

2020-1694
2020-11-19
Label corrections made 2023-03-13

PRINCIPAL DISPLAY PANEL

GROUP

2

HERBICIDE

REFINE® SG HERBICIDE

SOLUBLE GRANULE 50%

FOR SALE FOR USE ON WHEAT (SPRING, WINTER OR DURUM), SPRING BARLEY AND OATS AND SEEDLING AND ESTABLISHED GRASS SPECIES FOR FORAGE AND SEED PRODUCTION ONLY

AGRICULTURAL

REGISTRATION NO. 28285 PEST CONTROL PRODUCTS ACT

ACTIVE INGREDIENTS:	Thifensulfuron methyl	33.35%
	Tribenuron methyl	16.65%

Warning: Contains the allergen milk and sulfites

NET CONTENTS: 240 grams – 13.6 Kg

READ THE LABEL AND THIS ATTACHED BOOKLET BEFORE USING

FMC of Canada Limited
6755 Mississauga Road, Suite 204
Mississauga, ON L5N 7Y2
1-833-362-7722

PRECAUTIONS:

- KEEP OUT OF REACH OF CHILDREN.
- AVOID BREATHING SPRAY MIST. USE WITH ADEQUATE VENTILATION.
- AVOID CONTACT WITH SKIN, EYES AND CLOTHING. WEAR GOGGLES OR FACE SHIELD, LONG-SLEEVED SHIRT, LONG PANTS, SOCKS AND CHEMICAL RESISTANT GLOVES AND FOOT WEAR DURING MIXING, LOADING APPLICATION, CLEAN-UP AND REPAIR. CHEMICAL RESISTANT GLOVES ARE NOT REQUIRED WHILE OPERATING GROUNDBOOM SPRAYERS.
- DO NOT CONTAMINATE ANY BODY OF WATER.
- MAY BE HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES EYE AND SKIN IRRITATION.
- WHEN USING, DO NOT EAT, DRINK OR SMOKE. WASH SKIN THOROUGHLY WITH SOAP AND WATER AFTER HANDLING.
- REMOVE CONTAMINATED CLOTHING IMMEDIATELY AFTER USE. STORE AND WASH CONTAMINATED CLOTHING SEPARATELY FROM HOUSEHOLD LAUNDRY BEFORE REUSE.
- DO NOT USE HUMAN FLAGGERS.

FIRST AID:

IF IN EYES:

Hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

IF ON SKIN OR CLOTHING:

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

IF 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 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.

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

IN CASE OF EMERGENCY, CALL TOLL FREE, DAY OR NIGHT: 1-800-331-3148

TOXICOLOGICAL INFORMATION:

Treat symptomatically.

STORAGE:

Store product in original container only, away from other pesticides, fertilizer, food or feed. Not for use or storage in or around the home. Keep container closed.

DISPOSAL:

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If this is a non-returnable container:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.

If this is a refillable container:

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.

If this is a returnable container:

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

For all package types:

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.

®/™ REFINE is a trademark of FMC or an affiliate.

DFU Booklet

REFINE® SG HERBICIDE

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- DO NOT CONTAMINATE ANY BODY OF WATER.
- MAY BE HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES EYE AND SKIN IRRITATION.
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Take container or label or the product name and Pest Control Product Registration Number with you when seeking medical attention.

IN CASE OF EMERGENCY, CALL TOLL FREE, DAY OR NIGHT: 1-800-331-3148

TOXICOLOGICAL INFORMATION:

Treat symptomatically

ENVIRONMENTAL HAZARDS:

- Overspray or drift to important wildlife habitats such as shelterbelts, wetlands, sloughs or dry slough borders and woodlots should be avoided. Observe buffer zones specified under DIRECTIONS FOR USE.
- Do not remove soil from treated fields for use on lawns, in gardens or for back fill.
- Do not contaminate irrigation water. Do not apply to land where tail water will be used to irrigate cropland.
- Do not apply more than 30 g per hectare of REFINE® SG Herbicide per crop year.
- TOXIC to aquatic organisms and non-target terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE.
- To reduce runoff from treated areas into aquatic habitats, consider the characteristics and conditions of the site before treatment. Site characteristics and conditions that may lead to runoff include, but are not limited to: heavy rainfall, moderate to steep slope, bare soil, poorly draining soil (e.g. soils that are compacted or fine textured such as clay).
- Avoid application of this product when heavy rain is forecast.
- Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

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PRODUCT DESCRIPTION:

REFINE® SG Herbicide is recommended for selective post-emergent control or suppression of broadleaf weeds in wheat (spring, winter or durum), spring barley and oats not underseeded to legumes or grasses, and in certain grasses for forage or seed production.

REFINE® SG Herbicide is a 50% active ingredient herbicide formulated as a water soluble granule. It is non-corrosive, non-flammable, non-volatile and does not freeze.

REFINE® SG Herbicide is to be mixed with water and a recommended adjuvant and applied as a uniform broadcast spray. Recommended adjuvants are: AGRAL90*, AG-SURF*, CITOWETT* PLUS, LIBERATE* ADJUVANT, AG-SURF* II, HIACTIVATE* NON-IONIC LIQUID SPREADER/ACTIVATOR, SUPER SPREADER ADJUVANT AND ENHANCE*. Apply early postemergence, to the main flush of actively growing broadleaf weeds.

Warm, moist growing conditions promote active weed growth and enhance the activity of REFINE® SG Herbicide by allowing maximum foliar uptake and contact activity. Weeds hardened off by cold weather or drought stress may not be adequately controlled or suppressed and regrowth may occur. For best results, ensure thorough spray coverage of target weeds. See "DIRECTIONS FOR USE" section of this label for complete use details.

REFINE® SG Herbicide stops growth of susceptible weeds rapidly. However, typical symptoms (discolouration) of dying weeds may not be noticeable for 1 to 3 weeks after application, depending upon growing conditions and weed susceptibility. Degree of control and duration of effect are dependent on weed sensitivity, weed size, crop competition, growing conditions at and following treatment, and spray coverage.

Canola, flax, lentils and alfalfa may be planted two months after an application of REFINE® SG Herbicide. Any crop may be planted in the year following the use REFINE® SG Herbicide.

IMPORTANT INFORMATION: READ BEFORE USING

Injury to or loss of desirable trees or vegetation may result from failure to observe the following:

- Do not apply, drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- Do not use on lawns, walks, driveways, recreational grounds or similar areas.
- Prevent drift of spray to desirable plants.

- Do not contaminate any body of water, including irrigation water that may be used on other crops.
- Carefully observe sprayer clean-up instructions, as spray tank residues may damage crops other than wheat, spring barley or oats.

REPLANTING TO OTHER CROPS:

Minimum Crop Rotation Guidelines:

Minimum Interval	Crop
2 months	Canola, Flax, Lentils, Alfalfa
Next crop year	All crops

GRAZING/HARVEST RESTRICTIONS:

Wheat, spring barley or oats may not be grazed or fed to livestock within 7 days of application.

VARIETY RESTRICTIONS:

Limit use of REFINE® SG Herbicide to currently licensed varieties of wheat (spring, durum, winter), spring barley and oats. Consult FMC prior to use on unlicensed varieties for crop tolerance information. DO NOT USE ON LEGER SPRING BARLEY OR BELVEDERE WHEAT VARIETIES.

RAINFALL INFORMATION:

Up to 25 mm of rain beginning 1 hour or more after spraying will not reduce the effectiveness of REFINE® SG Herbicide.

APPLICATION INFORMATION:

APPLICATION PRECAUTIONS:

- Do not apply to irrigated land where tail water will be used to irrigate cropland.
- Overspray or drift to important wildlife habitats such as shelterbelts, wetlands, sloughs or dry slough borders and woodlots should be avoided. Observe buffer zones specified under DIRECTIONS FOR USE.
- Apply with an adjuvant registered for use with REFINE® SG Herbicide. Use only water as a carrier. Other carriers may accelerate breakdown of REFINE® SG Herbicide and reduce its effectiveness.
- Do not apply to crops underseeded to legumes or grasses as injury to forage may result.
- Application to crops that are stressed by severe weather conditions, frost, low fertility, water logged soil (soil at or near field capacity), disease or insect damage may result in crop injury. Drought, disease or insect damage following application may also result in crop injury.
- Under certain conditions, such as heavy rainfall, prolonged cool weather, frost or wide fluctuations in day/night temperatures, temporary lightening in crop colour, and occasionally, a slight reduction in crop height may occur.
- Do not apply more than 30 grams/hectare of REFINE® SG Herbicide per year.
- Do not re-enter treated fields until 12 hours after application.
- Apply only when the potential for drift to areas of human habitation or areas of human activity (houses, cottages, schools and recreational areas) is minimal. Take into consideration wind speed, wind direction, temperature, application equipment and sprayer settings.

In some cases, tank mixing a pest control product with another pest control product or a fertilizer can result in biological effects that could include, but are not limited to: reduced pest efficacy or increased host crop injury. The user should contact FMC at 1-833-362-7722 for information before mixing any pesticide or fertilizer that is not specifically recommended on this label.

APPLICATION INSTRUCTIONS:

GROUND APPLICATION

Apply the spray mixture uniformly with properly calibrated ground equipment. Ensure thorough coverage and a uniform spray pattern. Flat fan nozzles are recommended (minimum 55 litres spray volume per hectare). Use 50 mesh or larger filter screens (metal or nylon). A spray pressure of 210-275 kPa is recommended. Avoid overlapping and shut off spray boom while starting, turning, slowing or stopping to prevent crop injury from over application.

AERIAL APPLICATION:

Apply only by fixed-wing or rotary aircraft equipment, which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label. Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate 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.

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.

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 the 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 the manufacturer at 1-833-362-7722 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:

Apply a minimum of 25 L of spray volume per hectare.

Apply a maximum of 50 L of spray volume per hectare.

DIRECTIONS FOR USE:

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

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) 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.

Buffer zones:

Use of the following spray methods or equipment **DO NOT** require a buffer zone: hand-held or backpack sprayer, inter-row hooded sprayer, spot treatment, soil drench, and soil incorporation.

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

Method of Application	Crop		Buffer Zones (metres) Required for the Protection of:		
			Aquatic Habitats of Depths:		Terrestrial Habitats
			Less than 1 m	Greater than 1 m	
Field sprayer*	Wheat, spring barley, oats, forage grasses		1	0	15
Aerial	Wheat, spring barley, oats, forage grasses	Fixed wing	1	0	125
		Rotary wing	1	0	100

* For field sprayer application, buffer zones can be reduced with the use of drift reducing spray shields. When using a spray boom fitted with a full shield (shroud, curtain) that extends to the crop canopy, the labelled buffer zone can be reduced by 70%. When using a spray boom where individual nozzles are fitted with cone-shaped shields that are no more than 30 cm above the crop canopy, the labelled buffer zone can be reduced by 30%.

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

NOTE: Applicators may recalculate a site-specific buffer zone by combining information on current weather conditions and spray configuration for the following applications: all airblast applications, and for field and aerial applications which specify the following droplet size category wording on the product label: 'DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium or coarse classification.' To access the Buffer Zone Calculator, please visit the Pest Management Regulatory Agency web site.

WHEAT (SPRING, DURUM, WINTER), SPRING BARLEY AND OATS

REFINE® SG Herbicide	
LOCATION: Not restricted	
CROP(S): wheat (spring, durum, winter), spring barley and oats only	
TIMING: Post-emergent application from 2-leaf to flag leaf (shot blade) growth stage of crop, prior to head emergence, but before the crop canopy will prevent thorough coverage of target weeds. For best results, apply to young, actively growing weeds that are less than 10 cm in height or diameter. Thorough coverage of target weeds is essential.	
APPLICATION RATES	
REFINE® SG Herbicide	30 grams/hectare
Adjuvants: Agral® 90, Ag-Surf® , Citowett * Plus, Liberate* Adjuvant, Ag-Surf® II, HiActivate* Non-ionic Liquid Spreader/Activator, Super Spreader Adjuvant or Enhance*.	2 litres/1000 litres spray solution
MIXING: Ensure REFINE® SG is completely dissolved, then add adjuvant while maintaining agitation. Antifoaming agent may be required. Refer to MIXING DIRECTIONS section for general instructions.	
Weeds Controlled	Weeds Suppressed
Annual smartweed (green smartweed, lady's thumb)	Stinkweed
Ball mustard	Tartary buckwheat
Chickweed ¹	Volunteer rapeseed ²
Corn spurry	Volunteer sunflower
Cow cockle	Wild buckwheat ³
Flixweed	Wild mustard
Groundsel (common)	Canada thistle ⁴
Hemp-nettle	Cleavers (1-3 whorls)
Kochia	Round leaved mallow ⁵
Lamb's-quarters	Scentless chamomile
Narrow-leaved hawk's beard	Sow thistle ⁴
Redroot pigweed	Stork's bill (2-6 leaf)
Russian thistle	Toadflax ⁶
Shepherd's purse	

Notes:

1. Apply when chickweed is small (1-6 leaf) and actively growing, but before crop canopy prevents thorough coverage of weeds. Chickweed emerging after application will not be controlled.
2. REFINE® SG Herbicide alone will not control imazethapyr tolerant canola varieties (e.g. Clearfield* varieties or other varieties with the Pursuit Smart* trait)
3. Apply to actively growing wild buckwheat in the cotyledon to 5-leaf stage. Under environmental stress, such as dry weather, control may be reduced. Large plants may regrow after treatment.
4. Apply when the majority of thistles have emerged and are actively growing. For best top growth control, apply before bud stage when thistles are no larger than 15 cm in height and before crop canopy prevents thorough coverage of weeds. A single application will effectively inhibit the ability of emerged thistles to compete with the crop. Later emerging thistles will not be controlled.
5. Apply to actively growing round leaved mallow from the 2-6 leaf stage (10-12 cm in height). REFINE® SG Herbicide will keep mallow stunted, but may not reduce overall populations.

6. Apply to toadflax that is no larger than 15 cm in height. A control program for this weed includes both frequent tillage and chemical application.

REFINE® SG Herbicide + MCPA	
LOCATION: Not restricted	
CROP(S): wheat (spring, durum, winter), spring barley and oats only	
TIMING: Post-emergent application from full 3-leaf to just before flag leaf (shot blade) growth stage of crop	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE® SG Herbicide	30 grams/hectare
MCPA Amine or Ester 500 OR MCPA Ester 600	0.7-1.1 litres/hectare (350-560 grams acid equivalent/hectare) or 0.56 litres/hectare (280 grams acid equivalent/hectare). OR 0.58-0.9 litres/hectare (350-540 grams acid equivalent/hectare) or 0.47 litres/hectare (280 grams acid equivalent/hectare).
Adjuvants: Agral* 90, Ag-Surf*, Citowett * Plus, Liberate* Adjuvant, Ag-Surf* II, HiActivate* Non-ionic Liquid Spreader/Activator, Super Spreader Adjuvant or Enhance*. NOTE: Adjuvant not required when tank mixing with MCPA Ester.	2 litres/1000 litres spray solution
MIXING: Ensure that REFINE® SG Herbicide is dissolved before adding MCPA. Then add MCPA with reduced agitation, then adjuvant (if required). Refer to MIXING DIRECTIONS section for general directions. If antifoam agent is required, add last. Consult the MCPA label for additional application instructions and use precautions.	
Weeds Controlled (MCPA Ester at 350-560 g ae/hectare)	Russian thistle
Annual smartweed (green smartweed, lady's thumb)	Shepherd's purse
Ball mustard	Stinkweed
Burdocks (seedling)	Tartary buckwheat
Cocklebur ²	Tumble mustard
Chickweed ¹	Volunteer rapeseed ³
Corn spurry	Wild buckwheat ⁴
Cow cockle	Wild mustard
Dandelion ⁷ (spring and fall rosettes, less than 15 cm in diameter	
False ragweed ²	Wild radish
Flixweed	Wormseed mustard
Giant ragweed ²	
Hare's-ear mustard	
Hemp-nettle	Weeds Suppressed
Indian mustard	
Kochia ²	Canada thistle ⁵
Lamb's-quarters	Cleavers (1-3 whorls)

Plantain (common)	Round leaved mallow ⁶
Prickly lettuce	Scentless chamomile
Ragweed ²	Sow thistle ⁵
Redroot pigweed	Stork's bill (2-6 leaf)(MCPA Ester only)
Russian pigweed ²	
Weeds Controlled by MCPA Ester 500 at 0.56 litres/hectare or MCPA Ester 600 at 0.47 litres/hectare (280 grams acid equivalent/hectare)	
Weeds controlled or suppressed by REFINE [®] SG Herbicide alone plus:	
<ul style="list-style-type: none"> - Volunteer imazamox and imazethapyr tolerant canola (e.g. Clearfield* canola; 2-4 leaf stage) - Dandelion (spring and fall rosettes, less than 15 cm in diameter). 	

1. Apply when chickweed is small (1-6 leaf) and actively growing, but before crop canopy prevents thorough herbicide coverage of weeds. Chickweed emerging after application will not be controlled.
2. Use minimum of 400 grams MCPA active ingredient per hectare.
3. For imazethapyr tolerant canola varieties (e.g. Clearfield* or Pursuit Smart* trait) use 1.1 litres per hectare of MCPA Amine or Ester 500, or use 0.9 litres per hectare of MCPA Ester 600.
4. Apply to actively growing wild buckwheat in the cotyledon to 5-leaf stage. Under environmental stress, such as dry weather, control may be reduced. Large plants may re-grow after treatment.
5. Apply when the majority of thistles have emerged and are actively growing. For best top growth control, apply before bud stage when thistles are no larger than 15 cm in height and before crop canopy prevents thorough coverage of weeds. A single application will effectively inhibit the ability of emerged thistles to compete with the crop. Later emerging thistles will not be controlled.
6. Apply to actively growing round leaved mallow from the 2-6 leaf stage (10-12 cm in height) REFINE[®] SG Herbicide + MCPA will keep mallow stunted, but may not reduce overall populations.
7. MCPA Ester only.

WHEAT (SPRING, DURUM, WINTER) AND SPRING BARLEY

REFINE[®] SG Herbicide + 2,4-D AMINE or ESTER	
LOCATION: Not restricted	
CROP(S): wheat (spring, durum, winter) and spring barley only	DO NOT USE ON OATS
TIMING: Post-emergent application from full 3-leaf to just before flag leaf (shot blade) growth stage of crop.	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE [®] SG Herbicide	30 grams/hectare
Choose one of the following:	
1) 2,4-D Amine 500	0.84-1.1 litres/hectare

2) 2,4-D Ester LV700	0.6-0.8 litres/hectare
3) 2,4-D Ester LV600	0.7-0.9 litres/hectare
4) Acid equivalent.	
Adjuvants: AGRAL* 90, AG-SURF*, CITOWETT* PLUS, LIBERATE* ADJUVANT, AG-SURF* II, HIACTIVATE* NON-IONIC LIQUID SPREADER/ACTIVATOR, SUPER SPREADER ADJUVANT OR ENHANCE*.	2 litres/1000 litres of spray solution
MIXING: Ensure that REFINE [®] SG Herbicide is dissolved before adding 2,4-D. Then add 2,4-D with reduced agitation, then adjuvant. Refer to MIXING DIRECTIONS section for general directions. If antifoam agent is required, add last. Consult the 2,4-D label for additional application instructions and use precautions.	
Weeds Controlled	
Annual smartweed (green smartweed, lady's thumb)	Russian pigweed
Ball mustard	Russian thistle
Burdocks (seedling)	Shepherd's purse
Chickweed ¹	Stinkweed
Cocklebur	Stork's bill (2-6 leaf)(2,4-D Ester only)
Common ragweed	Tartary buckwheat
Corn spurry	Tumble mustard
Cow cockle	Volunteer rapeseed ²
False ragweed	Wild buckwheat ³
Flixweed	Wild mustard
Giant ragweed	Wild radish
Hare's-ear mustard	Wormseed mustard
Hemp-nettle	Weeds Suppressed
Indian mustard	Canada thistle ⁴
Kochia	Round leaved mallow ⁵
Lamb's-quarters	Scentless Chamomile
Plantain (common)	Sow thistle ⁴
Prickly lettuce	Toadflax (2,4-D Ester only)
Redroot pigweed	

1. Apply when chickweed is small (1-6 leaf) and actively growing, but before crop canopy prevents thorough herbicide coverage of weeds. Chickweed emerging after application will not be controlled.
2. For imazethapyr tolerant canola varieties (e.g. varieties with the Clearfield* or Pursuit Smart* traits) consult 2,4-D label for appropriate use rates.
3. Apply to actively growing wild buckwheat in the cotyledon to 5 leaf stage. Under environmental stress, such as dry weather, control may be reduced. Large plants may re-grow after treatment.
4. Apply when the majority of thistles have emerged and are actively growing. For best top growth control, apply before bud stage when thistles are no larger than 15 cm in height and before crop canopy prevents thorough coverage of weeds. REFINE[®] SG Herbicide + 2,4-D will effectively inhibit the ability of emerged thistles to compete with the crop. Later emerging thistles will not be controlled.

5. Apply to actively growing round leaved mallow from the 2-6 leaf stage (10-12 cm in height). REFINE[®] SG Herbicide + 2,4-D will keep mallow stunted, but may not reduce overall populations.

SPRING WHEAT (INCLUDING DURUM) AND SPRING BARLEY

REFINE[®] SG Herbicide + ACCORD[®] Dry Flowable Herbicide	
LOCATION: For use in the Prairie provinces and Peace River Region of British Columbia only.	
CROP(S): Spring wheat (including durum) and spring barley (grown for feed purposes only). NOT UNDERSEEDED TO FORAGES.	
TIMING: Post-emergent application from 2 to 5-leaf growth stage of the crop. See below for weed staging.	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE [®] SG Herbicide	30 grams/hectare
ACCORD [®] Dry Flowable Herbicide	135 grams/hectare for most weeds listed below 165 grams/hectare for green foxtail 67 grams/hectare for cleavers (1-4 whorl) and annual sow thistle (1-4 leaf).
Adjuvant: MERGE [®] only	10 litres/1000 litres of spray solution (1.0% v/v)
MIXING: Ensure that REFINE [®] SG Herbicide is completely dissolved. While maintaining agitation, add Accord [®] and then Merge [®] adjuvant. DO NOT USE ADDITIONAL NON-IONIC SURFACTANT. Refer to MIXING DIRECTIONS section for general instructions. Consult the Accord [®] Dry Flowable Herbicide label for rotational cropping restrictions, application instructions, use precautions, additional information on appropriate weed staging at application, and other restrictions. Thorough coverage of foliage is important for consistent weed control.	
WEEDS CONTROLLED	
Broadleaf weeds controlled or suppressed by REFINE [®] SG Herbicide alone, as well as:	
green foxtail	1-5 leaf, 2 tillers
barnyard grass	1-5 leaf
volunteer flax	1-8 cm
cleavers	1-4 whorls
annual sow thistle	1-4 leaf
NOTES: Do not apply this tank mixture more often than once every 2 years. Do not graze treated crops or cut for hay within 77 days (spring, durum wheat) or 80 days (spring barley) of application.	

REFINE® SG Herbicide® + BANVEL II* Herbicide or BANVEL* DRY Herbicide	
LOCATION: For use in the Prairie provinces and Peace River Region of British Columbia only.	
CROP(S): spring wheat (including durum) and spring barley only, not underseeded to legumes	
TIMING: Post-emergent application from the 2-5 leaf stage of spring wheat or spring barley, and seedling stage to 8 leaf stage of kochia.	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE® SG Herbicide	30 grams/hectare
Banvel* II Herbicide	0.110 or 0.145 litres/hectare
or	or
Banvel* Dry Herbicide	76 or 100 grams/hectare
Adjuvants: AGRAL* 90, AG-SURF*, CITOWETT* PLUS, LIBERATE* ADJUVANT, AG-SURF* II, HIACTIVATE* NON-IONIC LIQUID SPREADER/ACTIVATOR, SUPER SPREADER ADJUVANT OR ENHANCE*.	2 litres/1000 litres of spray solution
MIXING: Ensure that REFINE® SG Herbicide is completely dissolved. Add Banvel* II Herbicide or Banvel* Dry Herbicide with reduced agitation, then adjuvant. Refer to MIXING DIRECTIONS section for general instructions. Use minimum volume of 55 L/ha. Consult the Banvel® II Herbicide or Banvel* Dry Herbicide label for additional application instructions and use precautions.	
WEEDS CONTROLLED	
Weeds controlled by REFINE® SG Herbicide + Banvel* II at 0.110 L/ha (or Banvel* Dry at 76 g/ha): Broadleaf weeds controlled or suppressed by Refine® SG Herbicide alone, as well as kochia (including Group 2 resistant kochia).	
Weeds controlled by REFINE® SG Herbicide + Banvel* II at 0.145 L/ha (or Banvel* Dry at 100 g/ha): Broadleaf weeds controlled or suppressed by Refine® SG Herbicide alone, as well as kochia (including Group 2 resistant kochia) and dandelion (spring or fall rosettes, less than 15 cm in diameter).	
NOTES: Use the higher rate when the majority of Kochia plants are at or near the 8-leaf stage, or when growing conditions are not favourable.	
Do not permit lactating dairy animals to graze fields within 7 days after application.	

REFINE® SG Herbicide + PUMA¹²⁰ SUPER	
LOCATION: For use in the Prairie provinces and Peace River Region of British Columbia only.	
CROP(S): spring wheat (including durum) and spring barley only	
TIMING: Post-emergent application from 1 to 6-leaf plus 3 tillers growth stage of spring and durum wheat; 1 to 5-leaf plus 2 tillers growth stage of spring barley. For annual grass weeds, apply from 1 to 6-leaf stage, up to emergence of third tiller.	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE® SG Herbicide	30 grams/hectare
PUMA® 120 SUPER	385 ml/hectare for green foxtail only 770 ml/hectare for wild oats, barnyard grass, green foxtail and yellow foxtail.
No adjuvant required.	

MIXING: Ensure that REFINE® SG Herbicide is dissolved before adding Puma* 120 Super. Then add Puma* 120 Super while continuing agitation. Refer to MIXING DIRECTIONS section for general directions. Consult the Puma* 120 Super label for additional information on appropriate weed staging, application instructions, environmental hazards and use precautions.

WEEDS CONTROLLED

Broadleaf weeds controlled or suppressed by REFINE® SG Herbicide alone, as well as wild oats, green foxtail, barnyard grass and yellow foxtail.

REFINE® SG Herbicide + MCPA ESTER + PUMA* 120 SUPER

LOCATION: For use in the Prairie provinces and Peace River Region of British Columbia only.

CROP(S): spring wheat (including durum) and spring barley only

TIMING: Post-emergent application from 1 to 6-leaf plus 3 tillers growth stage of spring and durum wheat; 1 to 5-leaf plus 2 tillers growth stage of spring barley. For annual grass weeds, apply from 1 to 6-leaf stage, up to emergence of third tiller.

TANK MIX COMPONENTS AND APPLICATION RATES

REFINE® SG Herbicide	30 grams/hectare
MCPA ESTER 500	0.84 litres/hectare
OR	OR
MCPA ESTER 600	0.7 litres/hectare or 0.47 litres/hectare
PUMA* 120 SUPER	385 ml/hectare for green foxtail only 770 ml/hectare for wild oats, barnyard grass, green foxtail and yellow foxtail.

No adjuvant required.

MIXING: Ensure that REFINE® SG Herbicide is dissolved before adding Puma* 120 Super. Then add Puma* 120 Super, and, with reduced agitation, add MCPA Ester. Refer to MIXING DIRECTIONS section for general directions. Consult the Puma* 120 Super and MCPA Ester labels for additional information on appropriate weed staging, application instructions, environmental hazards and use precautions.

WEEDS CONTROLLED

Broadleaf weeds controlled or suppressed by REFINE® SG Herbicide + MCPA Ester 500 at 0.84 litres/hectare (or MCPA Ester 600 at 0.7 litres/hectare) **OR** volunteer imazamox and imazethapyr tolerant canola (e.g. Clearfield* canola (2-4 leaf stage) when MCPA Ester 500 is applied at 0.56 L/Ha (or MCPA Ester 600 is applied at 0.47 L/Ha), as well as wild oats, green foxtail, barnyard grass and yellow foxtail.

REFINE® SG Herbicide + ACCORD* Dry Flowable Herbicide + PUMA* 120 SUPER

LOCATION: For use in the Prairie provinces and Peace River Region of British Columbia only.

CROP(S): spring wheat (including durum) and spring barley (grown for feed purposes only) not underseeded to forages.

TIMING: Spring and durum wheat - 2 to 5-leaf stage;
 Spring barley – 2 to 4 leaf stage;
 Annual grasses – 1 to 6 leaf stage (up to emergence of third tiller);
 Cleavers – 1 to 4-whorl stage;
 Annual sow thistle – 1 to 4 leaf stage;

TANK MIX COMPONENTS AND APPLICATION RATES

REFINE® SG Herbicide	30 grams/hectare
ACCORD* Dry Flowable Herbicide	67 grams/hectare

PUMA® 120 SUPER	385 ml/hectare for green foxtail only 770 ml/hectare for wild oats, barnyard grass, green foxtail and yellow foxtail.
MERGE* adjuvant is NOT required with this tank mixture	
<p>MIXING: Ensure that REFINE® SG Herbicide is completely dissolved before adding Accord* Dry Flowable Herbicide. Then add Puma* 120 Super with reduced agitation. Refer to MIXING DIRECTIONS section for general directions. Consult the Puma* 120 Super label for additional information on appropriate weed staging, application instructions, environmental hazards and use precautions.</p>	
WEEDS CONTROLLED	
Broadleaf weeds controlled or suppressed by REFINE® SG Herbicide alone, as well as wild oats, green foxtail, barnyard grass yellow foxtail, cleavers and annual sow thistle.	
<p>NOTES: Do not apply this tank mixture more often than once every 2 years. Do not graze the treated crops or cut for hay within 77 days (spring wheat, durum) or 80 days (spring barley) of application. Consult the Accord* Dry Flowable Herbicide label for rotational cropping restrictions, application instructions, use precautions and other restrictions. Refer to the Accord* and Puma* 120 Super labels for additional information on appropriate weed staging at application. Thorough coverage of foliage is important for consistent weed control.</p>	

REFINE® SG Herbicide + STARANE* Herbicide or PERIMETER® Herbicide	
LOCATION: For use in the Prairie provinces and Peace River Region of British Columbia only.	
CROP(S): Spring wheat (including durum) and spring barley only, not underseeded to legumes	
TIMING: Post-emergent application from the 2-leaf to flag-leaf stage of spring wheat (including durum) or spring barley and from seedling stage to 4-leaf/whorls of cleavers. Apply to kochia (including Group 2 resistant kochia) from the seedling to 8-leaf stage.	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE® SG Herbicide	30 grams/hectare
STARANE* Herbicide Or PERIMETER® Herbicide*	0.3 L/ha
<p>* PERIMETER® Herbicide may be substituted with an equivalent 180 g ae/L fluroxypyr product at the use rate of 0.3 L/ha. Prior to use, consult the fluroxypyr product label to confirm tank mixing is permitted .</p>	

Adjuvants: AGRAL* 90, AG-SURF*, CITOWETT* PLUS, LIBERATE* ADJUVANT, AG-SURF* II, HIACTIVATE* NON-IONIC LIQUID SPREADER/ACTIVATOR, SUPER SPREADER ADJUVANT OR ENHANCE*.	2 L/1000 litres of spray solution
<p>MIXING: Ensure that REFINE® SG Herbicide is completely dissolved before adding STARANE* Herbicide or PERIMETER® Herbicide. Add STARANE* Herbicide or PERIMETER® Herbicide with reduced agitation, then add adjuvant. Refer to MIXING DIRECTIONS section for general directions. Use a spray volume of 100 L/ha. Consult the STARANE* Herbicide or PERIMETER® Herbicide label for additional application instructions and use precautions.</p>	
<p style="text-align: center;">WEEDS CONTROLLED</p> Broadleaf weeds controlled or suppressed by REFINE ® SG Herbicide alone, plus control of cleavers and kochia (including Group 2 resistant kochia).	
<p>NOTES: Do not permit lactating dairy animals to graze fields within 7 days after application. Do not harvest forage or cut hay within 30 days after application. Withdraw meat animals from treated fields at least 3 days prior to slaughter. Do not harvest the treated mature crop within 60 days after application.</p>	

REFINE® SG Herbicide + PERIMETER® II Herbicide	
<p>LOCATION: For use in the Prairie provinces and Peace River Region of British Columbia only.</p>	
<p>CROP(S): Spring wheat (including durum) and spring barley only, not underseeded to legumes</p>	
<p>TIMING: Post-emergent application from the 2-leaf to flag-leaf stage of spring wheat (including durum) or spring barley and from seedling stage to 4-leaf/whorls of cleavers. Apply to kochia (including Group 2 resistant kochia) from the seedling to 8-leaf stage.</p>	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE® SG Herbicide	30 grams/hectare
PERIMETER® II Herbicide♦ ♦ PERIMETER® II Herbicide may be substituted with any equivalent 333 g ae/L fluroxypyr product at the use rate of 0.155 L/ha.	0.155 L/ha

Adjuvants: AGRAL* 90, AG-SURF*, CITOWETT* PLUS, LIBERATE* ADJUVANT, AG-SURF* II, HIACTIVATE* NON-IONIC LIQUID SPREADER/ACTIVATOR, SUPER SPREADER ADJUVANT OR ENHANCE*.	2 L/1000 litres of spray solution
MIXING: Ensure that REFINE® SG Herbicide is completely dissolved before adding PERIMETER® II Herbicide. Add PERIMETER® II Herbicide with reduced agitation, then add adjuvant. Refer to MIXING DIRECTIONS section for general directions. Use a spray volume of 100 L/ha. Consult the PERIMETER II Herbicide label for additional application instructions and use precautions.	
WEEDS CONTROLLED	
Broadleaf weeds controlled or suppressed by REFINE® SG Herbicide alone, plus control of cleavers and kochia (including Group 2 resistant kochia).	
NOTES: Do not permit lactating dairy animals to graze fields within 7 days after application. Do not harvest forage or cut hay within 30 days after application. Withdraw meat animals from treated fields at least 3 days prior to slaughter. Do not harvest the treated mature crop within 60 days after application.	

SPRING WHEAT (EXCLUDING DURUM) AND SPRING BARLEY

REFINE® SG Herbicide + ATTAIN* Herbicide Tank Mix		
LOCATION: For use in the Prairie provinces and Peace River Region of British Columbia only.		
CROP(S): spring wheat (excluding durum) and spring barley only, not underseeded to legumes		
TIMING: Post-emergent application from the 4-leaf to flag-leaf stage of spring wheat or spring barley and seedling stage to 4-leaf/whorls of weed.		
TANK MIX COMPONENTS AND APPLICATION RATES		
REFINE® SG Herbicide	30 grams/hectare	
Attain* Herbicide Tank Mix	ATTAIN* A (fluroxypyr)	Attain* A - 0.30 L/ha
	ATTAIN* B (2,4-D ester)	Attain* B - 0.50 L/ha
Adjuvants: AGRAL* 90, AG-SURF*, CITOWETT* PLUS, LIBERATE* ADJUVANT, AG-SURF* II, HIACTIVATE* NON-IONIC LIQUID SPREADER/ACTIVATOR, SUPER SPREADER ADJUVANT OR ENHANCE*.	2 L/1000 litres of spray solution	
MIXING: Ensure that REFINE® SG Herbicide is completely dissolved before adding Attain A. Then add Attain* A with reduced agitation, and then add Attain B. Then add adjuvant. Refer to MIXING DIRECTIONS section for general directions. Use a spray volume of 100 L/ha. Consult the Attain* Herbicide Tank Mix labels for additional application instructions and use precautions.		
WEEDS CONTROLLED		
Broadleaf weeds controlled or suppressed by REFINE® SG Herbicide alone, as well as cleavers (excluding Group 2 resistant cleavers).		
NOTES: Do not permit lactating dairy animals to graze fields within 7 days after application. Do not harvest forage or cut hay within 30 days after application. Withdraw meat animals from treated fields at least 3 days prior to slaughter. Do not harvest the treated mature crop within 60 days after application.		

REFINE® SG Herbicide + AXIAL* 100EC Herbicide	
LOCATION: For use in the Prairie provinces and Interior of British Columbia only.	
CROP(S): spring wheat and spring barley only	
TIMING: Post-emergent application from 1 to flag leaf. For annual grass weeds, apply from 1 to 6-leaf stage, up to emergence of 4 th tiller.	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE® SG Herbicide	30 grams/hectare
AXIAL* 100 EC Herbicide	600 mL/hectare for wild oats, volunteer oats, green foxtail, yellow foxtail, volunteer canary seed, and proso millet.
ADIGOR* Adjuvant	700 mL/hectare
MIXING: Ensure that REFINE® SG Herbicide is completely dissolved. Then add Axial* 100 EC Herbicide with reduced agitation, and finally either Adigor adjuvant. DO NOT USE ADDITIONAL NON-IONIC SURFACTANT. Refer to MIXING DIRECTIONS section for general instructions. Consult the Axial* 100EC Herbicide label for application instructions and use precautions.	
WEEDS CONTROLLED	
Broadleaf weeds controlled or suppressed by REFINE® SG Herbicide alone, plus wild oats, volunteer oats, green foxtail, yellow foxtail, volunteer canary seed, and proso millet.	
NOTES: Do not harvest within 60 days for grain and straw and 30 days for hay. Do not graze treated crop for 7 days after application. Consult AXIAL* 100 EC Herbicide label for additional information on appropriate weed staging, application instructions, environmental hazards and use precautions.	

REFINE® SG Herbicide + AXIAL* 100EC Herbicide + MCPA Ester	
LOCATION: For use in the Prairie provinces and Interior of British Columbia only.	
CROP(S): spring wheat and spring barley only	
TIMING: Post-emergent application from 1 to flag leaf. For annual grass weeds, apply from 1 to 6-leaf stage, up to emergence of 4 th tiller.	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE® SG HERBICIDE	30 grams/hectare
AXIAL* 100 EC Herbicide	600mL/hectare for wild oats, volunteer oats, green foxtail, yellow foxtail, volunteer canary seed, and proso millet.

MCPA Ester 500	560 mL/hectare for volunteer imazamox and imazethapyr tolerant canola (e.g. Clearfield canola) (2-4 leaf stage).
OR	
MCPA Ester 600	700 mL/hectare for weeds controlled by MCPA Ester at this rate
	OR
	470 mL/hectare for volunteer imazamox and imazethapyr tolerant canola (e.g. Clearfield canola) (2-4 leaf stage).
	580 mL/hectare for weeds controlled by MCPA Ester at this rate
ADIGOR* Adjuvant	700 mL/hectare
<p>MIXING: Ensure that REFINE® SG Herbicide is completely dissolved. Then add Axial* 100 EC Herbicide with reduced agitation, then MCPA Ester and finally Adigor* adjuvant. DO NOT USE ADDITIONAL NON-IONIC SURFACTANT. Refer to MIXING DIRECTIONS section for general instructions. Consult the Axial* 100EC Herbicide and MCPA Ester labels for application instructions and use precautions. Refer to MIXING DIRECTIONS section for general instructions.</p>	
<p>WEEDS CONTROLLED</p>	
<p>Broadleaf weeds controlled or suppressed by Refine® SG Herbicide alone, as well as weeds controlled by MCPA Ester 500 at 700 mL/hectare (or MCPA Ester 600 at 580 mL/hectare), or volunteer imazamox and imazethapyr tolerant canola (e.g. Clearfield* canola)(2-4 leaf stage) when MCPA Ester 500 is applied at 560 mL/hectare (or MCPA Ester 600 at 470 mL/hectare), plus wild oats, volunteer oats, green foxtail, yellow foxtail, volunteer canary seed, and proso millet.</p>	
<p>NOTES: Do not harvest within 60 days for grain and straw and 30 days for hay. Do not graze treated crop for 7 days after application. Consult AXIAL* 100 EC Herbicide and MCPA Ester labels for additional information on appropriate weed staging, application instructions, environmental hazards and use precautions.</p>	

<p>REFINE® SG Herbicide + CURTAIL™ M</p>	
<p>LOCATION: For use in the Prairie provinces and Peace River Region of British Columbia only.</p>	
<p>CROP(S): spring wheat (excluding durum) and spring barley only</p>	
<p>TIMING: Post-emergent application from the full 3-leaf growth stage of spring wheat or spring barley.</p>	
<p>TANK MIX COMPONENTS AND APPLICATION RATES</p>	
REFINE® SG Herbicide	30 grams/hectare
CURTAIL™ M	1.5 litres/hectare
Adjuvants: AGRAL™ 90, AG-SURF™, CITOWETT™ PLUS, LIBERATE™ ADJUVANT, AG-SURF™ II, HIACTIVATE™ NON-IONIC LIQUID SPREADER/ACTIVATOR, SUPER SPREADER ADJUVANT OR ENHANCE™.	2 litres/1000 litres of spray solution
<p>MIXING: Ensure that REFINE® SG Herbicide is completely dissolved. Add Curtail™ M with reduced agitation, then adjuvant. Antifoaming agent may be required. Refer to MIXING DIRECTIONS section for general instructions. Consult the Curtail™ M label for additional application instructions and use precautions.</p>	

WEEDS CONTROLLED
Broadleaf weeds controlled or suppressed by REFINE [®] SG Herbicide alone, as well as Canada thistle ¹ and wild buckwheat ² .
Notes
¹ Apply when the majority of thistles have emerged and are actively growing. For best control, apply before bud stage when thistles are no larger than 15 cm in height and before crop canopy prevents thorough coverage of thistles. Later emerging thistles will not be controlled.
² Apply to actively growing wild buckwheat in the cotyledon to 5-leaf stage. Under environmental stress, such as dry weather, control may be reduced. Large plants may re-grow after treatment.

REFINE[®] SG Herbicide + LONTREL[™] 360	
LOCATION: For use in the Prairie provinces and Peace River Region of British Columbia only.	
CROP(S): spring wheat (excluding durum) and spring barley only	
TIMING: Post-emergent application from full 3-leaf to just before flag leaf growth stage of spring wheat or spring barley.	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE [®] SG Herbicide	30 grams/hectare
LONTREL [™] 360	0.21 litres/hectare
Adjuvants: AGRAL ⁺ 90, AG-SURF ⁺ , CITOWETT ⁺ PLUS, LIBERATE ⁺ ADJUVANT, AG-SURF ⁺ II, HIACTIVATE ⁺ NON-IONIC LIQUID SPREADER/ACTIVATOR, SUPER SPREADER ADJUVANT OR ENHANCE ⁺ .	2 litres/1000 litres of spray solution
MIXING: Ensure that REFINE [®] SG Herbicide is completely dissolved. With reduced agitation, add Lontrel [™] 360. Then add adjuvant. Antifoaming agent may be required. Refer to MIXING DIRECTIONS section for general instructions. Consult the Lontrel [™] 360 label for additional application instructions, use Precautions.	

WEEDS CONTROLLED
Broadleaf weeds controlled or suppressed by REFINE [®] SG Herbicide alone, as well as Canada thistle (seasonal control) ¹ , and wild buckwheat ²
Notes
¹ Apply when the majority of thistles have emerged and are actively growing. For best control, apply before bud stage when thistles are no larger than 15 cm in height and before crop canopy prevents thorough coverage of thistles. Later emerging thistles will not be controlled.
² Apply to actively growing wild buckwheat in the cotyledon to 5-leaf stage. Under environmental stress, such as dry weather, control may be reduced. Large plants may re-grow after treatment.

REFINE[®] SG Herbicide + LONTREL[™] 360 + 2,4-D ESTER or MCPA ESTER	
LOCATION: Western Canada only.	
CROP(S): spring wheat (excluding durum) and spring barley only	
TIMING: Post-emergent application from full 3-leaf to just before flag leaf (shot blade) growth stage of crop.	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE [®] SG Herbicide	30 grams/hectare
LONTREL [™] 360	0.21 litres/hectare
Choose one of the following:	
1) MCPA Ester (500 g/L)	0.84 litres/hectare
2) MCPA Ester (600 g/L)	0.7 litres/hectare

3) 2,4-D Ester (600 g/L)	0.7 litres/hectare
Adjuvants: AGRAL* 90, AG-SURF*, CITOWETT* PLUS, LIBERATE* ADJUVANT, AG-SURF* II, HIACTIVATE* NON-IONIC LIQUID SPREADER/ACTIVATOR, SUPER SPREADER ADJUVANT OR ENHANCE*.	2 litres/1000 litres of spray solution
MIXING: Ensure that REFINE® SG Herbicide is completely dissolved. With reduced agitation, add Lontrel™ 360, followed by 2,4-D Ester or MCPA Ester. Then add adjuvant. Refer to MIXING DIRECTIONS section for general instructions. Consult the Lontrel* 360 and MCPA Ester or 2,4-D Ester labels for additional application instructions, use Precautions and other label restrictions.	
WEEDS CONTROLLED	
All other weeds controlled by REFINE® SG Herbicide alone, as well as Canada thistle ¹ , lady's thumb, perennial sow thistle, stinkweed, volunteer canola, wild buckwheat and wild mustard.	
Notes	
¹ Provides seasonal control of Canada thistle.	
WEEDS SUPPRESSED	
All other weeds suppressed by REFINE® SG Herbicide alone, as well as cleavers.	

SPRING WHEAT (INCLUDING DURUM)

REFINE® SG Herbicide + SIMPLICITY*	
LOCATION: For use in the Prairie Provinces and Peace River Region of British Columbia only.	
CROP(S): Spring wheat and durum wheat.	
TIMING: Post-emergent application to spring wheat and durum wheat from the 3-leaf stage to the first node stage.	
This tankmix may be applied by ground or aerial equipment. Refer to AERIAL APPLICATION section for instructions. Consult the SIMPLICITY* label for additional aerial application instructions and use precautions.	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE® SG Herbicide	30 grams/hectare
SIMPLICITY*	500 mL/hectare Or 375 mL/hectare
Adjuvants: AGRAL* 90, AG-SURF*, CITOWETT* PLUS, LIBERATE* ADJUVANT, AG-SURF* II, HIACTIVATE* NON-IONIC LIQUID SPREADER/ACTIVATOR, SUPER SPREADER ADJUVANT OR ENHANCE*.	2.5 litres/1000 litres of spray solution
MIXING: Ensure that REFINE® SG Herbicide is completely dissolved. With reduced agitation, add SIMPLICITY*, followed by adjuvant. Refer to MIXING DIRECTIONS section for general instructions. Consult the Simplicity label for application instructions and use precautions.	
WEEDS CONTROLLED	
Broadleaf weeds controlled or suppressed by REFINE® SG Herbicide alone, plus weeds listed on the SIMPLICITY* label.	

SPRING WHEAT (EXCLUDING DURUM)

REFINE® SG Herbicide + EVEREST* SOLUPAK* 70 DF or EVEREST* 70 WDG Herbicide + BANVEL* II Herbicide or BANVEL* DRY EG Herbicide	
LOCATION: For use in the Prairie provinces and Peace River Region of British Columbia only.	
CROP(S): Spring wheat (excluding durum) only NOT UNDERSEEDED TO LEGUMES	
TIMING: Post-emergent application from 2 to 6-leaf (2 to 4 leaves on main stem, plus 2 tillers) growth stage of the crop. For wild oats and green foxtail, apply from 1 to 6-leaves (1 to 4 leaves on main stem, plus 2 tillers)	
TANK MIX COMPONENTS AND APPLICATION RATES	
REFINE® SG Herbicide	30 grams/hectare
EVEREST* 70 WDG Herbicide OR EVEREST* SOLUPAK 70 DF	43 grams/hectare
Banvel* II Herbicide	0.110 or 0.145 L/Ha
or	or
Banvel* Dry Herbicide	76 or 100 grams/hectare
Agral * 90, Agsurf*, Liberate* Adjuvant, Ag-Surf* II, HiActivate* Non-ionic Liquid Spreader/Activator, Super Spreader Adjuvant or Enhance*.	0.25% v/v
MIXING: Ensure that REFINE® SG Herbicide is completely dissolved. Add Everest* Solupak 70 DF or Everest* 70 WDG Herbicide while continuing agitation until these products are completely mixed. Reduce agitation, and add Banvel II Herbicide or Banvel* Dry EG Herbicide, and then adjuvant. Refer to MIXING DIRECTIONS section for general instructions. Consult the Everest* Solupak* 70 DF or Everest* 70 WDG Herbicide and the Banvel* II Herbicide or Banvel* Dry SG Herbicide labels for additional information on rotational cropping restrictions, application instructions, use precautions and other restrictions.	
WEEDS CONTROLLED	
Weeds controlled by REFINE® SG Herbicide + Banvel* II Herbicide at 0.110 L/ha (or Banvel* Dry Herbicide at 76 g/ha) + Everest* 70 WDG Herbicide or Everest* Solupak 70 DF : Broadleaf weeds controlled or suppressed by Refine® SG Herbicide alone, as well as kochia (including Group 2 resistant kochia), green foxtail and wild oats.	
Weeds controlled by REFINE® SG Herbicide + Banvel* II Herbicide at 0.145 L/ha (or Banvel* Dry Herbicide at 100 g/ha) + Everest* 70 WDG Herbicide or Everest* Solupak 70 DF: Broadleaf weeds controlled or suppressed by Refine® SG Herbicide alone, as well as kochia (including Group 2 resistant kochia), dandelion (spring or fall rosettes, less than 15 cm in diameter), green foxtail and wild oats.	
NOTES: Use the higher rate of Banvel* Herbicides when the majority of Kochia plants are at or near the 8-leaf stage, or when growing conditions are not favourable. Observe minimum interval to harvest of 80 days after treatment. For black, dark brown and grey-wooded soil zones only, field peas may be grown the year following Everest* Solupak* 70 DF or Everest* 70 WDG Herbicide application in fields where precipitation has been normal or above normal (10 year average) during the growing season, and where organic matter content is above 4% and pH below 7.5. Re-crop spring wheat only in brown soil zone.	

SPRING WHEAT (EXCLUDING DURUM) ONLY

REFINE® SG Herbicide + 2,4-D AMINE or ESTER + EVEREST* SOLUPAK* 70 DF or EVEREST* 70 WDG Herbicide							
LOCATION: For use in the Prairie provinces and Peace River Region of British Columbia only.							
CROP(S): spring wheat (excluding durum) only NOT UNDERSEEDED TO LEGUMES							
TIMING: Post-emergent application from 3 to 6-leafs (3 to 4 leaves on main stem, plus 2 tillers) growth stage of the crop. For wild oats, green foxtail and volunteer tame oats, apply from 1 to 6-leafs (1 to 4 leaves on main stem, plus 2 tillers)							
TANK MIX COMPONENTS AND APPLICATION RATES							
Component 1		Component 2		Component 3		Component 4	WEEDS CONTROLLED - Broadleaf weeds controlled or suppressed by REFINE® SG Herbicide alone plus:
REFINE® SG Herbicide	30 g/ha	Everest* 70 WDG Herbicide	43 g/ha	Agral * 90, Agsurf*, Liberate* Adjuvant, Ag-Surf* II, HiActivate* Non-ionic Liquid Spreader/Activator, Super Spreader Adjuvant or Enhance*.	0.25 % v/v		Wild oats, green foxtail, volunteer tame oats. Use 43 g/ha when wild oat infestations are greater than 100 plants/m2 or when plants are not actively growing due to poor environmental conditions.

REFINE® SG Herbicide	30 g/ha	Everest* 70 WDG Herbicide or Everest* Solupak 70 DF	43 g/ha	2,4-D Amine or Ester	up to 560 g ae/h a	Agra l * 90, Ags urf, Liber ate* Adju vant, Ag- Surf* II, HiAc tivat e* Non- ionic Liqui d Spre ader /Acti vator , Sup er Spre ader Adju vant or Enh ance *	0.25 % v/v	Wild oats, green foxtail and volunteer tame oats. Use 43 g/ha when wild oat infestations are greater than 100 plants/m2 or when plants are not actively growing due to poor environmental conditions.
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REFINE® SG Herbicide	30 g/ha	Everest* 70 WDG Herbicide or Everest* Solupak 70 DF	28.5 g/ha	2,4-D Amine or Ester	up to 560 g ae/h a	Agra l * 90, Ags urf*, Liber ate* Adju vant, Ag- Surf* II, HiAc tivat e* Non- ionic Liqui d Spre ader /Acti vator , Sup er Spre ader Adju vant or Enh ance * .	0.25 % v/v	Wild oats and volunteer tame oats only. Use 28.5 g/ha when wild oat populations are below 100 plants/m2 and when plants are actively growing.
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REFINE® SG Herbicide	30 g/ha	Everest* 70 WDG Herbicide or Everest* Solupak 70 DF	21.5 g/ha	2,4-D Amine or Ester	up to 560 g ae/h a	Agra I * 90, Ags urf*, Liber ate* Adju vant, Ag- Surf* II, HiAc tivat e* Non- ionic Liqui d Spre ader /Acti vator , Sup er Spre ader Adju vant or Enh ance *.	0.25 % v/v	Green foxtail only
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MIXING: Ensure that REFINE® SG Herbicide is completely dissolved. Add Everest* Solupak 70 DF or Everest* 70 WDG Herbicide while continuing agitation until these products are completely mixed. Reduce agitation, and add 2,4-D Amine or Ester, and then adjuvant. Refer to MIXING DIRECTIONS section for general instructions. Consult the 2,4-D Amine or Ester and Everest* Solupak* 70 DF or Everest* 70 WDG Herbicide labels for additional information on rotational cropping restrictions, application instructions, use precautions and other restrictions.

WEEDS CONTROLLED

Broadleaf weeds controlled or suppressed by REFINE® SG Herbicide alone, as well as green foxtail and wild oats.

NOTES: Observe minimum interval to harvest of 80 days after treatment. For black, dark brown and gray-wooded soil zones only, field peas may be grown the year following Everest* Solupak* or Everest* 70 WDG Herbicide application in fields where precipitation has been normal or above normal (10 year average) during the growing season, and where organic matter content is above 4% and pH below 7.5. Re-crop spring wheat only in brown soil zone.

MINOR USES:

SEEDLING AND ESTABLISHED GRASS SPECIES FOR FORAGE AND SEED PRODUCTION

NOTE TO BUYER/USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR SPECIAL USE APPLICATIONS:

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than FMC under the User Requested Minor Use Label Expansion program. For these uses, FMC 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.

SEEDLING AND ESTABLISHED GRASS SPECIES FOR FORAGE AND SEED PRODUCTION

For broadleaf weed control, apply 30 grams of REFINE[®] SG Herbicide per hectare with AGRAL^{*} 90, AG-SURF^{*}, CITOWETT^{*} PLUS, LIBERATE^{*} ADJUVANT, AG-SURF^{*} II, HIACTIVATE^{*} NON-IONIC LIQUID SPREADER/ACTIVATOR, SUPER SPREADER ADJUVANT OR ENHANCE^{*} at 2.0 litres per 1,000 litres of spray solution. (See "Mixing Instructions" section of the label).

Apply postemergence to the following Seedling or Established Grasses for Forage or Seed Production:

Meadow Bromegrass	Pubescent Wheatgrass	Smooth Bromegrass
Tall Wheatgrass	Creeping Red Fescue	Slender Wheatgrass
Tall Fescue	Streambank Wheatgrass	Orchard Grass
Northern Wheatgrass	Crested Wheatgrass	Western Wheatgrass
	Intermediate Wheatgrass	

Apply postemergence to the following Established Grasses for Forage or Seed Production:

Kentucky Bluegrass

REFINE[®] SG Herbicide will control the broadleaf weeds listed on the label for REFINE[®] SG Herbicide alone. For best results apply to emerged, young, actively-growing weeds that are less than 10 cm tall or across. Thorough coverage of target weeds is essential.

Apply with ground equipment only. Make only one application per growing season. The above grasses may not be grazed by or fed to livestock within 7 days of application. Please refer to the appropriate sections of this label for additional use precautions, application and/or mixing instructions.

FALL APPLICATION ON WINTER WHEAT IN EASTERN CANADA

NOTE TO BUYER/USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR SPECIAL USE APPLICATIONS:

The DIRECTIONS FOR USE for the uses described in this section of the label were developed by persons other than FMC under the User Requested Minor Use Label Expansion program. For these uses, FMC 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.

FALL APPLICATION ON WINTER WHEAT IN EASTERN CANADA

For the control of the weeds listed on the REFINE® SG Herbicide alone, apply 30 grams (15 g a.i/ha) of REFINE® SG Herbicide per hectare with a registered surfactant. (See "Mixing Instructions" section of the label).

Apply in the fall with ground equipment as a post-emergent spray after the 2-leaf stage of wheat but before killing frost. For best results, apply to actively growing weeds that are less than 10 cm in height or diameter. Thorough coverage of the weeds is essential.

Do not apply REFINE® SG Herbicide in the spring after a fall application.

Wheat may not be grazed or fed to livestock within 7 days of application.

Please refer to the appropriate sections of this label for additional use precautions, application and/or mixing instructions.

MIXING INFORMATION:

MIXING PRECAUTIONS:

Once dissolved, REFINE® SG Herbicide will not settle out, even if the sprayer is parked for long periods of time. If the sprayer has been left standing for a period of time and if a non-water soluble tank mix partner has been added, agitate thoroughly to re-suspend the tank mix partner before resuming spraying. Spray preparation should be used within 24 hours or product degradation may occur.

MIXING DIRECTIONS:

Select a spray volume that will ensure thorough coverage and a uniform spray pattern. Use a minimum of 55 L of spray volume per hectare for ground application, and between 25 to 50 L of spray volume per hectare for aerial application. If tank mixing with other herbicides, always consult the label of the tank mix partner(s) for minimum spray volume requirements and apply the tank mixture using a water volume recommended for all products.

1. Always start with a clean and empty sprayer tank.
2. Fill the tank to 1/3 full of **clean** water.
3. With the agitator running, add the required amount of REFINE® SG Herbicide. Continue to agitate for a minimum of 5 minutes to ensure that REFINE® SG Herbicide is **completely** dissolved.
4. Make sure there are no un-dissolved granules, and then add the required amount of the tank mix partner.
5. If the tank mix partner is an Emulsifiable Concentrate (EC), reduce agitation to avoid inducing an invert emulsion. Once dissolved, REFINE® SG Herbicide will remain in solution.

6. Add the rest of the water.
7. If required for the tank mixture, add the appropriate adjuvant. If an antifoam agent is required, add last.
8. Refer to the tank mix sections of this booklet for mixing order and other mixing instructions.
9. For repeat tank loads, reduce the material remaining in the tank to 10% of the original volume **or less** before proceeding with step 1, because remaining chemicals may prevent REFINE® SG Herbicide granules from completely dissolving. If this is not possible, pre-slurry REFINE® SG Herbicide in a small amount (5-10 L) of water before adding to the tank.

SPECIAL MIXING INSTRUCTIONS FOR CHEMICAL HANDLERS

1. Ensure the chemical handler is clean (rinsed with ammonia).
2. For best results, add REFINE® SG Herbicide to the top of the sprayer tank.
3. If a chemical handler is used, make sure that all of the granules of REFINE® SG Herbicide are completely dissolved and injected into the main tank with agitation before adding other chemicals.
4. Low water volumes in some chemical handlers can cause the water to become saturated with REFINE® SG Herbicide, leaving un-dissolved granules. In that case, rinse the chemical handler with clean water before adding any other chemical.
5. Always dissolve the REFINE® SG Herbicide granules with agitation in the main tank before adding a tank mix partner.

NOTE: Follow the clean-out procedure recommended for sprayer tanks for the chemical handler.

EQUIPMENT CLEANING INFORMATION:

CLEANING PRECAUTIONS:

CAUTION: Do not use ammonia with chlorine bleach. Using ammonia with chlorine bleach will release a gas with a musty chlorine odour, which may cause eye, nose, throat, and lung irritation. Do not clean equipment in an enclosed area.

DO NOT CLEAN SPRAYER NEAR WELL OR WATER SOURCE OR NEAR TO DESIRABLE VEGETATION.

CLEANING INSTRUCTIONS:

To avoid subsequent injury to crops other than wheat, spring barley or oats, immediately after spraying and prior to spraying other crops, thoroughly remove all traces of REFINE® SG Herbicide from mixing and spray equipment as follows:

1. Drain tank and flush tank, boom and hoses with clean water. If boom is equipped with multiple nozzle bodies, be sure to rotate through all nozzles to ensure clean water reaches all parts of these assemblies.
2. Visually inspect tank to ensure removal of all visible herbicide residues. If necessary, repeat

Step 1.

3. Fill the tank with clean water, and then add 1 litre household AMMONIA (containing minimum of 3% ammonia) or equivalent amount of a sprayer tank cleaner containing ammonia, per 100 litres of water. Ammonia will not neutralize the herbicide, but helps dissolve dried – on herbicide deposits. If an emulsifiable concentrate has been tank mixed with REFINE® SG Herbicide, use of a wetting agent in the cleaning process will assist in removing oily residue that may trap REFINE® SG Herbicide on the tank and hoses.
4. Flush solution through boom and hoses, and then add more water to completely fill tank. Allow to sit for 15 minutes with agitation.
5. Drain the tank.
6. Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
7. Thoroughly rinse the tank with clean water for a minimum of 5 minutes, flushing water through the hoses and boom.

RESISTANCE-MANAGEMENT RECOMMENDATIONS:

For resistance management, REFINE® SG Herbicide is a Group 2 herbicide. Any weed population may contain or develop plants naturally resistant to REFINE® SG Herbicide and other Group 2 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 REFINE® SG Herbicide or other Group 2 herbicides herbicides within a growing season (sequence) or among growing seasons with different herbicide groups that control the same weeds in a field.
- ◆ Use tank mixtures with herbicides from a different group when such use is permitted. To delay resistance, the less resistance-prone partner should control the target weed(s) as effectively as the more resistance-prone partner.
- ◆ Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates; precision fertilizer application method and timing to favour the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- ◆ Monitor treated weed populations after herbicide application for signs of resistance development (for example, only one weed species on the herbicide label not controlled). If resistance is suspected, prevent weed seed production in the affected area if possible by an alternative herbicide from a different group. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- ◆ Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options.
- ◆ Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- ◆ For further information or to report suspected resistance, contact your local FMC representative or the FMC hotline at 1-833-362-7722 for further information.

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STORAGE:

Store product in original container only, away from other pesticides, fertilizer, food or feed. Not for use or storage in or around the home. Keep container closed

DISPOSAL:

If this is a non-returnable container:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.

If this is a refillable container:

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.

If this is a returnable container:

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

For all package types:

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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* All other products mentioned are trademarks of their respective companies.