Field Bindweed</b>	Full bloom or beyond	4.67 8.0	100 - 300	<p>Allow 7 or more days after treatment before tillage.</p>
<b>Common Milkweed*</b>	Bud to full bloom (preharvest)	1.67	50 – 100	<p>See “<b>Preharvest Treatment</b>” (section 9.9) for more information.</p>
	Bud to full bloom	8.0	100 - 300	<p>Allow 7 or more days after treatment before tillage.</p> <p>Reduced control may occur after full bloom.</p> <p>Common milkweed may not all be in the correct stage, therefore, repeat treatments may be required.</p>
<b>Toadflax</b>	Vegetative Stage (summerfallow)	1.67	50 - 100	<p>Apply in clean water using flat fan nozzles.</p>

WEED	APPLICATION			COMMENTS
	GROWTH STAGE	RATE (L/ha)	WATER VOLUME (L/ha)	
	Bud to full bloom (preharvest)			<p>Allow 7 or more days after treatment before tillage in summerfallow.</p> <p>For more information, see “<b>Toadflax Control</b>” (section 8.2.4), or “<b>Preharvest Treatment</b>” (Section 9.9).</p>
<b>Alfalfa</b>	<p>Early bud to full bloom stage</p> <p>Fall applications only</p>	2.47 – 3.33	50 - 300	<p>Allow 5 or more days after treatment before tillage. Use the higher rates when alfalfa populations are high or when heavy grass infestations are also present.</p> <p>For spring applications and control in minimum tillage systems using a 2,4-D tank mix, see section 8.2.6.</p>
<b>Dandelion</b>	<p>&lt; 15 cm</p> <p>&gt; 15 cm</p> <p>Rosette to full bloom (preharvest)</p>	<p>1.67</p> <p>2.47 – 3.33</p> <p>1.67</p>	<p>50 – 100</p> <p>50 – 300</p> <p>50 - 100</p>	<p>Allow 3 or more days after treatment before tillage for all rates.</p> <p>Use the higher rate when infestations are heavy.</p> <p>Refer to “<b>Dandelion</b>” notes in section 8.2.5 for more information.</p> <p>Allow 7 or more days after treatment before tillage. For more information, see “<b>Preharvest Treatment</b>” (section 9.9).</p>
<b>Foxtail Barley</b>	Seeding to heading	1.67 – 3.33	50 - 100	<p>Allow a minimum of 1 day after treatment before tillage or seeding.</p> <p>Use higher rates for larger, more established plants, heavy infestations or if plants are stressed.</p>

Common reed	Apply when actively growing, or to regrowth after burning or mowing.	2.0 – 8.0	100-500	<p>For partial control and for best results, treat in late summer or early fall when plants are actively growing and in full bloom Treatment before or after this stage may lead to reduced control. Due to the dense nature of the vegetation, which may prevent good spray coverage or uneven stages of growth, repeat treatments may be necessary to maintain control. Visual control symptoms will be slow to develop.</p> <p>For higher volumes (i.e, 150–300 L/ha) an approved surfactant should be added at 0.5 L per 100 L of clean water (0.5% v/v).</p> <p><b>DO NOT TREAT PLANTS OVER OPEN WATER.</b> Smoke 540 2.0 is not registered for direct application to bodies of water.</p>
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WEED	APPLICATION			COMMENTS
	GROWTH STAGE	RATE (L/ha)	WATER VOLUME (L/ha)	
<b>Other Perennials</b> (see listing section 6.2)	Early heading or early bud stage	4.67 - 8	100 - 300	Allow 7 or more days after treatment before tillage.

**\*NOTE:** For spot treatment, mix 80 millilitres of product in 5 litres of clean water per 100 m<sup>2</sup> (1.67 – 8 litres per hectare is approximately equivalent to 17 – 80 mL/100m<sup>2</sup>, respectively).

## 8.2 SPECIAL NOTES FOR PERENNIAL WEED CONTROL

### 8.2.1 QUACKGRASS

For **season-long control on fall tilled ground:** Apply 1.67 litres per hectare of this product in spring prior to seeding. Apply in 50 to 100 litres per hectare of clean water as described in the preceding table. Delay application until the majority of quackgrass plants have 4 to 5 green leaves. This stage usually occurs 1 to 4 weeks later on fall tilled ground than on undisturbed ground. Reduced control may result on ground tilled deeper than 15 centimetres.

**NOTE:** This treatment will provide season-long control of quackgrass on fall tilled ground. Reduced control will be experienced versus this product on non-fall tilled ground. Repeat treatments may be necessary.

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

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

### 8.2.2 SURFACTANT INFORMATION

The following is a list of approved surfactants for use with Smoke 540 2.0 for control of quackgrass:

Agral 90                      Companion  
Ag Surf

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

### 8.2.3 CANADA THISTLE

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

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

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

### SMOKE 540 2.0 PLUS BANVEL II HERBICIDE TANK MIXTURES

For control of Canada thistle (and perennial sow thistle) in summerfallow or in postharvest stubble, apply 1.13 litres per hectare Smoke 540 2.0 plus 1.25 litres per hectare Banvel II Herbicide in 100 – 200 litres per hectare of clean water. In addition, add 350 millilitres per hectare of a non-ionic surfactant registered for use with this product, such as Agral 90, Ag Surf or Companion.

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

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

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

If application is made after September 1<sup>st</sup>, or if soil moisture levels are extremely low after application, crop injury may occur in the spring following application.

### 8.2.4 TOADFLAX

**Control of Toadflax in a Summerfallow Vegetative Stage.** To ensure the proper timing of application, the following steps must be followed:

1. Conduct summerfallow tillage as usual and perform the last tillage operation between July 10<sup>th</sup> to July 21<sup>st</sup>.

2. Allow toadflax to regrow for a minimum of 4 to 5 weeks until they are minimum of 15 centimetres tall and at a lush green vegetative stage.

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

### **8.2.5 DANDELION**

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

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

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

For fall control of established stands of alfalfa, apply 1.67 to 3.33 litres per hectare Smoke 540 2.0 and 1.2 to 2.4 litres per hectare of any 500 grams per litre 2,4-D amine or low volatile ester formulation in 100 to 200 litres of water per hectare. (Adjust product rates accordingly for other 2,4-D formulations).

For spring applications, use only the low rate of 2,4-D (i.e., 1.2 litres per hectare) and 1.67 to 3.33 litres per hectare Smoke 540 2.0. Only cereal crops not underseeded to legumes may be planted following spring applications of this tank mix, and a 14 day interval between application and planting is required.

Use the higher Smoke 540 2.0 rates when perennial grasses are prevalent.

#### **8.2.6.1 REMOVAL OF ROUNDUP READY ALFALFA – TANK MIXES**

**\*TANK MIXES – REFER TO THE RESPECTIVE PRODUCT LABELS WHEN TANK MIXING FOR USE RATES, CAUTIONS/WARNINGS, MIXING INSTRUCTIONS, RE-CROPPING RECOMMENDATIONS AND OTHER DETAILS.**

The addition of a tank-mix partner is required to remove a stand of Roundup Ready alfalfa. Herbicide applications should be made in the fall when the Roundup Ready Alfalfa is at the bud stage of growth. Tillage at 2-3 weeks following herbicide application can improve control and consistency under stressed conditions (drought, frost, cold temperatures).

Use the following products and rates to control Roundup Ready alfalfa plus annual and perennial weeds (See Sections 7.1 and 8.1).

- Mix with water to achieve a total applied volume of 100 L/ha.
- Apply to Roundup Ready alfalfa in the pre-bud to start of flowering stage.
- Best control achieved when the majority of plants are in the bud stage of development.

<b>Smoke 540 2.0 at 1.67-3.34 L/ha <u>plus only one of the following Tank Mix Products:</u></b>
2,4-D* Herbicide at 1.52 L/ha <b>or:</b>
Banvel II Herbicide at 1.25 L/ha <b>or:</b>
Lontrel 360 Herbicide at 0.56-0.83 L/ha <b>or:</b>
2,4-D* Herbicide at 1.05 L/ha + Banvel II Herbicide at 1.25 L/ha <b>or:</b>
2,4-D* Herbicide at 1.05 L/ha + Lontrel 360 Herbicide at 0.42 L/ha <b>or:</b>
Curtail M Herbicide at 2.0 - 3.0 L/ha

\*rate for a 564 g ae/L formulation of 2,4-D. Adjust rates for other formulations. Includes both amine and ester formulations.

### 8.2.7 ALL PERENNIAL WEEDS

**Weed Stages:** Weeds must be at the proper stage for effective control. Refer to “Perennial Weed Control with Smoke 540 2.0” (section 8.1).

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

**Rhizome Dormancy:** Reduced control may result if rhizomes have become dormant. Dormancy may occur if soil fertility is low and/or the land has not been tilled for several years.

**Mowing Effects:** Mowing prior to application will reduce effectiveness unless weeds are allowed to regrow to the proper stage before application.

**Tillage Effects:** Fall or spring tillage prior to spring applications and tillage between harvesting and fall applications will reduce the effectiveness on perennial weeds. Follow-up tillage after application should be delayed 5 to 7 days for best results. See “**Weed Control**” tables (sections 7.1 and 8.1) for specific tillage interval for each weed.

**Rainfall Effects:** Heavy rainfall immediately after application may wash the chemical off the foliage and a repeat treatment may be required. Do not apply if rainfall is forecast for the time of application.

**Regrowth from Germinating Seeds:** This product only controls emerged plants. Repeat treatments or other weed control measures may be required to control weeds regenerating from seeds or other underground parts.

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

## 9.0 CROPLAND SITUATIONS

**ALWAYS READ PRECAUTIONS, GENERAL INFORMATION & MIXING AND APPLICATION SECTIONS (3.0, 4.0 and 5.0) PRIOR TO SPECIFIC APPLICATION INFORMATION IN ANY LABEL SECTION. DO NOT APPLY BY AIR EXCEPT FOR PREHARVEST AERIAL APPLICATION (SECTION 9.9.2).**

This product can be applied as a broadcast spray or spot treatment prior to planting all crops, postharvest to annual crops, preharvest in wheat, barley, oats, canola (rapeseed), flax (including low linolenic acid varieties), lentils, peas, soybeans, dry beans and forages, and in summerfallow. It may also be applied as a broadcast spray in Roundup Ready® corn 2, soybean or canola varieties (sections 7.5 and 7.6 and 7.7). It may be applied as a directed spray in orchards, vineyards, blueberries and strawberries, and using selective equipment in soy and dry beans, orchards, vineyards, cranberries and strawberries (refer to specific sections below for more information). **For specific instructions on weed control in the following cropping situations, always refer to “Annual and Perennial Weed Control” (sections 7.0 and 8.0) for more information.**

### 9.1 PRIOR TO PLANTING – ALL CROPS

This product may be applied prior to planting all crops for control of emerged weeds listed on this label. Ensure weeds are at the desired stage at the time of application. This product does not provide preemergent weed control and newly germinating weeds may be a problem in the crop. **APPLY BEFORE SEEDING OR TRANSPLANTING.**

#### 9.1.1 PRIOR TO PLANTING – TANK MIXES\* - SOYBEANS

**\*TANK MIXES – WHEN APPLIED AS A TANK-MIX COMBINATION, READ AND OBSERVE ALL LABEL DIRECTIONS, INCLUDING RATES, PERSONAL PROTECTIVE EQUIPMENT, RESTRICTIONS AND PRECAUTIONS FOR EACH PRODUCT USED IN THE TANK-MIX. ALWAYS USE IN ACCORDANCE WITH THE MOST RESTRICTIVE LABEL RESTRICTIONS AND PRECAUTIONS.**

**WHERE TANK MIX PARTNER LABELS REFER TO ONLY 360 G/L GLYPHOSATE PRODUCTS, ENSURE THAT THE LABEL RATE IS ADJUSTED TO COMPENSATE FOR THIS MORE CONCENTRATED PRODUCT.**

**Smoke 540 2.0 plus Pursuit Herbicide**

Smoke 540 2.0 plus Pursuit Herbicide can be applied prior to or after seeding, but before crop emergence. Smoke 540 2.0 will control emerged weeds listed on this label when applied as directed (refer to Annual and Perennial Weed control sections in the Smoke 540 2.0 product label). Pursuit Herbicide will control weeds germinating from seed.

ONLY SOYBEANS, WHITE BEANS, KIDNEY BEANS, PROCESSING PEAS, FIELD CORN, SPRING BARLEY, SPRING WHEAT AND WINTER WHEAT MAY BE PLANTED THE SEASON FOLLOWING A PURSUIT APPLICATION. WINTER WHEAT MAY BE PLANTED THE SAME YEAR AS A PURSUIT APPLICATION TO SOYBEANS, BUT NOT EARLIER THAN 100 DAYS AFTER THE APPLICATION.

DO NOT APPLY AFTER CROP EMERGENCE.

**Smoke 540 2.0 plus metribuzin (Sencor 75 DF Herbicide, Sencor 480F Flowable Herbicide, Sencor 480 Soybean Flowable Herbicide, or Lexone DF Herbicide)**

For burndown and residual control of selected annual weeds taller than 4 cm in soybeans, apply Smoke 540 2.0 in tank mix with Sencor 75 DF Herbicide, Sencor 480F Flowable Herbicide, Sencor 480 Soybean Flowable Herbicide or Lexone DF Herbicide as a preplant surface or pre-emergence application before crop emergence.

**Smoke 540 2.0 plus Dual Magnum Herbicide or Dual II Magnum Herbicide**

For burndown and residual control of selected annual weeds in soybeans. Apply Smoke 540 2.0 in tank mix with Dual Magnum Herbicide or Dual II Magnum Herbicide at 1.15– 1.75 L/ha as a preplant surface (up to 30 days before planting) or pre-emergence application before crop emergence.

Perennial weeds such as quack grass may not be controlled with lower rates of Smoke 540 2.0. Use higher rates of Smoke 540 2.0 if perennial weeds are present.

**Smoke 540 2.0 plus Dual Magnum Herbicide or Dual II Magnum Herbicide plus metribuzin (Sencor 75 DF Herbicide, Sencor 480F Flowable Herbicide, Sencor 480 Soybean Flowable Herbicide, or Lexone DF Herbicide)**

For burndown and residual control of selected annual weeds in soybeans.

Apply as a preplant surface (up to 30 days before planting) or pre-emergence application before crop emergence. Perennial weeds such as quack grass may not be controlled with lower rates of Smoke 540 2.0.

**Smoke 540 2.0 plus Axiom DF Herbicide**

Preplant Surface:

For use in conservation tillage, minimum-tillage or no-tillage crop production systems, when weeds are present at the time of application, apply the Axiom DF Herbicide treatment in tank mixture with Smoke 540 2.0. Apply Axiom DF Herbicide in a minimum of 200 L/ha of total volume.

Preemergence:

Smoke 540 2.0 plus Axiom DF Herbicide may be applied to the soil surface as a broadcast spray after planting of the crop, but prior to weed or crop emergence. **For conservation tillage systems:** Apply this tank mixture in a minimum of 200 L/ha of total volume.

**9.1.2 PRIOR TO PLANTING – TANK MIXES\* - CORN**

**\*TANK MIXES – WHEN APPLIED AS A TANK-MIX COMBINATION, READ AND OBSERVE ALL LABEL DIRECTIONS, INCLUDING RATES, PERSONAL PROTECTIVE EQUIPMENT, RESTRICTIONS AND PRECAUTIONS FOR EACH PRODUCT USED IN THE TANK-MIX. ALWAYS USE IN ACCORDANCE WITH THE MOST RESTRICTIVE LABEL RESTRICTIONS AND PRECAUTIONS.**

**WHERE TANK MIX PARTNER LABELS REFER TO ONLY 360 G/L GLYPHOSATE PRODUCTS, ENSURE THAT THE LABEL RATE IS ADJUSTED TO COMPENSATE FOR THIS MORE CONCENTRATED PRODUCT.**

**Smoke 540 2.0 plus Dual Magnum Herbicide or Dual II Magnum Herbicide**

For burndown and residual control of selected annual weeds in corn. Apply Smoke 540 2.0 in tank mix with Dual Magnum or Dual II Magnum at 1.25 to 1.75 L/ha as a preplant surface (up to 30 days before planting) or pre-emergence application before crop emergence.

NOTE: The use on corn is for EASTERN CANADA ONLY.

Perennial weeds such as quack grass may not be controlled with lower rates of Smoke

540 2.0. Use higher rates of Smoke 540 2.0 if perennial weeds are present.

**Smoke 540 2.0 plus Dual Magnum Herbicide or Dual II Magnum Herbicide plus Aatrex Liquid 480 Herbicide**

For burndown and residual control of selected annual weeds in corn. Apply Smoke 540 2.0 in tank mix with Dual Magnum Herbicide or Dual II Magnum Herbicide at 1.25 – 1.75 L/ha plus Aatrex Liquid 480 Herbicide at 2.1 - 3.1 L/ha as a preplant surface (up to 30 days before planting) or pre-emergence application before crop emergence.

NOTE: The use on corn is for EASTERN CANADA ONLY.

Perennial weeds such as quack grass may not be controlled with lower rates of Smoke 540 2.0. Use higher rates of Smoke 540 2.0 if perennial weeds are present.

**Smoke 540 2.0 plus Primextra II Magnum Herbicide**

For burndown and residual control of selected annual weeds in corn apply Smoke 540 2.0 plus Primextra II Magnum preplant surface or pre-emergence application before crop emergence. This tank mixture requires the use of a surfactant, either Agral 90 or Ag-Surf. See mixing instructions for more information.

Perennial weeds such as quack grass may not be controlled with lower rates of Smoke 540 2.0. Use higher rates of Smoke 540 2.0 if perennial weeds are present.

**Smoke 540 2.0 plus Frontier MAX Herbicide**

For burndown and residual control of selected annual weeds apply Smoke 540 2.0 plus Frontier MAX Herbicide as a preplant surface or pre-emergence application before crop emergence.

**Smoke 540 2.0 plus Prowl herbicide**

For burndown and residual control of selected annual weeds apply Smoke 540 2.0 plus Prowl herbicide after seeding but before crop emergence.



### **Smoke 540 2.0 plus Converge Pro Herbicide or Converge 75 WDG Herbicide**

#### Surface Preplant:

CONVERGE 75 WDG Herbicide can be applied to the soil surface up to 14 days prior to planting. CONVERGE 75 WDG Herbicide must be tankmixed with atrazine when applied as a surface preplant application. When weed growth is present at the time of application, Smoke 540 2.0 can be added to the Converge Pro Herbicide or Converge 75 WDG Herbicide + atrazine treatment for burndown control of these weeds. Do not incorporate.

#### Preemergence:

Converge Pro Herbicide or Converge 75 WDG Herbicide can also be applied after planting to just prior to crop emergence. Atrazine and/or Smoke 540 2.0 can be tank mixed with pre-emergent applications of Converge Pro Herbicide or Converge 75 WDG Herbicide.

Apply Converge Pro Herbicide at 165-220 mL per hectare, or Converge 75 WDG Herbicide at 105-140 g per hectare, tankmixed with Smoke 540 2.0 at 1.67 L per hectare for burndown control of emerged weeds in all tillage management systems and improved control of established dandelion in zero-tillage management systems. A three-way tankmix of Converge Pro Herbicide or Converge 75 WDG Herbicide + atrazine + Smoke 540 2.0 can be used to provide residual control of the weeds listed in the Converge Pro Herbicide or Converge 75 WDG Herbicide + atrazine section.

### **Smoke 540 2.0 Liquid Herbicide plus Axiom DF Herbicide**

#### Preplant Surface:

For use in conservation tillage, minimum-tillage or no-tillage crop production systems, when weeds are present at the time of application, apply the Axiom DF Herbicide treatment in tank mixture with Smoke 540 2.0. Apply Axiom DF Herbicide in a minimum of 200 L/ha of total volume.

#### Preemergence:

Smoke 540 2.0 plus Axiom DF Herbicide may be applied to the soil surface as a broadcast spray after planting of the crop, but prior to weed or crop emergence.

#### **For conservation tillage systems:**

Apply this tank mixture in a minimum of 200 L/ha of total volume.

Sencor and Axiom are registered trademarks of Bayer CropScience Inc.

Lexone is a registered trademark of E.I. du Pont de Nemours and Company.

Dual, Magnum and Primextra are registered trademarks of Syngenta Group Company.

**\*TANK MIXES – REFER TO THE RESPECTIVE PRODUCT LABELS WHEN TANK MIXING FOR USE RATES, CAUTIONS/WARNINGS, MIXING INSTRUCTIONS, RE-CROPPING RECOMMENDATIONS AND OTHER DETAILS.**

**Smoke 540 2.0 plus bromoxynil for preseed/preplant control of annual, perennial weeds and volunteer canola:**

Apply Smoke 540 2.0 in a tank mix with bromoxynil. This tank-mix will control volunteer canola (all types) in addition to control of emerged weeds listed on this label when applied as directed (refer to Annual Weed Control Section 7.0 and Perennial Weed control Sections 8.0 prior to the planting of canola (all types).

For control of volunteer canola apply bromoxynil at a rate of 350 g/ha (e.g., 1.25 L/ha for herbicides containing 280 g/L bromoxynil, 1.5 L/ha for herbicides containing 235 g/L bromoxynil, etc.) tank mixed with Smoke 540 2.0 at 0.83 -1.27 L/ha (annual weeds) or 1.67-3.33 L/ha (perennial weeds) prior to the planting of canola.

## **9.2 POSTHARVEST STUBBLE TREATMENT**

This product may be applied in the fall as a postharvest stubble treatment for control of perennial weeds such as quackgrass and Canada thistle. Allow weeds to regrow to the desired stage (20 to 25 centimetres tall for quackgrass and Canada thistle) before application and ensure they have a high proportion of green colouration. Straw should be removed or evenly spread to allow for proper regrowth and spray coverage. Heavy frosts prior to application may decrease control.

## **9.3 SPOT TREATMENT (IN-CROP)**

This product can be applied as an in-crop spot treatment in barley, corn, oats, soybeans, wheat, strawberry, blueberry, forage grasses and legumes including seed production. Applications should be made using the same rates and at the same growth stages as listed in the “Weed Control” tables (sections 7.1 and 8.1) or use a 0.67 percent solution for annual weeds and quackgrass and a 1.34 percent solution for other perennial weeds (a 0.67 percent solution equals 0.67 litres of Smoke 540 2.0 in 100 litres of spray solution). 0.67 and 1.34 percent solutions should be applied to wet, but not run-off. Applications can be made using a boom sprayer, hose and handgun, or hand sprayer in accordance with instructions in “Application Equipment” (section 5.2).

### **9.3.1 GRAZING RESTRICTIONS**

Applications can be made up to heading of small grains, initial pod set on soy and dry beans, silking of corn and emergence of seed heads. The crop in the treated area will be killed. Take care to avoid drift for the same reason. **DO NOT APPLY IF CROP GROWTH HAS ADVANCED BEYOND SEED SET. ALLOW 3 TO 5 DAYS FOR SMOKE 540 2.0 TO TRANSLOCATE INTO ALL PLANT PARTS BEFORE GRAZING OR HARVESTING TREATED AREAS IN FORAGES.**

## **9.4 SUMMERFALLOW TREATMENT**

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

**9.5 MINIMUM AND ZERO TILLAGE CROPPING SYSTEMS (ALL FIELD CROPS, INCLUDING CEREALS, OILSEEDS, PULSES, FORAGES, CORN AND POTATOES)**

This product may be applied prior to seeding or after seeding, but before crop emergence for control of emerged weeds in minimum and zero tillage cropping systems for all field crops. Applications made too far in advance of seeding may allow weeds to emerge between application and crop emergence, as this product does not provide residual weed control.

SPECIMEN

## Minimum and Zero Tillage Tank Mixtures

**9.5.1 Smoke 540 2.0 plus 2,4-D amine or ester** can be applied prior to seeding or after seeding, but before crop emergence in **wheat, winter wheat, barley and rye**. Refer to “**Annual Weed Control with Smoke 540 2.0 Tank Mixtures**” table for information (section 7.2).

**9.5.2 Smoke 540 2.0 plus bromoxynil (Pardner)** can be applied prior to seeding or after seeding, but before crop emergence in wheat, barley and oats. Refer to “**Annual Weed Control with Smoke 540 2.0 Tank Mixtures**” table for information (section 7.2).

**9.5.3 Smoke 540 2.0 plus Pursuit Herbicide** can be applied prior to, or after seeding, but before crop emergence in soybeans. Smoke 540 2.0 will control emerged weeds listed on this label when applied as directed (refer to “**Annual and Perennial Weed Control**” section 7.0 and 8.0). Pursuit Herbicide will control weeds germinating from seed. Add the recommended rates of both products in 100 litres of water per hectare, following the instructions on the Pursuit herbicide label.

**ALWAYS REFER TO THE PURSUIT LABEL FOR FURTHER INFORMATION ON WEEDS CONTROLLED, APPLICATION DIRECTIONS, AND USE PRECAUTIONS. ONLY SOYBEANS, FIELD CORN, SPRING BARLEY, SPRING WHEAT AND WINTER WHEAT MAY BE PLANTED THE SEASON FOLLOWING A PURSUIT HERBICIDE APPLICATION. WINTER WHEAT MAY BE PLANTED THE SAME YEAR AS A PURSUIT APPLICATION TO SOYBEANS, BUT NOT EARLIER THAN 120 DAYS AFTER THE APPLICATION.**

**DO NOT APPLY AFTER CROP EMERGENCE.**

Pursuit is a registered trademark of BASF Agrochemical Products B.V. Netherlands.

**9.5.4 Smoke 540 2.0 plus MCPA** can be applied prior to seeding in wheat, barley, rye, oats, corn (field and sweet; MCPA amine only), flax and field peas (MCPA amine only). Refer to “**Annual Weed Control with Smoke 540 2.0 Tank Mixtures**” table for information (section 7.2).

**9.5.5 Smoke 540 2.0 plus Buctril M®** can be applied prior to seeding in **wheat, rye, corn, barley, oats, flax, canary seed and seedling grasses (including brome grass, crested wheatgrass, intermediate wheat grass, slender wheatgrass, tall wheatgrass, Russian wild rye, timothy, orchard grass, creeping red fescue, meadow fescue, meadow foxtail, seedling tall fescue, seedling meadow brome grass, seedling streambank wheatgrass and reed canary grass).**

Refer to “**Annual Weed Control with Smoke 540 2.0 Tank Mixtures**” table for information (section 7.2).

**9.5.6 Smoke 540 2.0 plus MCPA amine** can be applied prior to seeding in **lentil and chickpea**. Refer to “**Annual Weed Control with Smoke 540 2.0 Tank Mixtures**” table for information (section 7.2).

**9.5.7 Smoke 540 2.0 plus Express Toss-N-Go Herbicide Or Express Toss-N-Go® Dry Flowable 75% Herbicide** in pre-seed situations, **wheat and barley** may be seeded after a minimum of 24 hours after application. Refer to “**Annual Weed Control with Smoke 540 2.0 Tank Mixtures**” table for information (section 7.2).

ALWAYS REFER TO THE EXPRESS® TOSS-N-GO HERBICIDE OR EXPRESS TOSS-N-GO DRY FLOWABLE 75% HERBICIDE LABEL FOR FURTHER INFORMATION ON APPLICATION DIRECTIONS, TANK MIXING, AND USE PRECAUTIONS.

**9.5.8 Smoke 540 2.0 plus Banvel II Herbicide** can be applied prior to seeding in **wheat, barley, rye, oats and field corn only (do not apply prior to seeding sweet corn)**. Refer to “**Annual Weed Control with Smoke 540 2.0 Tank Mixtures**” table for information (section 7.2).

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

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than Farmer’s Business Network Canada, Inc. under the User Requested Minor Use Label Expansion program. For these uses, Farmer’s Business Network Canada, Inc. 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 applications.

**For use only in the Prairie Provinces and Peace River Region of British Columbia.**

**9.5.9 Smoke 540 2.0 plus HEAT WG** can be applied prior to seeding brome grass (seed production & forage use). Refer to “**Annual Weed Control with Smoke 540 2.0**” table for weed control information (section 7.2) and to Section 9.3 of HEAT WG label.

Apply 0.83-1.67 L/ha of Smoke 540 2.0 plus 26-71 g/ha of HEAT WG. Add MERGE Adjuvant, MSO Concentrate or Amigo at a rate of 0.5 – 1 L/ha.

**Always refer to the tank mix partner herbicide label for precautions, use instructions and crop rotation restrictions. Do not apply tank mix combinations by air.**

**When tank mixes are permitted, consult the labels of the tank mix partners and observe the largest (most restrictive) spray buffer zone of the products involved in**

**the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.**

## **9.6 FORAGES LEGUMES AND GRASSES**

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

## **9.7 PASTURE RENOVATION**

Use this product to control or suppress existing vegetation for zero-tillage seeding of legumes into established sod for pasture renovation. Delay spraying until weed growth is at least 20 centimetres in height and a maximum number of seedlings or shoots have emerged. Application can be made immediately before, during or after seeding, but before crop emergence.

## **9.8 FORAGE SEED PRODUCTION**

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

## 9.9 PREHARVEST TREATMENT

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

For control of quackgrass, Canada thistle, common milkweed, toadflax and dandelion; and season-long control of perennial sow thistle, Smoke 540 2.0 can be applied prior to harvest of wheat, barley (including malting barley), oats, canola (rapeseed) (including Roundup Ready® varieties), flax (including low linolenic acid varieties), lentils, peas, dry beans, soybeans (including Roundup Ready® varieties) and forages. DO NOT apply to crops if grown for seed production.

This treatment may also provide harvest management benefits, by drying down crop and weed vegetative growth, for example, where late flushes of annual weeds, green vegetative crop growth, or late tillering may interfere with harvest operations. EXTREMELY COOL, WET AND/OR CLOUDY WEATHER CONDITIONS BETWEEN THE TIME OF APPLICATION AND THE ANTICIPATED HARVEST DATE MAY SLOW DOWN ACTIVITY OF THIS PRODUCT, THEREBY DELAYING CROP DRYDOWN AND HARVEST DATE. Preharvest treatment to Roundup Ready® varieties of canola and soybean provides weed control only.

Smoke 540 2.0 should be applied preharvest at 1.67 litres per hectare in 50 to 100 litres per hectare of clean water, by ground application only. Apply only when the crop has 30 percent or less grain moisture content. This stage typically occurs 7 to 14 days before harvest. For forage crops, apply this product at 1.67 to 3.33 litres per hectare 3 to 7 days prior to the last cut before rotation or forage renovation.

Consult the table “**Guidelines for Timing of Preharvest Applications**” (section 9.9.1) for visual indicators of this stage in each crop. For the best weed control results, quackgrass should be actively growing and have at least 4 to 5 green leaves. Canada thistle and perennial sow thistle should be actively growing and at or beyond the bud stage for best results. Common milkweed should be at the bud to bloom stage and actively growing for best results. Applications for weed control (not for harvest management) must be made at the correct stage of both weed and crop growth.

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

DO NOT apply by air.

**9.9.1 GUIDELINES FOR TIMING OF PREHARVEST APPLICATIONS**

<b>CROP(S)</b>	<b>PERCENT GRAIN MOISTURE</b>	<b>VISUAL SYMPTOMS</b>
WHEAT/BARLEY/OATS	Less than 30	Hard dough stage; a thumbnail impression remains on seed.
CANOLA (including Roundup Ready® varieties)	Less than 30	Pods are green to yellow; most seeds are yellow to brown.
FLAX (including low linolenic acid varieties)	Less than 30	Majority (75% - 80%) of bolls are brown.
PEAS	Less than 30	Majority (75% - 80%) of pods are brown.
LENTILS	Less than 30	Lowermost pods (bottom 15%) are brown and seeds rattle.
DRY BEANS	Less than 30	Stems are green to brown in colour; pods are mature (yellow to brown in colour); 80% - 90% leaf drop (original leaves).
SOYBEANS (including Roundup Ready varieties)	Less than 30	Stems are green to brown in colour; pod tissue is dry and brown in appearance; 80% - 90% leaf drop.
FORAGES	Not applicable	Normal stage for forage harvesting.



**NOTE TO USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR SPECIAL USE APPLICATIONS: (PREHARVEST TREATMENT OF CHICKPEA, DRIED LUPIN AND DRIED FAVA BEAN).**

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than Farmer's Business Network Canada, Inc. under the User Requested Minor Use Label Expansion program. For these uses, Farmer's Business Network Canada, Inc. 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.

**DIRECTIONS FOR USE**

**Preharvest Treatment of Chickpea, Dried Lupin and Dried Fava Bean**

For control of quackgrass, Canada thistle, common milkweed, toadflax and dandelion; and season-long control of perennial sow thistle and harvest management, Smoke 540 2.0 can be applied prior to harvest of chickpea, dried lupin and dried fava bean. DO NOT apply to crops if grown for seed production.

Smoke 540 2.0 should be applied preharvest at 1.67 litres per hectare in 50 to 100 litres per hectare of clean water, by ground application only. Apply only when the crop has 30 percent or less grain moisture content. This stage typically occurs 7 to 14 days before harvest. For further information see guidelines above. The Pre-harvest interval is 7 days.

**GUIDELINES FOR TIMING OF PREHARVEST**

CROP(S)	PERCENT GRAIN MOISTURE	VISUAL SYMPTOMS
Chickpea	Less than 30	Stems are green to brown in colour; pods are mature (yellow to brown in colour); 80%-90% leaf drop (original leaves)
Dried Lupin		
Dried Fava Bean		
Mustard (Yellow/White, Brown, Oriental)	Less than 30	Pods are green to yellow; most seeds are yellow to brown.
Pearl Millet	Less than 30	Kernels will be hard & a black layer opposite the embryo at the base of the kernel will be present.

Grain Sorghum (not for use as a forage crop)	Less than 30	Kernels will have a black-layer immediately above the point of kernel attachment in the floret near the base of the kernel.
Camelina	Less than 30	When 95% of pods have changed colour, seed is firm and less than 40% of seed is green.
Canary Seed	Less than 30	Hard dough stage; a thumbnail impression remains on seed.

**NOTE:**

Pearl millet grain is to be harvested for use as animal feed only.  
DO NOT GRAZE treated pearl millet forage or cut for hay.

**ALWAYS REFER TO THE PRODUCT LABEL FOR FURTHER INFORMATION ON WEEDS CONTROLLED, APPLICATION DIRECTIONS, AND USE PRECAUTIONS**

**SMOKE 540 2.0 TANK MIX WITH: HEAT LQ (SAFLUFENACIL) AS A HARVEST AID FOR CHICKPEAS.**

**For use only in the Prairie Provinces and Peace River Region of British Columbia.**

Smoke 540 2.0 should be applied as a single preharvest application at 1.67 litres per hectare plus 73-146 mL/ha of HEAT LQ. Add MERGE Adjuvant or Amigo at a rate of 0.5 L/ha in 200 litres per hectare of clean water, by ground application only.

Apply only when the crop has 30 percent or less grain moisture content. This stage typically occurs 7 to 14 days before harvest. For further information see guidelines above. The Pre-harvest interval is 7 days. **DO NOT apply to crops if grown for seed production.**

For Desi type, apply at the time swathing would normally commence, when the majority of plants are yellow and most pods are mature and seeds have turned from green to yellow or brown. Upper part of plant may still be green.

For Kabuli type, apply when the majority of plants and pods are ripe and dry with seeds turned from green to white or tan, and detached from the pods. Dry down is less complete in Kabuli type due to its thick pod wall.

**ALWAYS REFER TO THE PRODUCT LABEL FOR FURTHER INFORMATION ON WEEDS CONTROLLED, APPLICATION DIRECTIONS, AND USE PRECAUTIONS**

## 9.9.2 PREHARVEST AERIAL APPLICATION

Refer to the general guidelines for aerial application in Sections 5.2 and 5.3 as well as specific instructions in this section.

**RESTRICTED USE  
AERIAL PREHARVEST APPLICATION  
PRAIRIE PROVINCES ONLY  
(including PEACE RIVER REGION AND  
INTERIOR OF B.C.)**

**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.

**NATURE OF RESTRICTION:** This product is to be used only in the manner authorized. For use only by aerial applicators and aerial application services approved by the provincial regulatory agency to apply this product with aerial application equipment. To qualify for consideration of provincial approval, the following requirements must be demonstrated to the provincial regulatory agency:

1. Aircraft used in the application of this product must have been configured and calibrated to acceptable standards at a recognized calibration (patterning) clinic within 20 months of the date of application. The spray system must not have been subjected to major changes (new nozzles, booms or configurations) since the calibration, and must meet critical drift management standards e.g. maximum boom width 65% of wing span; nozzle type, size and orientation to minimize drift and deliver droplet size VMD in the coarse (400 – 600 microns) or very coarse (600 – 1000 microns) range.
2. Aircraft used in the application of this product must carry a minimum of \$25,000 drift insurance in addition to any provincial requirements for general comprehensive insurance coverage.

3. Applicators using this product must have successfully completed a Smoke 540 2.0 herbicide aerial application training course.
4. Aerial application services applying this product must employ on staff at least one pilot applicator with at least 250 hours of actual aerial application time and a minimum of 100 hours within the last 24 month period. All pilots who do not meet the minimum experience standard must work under the *direct daily supervision* of a qualified pilot.

Refer to general directions and precautions concerning aerial application, section 5.2, and 5.3, spray buffer zones.

### DIRECTIONS FOR USE

Smoke 540 2.0 may be applied with aerial application equipment for control of quackgrass, Canada thistle, common milkweed, toadflax and dandelion, and season-long control of perennial sow thistle. Smoke 540 2.0 can be applied prior to harvest of wheat, barley (including malting barley), oats, canola (rapeseed), flax (including low linolenic acid varieties), lentils, peas, dry beans and soybeans. **Do not use on forages. DO NOT apply to any crops if grown for seed production.**

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

EXTREMELY COOL, WET AND/OR CLOUDY WEATHER CONDITIONS BETWEEN THE TIME OF APPLICATION AND THE ANTICIPATED HARVEST DATE MAY SLOW DOWN ACTIVITY OF THIS PRODUCT, THEREBY DELAYING CROP DRYDOWN AND HARVEST DATE.

Smoke 540 2.0 should be applied at 1.67 L/ha in 20 – 50 L/ha of clean water with aerial application equipment. Apply only when the crop has 30% or less grain moisture content. This stage typically occurs 7 to 14 days before harvest. Consult the table “**Guidelines for Timing of Preharvest Applications**” (Section 9.9.1) for visual indicators of this stage in each crop. For the best weed control results quackgrass should be actively growing and have at least 4 to 5 green leaves. Canada thistle and perennial sow thistle should be actively growing and at or beyond the bud stage for best results. Common milkweed should be at the bud to bloom stage and actively growing for best results. Applications for weed control (not for harvest management) must be made at the correct stage of both weed and crop growth.

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

## 9.10 TREE PLANTINGS

### SHELTERBELTS AND NURSERY STOCK (WOODY ORNAMENTALS)

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

#### DECIDUOUS

##### Ash

*Fraxinus spp.*

##### Caragana

*Caragana spp.*

##### Cherry

*Prunus spp.*

##### Elm

*Ulmus spp.*

##### Lilac

*Syringa spp.*

##### Maple

*Acer spp.*

##### Mountain Ash

*Sorbus spp.*

##### Poplar

*Populus spp.*

##### Russian Olive

*Elaeagnus spp.*

##### Willow

*Salix spp.*

#### CONIFEROUS

##### Fir

*Abies spp.*

##### Juniper

*Juniperus spp.*

##### Pine

*Pinus spp.*

##### Spruce

*Picea spp.*

##### Yew

*Taxus spp.*

**NOTE:** This product is not recommended for use as an over-the-top broadcast spray in forest tree nurseries or in Christmas tree plantations. Application in such sites should be limited to directed sprays. DO NOT treat Christmas tree plantations in the year of anticipated harvest.

## 9.11 TREE, VINE, BERRY AND OTHER CROPS

This product is recommended for annual and perennial weed control in established vineyards or orchards, in blueberry, cranberry and strawberry, or for site preparation prior to transplanting tree and vine crops. Applications may be made with boom equipment, shielded sprayers, hand held and high volume orchard guns, or with wiper applicator equipment (orchards, vineyards, cranberry and strawberry only). See “**Mixing and Application Equipment Information**” (section 5.2) and the following table for specific information on the use of equipment.

Repeat treatments may be necessary to control weeds originating from underground parts of untreated weeds or from seeds. This product does not provide residual or preemergent weed control. For subsequent weed control, follow a program using residual herbicides or use repeated applications of this product. Do not apply more than 23 litres of this product per hectare per year.

**EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF**

**HERBICIDE SOLUTION, SPRAY, DRIFT, OR MIST WITH FOLIAGE OR GREEN BARK OF TRUNK, BRANCHES, SUCKERS, FRUIT, CANES OF BLUEBERRY BUSHES, OR OTHER PARTS OF TREES OR VINES. CONTACT OF THIS PRODUCT WITH OTHER THAN MATURED BROWN BARK CAN RESULT IN SERIOUS CROP DAMAGE.**

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

### WEED CONTROL IN TREE, VINE, BERRY AND OTHER CROPS

CROP	RATE (L/ha)	PRE-HARVEST INTERVAL (days)	MAX. APPL. PER YEAR	WEEDS CONTROLLED	COMMENTS (Refer to sections 7.1 and 8.1 for specific rates for weed control)
Apples, Apricot, Cherry (sweet/sour), Peaches, Nectarines, Pears,	1.5 - 8	30	3	Annual and perennial weeds	
Apples, Grapes	Tank Mix 1.5 – 8 + Simazine 2.0 – 4.5 kg ai/ha	-	1	Annual and perennial weeds	Will provide season-long preemergent control.  Do not apply to coarse, sandy or gravelly soil.  Use according to the more restrictive label direction for each product in the mix.  When applied as a tank-mix combination, read and observe all label directions, including rates, personal protective equipment, restrictions and precautions for

CROP	RATE (L/ha)	PRE-HARVEST INTERVAL (days)	MAX. APPL. PER YEAR	WEEDS CONTROLLED	COMMENTS (Refer to sections 7.1 and 8.1 for specific rates for weed control)
					DO NOT apply to orchards or vineyards that have been established less than 1 or 3 years, respectively.  Simazine rate is equivalent to 2.25 – 5.0 kg/ha Princep® Nine-T®, or 4.0 – 9.0 kg/ha Simadex®
Grapes	1.5 - 8	14	3	Annual and perennial weeds.	Remove all sucker growth from the spray zone before spraying, except for the Concord variety of grape.  Suckering should be conducted within 2 weeks prior to application.  Do not apply to vines which have been established less than 3 years.
Highbush (cultivated) blueberry	1.87 – 3.73	30	1	Quackgrass	Use as a directed spray, with no more than 275 kPa pressure.
Lowbush blueberry	0.67 – 1.34% solution (spot application)	Apply in non-bearing year only	1	Woody brush (section 6.3)	Apply as a directed spray in mid-summer of the vegetative (non-bearing) year.  See section 9.3 for instructions on spot treatments.
Filberts, Hazelnut (established plantations)	1.5 – 2.33	14	-	Annual Weeds	Use as a directed spray, with no more than 275 kPa pressure.

CROP	RATE (L/ha)	PRE- HARVEST INTERVAL (days)	MAX. APPL. PER YEAR	WEEDS CONTROLLED	COMMENTS (Refer to sections 7.1 and 8.1 for specific rates for weed control)
Walnut, Chestnut, Japanese Heartnut	1.5 - 8	-	2	Annual and perennial weeds	<p>Apply late spring and fall, postharvest but prior to a killing frost.</p> <p>Apply in 200 – 300 L water as a directed spray, using no more than 275 kPa pressure.</p> <p>Apply alternatively as a 1.34% wiper solution (see “<b>Wiper Applications</b>” section 9.12).</p>
Cranberry	13.4% solution (0.62 L Smoke 540 2.0 + 4L water)	30	1	Annual and perennial weeds	Apply using wick or wiper applicators (section 9.12).
Strawberry	0.67 – 1.34% solution (spot application) 22% solution (wiper application)	30	1	Emerged perennial weeds	<p>Apply when weeds are at a susceptible growth stage (see sections 8.1 and 8.2).</p> <p>See section 9.3 for instructions on spot treatments.</p> <p>See section 9.12 for instructions on wiper applications.</p>
Sugar Beets	0.67 – 1.34% solution (spot application)	Treated crop MUST NOT be harvested	1	Dodder species	<p>Apply when dodder is vigorously growing but before flowering.</p> <p>See section 9.3 for instructions on spot treatments.</p>



Asparagus	0.83 – 1.67	7	1	Fall seeded ryegrass	Apply in spring before emergence of crop shoots.
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Simadex is a registered trademark of Aventis CropScience UK Limited.

### **SHORT ROTATION INTENSIVE CULTURE (SRIC) POPLAR**

*(Populus spp)*

DO NOT apply by air.

This product may be used to control listed annual or perennial weeds prior to planting, or as a post directed spray in established crops of short rotation intensive culture (SRIC) Poplar species (*Populus spp.*)

**EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF HERBICIDE SOLUTION, SPRAY, DRIFT, OR MIST WITH FOLIAGE OR GREEN BARK OF TRUNK, BRANCHES, OR OTHER PARTS OF TREES. CONTACT OF THIS PRODUCT WITH OTHER THAN MATURED BROWN BARK CAN RESULT IN SERIOUS CROP DAMAGE.**

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

Smoke 540 2.0 may be applied prior to planting or as a post directed spray in established short rotation intensive culture crops. Apply Smoke 540 2.0 up to 8 L/ha in 50 – 100 liters or 150 – 300 L/h for quackgrass control by ground application only. Applications can be made 1-3 times per year during establishment however, not to exceed the limit of 8 L/ha per year. Shielded sprayers must be utilized when applying post directed spray solutions. Allow a 6-8 week interval between spray applications. Apply to actively growing weeds.

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

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than Farmer's Business Network Canada, Inc. under the User Requested Minor Use Label Expansion program. For these uses, Farmer's Business Network Canada, Inc. 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 applications.

**DIRECTIONS FOR USE: For use in Eastern Canada only**

**Late Fall Broadcast Treatment of Newly Established Lowbush Blueberry Fields**

For suppression of Lambkill (Sheep Laurel, *Kalmia angustifolia*) in newly cleared lowbush blueberry, apply Smoke 540 2.0 in the fall after 95 percent blueberry leaf drop, typically late October or November. Do not apply Smoke 540 2.0 before one or two heavy, damaging fall frosts have occurred. Lambkill plants should have at least 50 percent green leaf colour at the time of application.

Apply Smoke 540 2.0 at 1.67 litres per hectare in 200-300 litres per hectare of clean water using a boom applicator. Do not add adjuvant to the spray mixture. Treat only areas of the field which have lambkill present. Apply Smoke 540 2.0 before pruning lowbush blueberry plants and do not prune for at least 14 days after application.

**All fields treated with Smoke 540 2.0 must be pruned post treatment in the fall or the following spring before May 15<sup>th</sup>.**

Pre-harvest interval is 550 days.

Use of fertilizers or fungicides for suppression of leaf diseases have been shown to delay leaf drop and blueberry plant dormancy. Do not apply Smoke 540 2.0 if 95 percent leaf drop has not occurred. Applications should not be made in consecutive years within the same treatment area. See "Mixing and Application Equipment Information" for additional information.

**EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF HERBICIDE SOLUTION, SPRAY DRIFT, OR MIST WITH NON-DORMANT FOLIAGE OR GREEN BARK OF LOWBUSH BLUEBERRY STEMS. CONTACT OF THIS PRODUCT WITH OTHER THAN DORMANT PLANTS CAN RESULT IN SERIOUS CROP DAMAGE.**

<b>CROP</b>	<b>RATE (L/ha)</b>	<b>PRE HARVEST INTERVAL (days)</b>	<b>MAX. APPL. PER YEAR</b>	<b>WEEDS SUPPRESSED</b>	<b>COMMENTS</b>
Lowbush blueberry	1.67	550	1	Lambkill/ Sheep Laurel	Apply in the late fall after 95% leaf drop (Late October/November)

					). Do not apply within 550 days of harvest. <b>Treated areas must be pruned after treatment.</b>
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**NOTE TO USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR SPECIAL USE APPLICATIONS: (NORTH AMERICAN GINSENG).**

The DIRECTIONS FOR USE for the uses described in this section on the label were developed by persons other than Farmer's Business Network Canada, Inc. under the User Requested Minor Use Label Expansion program. For these uses, Farmer's Business Network Canada, Inc. 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.

**DIRECTIONS FOR USE**

**ALWAYS REFER TO THE PRODUCT LABEL FOR FURTHER INFORMATION ON WEEDS CONTROLLED, APPLICATION DIRECTIONS, AND USE PRECAUTIONS.**

**NORTH AMERICAN GINSENG**

**New Gardens (British Columbia only):** Apply this product in the fall after seeding but before freeze-up in new gardens only to control volunteer cereals. Apply when weeds are at the growth stages listed on the product label. Use a single application of 1.67 litres per hectare in 50 to 100 litres water per hectare. **DO NOT USE A FALL APPLICATION IN ESTABLISHED/EXISTING GARDENS**

**Existing/Established Gardens:** Apply this product in the spring before the crop has emerged above the soil. Apply when weeds are at the growth stages described in the product label. A maximum of two 1.67 litres per hectare applications in 50 to 100 litres water per hectare may be made in a season. **DO NOT USE A FALL APPLICATION IN ESTABLISHED/EXISTING GARDEN**

## 9.12 SELECTIVE EQUIPMENT

### WIPER APPLICATORS

This product may be applied with a wiper applicator, after dilution and thorough mixing with water, to listed weeds in soy and dry beans, grapes, orchards, cranberries, lowbush blueberries and strawberries. Applications must be made before initial pod set in soy and dry beans. (It may also be used in any industrial, tree planting and non-crop site specified on this label. See sections 9.10 and 10.1).

A wiper applicator applies the herbicide solution onto weeds by rubbing the weed with an absorbent material containing the herbicide solution. Wiper applicators include either roller or wick devices which physically wipe appropriate concentrations or amounts of this product directly onto the weed. Equipment must be designed, maintained and operated to prevent the herbicide solution from contacting desirable vegetation. Performance may be improved by reducing speed in areas of heavy weed infestations to insure adequate wiper saturation. Best results may be obtained if 2 applications are made in opposite directions.

**AVOID CONTACT WITH DESIRABLE VEGETATION.** Contact of the herbicide solution with desirable vegetation may result in damage or destruction. Applicators used above desired vegetation should be adjusted so that wiper contact point is at least 5 centimetres above the desirable vegetation. Droplets or foam of the herbicide solution settling on desirable vegetation may result in discoloration, stunting or destruction.

Applications should be made when the weeds are a minimum of 15 centimetres above the desirable vegetation. Best results may be obtained when more of the weed is exposed to the herbicide solution. Weeds not contacted by the herbicide solution will not be affected. This may occur in dense clumps, severe infestations, or when the height of the weeds varies so that not all weeds are contacted. In these instances, repeat treatments may be necessary. See the “**Weed Control**” tables (sections 7.1 and 8.1) for recommended stage of growth for specific weeds.

### NOTES

- **Maintain equipment in good operating condition. Avoid leakage or dripping onto desirable vegetation.**
- **Adjust height of applicator to insure proper contact with weeds.**
- **Keep wiping surfaces clean.**
- **Maintain recommended roller RPM on roller applicators while in use.**
- **Keep wiper material at proper degree of saturation with herbicide solution.**
- **DO NOT use wiper equipment when weeds are wet.**

- **DO NOT** operate equipment at ground speeds below 4 and greater than 10 kilometres per hour. Weed control may be affected by speed of application equipment. As weed density increases, reduce equipment ground speed to insure good coverage of weeds.
- Be aware that on sloping ground the herbicide solution may migrate, causing dripping on the lower end and drying on the upper end of the wiper applicator.
- Variation in equipment design may affect weed control. With wiper applicators, the wiping material and its orientation must allow delivery of sufficient quantities of the recommended herbicide solution directly to the weed.
- Care must be taken with all types of wipers to insure that the absorbent material does not become over-saturated, causing the herbicide to drip onto desirable vegetation.
- With all equipment, drain and clean wiper parts immediately after using this product, by thoroughly flushing with water.

**For Roller Applicators – Mix 0.33 to 0.67 litres of this product in 10 litres water to prepare a 3 to 7 percent solution. Roller speed should be maintained at 50 to 150 RPM.**

**For Wick or other Wiper Applicators – Mix 0.57 litres of this product in 2 litres of water to prepare a 22 percent solution.**

### **9.13 AERIAL APPLICATION FOR WEED CONTROL WITH SMOKE 540 2.0 PRIOR TO SEEDING OR AFTER SEEDING PRIOR TO CROP EMERGENCE IN ALL CROPS AND IN SUMMERFALLOW – WET FIELD CONDITIONS ONLY**

Refer to the general guidelines for aerial application in Sections 5.2 and 5.3 as well as specific instructions in this section.

#### **RESTRICTED USE AERIAL APPLICATION FOR WEED CONTROL PRIOR TO SEEDING ALL CROPS AND IN SUMMERFALLOW**

#### **PRAIRIE PROVINCES ONLY (including PEACE RIVER REGION OF B.C.)**

**NATURE OF RESTRICTION:** This product is to be used only in the manner authorized. For use only by aerial applicators and aerial application services approved by the provincial regulatory agency to apply this product with aerial application equipment. To qualify for consideration of provincial approval, the following requirements must be demonstrated to the provincial regulatory agency:

1. Aircraft used in the application of this product must have been configured and calibrated to acceptable standards at a recognized calibration (patterning) clinic within

20 months of the date of application. The spray system must not have been subjected to major changes (new nozzles, booms or configurations) since the calibration, and must meet critical drift management standards e.g. maximum boom width 65% of wing span; nozzle type, size and orientation to minimize drift and deliver droplet size VMD in the coarse (400 – 600 microns) or very coarse (600 – 1000 microns) range.

2. Aircraft used in the application of this product must carry a minimum of \$25,000 drift insurance in addition to any provincial requirements for general comprehensive insurance coverage.

3. Applicators using this product must have successfully completed a Smoke 540 2.0 aerial application training course provided by Farmer's Business Network Canada, Inc.

4. Aerial application services applying this product must employ on staff at least one pilot applicator with at least 250 hours of actual aerial application time and a minimum of 100 hours within the last 24 month period. All pilots who do not meet the minimum experience standard must work under the *direct daily supervision* of a qualified pilot.

This product may be applied with aerial equipment only if ground equipment cannot be used due to flooded field conditions.

Smoke 540 2.0 may be applied with aerial application equipment for control of certain annual grass and broadleaf weeds and the suppression or season long control of certain perennial weeds.

**EXTREME CARE MUST BE TAKEN WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS.**

**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.

Apply only by fixed-wing or rotary aircraft which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label. Ensure that the maximum boom width does not exceed 65% of the wing span. Nozzle type, size and orientation must be configured to deliver a droplet size VMD in the coarse (400-600 microns) or very coarse (600-1000) range.

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

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices, or equivalent electronic positioning systems (GPS). The use of spotter planes is recommended.

Thoroughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or from spills. **PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANDING GEAR ARE MOST SUSCEPTIBLE.** The maintenance of an organic coating (paint) which meets aerospace specification MIL-C-38412 may prevent corrosion.

**Use Precautions**

Use only when meteorological conditions at the treatment site allow for complete and even target coverage. Apply only under conditions of good practice specific to aerial application as outlined in the *National Aerial Pesticide Application Manual*, developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides.

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified spray buffer zones should be observed.

Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure.

**Operator Precautions**

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

**Product Specific Precautions**

Read and understand the entire label before opening this product. If you have questions, call Farmer's Business Network Canada, Inc. at 1-844-200-FARM (3276) or obtain technical advice from the distributor or your provincial agricultural representative.

Application of this product must meet and/or conform to the following:

Volume: Apply the recommended rate in a minimum spray volume 30-100 litres per hectare.

Spray Buffer Zones: Refer to Section 5.3 for required spray buffer zones.

**DIRECTIONS FOR USE**

**THIS USE IS LIMITED TO SITUATIONS WHERE FIELD CONDITIONS ARE EXTREMELY WET SUCH THAT GROUND SPRAYERS (TRACTOR & FIELD SPRAYER, HIGH CLEARANCE SPRAYERS OR ANY KIND OF GROUND SPRAYER) CANNOT TRAVEL ACROSS THE FIELD TO MAKE EFFECTIVE WEED CONTROL APPLICATIONS.**

**DO NOT TANK MIX SMOKE 540 2.0 WITH ANY OTHER PRODUCT WHEN APPLIED BY AERIAL APPLICATION.**



Apply at appropriate weed stages. Consult tables in Section 7.1 and 8.1 for weeds, stages and rates.

For the best weed control results weeds should be actively growing.

Wet conditions can stress weeds and slow plant growth, therefore it is recommended to use the highest labelled rate for target weeds.

**Prior to Seeding All Crops**

Smoke 540 2.0 may be applied with aerial application equipment for control of annual weeds (refer to Section 7.1) prior to seeding all crops. Apply 0.5-1.67 L/ha of Smoke 540 2.0.

**Summerfallow**

Smoke 540 2.0 may be applied at 1.67-4.0 L/ha with aerial application equipment for control of annual weeds (refer to Section 7.1) and perennial weeds (refer to Section 8.1) in summerfallow situations.

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## 10.0 NON-CROPLAND USES

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

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

**DO NOT apply by air.**

This product can be used to control annual and perennial weeds and woody brush and trees listed on this label in non-crop areas such as railroad, pipeline, highway, power and telephone rights-of-way, petroleum tank farms and pumping installations; roadsides; storage areas; lumberyards; fence rows; industrial plant sites; parking areas; school yards, parks, golf courses, other public areas; airports and similar industrial or non-crop areas.

**NOTE:** For all industrial, rights-of-way, recreational and public areas, repeat treatments may be necessary to control regeneration or new growth.

When applied as recommended under the conditions described, this product will control weeds in non-cropland areas as listed in the following table.

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**10.1 WEED CONTROL IN NON-CROPLAND AREAS WITH SMOKE 540****2.0**

WEEDS	GROUND APPLICATION*			COMMENTS
	BOOM APPLICATION		HAND HELD HIGH VOLUME APPLICATION % SOLUTION	
	RATE* (L/ha)	WATER VOL.* (L/ha)		
<b>Annual grasses and broadleaves</b>	1.5-2.33	50-100	0.67	Actively growing weeds.
<b>Perennial Weeds</b>				Actively growing weeds.
Quackgrass	1.67 3.17-4.67	50-300 50-300	0.67 1.34	Add 0.5% v/v of a recommended surfactant when using water volumes greater than 150 L (see section 8.2.2).
Canada Thistle (bud stage)	3.17-4.67	100-300	1.34	
Purple Loosestrife	4	300-600	0.67-1.34 (or 22% for wiper application)	Higher rate for long term control and for heavy infestations.
Other Perennials	4.67-8	100-300	1.34	See section 10.2.2 for instructions on purple loosestrife applications.  Summer through fall is optimum.
<b>Brush and Trees</b>				
Birch, Cherry, Poplar, Western Snowberry, Willow	2-4	100-300	0.67-1.34	Summer through early fall (see section 10.2).
Maple, Raspberry/ Salmonberry, Alder	4	100-300	1.34	Late summer through fall. Fall is optimum.

WEEDS	GROUND APPLICATION*			COMMENTS
	BOOM APPLICATION		HAND HELD HIGH VOLUME APPLICATION % SOLUTION	
	RATE* (L/ha)	WATER VOL.* (L/ha)		
<b>Turf Renovation</b> Annual and perennial weeds	1.67-8	100-300	0.67-1.34	Use higher end of the rate range for perennials.
<b>Roadside Vegetation</b> (1-2m wide along shoulders) Annual weeds (refer to tank mix sections on product labels for specific weeds controlled)	1) 0.5 – 0.67 + 1.25 – 2.5 L Vanquish or 2) 0.5 – 0.67 + 0.30 L Vanquish + 1.2 L 2,4-D amine 500	25-150	-	Refer to “ <b>Annual Weed Control</b> ” table (section 7.1) for appropriate product rate for specific weeds.  For 2,4-D amine formulations with a different guarantee, adjust the rate accordingly.  No application to standing water.
<b>Residual Control</b> Annual and perennial weeds (the simazine component of this tank mixture will provide season long control of most germinating broadleaf weeds and grasses. It may also provide postemergent activity on certain annual weeds).	1.67 – 8 + 4.0 -9.0 L Simadex Simazine Flowable	200-400	-	Do not apply to coarse, sandy or gravelly soil. One application per year.  Use according to the most restrictive label directions for each product in the mixture.  For other simazine formulations registered for industrial/ non-cropland areas, use equivalent rates; i.e., 2.0 – 4.5 kg simazine/ha.

\* For more information on rates, water volumes and application, refer to “**Annual and Perennial Weed Control**” (sections 7.1 and 8.1, respectively).

Vanquish is a registered trademark of Syngenta Group Company.  
Simadex is a registered trademark of Bayer CropScience Inc.

## 10.2 APPLICATION INFORMATION FOR NON-CROPLAND USES

### FOLIAR APPLICATIONS

Spray coverage should be uniform and complete. Do not spray to the point of run-off. Do not allow spray drift to contact desirable vegetation as severe injury or destruction may occur. For woody brush and trees, early season applications may take 30 to 45 days for symptoms to develop on target species. Late season application may be made to species that have some autumn colors provided no major leaf drop has occurred. Control will be observed the following spring.

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

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

#### 10.2.1 GROUND APPLICATIONS:

##### For all non-cropland uses

For woody brush and trees, apply 2 to 4 litres of this product per hectare. Use ground boom or boomless, or mist blower equipment, or apply as a 0.67 to 1.34 percent solution using hand held, high volume equipment. Apply as directed in the recommended volume of clean water to foliage of actively growing vegetation. Use the 4 litres per hectare rate for Maple, Alder and Willow\* species, as well as for hard to control perennial weed species. (\*suppression only).

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

#### 10.2.2 PURPLE LOOSESTRIFE CONTROL

- DO NOT TREAT PLANTS OVER OPEN WATER. Smoke 540 2.0 is not registered for direct application to bodies of water.
- Treat when plants are actively growing at or beyond the bloom stage. If using hand held equipment, spray-to-wet.
- For wiper applications see section 9.12.

- Where feasible, remove flower heads before treatment to ensure prevention of seed set.
- For large (>1.6 ha) monocultures of loosestrife, work from the periphery inward in successive years to allow competing vegetation to invade the treated area.
- A long-term control strategy should include measures to control both established plants and seedlings. Sprayed areas should be monitored to determine the appropriate follow-up management. Early detection and treatment of second and third generation seedlings is important to prevent re-infestation of purple loosestrife. Desirable native plant communities will then have a chance to become re-established.

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

Selective equipment such as WIPER and ROLLER applicators can be used to control emerged weeds in non-crop areas and tree plantings. See “**Selective Equipment**” (section 9.12) for more information.

### **10.4 TURF GRASS**

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

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

Where existing vegetation is growing in a field or unmowed situation, apply this product to actively growing weeds at the stages of growth given in “**Weed Control**” (sections 7.1 and 8.1, respectively). Where existing vegetation is growing under mowed turfgrass management, apply this product after omitting at least one regular mowing to allow sufficient growth for good interception of the spray and proper translocation into underground plant parts. Tillage or renovation techniques such as vertical mowing, coring or slicing should be delayed for 7 days after application to allow proper translocation into underground plant parts.

For maximum control of existing vegetation, delay establishment to determine if regrowth from escaped underground plant parts occurs. When repeat treatments are necessary, sufficient regrowth must be attained prior to application. Desirable turfgrass may be established following the above procedures.

## 10.5 INJECTION APPLICATIONS -- FOR ALL NON-CROPLAND USES

Woody vegetation may be controlled by injection application of this product. Apply using suitable equipment, which must penetrate into living tissue, at a rate of at least 0.33 millilitres (either undiluted or 1:1 with water) per 5 centimetres tree diameter at breast height (DBH). The cuts should be spaced evenly around the tree and below all major branches. Application may be made at any time of year, except when cold temperatures prevent adequate penetration of injection equipment, or in the spring during periods of heavy sap flow. Control of tree species with tree diameters greater than 20 centimetres may not be acceptable at this rate.

Total control may not be evident for 1 to 2 years following treatment. A partial list of species controlled includes:

### **Alder**

*Alnus spp.*

### **Birch**

*Betula spp.*

### **Cedar**

*Thuja spp.*

### **Cherry**

*Prunus spp.*

### **Douglas Fir**

*Pseudotsuga spp.*

### **Hemlock**

*Tsuga spp.*

### **Maple\***

*Acer spp.*

### **Pine**

*Pinus spp.*

### **Poplar**

*Populus spp.*

### **Willow**

*Salix spp.*

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

## 10.6 CUT STUMP APPLICATION

Woody vegetation may be controlled by the application of this product to freshly cut stumps to prevent regrowth. Because the treatment uses a concentrated solution, application must be made using low-pressure equipment e.g., squirt bottle or similar device. This product must be applied immediately to the surface of the freshly cut stump i.e., within 5 minutes for optimum control at the prescribed rates. Only the cambial tissues of the cut surface should be treated. Apply the herbicide solution at a rate equivalent to at least 0.33 milliliters product for every 5 centimeters DBH. Do not cover the remaining area nor any exposed roots, as this product does not penetrate bark well. This treatment may be used at any time of year, except during periods of heavy sap flow or when low temperatures prevent solution application due to freezing. A water soluble colourant may be added to the solution as a means of indicating which surfaces have been treated. Total control may not be evident until 1 to 2 years after treatment.

See “**Injection Applications**” (section 10.5) of this label for a partial list of species controlled.