



2023

PRODUCT

GUIDE

WESTERN CANADA





An Agricultural
Sciences Company

SETTING UP GOOD STORIES IN 2023

Weather was the story in 2022. How you tell the story depends on where you farm.

Spring and summer weather conditions varied widely across the Prairies. Most of Western Canada was coming out of a drought in 2021. But the welcome spring rains across much of eastern Saskatchewan and Manitoba didn't stop falling. Flooding meant that the crop was late getting seeded. Weather in Southern Alberta and Southwestern Saskatchewan went the opposite direction with no significant moisture all summer.

In agriculture, weather is usually the biggest variable we face. Across the country, growers seed crops with the hope that a decent mix of rain and sun will get their livelihood safely to harvest.

We can't predict which weather events will become the storyline in 2023. But we know that no matter what happens, a healthy plant that doesn't have to compete with weeds for resources or fight off insect pressure at critical times will do better than a plant left to fend for itself.

That's where we come in. We help maximize yield by bringing advanced chemistries backed by the best crop protection team in the country to help protect your crop. We help growers like you produce food, feed, fiber, and fuel for an expanding world population while adapting to a changing environment.

Weather will be part of the story in 2023. So will evolving pest pressure.

We can't control all the variables but in these pages you'll find products that can help protect your crop and help maximize yield, no matter what we face in 2023. Together, let's keep Canadian agriculture strong.

Thank you for choosing to farm. We're proud to be a part of your team.





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A flexible tank-mix partner for enhanced burnoff

- Effective, quick burnoff of hard-to-control weeds, including glyphosate-resistant biotypes
- Provides protection for a broad range of crops with flexible tank-mix options


Crops:

Pre-seed/ pre-emerge burnoff:	Barley, buckwheat, canola, chickpea, corn (field, sweet and popcorn), dry bean, faba bean, field pea, flax, lentil, millet (pearl and proso), mustard, oats, potato*, rye, safflower, soybean, sunflower, triticale, wheat (spring, durum, winter)
Harvest aid:	Barley, dry beans, oats, field peas, potatoes, soybeans, wheat, millet, sorghum, triticale
Post-harvest:	Barley, buckwheat, canola, chickpea, corn (field, sweet and popcorn), dry bean, faba bean, field pea, flax, lentil, millet (pearl and proso), mustard, oats, potato, rye, safflower, soybean, sunflower, triticale, wheat (spring, durum, winter) Recropping: Cereals, cucurbits, fruiting vegetables, legume vegetables, mint, potatoes, rapeseeds (including canola) and sunflowers can be planted the following spring after post-harvest application. All other crops can be planted after 12 months.

*pre-seed only

Chemical Group: Group 14

 **Registered and Supported Tank-mixes:** Recommended to be tank-mixed with glyphosate. 2,4-D ester, Express® SG herbicide, Express® PRO herbicide, Express® FX herbicide, MCPA , Authority® 480 herbicide, Authority® Supreme herbicide, Command® 360 ME herbicide, PrecisionPac® NC-0050, Nufarm Korit® 235, IPCO Brotex® 240, 480 and 4AT, Bromotril® 240 EC and Bromotril® II 240 EC, PrecisionPac® DB-878, PrecisionPac® NC-00439, Pardner®, Reglone® Ion

 **Timing:** Pre-seed, pre-emerge (up to 3 days after seeding), harvest-aid and post-harvest application

Application Information:

Pre-seed, pre-emerge (up to 3 days after seeding) weed control	Rate	1.2 L Jug (ac/jug)	4.8 L Jug (ac/jug)
For newly emerged weeds or when using with a tank-mix partner: Black nightshade (up to 5 cm tall) Eastern black nightshade (up to 5 cm tall) Lamb's-quarters (up to 7.5 cm tall) Morning glory (up to 3 leaf) Redroot pigweed Tall waterhemp (up to 5 cm tall) Velvetleaf	15 mL/ac	80	320
For wider weed spectrum, moderate pressure and larger weeds: <i>All the above weeds, plus</i> Flixweed Hairy nightshade Lamb's-quarters Morning glory Pennsylvania smartweed (seedling) Pigweed (prostrate, smooth, tumble) Purslane Round-leaved mallow Stinkweed Tansy mustard Waterhemp (tall, common)	24 mL/ac	50	200

Pre-seed, pre-emerge (up to 3 days after seeding) weed control	Rate	1.2 L Jug (ac/jug)	4.8 L Jug (ac/jug)
For glyphosate-resistant weeds, large overwintering cleavers and heavy/larger weeds <i>All the above weeds, plus</i> Black nightshade Carpetweed Cleavers Cocklebur Eastern black nightshade Jimsonweed Kochia Russian thistle (up to 5 cm tall) Shepherd's-purse Volunteer canola (up to 4 leaf stage)*	30 mL/ac	40	160
Tough to control weeds <i>All the above weeds, plus</i> Burclover Corn spurry Prickly lettuce Venice mallow (up to 5 cm tall)	47 mL/ac	26	102

* All herbicide-tolerant canola

Harvest Aid	Rate	PHI (Days Before Harvest)
<p>Wheat, barley and oats: Apply when grain moisture is less than 30% (hard dough stage; thumbnail impression remains on seed).</p> <p>Field peas: Apply when grain moisture is less than 30%. Apply to dry field pea when majority (75% to 80%) of the pods are brown, the bottom pods are ripe and the pea seeds have detached from the pods.</p> <p>Chickpeas: Apply when grain moisture is less than 30%. Apply to chickpeas when 80% to 90% of bean leaves have fallen and pods are mature (yellow to brown in color) and 80% to 90% leaf drop (original leaves) has occurred.</p> <p>Faba beans: Apply when grain moisture is less than 30%. At this stage, the majority of the faba bean plants will be ripe and dry. Pods will be fully filled and the bottom pods will be tan or black in color.</p> <p>Dry beans: Apply when grain moisture is less than 30%. Apply to dry beans when 80% to 90% of bean leaves have fallen and pods are mature (yellow to brown in color).</p> <p>Soybeans: Apply when grain moisture is less than 30%. Apply to soybeans when crop has lost 80% to 90% of leaves and 80% of pods are brown.</p>	Apply at 47 mL per acre 1.2 L jug = 25 ac/jug 4.8 L jug = 102 ac/jug	3 days
<p>Potatoes: When Aim® EC herbicide is used with diquat (Reglone® Desiccant) for potato desiccation, the following increases in quality were revealed:</p> <p>1. STOLON DETACHMENT increased from the tuber</p> <p>2. SKIN SET increased Skin Set</p>	<p>1st Desiccation application Aim® EC herbicide @ 94 - 142 mL/acre + Reglone® @ 506 - 931 mL/acre</p> <p>2nd Desiccation application (7-14 days after 1st application) Aim® EC herbicide @ 94 - 142 mL/acre + Reglone® @ 506 mL/acre</p>	7 days
Post Harvest		
Cereals, cucurbits, fruiting vegetables, legume vegetables, mint, potatoes, rapeseeds (including canola) and sunflowers can be planted the following spring after post-harvest application. All other crops can be planted after 12 months.	15-47 mL/ac	

Do not apply more than two applications in total per year, including post-harvest application.

Surfactant: None required when tank-mixing with glyphosate. When using Aim[®] EC herbicide alone for pre-plant/pre-emergence, fallow and post-harvest application, use a non-ionic surfactant at 0.25% v/v or use Merge[®] at 1% v/v. Higher rates are recommended when applying Aim EC herbicide alone at burn-off timing. For harvest aid uses, a surfactant is recommended with or without glyphosate. Please refer to label for surfactant information for harvest-aid uses.

Water Volume: 10 US gal/ac (100 L/ha).

Rainfastness: Aim EC herbicide is rapidly absorbed through the foliage of plants. Rainfall soon after application may reduce efficacy.

Mixing Instructions: Spray equipment must be clean and free of existing pesticide deposits before using this product. Follow the spray tank clean-out procedures specified on the label of the previously applied product before adding Aim EC herbicide to the spray tank.

For best results, fill the spray tank with one half the volume of clean water needed for the area to be treated. Make sure the agitation system is operating while adding products. Slowly add the required amount of Aim EC herbicide to the spray tank. Carefully rinse the container, adding the rinsings to the spray tank. Complete filling the spray tank to the desired level. Spray tank agitation should be sufficient to ensure uniform spray mixture during application and must continue until the spray tank has been emptied.

Tank-mixtures: Fill spray tank one-half to two-thirds full of water. With agitator operating, add the recommended amount of ingredients using the **WAMLEGS** order. Please refer to Mixing Instructions under the Other tab.

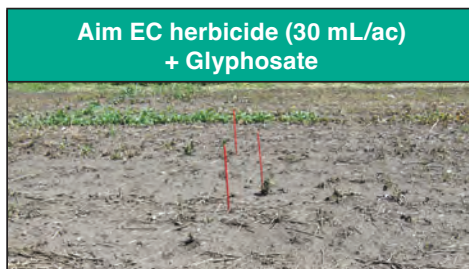
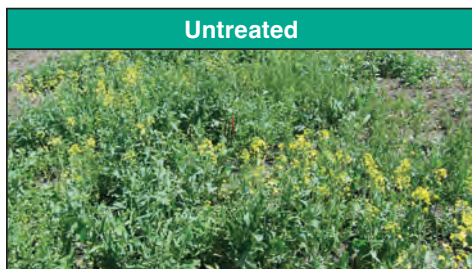
If sprayer has been stored or idle, purge the spray boom and nozzles with clean water before charging sprayer with products to be applied.

Avoid overnight storage of Aim EC herbicide spray mixtures.

Premixing Aim EC herbicide spray solutions in nurse tanks is not recommended.

Maintain continuous and adequate agitation until all spray solution has been used.

Do not use with tank additives that alter the pH of the spray solution.



Source: Olds, AB (2020)

Broadleaf control all season long

- Systemic activity with soil residual that lasts up to eight (8) weeks

- Controls late weed flushes

🌿 Crops: Spring wheat, durum wheat, barley, creeping red fescue, orchard grass, crested and intermediate wheat grass (seed or forage) and timothy (seed or forage).

🧪 Chemical Group: Group 2

% Registered and Supported Tank-mixes:

- 2,4-D (Amine / Ester): Barley, wheat
- Assure[®] II: Creeping red fescue
- Everest[®] 3.0AG / Sierra[®] 3.0AG + 2,4-D (Amine/Ester): Spring and durum wheat
- Clodinafop: Spring wheat, durum wheat
- MCPA (Amine / Ester): Barley, wheat
- Puma[®] Advance: Spring wheat, durum wheat, barley

🕒 Timing: 2-leaf to flag-leaf stage

🔄 Crop Rotation: For black and grey wooded soils of pH 7.9 or lower, please refer to the re-cropping recommendations on the next page.

? Application Information:

Packaging: 122 g

Rates: 3 g/ac (40 ac/bottle) used alone in barley, wheat and creeping red fescue

Surfactant: Add a registered non-ionic surfactant (NIS) at 2 L per 1000 L of spray solution (0.2% v/v).

Water Volume: 10 US gal/ac (100 L/ha)



Broadleaf Control		
Ball mustard	Hemp-nettle	Stinkweed
Bluebur	Lady's-thumb	Stork's-bill
Canada thistle ¹	Lamb's-quarters ¹	Tartary buckwheat
Chickweed	Prostrate pigweed	Toadflax ¹
Common groundsel	Redroot pigweed	Volunteer canola (excluding Clearfield® canola)
Corn spurry	Russian thistle ¹	Wild buckwheat ¹ (1-3 leaf)
Cow cockle	Scentless chamomile	Wild mustard
Flixweed	Shepherd's-purse	
Green smartweed	Sow-thistle ¹ (annual, perennial)	

¹ Suppression

Crop Rotation: Black and Grey Wooded Soils									
Soil pH	Interval prior to planting (months)								
	Barley	Canary Seed	Canola	Durum wheat	Flax	Lentils	Oats	Spring wheat	Yellow mustard
6.9 or lower	10	48	10	10	10	34	10	10	48
7.0 to 7.9	10	48	22	10	34	48	10	10	48

DO NOT USE ON SOILS WITH pH GREATER THAN 7.9.
On black and grey wooded soils of pH 7.5 or lower, fescue may be planted in 10 months. Alfalfa, red clover, peas and flax may be planted 22 months following application of Ally® herbicide.

Notes: _____

Refer to the Ally® herbicide label for complete use instructions.

Extended control of tough broadleaf weeds

- Now registered in spring and durum wheat
- Pre-plant and pre-emergent extended control of tough broadleaf weeds in a wide range of crops
- Group 14 for resistance management
- Concentrated formulation for ease of use and mixing

Crops: Chickpeas, field peas, flax, sunflower, soybeans, spring and durum wheat (low rate only), tame mustard (low rate only), asparagus, faba bean, mint, strawberry, horseradish, cabbage (transplants only), tomato (transplants only), walnuts, grapes, caneberries, bushberries and apples

Chemical Group: Group 14

Registered and Supported Tank-Mix Options:

Aim[®] EC herbicide + glyphosate
 Aim EC herbicide + MCPA amine + glyphosate (flax only)
 Glyphosate
 Enlist[®] herbicide
 Express[®] FX herbicide / DB-878 herbicide
 Express[®] SG herbicide / NC-0050 herbicide
 Engenia[®] herbicide (dicamba-tolerant soybeans)
 Nu-Image[®] herbicide (field peas only)
 Roundup Xtend[™] herbicide with VaporGrip[®] Technology (dicamba-tolerant soybeans)
 XtendiMax[®] herbicide (dicamba-tolerant soybeans)
 (Consult the tank-mix partner label for specific application use directions and restrictions. Always follow the most restrictive label.)

Timing:

Authority[®] 480 herbicide alone, or in recommended tank-mixes, may be applied to the soil surface as a broadcast spray prior to or after planting of the crop (no later than 3 days after seeding), but prior to weed or crop emergence.

Authority 480 herbicide requires 1/2" of moisture, at once, for activation, whether the total amount of moisture is supplied by rainfall or irrigation.

Weed Control List:

Use rate (ac/jug)	Weeds controlled		
43 acres / jug 89 mL/ac (0.219 L/ha)	Kochia Russian thistle ¹		
32 acres / jug 118 mL/ac (0.292 L/ha)	Cleavers ¹ Common groundsel Common purslane Common waterhemp Eastern black nightshade	Kochia Lamb's-quarters Large crabgrass Powell pigweed Redroot pigweed	Russian thistle ¹ Smooth crabgrass Wild buckwheat Yellow woodsorrel

¹ Suppression.

🕒 Crop Rotation:

Replant Interval (Months)	Rotational Crop
0	Broccoli, Cabbage, Cauliflower, Chickpea, Faba bean, Field pea, Flax, Horseradish, Potatoes, Soybeans, Sunflowers, Tomato (transplants)
0 (low rate only)	Spring and durum wheat, Tame mustard
4	Winter wheat
12	Alfalfa, Barley, Canola, Corn (field), Spring and durum wheat (high rate)
24	Corn (sweet and pop), Lentils, Sorghum

If there is a lack of adequate or normal soil moisture due to drought conditions following an application of Authority[®] 480 herbicide, the minimum rotational crop interval listed in the table must be extended for one additional year and a representative bioassay of the field must be conducted with the potential rotational crop and adequate soil moisture to determine the crop sensitivity to Authority 480 herbicide.

❓ Application Information:

Apply pre-plant or post-seed (up to 3 days after seeding).

Early application (pre-plant) increases activation potential via spring showers. Post-seed application should be considered in higher disturbance situations.

Clean out tank after using Authority 480 herbicide. When spraying Authority 480 herbicide for multiple days, at the end of each day, rinse tank with water and leave 1/3 full of water overnight.

Do not apply Authority 480 herbicide to fields treated with products containing sulfentrazone in the previous year.

Do not apply Authority 480 herbicide (or any other product containing sulfentrazone) to spring wheat if an application of Focus[®] herbicide (or any other product containing pyroxasulfone) was applied in the previous fall.

Do not apply to soils classified as coarse-textured soils.

Do not apply in any type of soil with organic matter lower than 1.5% or greater than 6%.

Do not use on soils with a pH of 7.8 or greater.

Rates and Packaging: 4 x 3.79 L jugs per case.

Each 3.79 L jug treats 32 or 43 acres.

Water Volume: 10 US gal/ac (100 L/ha) provides best uniform soil coverage with medium to coarse droplet sizes.

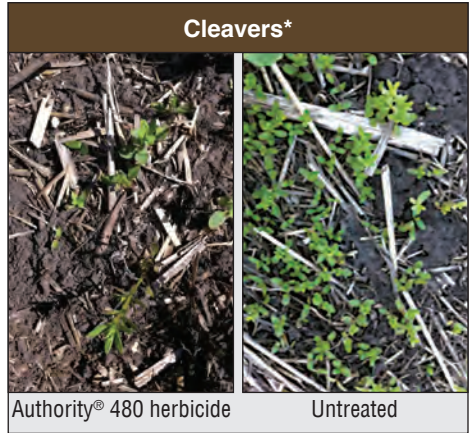
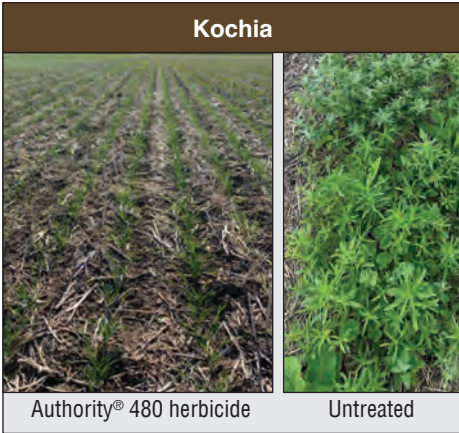
Mixing Instructions: Fill spray tank one-half to two-thirds full of water. With agitator operating, add the recommended amount of ingredients using the **WAMLEGS** order.

Please refer to Mixing Instructions under the Other tab.

Keep your flax field clean



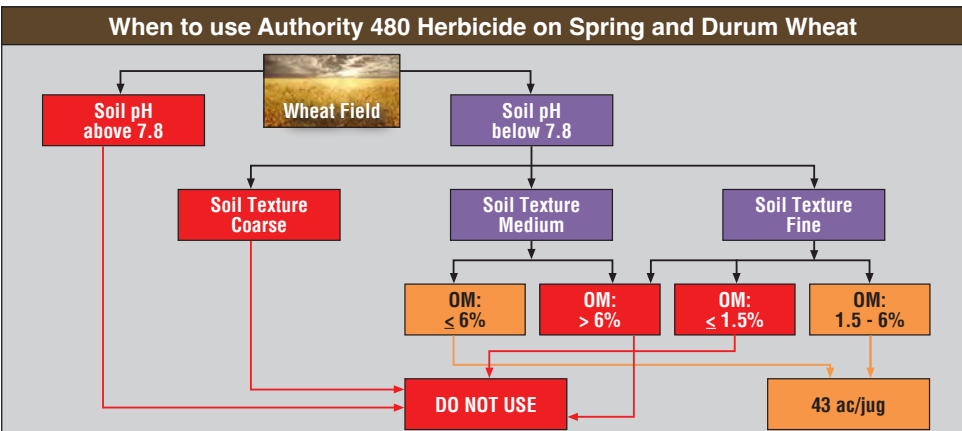
Source: Sedley, SK (2019)



* Suppression high rate



Source: Kincaid, SK (May 15, 2019). Application: April 26, 2019



Refer to the Authority 480 herbicide label for complete use instructions.

Get 2-in-1 pre-emergent protection against grassy and broadleaf weeds

- All-in-one, broad-spectrum, extended control against tough-to-kill grass and broadleaf weeds in soybeans, chickpeas, sunflowers and field peas

- Multiple modes of action for resistance management

- 🌿 **Crops:** Field peas, chickpeas, soybeans and sunflowers

- 🧪 **Chemical Groups:** Groups 14 & 15

- 📊 **Registered and Supported Tank-mix Options:**

Glyphosate

Aim® EC herbicide + glyphosate

Enlist™ herbicide

Express® SG herbicide / NC-0050 herbicide + glyphosate (soybeans and field peas only)

Engenia® herbicide (dicamba-tolerant soybeans)

Roundup Xtend™ herbicide with VaporGrip® Technology (dicamba-tolerant soybeans)

XtendiMax® herbicide (dicamba-tolerant soybeans)

(Consult the tank-mix partner label for specific application use directions and restrictions. Always follow the most restrictive label.)

- 🕒 **Timing:**

Authority® Supreme herbicide can be applied pre-plant or pre-emergence up to three (3) days after planting. Crop seeds must be planted a minimum of 2.5 cm deep. **DO NOT** apply Authority Supreme herbicide if crop has emerged. A minimum of 1/2" of rainfall and/or overhead sprinkler irrigation, at once, is necessary to move Authority Supreme herbicide into the upper soil surface where weed seeds germinate.

Application Timing	Rate (mL/ac) of Authority Supreme herbicide
Setup Treatment (pre-plant or pre-emergence)	162 mL/ac (50 ac/ jug) (early season control only)
Extended Treatment (pre-plant or pre-emergence)	202 mL/ac (40 ac/jug) (medium texture, O.M. 1 – 3%) 243 mL/ac (33 ac/jug) (medium-fine/fine texture, O.M. 3 - 6%)
<p>Do not apply to soils classified as coarse-textured soils. Do not use on peat or muck soils. Do not apply on any type of soils with an organic matter content less than 1% or greater than 6%. Do not use on soils with a pH of 7.8 or greater.</p>	

- 🔄 **Crop Rotation:**

Replant Interval (Months)	Rotational Crop
0	Chickpeas, field peas, soybeans, sunflowers
4	Winter wheat
12	Field corn, spring and durum wheat, barley, canola, mustard, oats
24	Lentils
36	Sugar beets

If there is a lack of adequate or normal soil moisture due to drought conditions following an application of Authority Supreme herbicide, the minimum rotational crop interval listed in the table must be extended for one additional year and a representative bioassay of the field must be conducted with the potential rotational crop and adequate soil moisture to determine the crop sensitivity to Authority Supreme herbicide.

Application Information:

Early application (pre-plant) increases activation potential by spring showers. Post-seed application should be considered in higher disturbance situations.

Apply at 10 US gal/ac (100 L/ha) for maximum soil coverage, using medium to coarse droplets.

For extended control, apply at 33 or 40 acres per jug based on timing and soil characteristics.

Apply with or without glyphosate. Apply with glyphosate if weeds are emerged and actively growing.

Authority[®] Supreme herbicide controls weeds germinating within the soil barrier.

Do not apply Authority Supreme herbicide to fields treated with products containing sulfentrazone in the previous year.

Do not apply Authority Supreme herbicide (or any other product containing pyroxasulfone) if an application of Focus[®] herbicide (or any other product containing pyroxasulfone) was applied in the previous fall.

Rates and Packaging: 2 x 8 L jugs per case. Each 8 L jug treats 33 or 40 acres per jug when applied for extended control.

Surfactant: Not required.

Water Volume: 10 US gal/ac provides best uniform soil coverage with medium to coarse droplet sizes.

Mixing Instructions: Fill spray tank one-half to two-thirds full of water. With agitator operating, add the recommended amount of ingredients using the **WAMLEGS** order. Please refer to Mixing Instructions under the Other tab.

Grass Weed Control		
Barnyard grass	Crabgrass (large, smooth)	Witchgrass
Brome (downy, Japanese)	Foxtail (green, yellow, giant)	Wild oats ¹
Broadleaf Weed Control		
Cleavers	Cowcockle Eastern black	Stinkweed
Common groundsel	nightshade	Wild buckwheat
Common purslane	Kochia	Wild mustard ¹
Common ragweed ¹	Lamb's-quarters	Yellow woodsorrel
Common waterhemp	Pigweed (green, redroot, Powell)	
¹ Suppression		



Source: Hanley, SK, 2020

Refer to the Authority Supreme herbicide label for complete use instructions.

Tough on weeds, gentle on crops

- Consistent performance on the toughest broadleaf weeds, yet gentle on crops
 - Leverages the strengths of three (3) active ingredients to provide consistent control of a broad range of broadleaf weeds
 - Excellent control of narrow-leaved hawk's-beard, cleavers and kochia
 - Contains actives from two groups (Groups 2 & 4) to help with resistance management
- Crops:** Spring wheat, durum wheat, winter wheat, spring barley, oats (when mixed with MCPA Ester)

Chemical Groups: Groups 2 & 4

Registered and Supported Tank-mix Options:

- Acapela[®]
- Assert[®]
- Axial[®] / Epic[®]
- Banvel[®]
- Brazen II[™]
- Cirray[™]
- Clodinafop
- Everest[®] 3.0AG / Sierra[®] 3.0AG
- MCPA Ester
- 2,4-D Ester
- Puma[®] Advance
- Simplicity[™] / Simplicity[™] GoDri
- Traxos[®]
- Trondus[™]
- Varro[®]

Timing: Wheat: 2-leaf to flag-leaf stage; oats: 3-leaf to flag-leaf stage; winter wheat: 3-tiller to just before the flag leaf (spring application)

Crop Rotation:

Replant Interval	Rotational Crop
Following year	Alfalfa, barley, canola, dry beans, faba beans, field corn, flax, forage grasses, lentils, mustard, oats, peas, potatoes, rye, wheat, soybeans, sugar beets, sunflowers or fields can be summer fallowed

Application Information:

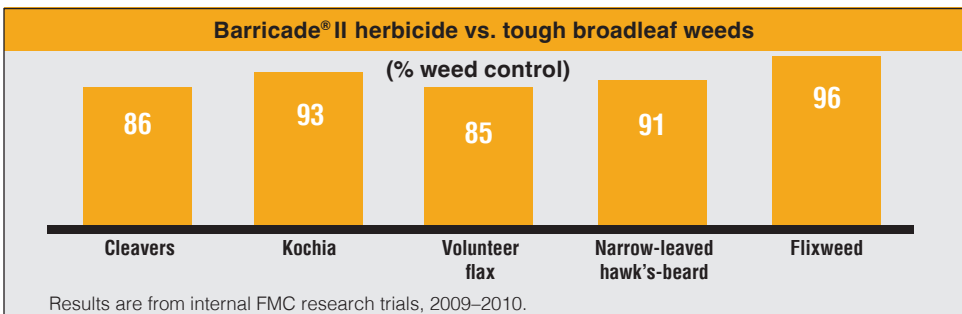
Rates and Packaging: One (1) case treats 40 acres

Surfactant: Add a registered non-ionic surfactant (NIS) at 2 L per 1000 L of spray solution (0.2% v/v). When tank-mixing with a grass herbicide, use the surfactant provided with that product. Do not use an additional surfactant unless otherwise indicated on the label.

Water Volume: Ground application - 5 US gal/ac (50 L/ha)
Can be aerial applied.

Rainfastness: One (1) hour

Mixing Instructions: Please refer to Mixing Instructions under the Other tab.



Broadleaf control	
Canada thistle ¹	Russian thistle
Cleavers (1 to 6 whorls), (1 to 9 whorls) ³	Scentless chamomile ³
Common chickweed	Shepherd's purse
Cow cockle	Smartweed (Lady's-thumb)
Common ragweed (up to 10 cm) ³	Sow thistle (perennial)
Dandelion ³ (spring and fall rosettes up to 15 cm)	Stinkweed
Flixweed	Stork's-bill (1-6 leaf)
Hemp-nettle (control <10cm); (1 to 8 leaf) ³	Tufted vetch (up to 15 cm) ³
Kochia (up to 10 cm; including Group 2 resistant biotypes)	Volunteer canola (2 to 4 leaf) ²
Lamb's-quarters	Volunteer flax (12 cm in height)
Narrow-leaved hawk's-beard (<10cm)	White cockle ³
Night-flowering catchfly (<10cm)	Wild buckwheat
Redroot pigweed	Wild mustard
Round-leaved mallow (1-5 leaf)	

¹ Suppression.
² Excluding Group 2 herbicide tolerant varieties, unless Barricade[®] II herbicide is tank-mixed with MCPA Ester
³ When tank-mixed with MCPA Ester

Unless otherwise noted, apply to young and actively growing weeds that are less than 10 cm in height or width.




Source: Dammann Farms, Creelman, SK

Notes: _____

Refer to the Barricade II herbicide labels for complete use instructions.

Your first line of defense against cleavers in canola

- Early, extended control of cleavers and suppression of common chickweed in front of canola, mustard and camelina
- Unique Group 13 mode of action for resistance management
- Does not require incorporation and is taken up by the roots of germinating cleavers, and chickweed upon activation

 **Crops:** Canola, mustard, camelina

 **Chemical Group:** Group 13

 **Registered and Supported Tank-mix Options:**


Glyphosate, Aim® EC herbicide, Aim EC herbicide + glyphosate, Aim EC herbicide + glyphosate + Pardner® herbicide, Aim EC herbicide + glyphosate + Nufarm Koril® 235 Liquid herbicide, Bromotril® 240 EC herbicide, Bromotril® II 240 EC herbicide, IPCO Brotex® 480 Liquid herbicide or IPCO Brotex® 4AT, IPCO Brotex® 240 Liquid herbicide, IPCO Octagon Herbicide

 **Timing:** Pre-seed in front of canola, mustard and camelina.

 **Crop Rotation:**

Replant Interval (Months)	Rotational Crop
Immediately	Canola, mustard, camelina
4	Winter wheat
Following spring	Beans (white, kidney, snap), corn (field, sweet), peas, potatoes, spring & durum wheat, spring barley, oats, lentils
16	All other crops

If there is a lack of adequate or normal soil moisture due to drought conditions following an application of Command® 360 ME herbicide, the minimum rotational crop interval listed in the table must be extended for one additional year and a representative bioassay of the field must be conducted with the potential rotational crop and adequate soil moisture to determine the crop sensitivity to Command 360 ME herbicide.

 **Application Information:** Early-season control only. An in-crop herbicide application will be required. Can be used in front of any variety of herbicide-tolerant canola. Requires 1/4" of rain for activation.

Rates and Packaging: Canola: 134 mL/ac (330 mL/ha or 40 acres per jug). Mustard and camelina: 101 mL/ac (250 mL/ha or 132 acres per jug). 2 x 5.4 L jugs/case

Surfactant: None required

Water Volume: 10 US gal/ac (100 L/ha)

Mixing Instructions: Fill spray tank one-half to two-thirds full of water. With agitator operating, add the recommended amount of ingredients using the **WAMLEGS** order. Please refer to Mixing Instructions under the Other tab.

Weeds Controlled: Extended control of cleavers (cleavers not emerged at application), suppression of chickweed in canola.

Command[®] 360 ME herbicide control of cleavers



Rowatt, SK. Photo taken July 14, 2019

Notes: _____

Refer to the Command 360 ME herbicide label for complete use instructions.

The most complete broadleaf burnoff label available to canola growers with added extended activity on cleavers and chickweed

- Multiple modes of action to battle weed resistance

 **Crops:** All herbicide tolerant canola and mustard

 **Chemical Group:** Groups 13 & 14

 **Registered and Supported Tank-mix Options:**

Glyphosate, Glyphosate + Pardner® herbicide, Glyphosate + Nufarm Koril® 235 Liquid herbicide, Bromotril® 240 EC herbicide, Bromotril® II 240 EC herbicide, IPCO Brotex® 240 Liquid herbicide, IPCO Brotex® 480 Liquid herbicide or IPCO Brotex® 4AT

 **Timing:** Pre-seed in front of canola, mustard.

 **Crop Rotation:**

Replant Interval	Rotational Crop
Immediately	Canola, mustard (low rate of Command Charge A herbicide only)
4 months	Winter wheat
Following spring	Beans (white, kidney, snap), corn (field, sweet), peas, potatoes, spring & durum wheat, spring barley, oats, lentils
16 months	All other crops

If there is a lack of adequate or normal soil moisture due to drought conditions following an application of Command Charge herbicide, the minimum rotational crop interval listed in the table must be extended for one additional year and a representative bioassay of the field must be conducted with the potential rotational crop and adequate soil moisture to determine the crop sensitivity to Command Charge herbicide.

 **Application information:**

Rates and Packaging: 2 x 5.4 L jugs of Command® Charge A Herbicide – 101-135 mL/ac *
2 x 1.2 L jugs of Command® Charge B Herbicide – 30 mL/ac
80-107 acres / case

*For mustard, use 101 mL/ac. For canola, use 135 mL/ac

Surfactant: None required if tank-mixed with glyphosate. If sprayed without glyphosate, add a non-ionic surfactant at 0.25% v/v or Merge® at 1% v/v.

Water Volume: 10 US gal/ac (100 L/ha)

Rainfastness and Moisture Activation Requirement:

Command Charge A herbicide – Requires 1/4" of rain at once for activation in the soil
Command Charge B herbicide – Rainfall soon after application may reduce efficacy

Mixing Instructions: Fill spray tank one-half to two-thirds full of water. With agitator operating add the recommended amount of ingredients using the **WAMLEGS** order. Please refer to Mixing Instructions under the Other tab.

WEEDS AND CROP USES

When used as directed, Command Charge A herbicide will provide extended control of cleavers and suppression of chickweed for up to 4 weeks. Command Charge B herbicide will provide burnoff control of the listed, emerged weeds up to ten (10) cm in height, or as specified.

Weeds Controlled at 80 acres/case rate

Burnoff and Extended Weed Control	
Chickweed (suppression)	Cleavers (emerged and emerging)
Emerged and Burnoff	
Canola, volunteer, including glyphosate-tolerant	Pennycress, field (stinkweed)
Carpetweed	Pigweed, prostrate
Cocklebur	Pigweed, redroot
Flixweed	Pigweed, smooth
Jimsonweed	Pigweed, tumble
Kochia	Purslane, common
Lamb's-quarters, common	Shepherd's purse
Mallow, round-leaved	Smartweed, Pennsylvania (seedling)
Morning glory	Thistle, Russian (up to 5 cm tall)
Mustard, tansy	Velvetleaf
Nightshade, black	Waterhemp, common
Nightshade, Eastern black	Waterhemp, tall
Nightshade, hairy	

Command® Charge herbicide versus untreated



Source - FMC Internal Trials, Portage la Prairie, MB, 2020

Command Charge provides a MMOA complete solution control on cleavers

- Whitening is evidence of the Group 13 soil applied extended active ingredient
- The brown necrotic tissue is evidence of the burnoff Group 14 component
- The yellowing observed is evidence of the Group 9 control



Viking, AB, 2022 Date of Application May 18, 2022
Date of Photographs June 7, 2022

Refer to the Command Charge herbicide labels for complete use instructions.

Eliminate your toughest weeds from shoots to roots

Express® Brand herbicides - One trusted brand, multiple options

Select pre-seed weed control based on:

- Agronomic requirements
- Weed control
- Cropping plans

	Express® SG herbicide	Express® PRO herbicide	Express® FX herbicide
Chemical Groups (tank-mixed with glyphosate)	Groups 2 & 9	Groups 2 & 9	Groups 2, 4 & 9
Pre-Seed Crop Flexibility	Cereal crops, lentils [†] , lupin [†] , soybeans [†] , alfalfa [†] , grasses [†] , canary seed, peas [†] , dry beans [†] and faba beans [†]	Wheat (spring, durum, winter), barley	Wheat (spring, durum, winter), barley, oats
Key Weeds (tank-mixed with glyphosate)	Dandelion, flixweed, narrow-leaved hawk's-beard, stinkweed, volunteer canola*, wild buckwheat (3-leaf)	Up to 15 days of extended control of cleavers, dandelion, narrow-leaved hawk's-beard, volunteer canola*	Kochia (Group 2 & 9 resistant biotypes) dandelion, flixweed, narrow-leaved hawk's-beard, stinkweed, volunteer canola*
Timing	- Pre-seed burnoff - Chemfallow - Post-harvest	- Pre-seed burnoff - Chemfallow - Post-harvest prior to seeding cereals	- Pre-seed burnoff - Chemfallow - Post-harvest
Fit	Maximum cropping flexibility & application timing	Extended control in cereals	- Proactive resistance management - Control of Group 2 & 9 resistant kochia
[†] Injury to pulse crops, soybeans, grasses and alfalfa may occur on coarse textured soils, low in organic matter (less than 3%), or in fields with variable soils, gravelly areas, sandy areas or eroded knolls. * Will not provide extended control of volunteer Group 2 herbicide tolerant canola.			

Refer to the Express Brand herbicide labels for complete use instructions.

Proactive resistance management with uncompromising burnoff performance

- Three modes of action when tank-mixed with glyphosate
- Enhanced control of key weeds like kochia, dandelion, narrow-leaved hawk's-beard, volunteer canola
- Systemic activity all the way down to the root, so weeds won't grow back
- 🌿 **Crops:** Wheat (spring, durum, winter), barley, oats
- 🧪 **Chemical Groups:** Groups 2, 4 & 9 when tank-mixed with glyphosate
- 📊 **Registered and Supported Tank-mixes:** Must be tank-mixed with glyphosate. Aim[®] EC herbicide, 2,4-D Ester, Focus[®] herbicide (spring/winter wheat), Authority[®] 480 herbicide (spring/durum wheat)
- 🕒 **Timing:** Add Express[®] FX herbicide to your glyphosate for pre-seed, chemfallow or post-harvest.
- 🔄 **Crop Rotation:**

Replant Interval	Rotational Crop
Following year	Any crop may be seeded after a pre-seed burnoff or chemfallow application
Following spring	Spring/durum wheat, barley and oats after post-harvest application
	Canola, field corn, lentils, soybean or white beans after a post-harvest application

🔍 Application Information

Rates and Packaging: One (1) case treats 80 acres

Surfactant: No additional surfactant is required when tank-mixed with 0.5 REL glyphosate/acre

Water Volume: 5 US gal/ac (50 L/ha)

Weeds Controlled (Express [®] FX herbicide plus 0.5 L/ac glyphosate equivalent) [†] :		Stage
Canada fleabane Common ragweed Kochia (including Gr. 2 & 9 resistant biotypes)	Narrow-leaved hawk's-beard Scentless chamomile ¹	Up to 8 cm
Cleavers Common chickweed control (up to 8 leaf) Dandelion Downy brome Flixweed Giant foxtail Green foxtail Hemp-nettle Lady's-thumb Lamb's-quarters Persian darnel Redroot pigweed	Russian thistle Stinkweed Tufted vetch ¹ (up to 15 cm) Volunteer barley Volunteer canola (including glyphosate-tolerant varieties) Volunteer flax Volunteer wheat Wild carrot ¹ (up to 10 cm) Wild mustard Wild oats	Up to 15 cm
Cow cockle		Up to 3 leaf
Wild buckwheat		Up to 8 leaf
Canada thistle ¹	White cockle ¹	Rosette

¹ Suppression.

[†] Original 360 g/L formulation.

Refer to the Express FX herbicide label for complete use instructions.

Professional strength burnoff with extended control

- Provides up to 15 days of extended control[†] on key broadleaf weeds, including cleavers, dandelion, narrow-leaved hawk's-beard and volunteer canola¹

Crops: Pre-seed burnoff application prior to seeding wheat (spring, winter, durum) and spring barley. Also used in chemfallow and post-harvest applications prior to seeding wheat, oats or barley the following spring.

Chemical Group: Groups 2 & 9 when tank-mixed with glyphosate

Registered and Supported Tank-mixes:

Express[®] PRO herbicide must be tank-mixed with glyphosate.
Aim[®] EC herbicide.

Timing: Pre-seed: Wait a minimum of 24 hours after applying Express PRO herbicide and glyphosate before planting wheat (spring, durum, winter) or barley.

Note: Do not use on highly variable soils that have gravelly or sandy areas, eroded knolls or calcium deposits. Heavy rainfall soon after application may result in visual crop injury or possible yield reduction. Conditions such as thin crop stand, sandy soil or low soil organic matter may increase the severity of injury.

Chemfallow: Allow at least 10 days after treatment before tillage.

Post-harvest: Apply to fields where wheat, barley or oats will be seeded next spring.

Note: Limit of one (1) application of metsulfuron products per growing season.

Crop Rotation:

Replant Interval	Rotational Crop
24 hours:	Wheat (spring, durum and winter) and spring barley.
10 months:	Canola, peas, faba beans, field corn, soybeans, lentils, dry beans and flax. Oats, wheat (spring or durum), barley or winter wheat may be seeded any time in the following season.

Application Information:

Rates and Packaging: 7 g/ac (17.5 g/ha) One (1) jug treats 80 acres

Water Volume: 5 US gal/ac (50 L/ha)

Mixing Instructions: Please refer to Mixing Instructions under the Other tab.

¹Excluding Group 2 herbicide tolerant canola.

[†] Degree and duration of extended control is dependent on weed infestation levels, and on environmental conditions at and following treatment.

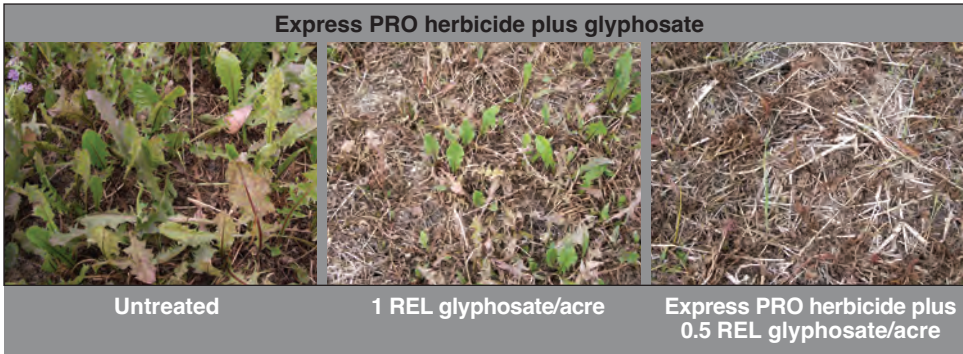
Weeds Controlled (Express [®] PRO herbicide plus 0.5 L/ac glyphosate equivalent) [†] :		Stage
Canada fleabane Cleavers [‡] Common ragweed	Narrow-leaved hawk's-beard [‡] Scentless chamomile Night flowering catchfly [†]	Up to 8 cm
Chickweed		1 - 6 leaf
Dandelion [‡] Downy brome Flixweed Giant foxtail Green foxtail Hemp-nettle Kochia (except Group 2 & 9 resistant biotypes) Lady's-thumb Lamb's-quarters Persian darnel	Redroot pigweed Russian thistle Stinkweed Volunteer barley Volunteer canola [‡] (including glyphosate tolerant) Volunteer flax Volunteer wheat Wild mustard Wild oats	Up to 15 cm
Cow cockle	Wild buckwheat	Up to 3 leaf
White cockle	Canada thistle [†]	Rosette

[†] Suppression.

[†] Original 360 g/L formulation.

[‡] = Extended control.

[‡]* = Will not provide extended control of Group 2 herbicide tolerant canola.



Location: Kelburn Farm, MB

Notes: _____

Refer to the Express PRO herbicide label for complete use instructions.

Excellent burnoff weed control with maximum cropping flexibility

- When added to glyphosate, it provides enhanced control of hard-to-kill broadleaf weeds while providing maximum cropping flexibility.
- Gets right to the root of your weed problems with systemic activity.

Crops:

Pre-seed burnoff application prior to seeding	Spring wheat (including durum), winter wheat, spring barley, oats, canary seed, pulse crops (including dry bean, faba bean, field pea, lentil, lupin and soybean), alfalfa, red clover, alsike clover smooth bromegrass, meadow bromegrass, timothy and creeping red fescue. And in-crop application for pasture and rangeland and tribenuron-methyl tolerant sunflowers (e.g. ExpressSun™ Sunflowers SU7)
New minor use registration:	Express® SG herbicide pre-seed application for the following minor use crops (for forage and seed production): Yellow sweet clover, sainfoin, hybrid bromegrass, meadow fescue, tall fescue, slender wheatgrass, crested wheatgrass

 **Timing:** Pre-seed burnoff, chemfallow and post-harvest applications.

 **Chemical Group:** Groups 2 & 9 when tank-mixed with glyphosate

Registered and Supported Tank-mixes:

Express SG herbicide must be tank-mixed with glyphosate with or without labelled tank-mix partners, when applied before seeding.

Aim® EC herbicide

Authority® Supreme herbicide (field pea, soybeans)

Focus® herbicide (spring and winter wheat, soybeans, field peas)

Authority® 480 herbicide (faba bean, soybean, field pea, spring and durum wheat).

Registered and Supported Tank-mixes for ExpressSun® sunflowers

Assure® II herbicide at labelled rates + Merge at 0.5-1% v/v or SURE-MIX at 0.5% v/v

Poast® Ultra Liquid Emulsifiable herbicide at 190 mL/ac

Select®, Centurion®, OR Shadow® RTM herbicide at 80 mL/ac + Amigo® adjuvant at 1% v/v

Crop Rotation:

Replant Interval	Rotational Crop
Pre-seed burnoff	Any crop may be seeded the year following a pre-seed burnoff.
Chemfallow	Allow at least 10 days after treatment before tillage. Any of the above crops can be seeded 24 hours after application. Canola and flax can be seeded two (2) months after application
Fall Application	Seed winter wheat a minimum of 24 hours after application. Next spring you can seed alfalfa, alsike clover (seed or forage production), canary seed, any cereal crop, canola, chickpeas, creeping red fescue, field corn, flax, lentils, meadow bromegrass, pulse crops (including dry bean, faba bean, field pea, lupin and soybean), red clover, smooth bromegrass, timothy.

② Application Information:

Rates and Packaging: One jug treats 80 acres (6 g/ac)

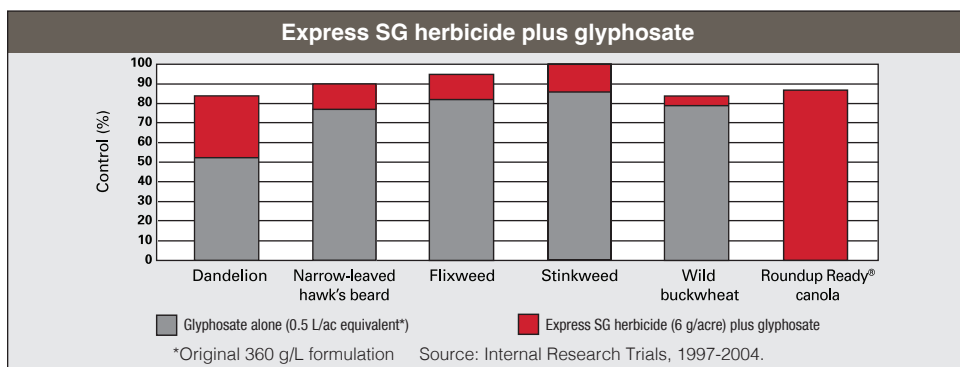
Water Volume: 5 US gal/ac (50 L/ha)

Mixing Instructions: Please refer to Mixing Instructions under the Other tab.

*Note: For pre-seed applications in the spring, injury to pulse and forage crops may occur on coarse-textured soils, low in organic matter (less than 3%) or in fields with variable soils, gravelly areas, sandy areas or eroded knolls. Avoid planting crops in soils containing more than 50% sand.

Weeds Controlled (Express [®] SG herbicide plus 0.5 L/ac glyphosate equivalent) [†] :		Stage
Canada fleabane Common ragweed	Narrow-leaved hawk's-beard Scentless chamomile ¹	Up to 8 cm
Dandelion Downy brome Flixweed Giant foxtail Green foxtail Hemp-nettle Kochia (except Group 2 & 9 resistant biotypes) Lady's-thumb Lamb's-quarters Persian darnel Redroot pigweed	Russian thistle Stinkweed Tufted vetch ¹ Volunteer barley Volunteer canola (including glyphosate tolerant) Volunteer flax Volunteer wheat Wild carrot (up to 10 cm) ¹ Wild mustard ¹ Wild oats	Up to 15 cm
Cow cockle	Wild buckwheat	Up to 3-leaf
White cockle ¹	Canada thistle ¹	Rosette
Common chickweed		Up to 8-leaf

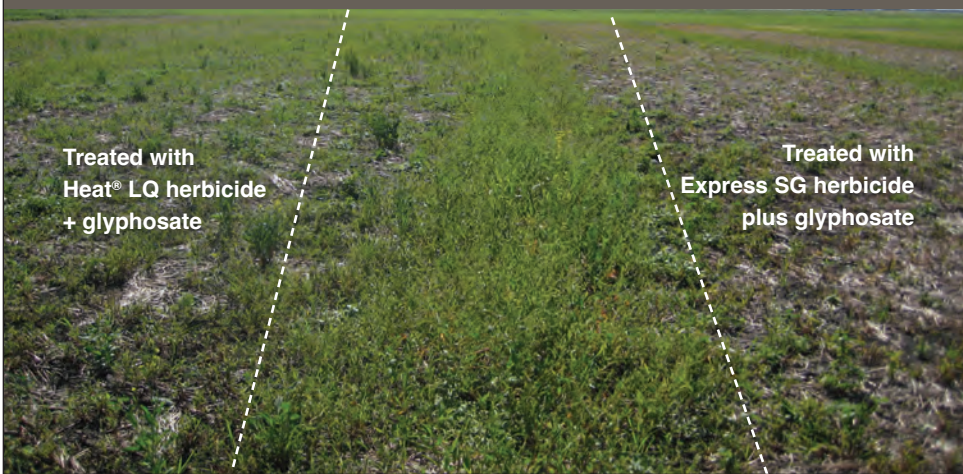
¹ Suppression.
[†] Original 360 g/L formulation



Express[®] SG herbicide plus glyphosate on dandelion (pre-seed burnoff)



Treatment (21 days after application)



Notes: _____

Refer to the Express SG herbicide label for complete use instructions.

A unique combination of Group 14 and 15 actives in one product providing complete spectrum broadleaf and grassy extended weed control along with enhanced pre-seed burndown

- Multiple modes of action for resistance management

Crops: Spring wheat (except durum), winter wheat, lentils, field corn, field peas, soybeans, sunflowers.

Chemical Groups: Groups 14 & 15

Registered and Supported Tank-Mix Options:

Glyphosate
2,4-D Amine / Ester (spring and winter wheat, except durum)
Engenia™ herbicide
Express® SG herbicide (soybean, spring (except durum) and winter wheat, field peas)
Express® FX herbicide (spring (except durum) and winter wheat)
Intruvix™ herbicide
Roundup Xtend™
XtendiMaX®

Timing: Focus® herbicide can be applied pre-plant or pre-emergence. Requires a minimum 1/2" of moisture, at once, for activation. Should be planted a minimum 2.5 cm deep for wheat, corn and lentils; 4 cm deep for soybeans.

FALL APPLICATION - Focus herbicide may be applied with glyphosate in the fall to control labeled emerged weeds. A fall application of Focus herbicide will also provide early-season control or suppression of labelled weeds the following spring. Focus herbicide should be applied to the stubble or soil surface and allow moisture from rainfall or snow to move the product into the soil. Do not mechanically incorporate in the fall or spring as this can destroy the herbicide barrier and allow weeds to escape. Do not apply to frozen soils or existing snow cover to prevent Focus herbicide runoff.

Crop Rotation:

Replant Interval (Months)	Rotational Crop
0	Field corn, field peas, lentils, soybeans, sunflowers, wheat (winter and spring, except durum)
12	Barley, canola, chickpeas, durum wheat, flax, mustard, oats, safflower
24	Sugar beets

If there is a lack of adequate or normal soil moisture due to drought conditions following an application of Focus herbicide, the minimum rotational crop interval described above must be extended for one additional year and a representative bioassay of the field must be conducted with the potential rotational crop and adequate soil moisture to determine the crop sensitivity to Focus herbicide.

Application Information: Apply pre-plant or post-seed (up to three (3) days after seeding). Application early (pre-plant) increases activation potential by spring showers. Post-seed application should be considered in higher disturbance seeding operations.

Acres/jug	Soil Texture	O.M.
33	medium-fine/fine	> 3-7%
40	coarse/medium	1-3%

- Apply at 33 or 40 ac/jug, based on soil characteristics
- Apply with or without glyphosate. Apply with glyphosate if weeds are emerged and actively growing.
- Apply only once per 12-month period.
- Do not apply Authority[®] Supreme herbicide (or any other product containing pyroxasulfone) in the spring to fields that were treated with applications of Focus[®] herbicide (or any other product containing pyroxasulfone) during the previous fall. DO NOT follow a fall application of Focus herbicide (or any other product containing pyroxasulfone) with a spring application of Authority[®] 480 herbicide (or any other product containing sulfentrazone) to fields where spring wheat will be planted.
- Focus herbicide controls weeds germinating within the soil barrier.

Rates and Packaging: 4 x 4.5 L jugs per case. Each 4.5 L jug treats 33 acres / jug at 136 mL/ac (336 mL/ha) or 40 acres / jug at 113 mL/ac (280 mL/ha).

Water Volume: 10 US gal/ac (100 L/ha)

Mixing Instructions: Fill spray tank one-half to two-thirds full of water. With agitator operating, add the recommended amount of ingredients using the **WAMLEGS** order. Please refer to Mixing Instructions under the Other tab.

Weeds registered for extended control
<p>Annual grasses Wild oats¹, barley foxtail¹, foxtail (green, yellow, giant¹), barnyard grass, downy brome, Italian ryegrass, Japanese brome, large crabgrass</p>
<p>Annual broadleaf weeds Redroot pigweed, green pigweed, cleavers, common waterhemp, kochia¹, lamb's quarters¹, stinkweed¹, velvetleaf, wild buckwheat¹, wild mustard¹, wormseed mustard</p>
Emerged Weeds Controlled
<p>Rate: 224 mL/ac Lamb's-quarters, common (up to 7.5 cm tall), morning glory (up to 3 leaves), nightshade, black and Eastern black (up to 5 cm tall), pigweed, redroot, velvetleaf, waterhemp, tall and common (up to 5 cm tall)</p>
<p>Rate: 280 mL/ac All the weeds controlled at 224 mL/ha plus the following: flixweed, lamb's-quarters, common mallow, round-leaved; morning glory; nightshade, hairy; pennycress, field (stinkweed); pigweed, prostrate, smooth and tumble; purslane, common; smartweed, Pennsylvania (seedling); mustard, tansy; waterhemp, tall and common</p>
<p>Rate: 336 mL/ac All the weeds controlled at 280 mL/ha plus the following: carpetweed; cleavers; cocklebur; jimsonweed; kochia; nightshade, black and Eastern black; thistle, Russian (up to 5 cm tall); shepherd's purse; canola, volunteer, including glyphosate-tolerant</p>

¹ Suppression

Focus[®] herbicide – on bare ground



Glyphosate*

Focus herbicide (40 ac/ jug rate)
+ Glyphosate (0.5 REL/ac)


FMC Internal Trial. Hanley, SK 2020


Notes: _____

Refer to the Focus herbicide label for complete use instructions.


Intruvix™ herbicide consistently provides quick and lasting burnoff control of tough weeds like kochia, narrow-leaved hawk's-beard and volunteer canola in front of cereals

- Fast burning activity with the power of systemic action on broadleaf weeds
- Extensive burnoff of over 30 broadleaf weeds in front of cereal crops
- Cleaner fields without the worry of resistant weed escapes
- Multiple modes of action to battle weed resistance

 **Crops:** Wheat (spring, durum, winter), barley, oats

 **Chemical Group:** Groups 2, 4, 14 & 9 when tank-mixed with glyphosate

 **Registered and Supported Tank-mixes:** Glyphosate, 2,4-D Ester, Focus® herbicide (spring and winter wheat), Authority® 480 herbicide (spring and durum wheat)

 **Timing:** Pre-seed burnoff, chem-fallow and post-harvest

 **Crop Rotation:**

Replant Interval	Rotational Crop
After 24 hours	Wheat (spring, durum, winter), barley, oats,
Following year Pre-seed / Chemfallow	Any crop
Post-harvest	Following a post-harvest application, fields may be seeded to the following crops next spring: canola, corn, lentils, oats, spring barley, soybeans and spring wheat (including durum).
12 Months	To seed white beans the spring after a fall application, contact FMC for specific timing of the fall application.

 **Application information:**

Rates and Packaging: One (1) case treats 80 acres. Co-Pack (3.72 kg Intruvix™ A herbicide + 1.2 L Intruvix™ B herbicide)

Surfactant: No additional surfactant is required when tank-mixed with 0.5 REL glyphosate/acre

Water Volume: 10 US gal/ac (100 L/ha)

Tank-mixtures: Fill spray tank one-half to two-thirds full of water. With agitator operating, add the recommended amount of ingredients using the **WAMLEGS** order.

Rainfastness: Rainfall soon after application may reduce efficacy.

Mixing Order: Recommended mixing order is as follows:

1. Intruvix™ A herbicide
2. Intruvix™ B herbicide
3. Glyphosate

Mixing Instructions: Please refer to Mixing Instructions under the Other tab.

Weeds Controlled

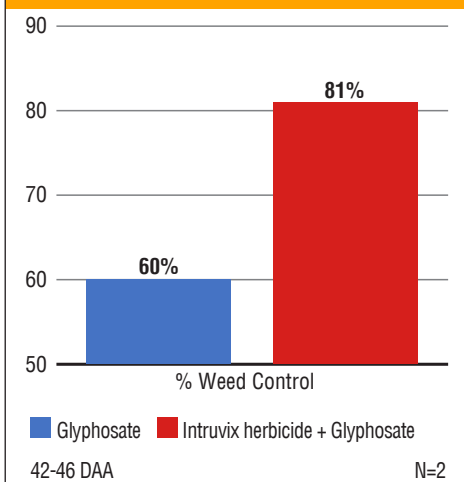
(Intruvix™ herbicide plus 0.5 L/ac glyphosate equivalent):

Canada fleabane (up to 8 cm)	Persian darnel
Canada thistle (rosette) [†]	Redroot pigweed
Cleavers	Russian thistle
Common ragweed (up to 8 cm)	Scentless chamomile (up to 8 cm) [†]
Cow cockle (up to 3 leaf)	Stinkweed
Dandelion	Velvetleaf
Downy brome	Volunteer barley
Flixweed	Volunteer canola (Including glyphosate tolerant)
Foxtail (giant, green)	Volunteer flax
Hemp-nettle	Volunteer wheat
Kochia (up to 8 cm)(Incl. Gp 2 & 9 biotypes)	Waterhemp (tall) (up to 5 cm)
Lady's thumb	White cockle (rosette) [†]
Lamb's-quarters	Wild buckwheat (up to 8 leaf)
Morning glory	Wild mustard
Narrow-leaved hawk's-beard (up to 8 cm)	Wild oats
Nightshade (Eastern black, black) (up to 5 cm)	

¹ Suppression.

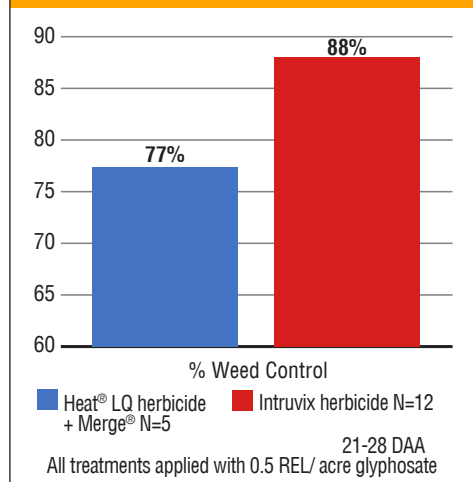
[†] Original 360 g/L formulation

Late-season Control of Russian Thistle



Source: 2019 FMC Canada Field Trials.

Volunteer RR Canola Western Canada, 2019-2020



Source: 2019-2020 FMC Canada Internal Trials

Intruvix herbicide



Source: 2021 Portage la Prairie, MB 2022

Intruvix herbicide provides great early activity on volunteer canola



Application Date: June 12, 2019 - Photo taken 5 DAA

Source: 2019 FMC Canada Field Trials, Vegreville, AB

Refer to the Intruvix herbicide label for complete use instructions.

MUSTER®

TOSS-N-GO®
HERBICIDE

- Proven broadleaf control for brown and oriental mustard, canola and sunflowers
- Control of wild mustard
- Registered for minor use on *Brassica carinata*

 **Crops:** Canola, *Brassica carinata*, brown mustard, oriental mustard, sunflowers

 **Chemical Group:** Group 2

 **Tank-mix Options:** For grass and broadleaf control in canola only, tank-mix Assure® II, Poast® Ultra or Lontrel®.

 **Timing:**

Canola: 2-leaf stage up to the initiation of bolting and before crop canopy closure.

Brown and Oriental mustard, *Brassica carinata*: 4-leaf to late rosette stage.

Sunflower: 2-leaf to 8-leaf stage.

Weeds: Apply early when weeds are actively growing.

 **Crop Rotation:**

Replant Interval (Months)	Rotational Crop
10	Spring wheat, durum, barley, oats, flax
22	Alfalfa, canary grass, canola, dry beans, faba beans, fescue, lentils, peas, red clover, tame mustard

 **Application Information:**

Crop	Staging	Rates
Canola, including rapeseed	2 leaf to beginning of bolting	8 g/ac or 12 g/ac
Brown condiment mustard oriental mustard	4 leaf to late rosette stage	8 g/ac
Sunflower	2 - 8 leaf stage (14 - 45 cm in height)	8 g/ac or 12 g/ac

Must use a surfactant with Muster herbicide. Use Agral 90, or Ag-Surf, or Super Spreader.

Caution: Application prior to the 2-leaf stage of canola or 4-leaf stage of brown condiment mustard and oriental mustard (condiment and oilseed types), or to sandy soil or low soil organic matter may increase the severity of injury.

Broadleaf control	
Flixweed (spring seedlings)	Redroot pigweed ²
Green smartweed	Stinkweed ¹ (1-4 leaf)
Hemp-nettle	Wild mustard

¹ Controlled at high rate of Muster Toss-N-Go® herbicide – 12 g/ac or 8 g/ac when tank-mixed with Assure® II.
² Suppressed at high rate of Muster Toss-N-Go® herbicide – 12 g/ac.

Refer to the Muster Toss-N-Go® herbicide label for complete use instructions.

- Pinnacle[®] SG Toss-N-Go[®] herbicide with Solumax[®] soluble granules is a sulfonyleurea herbicide for soybeans, thifensulfuron-methyl tolerant camelina (SES1154HR) and field tomatoes
- Recognized leader for post-emergent control of lamb's-quarters
- Powered by Solumax soluble granules for effective and consistent weed control, and easier, more consistent sprayer cleanout that reduces risk to subsequently sprayed crops
- 🔍 **Crops:** Camelina (SES1154HR thifensulfuron-methyl tolerant), soybeans, field tomatoes
- 🧪 **Herbicide Group:** Group 2
- 📦 **Packaging:** 96 g pouch containing 8 pre-measured water soluble bags (12 g per bag). Each pouch treats 20 acres at the high rate (4.8 g/ac) or 29 acres at the low rate (3.3 g/ac).
- 🔄 **Crop Rotation:** Any crop the following year

Weeds Controlled and Application Information				
Crop	Weeds	Rate	Application Timing	Application Information
Soybeans, field tomatoes	Lady's-thumb Redroot pigweed Wild mustard	3.3 g/ac + NIS	Soybeans: Apply post-emergent from the first fully expanded trifoliate leaf to before the initiation of flowering. Target weeds when they are small. Tomatoes: Apply post-emergent 3 weeks after transplanting in the field. Weeds should be less than 10 cm (4 in.) tall or across. Weeds that emerge after treatment will not be controlled. Because varieties differ in their tolerance to herbicides, limit the first use of Pinnacle [®] SG Toss-N-Go [®] herbicide to a small area of each variety prior to adoption as a field practice.	Soybeans: Add a registered non-ionic surfactant (NIS) such as Agral [®] 90 or Ag-Surf [®] at 1 L per 1000 L of spray solution (0.1% v/v). For more consistent control of velvetleaf, add 28% UAN at 4 L per 100 L of spray solution (4% v/v). Tomatoes: Add a registered non-ionic surfactant (Agral [®] 90 only) at 2.0 L per 1,000 L of spray solution (0.2% v/v). For a wider spectrum of weeds, apply a tank-mix of Prism [®] herbicide and Pinnacle SG Toss-N-Go [®] herbicide 3 weeks after processing tomatoes are transplanted.
	Lady's-thumb Lamb's-quarters Redroot pigweed Velvetleaf Wild mustard	4.8 g/ac + NIS		
Thifensulfuron-methyl tolerant camelina (SES1154HR) only	Lady's-thumb Lamb's-quarters Redroot pigweed Velvetleaf Wild mustard	4.8 g/ac + NIS	Apply post-emergent up to 60 days before harvest, to young actively growing weeds less than 10 cm tall or across. Weeds that emerge after treatment will not be controlled. Do not make more than 1 application per year in thifensulfuron-methyl tolerant camelina.	Add a registered non-ionic surfactant (Ag-Surf [®] , Agral [®] 90 or Citowett [®] Plus) at 1L per 1000L of spray solution (0.1% v/v) OR a crop oil concentrate (such as Sure-Mix [®] at 0.5 L per 100L of spray solution (0.5% v/v) OR Assist [®] at 1-2L per hectare. Use a minimum spray volume of 100 L/Ha. Do not apply by air.

Refer to the Pinnacle[®] Toss-N-Go[®] herbicide label for complete use instructions.

Custom herbicides as unique as your fields

Every farm is unique. Every field is different. Now, you can choose from 17 different PrecisionPac[®] herbicides to customize your weed control program for each individual field, based on your agronomic needs. Thanks to a revolutionary new dispensing system, your crop protection retailer can create high-performing PrecisionPac herbicides that match your agronomic needs, in exactly the right amount for your field size or sprayer tank.

No more left-over herbicide, no more measuring or guesswork. PrecisionPac herbicides can save time and money while enhancing your weed control.

How it works: After scouting the field, identifying key weeds and evaluating other important agronomic factors, your retailer will help you choose the appropriate PrecisionPac herbicide solution. Each system can hold up to 6 different active ingredients that can be combined in various ratios to create the PrecisionPac herbicide blend that best meets the agronomic needs of a specific field. The exact amount of herbicide is dispensed into a grower bag and labeled for easy identification.

PrecisionPac[®] herbicides are:



High Performing
Weed Control



Completely
Customized
Weed Control



Easy to Use



Right Product,
Right Rate,
Right Acre



Multiple
Modes of Action



Pick Length
Of Herbicide
Activity



Reduced Waste



Constantly
Evolving



Thanks to the revolutionary dispensing technology of PrecisionPac® herbicides, you'll experience:

- Less time mixing and more time spraying
- Less risk of errors; each bag is custom built for your field or sprayer tank size
- Less herbicide and packaging, with single bags able to treat up to 320 acres
- **17** high-performing herbicides to match with your weed spectrum, including blends with both grassy and broadleaf weed control all in one bag

Cross-Spectrum Grassy and Broadleaf Weed Control

- CS-100-2525 • CS-75-2525 • CS-100-23235 • CS-75-23235

Non-Crop Weed Control

- NC-00439 • NC-0050 • DB-878 • CF herbicide • DB-878 PRO

Extended Weed Control

- SZ-75 • SZ-0050

Post-Emergent Broadleaf Weed Control

- PP-2525 • PP-23235 • PP-3317 • DB-8454 • Ally®




Other Products / Tank-mix Options

- Perimeter® II • MCPA Ester • 2,4-D Ester

Notes: _____

Refer to the PrecisionPac herbicide labels for complete use instructions.

All-in-one grass and broadleaf weed control for wheat

- Predicade® herbicide is an all-in-one solution that excels at controlling the most challenging grass and broadleaf weeds, including Group 1 resistant wild oats
 - Multiple modes of action for proactive resistance management
 - Offers excellent control while still providing flexible re-crop options
-  **Crops:** Spring, durum and winter wheat
-  **Chemical Groups:** Groups 2 & 4
-  **Timing: Spring wheat and durum:** 3-leaf to 6-leaf with 3 tillers, but prior to jointing (presence of first node)

Winter Wheat: Spring application from the 3 tiller stage and before the first node can be felt in the stem. DO NOT apply after the presence of the first node as crop injury may occur.

Under drought conditions, do NOT apply Predicade herbicide if time between seeding and spraying exceeds 35 days.

 **Crop Rotation:**

Replant Interval	Rotational Crop
Following Year	alfalfa, barley, canola, field corn, flax, dry beans, lentils, mustard, oats, peas, soybeans, spring and durum wheat or sunflowers

Broadleaf Weed Control		
Annual smartweed (green smartweed, lady's-thumb) Canada thistle ¹ (top growth control) Cleavers (1-6 whorls) Common chickweed (1-6 leaf) Cow cockle Dandelion (< 15 cm in diameter) Flixweed Hemp-nettle	Kochia (including Groups 2 & 9 resistant biotypes; up to 10 cm) Lamb's-quarters Narrow-leaved hawk's-beard Night flowering catchfly Pale smartweed (1-6 leaf) Redroot pigweed Round-leaved mallow (1-5 leaf) Russian thistle Scentless chamomile (< 10 cm)	Shepherd's-purse (1-6 leaf) Sow thistle, perennial Stinkweed Stork's-bill (1-6 leaf) Volunteer canola (2-4 leaf) including Group 2 herbicide tolerant varieties Volunteer flax (< 12 cm) White cockle (< 10 cm) Wild buckwheat Wild mustard
Grassy Weed Control		
Barnyard grass Green foxtail Japanese brome ² (1-6 leaf)	Persian darnel ¹ Volunteer canary seed	Wild oats Yellow foxtail ¹
¹ Suppression. ² Control of spring-germinated Japanese brome. Suppression of overwintered Japanese brome. Best results are obtained after a pre-seed or burnoff application with a glyphosate herbicide.		

② Application Information:

Rates and Packaging: One (1) case treats 40 acres

Water Volume: Minimum 5 US gal/ac (50 L/ha)

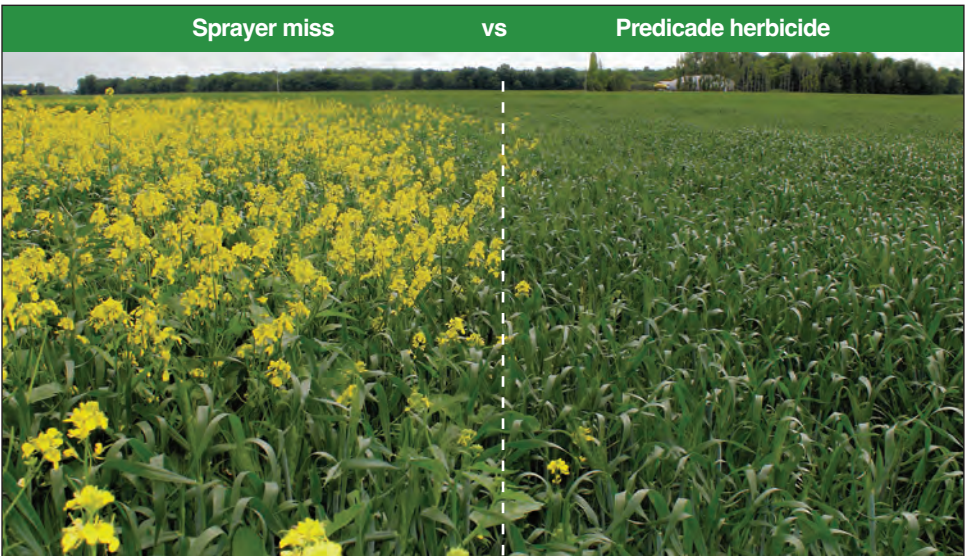
Rainfastness: Two (2) hours

Can be applied by ground or air

Mixing Order: Recommended mixing order is as follows:

1. Predicade® Broadleaf herbicide
2. Predicade® Grass herbicide
3. Perimeter® II herbicide
4. MCPA Ester 600 Liquid herbicide

Mixing Instructions: Please refer to Mixing Instructions under the Other tab.



Predicade herbicide sprayed June 5th, 2015, Oakville, MB
Photo taken 21 DAA

Notes: _____

Refer to the Predicade herbicide label for complete use instructions.

Proven control of annual and perennial broadleaf weeds

- Controls dandelion, wild buckwheat and all types of volunteer canola, including Roundup Ready[®] and Group 2 herbicide tolerant varieties
- Contains both Group 2 and Group 4 herbicides to help manage weed resistance

 **Crops:** Barley, oats, wheat (durum, spring, winter)

 **Chemical Groups:** Groups 2 & 4

 **Registered and Supported Tank-mix Options:**

- Assert[®]
- Axial[®] / Epic[®]
- Axial[®] Xtreme
- Brazen[™] II
- Cirray[™] (wild oats only)
- Clodinafop
- Erebus Xtreme
- Everest[®] 3.0 AG / Sierra[®] 3.0AG
- Lontrel[™] XC
- Puma[®] Advance
- Simplicity[™] / Simplicity[™] GoDri
- Traxos[®]
- Trondus[™]
- Varro[®]

 **Timing:** 3-leaf stage to just prior to flag-leaf stage

 **Crop Rotation:**

Replant Interval	Rotational Crop
Following Year	No re-cropping restrictions

 **Application Information:**

Rates and Packaging: One (1) case treats 40 acres

Surfactant: Not required when used alone. When tank-mixing with grass herbicides, use the surfactant provided with that product (follow label instructions if surfactant is not provided).

Water Volume: 5-10 US gal/ac (50-100 L/ha)

Rainfastness: Two (2) hours

Mixing Instructions: Please refer to Mixing Instructions under the Other tab.

Broadleaf control

Ball mustard	Round-leaved mallow* ¹ (2–6 leaf)
Canada thistle* (≤15 cm, before budding)	Russian thistle
Chickweed (1–6 leaf)	Scentless chamomile*
Cleavers* ¹ (1–3 whorls)	Shepherd's purse
Common groundsel	Sow-thistle* ¹ (≤15 cm, before budding)
Corn spurry	Stinkweed
Cow cockle	Stork's-bill* ¹ (2–6 leaf)
Dandelion ²	Tartary buckwheat
Flixweed	Toadflax* (≤15 cm in height)
Green smartweed	Volunteer canola
Hemp-nettle	Volunteer Group 2 herbicide tolerant canola
Kochia ³	Volunteer Roundup Ready [®] canola
Lady's-thumb	Volunteer sunflower
Lamb's-quarters	Wild buckwheat (up to 5-leaf)
Narrow-leaved hawk's-beard	Wild mustard
Redroot pigweed	

* Suppression.

¹ Use Barricade[®] II herbicide, Predicade[®] herbicide or Travallas[®] herbicide for control.

² Spring or fall rosettes, less than 15 cm in diameter.


³ Most effective control with early application. Use Barricade[®] II herbicide or Predicade[®] herbicide for enhanced results and control of Group 2-resistant kochia.

Notes: _____

Refer to the Refine[®] M herbicide label for complete use instructions.

Count on Refine[®] SG herbicide for broad spectrum broadleaf weed control

- Controls broadleaf weeds, including hemp-nettle, chickweed, narrow-leaved hawk's-beard and flixweed
- One of the most broad spectrum broadleaf herbicides on the market
- Wide window of application and excellent crop safety

 **Crops:** Wheat (spring, durum, winter), barley, oats


Seedling or established grasses for forages or seed production:

Meadow bromegrass, smooth bromegrass, creeping red fescue, tall fescue (seedling only), Kentucky bluegrass (established stand only), orchard grass, crested wheatgrass, intermediate wheatgrass, northern wheatgrass, pubescent wheatgrass, slender wheatgrass, streambank wheatgrass, tall wheatgrass, western wheatgrass

 **Chemical Group:** Group 2

Registered & Supported Tank-mix Options:

- 2,4-D
- Attain[®]
- Axial[®] / Epic[®]
- Axial[®] Xtreme
- Banvel[®] II
- Brazen[™] II
- Cirray[™]
- Clodinafop
- Erebus[®] Xtreme
- Everest[®] 3.0 AG / Sierra[®] 3.0
- MCPA
- Puma[®] Advance
- Simplicity[™] / Simplicity[™] GoDri
- Traxos[®]
- Trondus[™]
- Varro[®]

 **Timing:** 2-leaf to the full flag-leaf stage

 **Crop Rotation:**

Replant Interval (Months)	Rotational Crop
2	Alfalfa, canola, flax, lentil
Following Year	No re-cropping restrictions

Application Information:

Rates and Packaging: 12 g/ac. One (1) jug treats 40 acres

Surfactant: Add a registered non-ionic surfactant (NIS) at 2 L per 1000 L of spray solution (0.2% v/v). When tank-mixing with grass herbicides use the surfactant provided with that product. Do not use an additional surfactant unless otherwise indicated on the label.

Water Volume: 5-10 US gal/ac (50-100 L/ha)

Rainfastness: One (1) hour
Can be applied by ground or air

Mixing Instructions: Please refer to Mixing Instructions under the Other tab.

Broadleaf control	
Ball mustard	Redroot pigweed
Canada thistle* (≤15 cm, before budding)	Round-leaved mallow ¹ (2–6 leaf)*
Chickweed (1–6 leaf)	Russian thistle
Cleavers ¹ (1–3 whorls)*	Scentless chamomile*
Common groundsel	Shepherd's purse
Corn spurry	Sow-thistle ¹ (≤15 cm, before budding)*
Cow cockle	Stinkweed
Flixweed	Stork's-bill ¹ (2–6 leaf)*
Green smartweed	Tartary buckwheat
Hemp-nettle	Toadflax* (≤15 cm in height)
Kochia ²	Volunteer canola ³
Lady's-thumb	(excluding Group 2 herbicide tolerant canola)
Lamb's-quarters	Volunteer sunflower (excluding ExpressSun [®] herbicide tolerant sunflowers)
Narrow-leaved hawk's-beard	Wild buckwheat (up to the 5-leaf stage)
	Wild mustard
<p>*Suppression. ¹ Use Barricade[®] II herbicide, Predicade[®] herbicide or Travallas[®] herbicide for control. ² Most effective control with early application. Use Barricade[®] II herbicide or Predicade[®] herbicide for enhanced results and control of Group 2-resistant kochia. ³ For control of Group 2 herbicide tolerant canola, tank-mix with MCPA or use Refine[®] M herbicide.</p>	

Notes: _____

Refer to the Refine[®] SG herbicide label for complete use instructions.

Lightweight package, heavyweight liquid weed control

- Commanding performance on key weeds like Canada thistle¹, cleavers, narrow-leaved hawk's-beard, wild buckwheat, dandelion, scentless chamomile, hemp-nettle and kochia
- Simple to use and easy to handle
- High performance on large weeds (i.e. up to 9 whorl cleavers)
- Excellent crop safety over a wide application window
- Multiple modes of action built in (2 different groups, 3 active ingredients)

 **Crops:** Spring wheat, durum wheat, winter wheat, barley

 **Chemical Groups:** Groups 2 & 4

 **Timing:** 2-leaf to flag-leaf

 **Crop Rotation:**

Replant Interval (Months)	Rotational Crop
10 months after application:	Canola, flax, dry beans, faba beans, field corn, lentils, oats, peas, soybeans, spring barley, wheat (spring, durum, winter)

Registered & Supported Tank-mix Options:

- Acapela®
- Axial® / Epic®
- Brazen™ II
- Everest® 3.0 AG / Sierra® 3.0AG
- Cirray™
- Clodinafop
- MCPA Ester
- Puma® Advance
- Simplicity™ / Simplicity™ GoDri
- Traxos®
- Trondus™
- Varro®

Application Information:

Rates and Packaging: One 8 L jug treats 40 acres (202 mL/ac)

Rainfastness: Two (2) hours


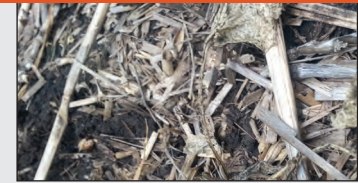

Water Volume: 5 US gal/ac (50 L/ha)

Control of key weeds like dandelion:

Travallas® herbicide		
		
Day of application – 15" dandelion Legal, AB	28 days after application Legal, AB	40 days after application Legal, AB

¹Suppression

Wild buckwheat comparison:

Untreated	Travallas® herbicide	Premium competitive product
		
<p>Wild buckwheat Three Hills, AB</p>	<p>30 days after application Three Hills, AB</p>	<p>30 days after application Three Hills, AB</p>

Weeds Controlled	
<p>Annual smartweed (green smartweed, lady's thumb) Annual sow thistle² Canada thistle¹ (top growth control) Chickweed (1-6 leaf) Cleavers (1-9 whorl) Corn spurry Cow cockle Dandelion (spring or fall rosettes up to 25 cm in diameter) Flixweed Hemp-nettle (up to 8 leaf) Kochia (including Group 2-resistant) Lamb's-quarters Narrow-leaved hawk's-beard</p>	<p>Night-flowering catchfly (up to 10 cm) Redroot pigweed Round-leaved mallow² Russian thistle Scentless chamomile (up to 10 cm) Shepherd's purse (up to 20 cm) Stinkweed Stork's-bill Volunteer canola³ Volunteer flax White cockle (less than 10 cm) Wild buckwheat (1-8 leaf) Wild mustard</p>
<p>¹ Suppression ² When tank-mixed with MCPA Ester ³ Including Group 2 herbicide-tolerant varieties when tank-mixed with MCPA Ester</p>	


Notes: _____

Refer to the Travallas herbicide label for complete use instructions.


UPBEET®

HERBICIDE

Broadleaf weed control for sugar beets

 **Crop:** Sugar beets

 **Chemical Group:** Group 2

 **Registered and Supported Tank-mixes:** UpBeet® herbicide may be applied alone with a NIS. If tank-mixing, may be mixed with Betamix® B EC herbicide. Do not add a surfactant when tank-mixing.

 **Crop Rotation:**

Replant Interval (Months)	Rotational Crop
1	Sugar beets
Following year	Spring wheat, durum, winter wheat, barley, sugar beets

 **Application Information:**

Rates and Packaging: Broadcast at 14 g/ac to 28 g/ac. Do not exceed 40 g/ac per growing season.

Surfactant: If applied alone, add a registered non-ionic surfactant (Agral® 90, Ag Surf®, Citowett® Plus or Sure-Mix™ at 0.25% v/v or 2.5 L per 1000 L of spray solution).

Water Volume: 10 US gal/ac (100 L/ha)

Rainfastness: Six (6) hours

Weeds Controlled	
Velvetleaf ¹	
When tank-mixed with Betamix® B EC herbicide, UpBeet® herbicide will control the following additional weeds:	
Green foxtail ²	Lamb's-quarters
Kochia (rosette stage)	Redroot pigweed
¹ Two (2) applications necessary. ² Suppression.	

Notes: _____

Refer to the UpBeet herbicide label for complete use instructions.



Insecticide

Carbine™	53
Coragen® MaX	55
Cygon® 480-AG.....	61
Pounce® 384EC	64



Insecticide

Carbine™	53
Coragen® MaX	55
Cygon® 480-AG.....	61
Pounce® 384EC	64



CARBINE™

INSECTICIDE

NEW!

Targeted aphid control in pulses and alfalfa

- Fast acting, selective aphid control
- Residual with translaminar activity
- Ideal partner in integrated pest management (IPM) - minimal impact on many important beneficial insects and pollinators¹, with a favourable environmental and toxicological profile.
- Short 7 day PHI for flexibility

Crops: Lentil, field pea, chickpea, dry bean, faba bean, lupin, alfalfa, clover

Chemical Group: IRAC Group 29

Application Information:

Carbine™ insecticide applications can be made any time before the pre-harvest interval in the registered crop, once the threshold has been met. Controls both immature and adult insect stages with unique anti-feeding action. Minimum 7 days between applications with a maximum of 3 applications per year.

Packaging: 4 x 1.587 KG jugs/case

Surfactant: Not required

Water volume (Ground): Minimum 10 US gal/ac (100 L/ha). Thorough spray coverage of plant foliage is essential for optimum control.

Temperature: Can be applied in a wide range of temperatures. High temperatures do not reduce efficacy. If temperatures are high at time of application, consider increasing water volume to ensure adequate coverage.

Rainfast: When dry on leaf surface. Avoid application when heavy rain is forecast.

Mixing Instructions: Ensure the spray system is clean and free of residues from previous applications. Fill the spray tank half full with clean water. Ensure the agitation system is operating and sufficient to provide uniform spray mixing during application and until the spray tank has been emptied. Complete filling the spray tank to the desired level. Avoid overnight storage of Carbine™ insecticide spray mixtures. Do not use liquid fertilizer as a carrier for Carbine insecticide.

Re-Entry Period: 12 hours



¹When applied at label rates. In line with Integrated Pest Management and Good Agricultural Practices, insecticide applications should be made when pollinators are not foraging to avoid unnecessary exposure.



CARBINE™

INSECTICIDE

Crop	Pest	Rate	PHI (days)	Application Information
Pulses (not including soybean): Lentil, field pea, chickpea, dry edible beans, faba bean, lupins	Aphids	49-65 g/ac	7	Apply before aphid populations reach economic thresholds or as populations begin to increase but before damaging populations become established. Scout fields and reapply if necessary. Use higher rates for greater pest populations and/or dense foliage. Do not apply more than 65 g/ac per application (up to 3 applications per season).
	Lygus & tarnished plant bug	81 g/ac		Apply when lygus bugs first appear in the field and before populations reach high levels. Carbine™ Insecticide will stop lygus bug feeding rapidly but it may take several days to see a reduction in lygus bug numbers. Reapply when new insects are detected.
Non Grass Animal Feeds Alfalfa (seed*, forage), clover, lespedeza, lupin, sainfoin, trefoil, vetch; crown vetch, milk vetch	Aphids	49-65 g/ac		Apply before aphid populations reach economic thresholds or as populations begin to increase but before damaging populations become established. Scout fields and reapply if necessary. Use higher rates for greater pest populations and/or dense foliage.
	Tarnished plant bug	81 g/ac max 3 applications OR 121 g/ac max 2 applications		Within the range, use higher rate for greater pest populations and/or dense foliage.

* Do not use seed or treated forage for human or animal consumption from treated alfalfa that was grown for seed production specifically.



Now, 3X more concentrated for easier handling and increased sustainability

- Powered by the Rynaxypyr® active, Coragen® MaX insecticide is an **innovative insecticide** providing broad spectrum, extended control of many pests
- Active ingredient from a **novel group of chemistry** with no cross-resistance to other chemistries
- Controls hatching insects all the way through to adult stages of development
- **Fast acting!** Insect feeding stops in as little as 7 minutes
- **Extended Control!** Delivers reliable, long-lasting protection against key insect pests.
- **Coragen MaX insecticide** has minimal impact on many important beneficial insects and pollinators¹, and its unique environmental and toxicological profile make it a sound choice for growers and applicators.

Crops:

Brassica vegetables	Fodder and hay	Okra
Canola	Fruiting vegetables	Peas
Cereals (wheat, barley, rye, oats, triticale)	Grass forage	Potatoes
Chickpeas	Leafy vegetables	Soybeans
Cucurbit vegetables	Legume vegetables	Sunflowers
Corn (field, sweet, seed, pop)	Lentils	Tame mustard
Flax	Mint	Tuberous and corn vegetables
	Non-grass animal feeds	

How Coragen MaX works: Coragen MaX insecticide is unique in the way that it controls target insect pests. After application and consumption of treated plant material, target insects will undergo rapid cessation of feeding, lethargy, regurgitation and muscle paralysis. They may remain alive for up to a few days after application (depending on rate applied, target insect and stage), but will not be causing further feeding damage leading up to their death.

Chemical Group: Group 28, Anthranilic Diamide.

Resistance Management - DO NOT make a foliar application of Coragen MaX insecticide for a minimum of 60 days following an in-furrow or soil application or planting of seed or seed pieces treated with any Group 28 insecticide.

Application Information:

Packaging: 4 x 2 L jugs/case

Rainfast: 1 hour

Water Volume (Ground): 10 US gal/ac (100 L/ha)

Aerial Application: 5 US gal/ac (50 L/ha) for cereals, corn, legume vegetables (dry edible beans, soybeans, lupine, faba bean, chickpeas, lentils, peas, sugar beets), oilseeds (canola, mustard, flax, sunflower, safflower, etc.) and potatoes

Re-entry Period: 12 hours

¹ In line with Integrated Pest Management and good agricultural practices, insecticide applications should be made when pollinators are not foraging to avoid unnecessary exposure.

What to Expect After Application



Provides Extended Control:	7 to 21 days (depending on pest, rate, crop stage and when weather and temperature are optimal).
Staging:	Controls hatching insects all the way through to adult stages.
Tank-Mixing:	Very stable in the tank and very tank-mixable.
Temperature:	Can be applied in a wide range of temperatures (between 4°C and 40°C).

Pests Controlled and Application Timing

Crop	Pest	Rate	PHI	Application Information
OILSEEDS GROUP (Crop Group 20) Canola , rape seed, mustard seed , flax , linseed, sunflower seed , safflower, borage, calendula, castor oil plant, Chinese tallowtree, cottonseed, crambe, cuphea, echium, euphorbia, evening primrose, gold of pleasure, hare's ear mustard, jojoba, lesquerella, lunaria, meadowfoam, milkweed, niger seed, oil radish, poppy seed, rose hip, stokes aster, sweet rocket, tea oil plant	Diamondback moth	17 mL/ac	1 day	Begin applications when treatment thresholds have been reached. Thorough coverage is important to obtain optimum control. For cutworm control, apply to smaller plants or when lower portions of plant can receive adequate coverage. Do not make more than 3 applications per season. Do not apply more than once every 5 days. Do not exceed a total of 151 mL of Coragen® MaX Insecticide per ha per year.
	Cabbage looper Cutworms Imported cabbage worm Swede midge	33.5 mL/ac		
	Bertha armyworm 17 mL/ac recommended when the bertha armyworms are less than 1 inch in length, and populations are low. 33.5 mL/ac recommended when the bertha armyworms are approximately 1 inch in length and populations are increasing. 50.5 mL/ac recommended when the bertha armyworms are greater than 1 inch in length and populations are high. Rates on the higher end of the range will result in longer length of extended control.	17 to 50.5 mL/ac		

Pests Controlled and Application Timing

Crop	Pest	Rate	PHI	Application Information
OILSEEDS GROUP (Continued)	Grasshoppers	17 to 33.5 mL/ac	1 day	
	Reduces damage caused by banded sunflower moth. Sunflower head moth	33.5 to 50.5 mL/ac		
CEREAL GRAINS Crop Groups 15 and 16 (except corn and wild rice) Barley, buckwheat, millet - pearl, millet - proso, oats, rye, sorghum, teosinte, triticale, wheat	Grasshoppers	17 to 33.5 mL/ac	1 day	Begin applications when treatment thresholds have been reached. Thorough coverage is important to obtain optimum control.
	Cutworms	33.5 mL/ac		
	Armyworm Fall armyworm Beet armyworm Corn earworm European corn borer	33.5 to 50.5 mL/ac		
LEGUME VEGETABLES (Crop Group 6) Bean (lupinus) (includes grain lupin, sweet lupin, white lupin and white sweet lupin), bean (phaseolus) (includes field bean, kidney bean, lima bean, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean), bean (vigna) (includes adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlong bean), broad bean (fava), chickpea (garbanzo), guar, jackbean, lablab bean, lentil, pea (Pisum) (includes dwarf pea, edible-podded pea, English pea, field pea, garden pea, green pea, snowpea, sugar snap pea), pigeon pea, sword bean, soybean	Grasshoppers	17 to 33.5 mL/ac	1 day	Begin applications when treatment thresholds have been reached. Thorough coverage is important to obtain optimum control. For cutworm control, apply to smaller plants or when lower portions of plant can receive adequate coverage.
	Cabbage looper Cutworms	33.5 mL/ac		
	Armyworm Fall armyworm Beet armyworm Corn earworm European corn borer Western bean cutworm	33.5 to 50.5 mL/ac		

Pests Controlled and Application Timing

Crop	Pest	Rate	PHI	Application Information
CORN Field corn, popcorn, seed corn, sweet corn	Black cutworm	33.5 mL/ac	1 day (sweet and seed corn) 14 days (field corn and popcorn)	Begin applications when treatment thresholds have been reached. Thorough coverage is important to obtain optimum control. For black cutworm control, apply to smaller plants or when lower portions of plant can receive adequate coverage. For <u>corn earworm</u> , <u>European corn borer</u> and <u>Western bean cutworm</u> control, time the applications to coincide with peak egg hatch. Scout by monitoring egg laying and egg hatch to determine application timing. Thorough coverage is essential for optimum control. Reapply if monitoring indicates it is necessary.
	Armyworm Fall armyworm Beet armyworm Variegated cutworm Corn earworm/Tomato fruitworm European corn borer Western bean cutworm	33.5 to 50.5 mL/ac		
	Grasshoppers	17 to 33.5 mL/ac		
POTATOES (Crop Group 1)	Colorado potato beetle	33.5 to 67.5 mL/ac	1 day	Begin applications when treatment thresholds have been reached. Thorough coverage is essential for optimum control. For <u>Colorado potato beetle</u> , application made at larval stages provides optimal control. For all pests, use the high rate under heavy pest pressure. For control of <u>European corn borer</u> , time the application to coincide with peak egg hatch. Scout for European corn borer by monitoring egg laying and egg hatch to determine application timing. Registered for aerial application.
	Grasshoppers	17 to 33.5 mL/ac		
	Diamondback moth Cabbage looper Black cutworm Imported cabbage worm Swede midge	33.5 mL/ac		
	European corn borer Variegated cutworm Tobacco hornworm Tomato hornworm Leaf miners; <i>Liriomyza sativae</i> , <i>Liriomyza trifolii</i>	33.5 to 50.5 mL/ac		
GRASS FORAGE, FODDER AND HAY (Crop Group 17) Any grass, Gramineae family (either green or cured) except sugarcane and those included in the cereal grains group, that will be fed to or grazed by livestock, all pasture and range grasses and grasses grown for hay or silage.	Grasshoppers	17 to 33.5 mL/ac	0 days	Begin applications when treatment thresholds have been reached. Thorough coverage is important to obtain optimum control.
	Cutworms	33.5 mL/ac		
	Armyworm Fall armyworm Beet armyworm Corn earworm	33.5 to 50.5 mL/ac		



Pests Controlled and Application Timing

Crop	Pest	Rate	PHI	Application Information
NON-GRASS ANIMAL FEEDS (Crop Group 18) Alfalfa , bean (velvet), clover (trifolium, melilotus), kudzu, lespedeza, lupin, sainfoin, trefoil, vetch; vetch (crown), vetch (milk)	Beet armyworm	33.5 to 50.5 mL/ac	0 days	Begin applications when treatment thresholds have been reached. Thorough coverage is important to obtain optimum control.
	Alfalfa weevil (Suppression)	50.5 to 67.5 mL/ac		
	Cutworms	33.5 mL/ac		
	Grasshoppers	17 to 33.5 mL/ac		

Notes: _____

Refer to the Coragen® MaX insecticide label for complete use instructions.

Registered Rates, Crops & Insects Controlled



Coragen[®] Max insecticide
(600 SC formulation)
2L Jug



Coragen[®] insecticide
(200 SC formulation)
6L Jug

Insect	New 2L jug covers the same acres	Rates / Acre	Rates / Acre
Alfalfa weevils	30 - 40	50.5 – 67.5 mL/ac	151 – 202 mL/ac
Armyworm in cereals	40 - 60	33.5 – 50.5 mL/ac	101 – 151 mL/ac
Banded sunflower moths	40 - 60	33.5 – 50.5 mL/ac	101 – 151 mL/ac
Beet armyworms	40 - 60	33.5 – 50.5 mL/ac	101 – 151 mL/ac
Bertha armyworms	40 - 120	17 – 50.5 mL/ac	50 – 151 mL/ac
Cabbage loopers	60	33.5 mL/ac	101 mL/ac
Colorado potato beetles	30 - 60	33.5 – 67.5 mL/ac	101 – 202 mL/ac
Corn earworms	40 - 60	33.5 – 50.5 mL/ac	101 – 151 mL/ac
Cutworms	60	33.5 mL/ac	101 mL/ac
Diamondback moths	120	17 mL/ac	50 mL/ac
European corn borers	40 - 60	33.5 – 50.5 mL/ac	101 – 151 mL/ac
Fall armyworms	40 - 60	33.5 – 50.5 mL/ac	101 – 151 mL/ac
Grasshoppers	60 - 120	17 – 33.5 mL/ac	50 – 101 mL/ac
Imported cabbage worms	60	33.5 mL/ac	101 mL/ac
Sunflower head moths	40 - 60	33.5 – 50.5 mL/ac	101 – 151 mL/ac
Swede midge	60	33.5 mL/ac	101 mL/ac

Crops	Pre-Harvest Interval	Insects
Alfalfa	0 days	Grasshoppers, alfalfa weevil (suppression)
Oilseeds: Canola, flax, mustard, sunflower, safflower	1 day	Bertha armyworm, diamondback moth, cutworms, grasshoppers, swede midge, imported cabbage worm, sunflower head moth
Pulses: Chickpeas, lentils, peas, beans, soybeans	1 day	Armyworm, fall armyworm, beet armyworm, cutworms, grasshoppers, cabbage looper, corn earworm, European corn borer, Western bean cutworm
Cereals	1 day	Grasshoppers, beet armyworm, fall armyworm, cutworms, armyworm, corn earworm, European corn borer
Corn (sweet and seed)	1 day	Armyworm, fall armyworm, variegated cutworm, beet armyworm, corn earworm, Western bean cutworm, European corn borer, black cutworm, grasshoppers
Corn (field and popcorn)	14 days	
Grass forage, hay	0 days	Grasshoppers, armyworm, beet armyworm, fall armyworm, corn earworm, cutworms
Potatoes	1 day	Colorado potato beetle, European corn borer, cutworms, grasshoppers

Reliable wheat midge, aphid, lygus and spider mite control

• Systemic insecticide for the control of insects on listed field crops

Crops: Wheat, barley, oats, soybeans, beans, potatoes, alfalfa, canola, asparagus, pastures, forage crops, strawberry, peas, clover, canary seed, flax

Insecticide Group: Group 1B

Packaging: 2 x 10 L jugs per case

Re-entry Period: 12 hours (unless otherwise indicated on label)



Two-spotted spider mite



Adult nymph soybean aphid



Lygus bug

Insects Controlled and Application Information

Crop	Pest	Rate	PHI (days)	Application Information
Wheat	Orange blossom wheat midges Say's stink bug (For Say's stink bug must use a water volume of at least 10 gal/ac (100 L/Ha) for ground or 5 gal/ac (50 L/Ha) for air).	405 mL/ac	35 days	If adult midges are present (1 midge / 4-5 wheat heads), sprays should be applied when 25% of the wheat head has fully emerged from the boot but before flowering has begun. At this stage, wheat first becomes susceptible to attack by the egg-laying females. Applications should be made in the late afternoon or evening when temperatures exceed 15°C and the wind speed is less than 10 km/h. High volume sprays will improve penetration of the crop. Proper timing of application is essential for control.
Wheat, oats, barley	Thrips Aphids Russian wheat aphid ¹	405 mL/ac 172 mL/ac	35 days	
Soybean	Spider mites	405 mL/ac	30 days	Do not feed or allow livestock to graze treated forage. Toxic to bees. Avoid application during the crop blooming period. If applications must be made during the crop blooming period, restrict applications to evening when most bees are not foraging.

Insects Controlled and Application Information				
Crop	Pest	Rate	PHI (days)	Application Information
Peas	Aphids	111-154 mL/ac	3 days	May be applied by air or ground equipment. Do not feed or allow livestock to graze treated vines within 21 days after application. Do not apply when bees are foraging.
Beans	Aphids Bean beetles Leafhoppers Leaf miners Lygus bugs Mites Tarnished plant bugs	283-405 mL/ac	7 days	Do not feed or allow livestock to graze treated forage. Toxic to bees. Avoid application during the crop blooming period. If applications must be made during the crop blooming period, restrict applications to evening when most bees are not foraging.
Potatoes	Aphids Leafhoppers	223-405 mL/ac	7 days	Toxic to bees. Avoid application during the crop blooming period.
Alfalfa	Aphids, Leafhoppers, Lygus bugs, reduction of alfalfa weevil larvae	172 mL/ac	2 days	If applications must be made during the crop blooming period, restrict applications to evening when most bees are not foraging.
	Blotch leaf miners	223 mL/ac	2 days	
	Grasshoppers - nymphs	223 mL/ac	2 days	
	Grasshoppers - adults	344-364 mL/ac	28 days	
Alfalfa (seed)	Lygus bugs Plant bugs	445 mL/ac	10 days	
Forage crops (grain)	Lygus bugs Plant bugs	172 mL/ac	2 days	
	Grasshoppers – Low infestations	172-223 mL/ac	2 days	
	Grasshoppers-nymphs	223 mL/ac	2 days	
	Grasshoppers-adults	344-405 mL/ac	28 days	
Sweet clover, red clover, alsike clover	Sweet clover weevils	344-445 mL/ac	28 days	
Pastures	Grasshoppers-nymphs	223 mL/ac	2 days	
	Grasshoppers-adults	344-405 mL/ac	28 days	

Insects Controlled and Application Information				
Crop	Pest	Rate	PHI (days)	Application Information
Canola	Aphids Leafhoppers Grasshoppers	344-364 mL/ac	21 days	Repeat application only when necessary. Toxic to bees. Do not apply during the crop blooming period or during the 5-day period before the crop blooms.
	Lygus bugs	182-364 mL/ac		
Asparagus	Asparagus aphid	931 mL/ac	Apply post harvest only	For mature asparagus, sprays begin July 1, after crop has been harvested, and continue at 3 to 4 week intervals until defoliation in October. For immature asparagus, begin application mid-May. If applied on immature asparagus do not harvest for feed or food.
Canary seed	Aphids	202 mL/ac	21 days	Apply when >50 aphids per seed head between heading and soft dough stage. Do not apply when bees are foraging.
Flax	Potato aphids	177 mL/ac	21 days	One application per season; apply from late flowering to early green bole stage in sufficient water to provide good coverage. Do not apply when bees are foraging.
Strawberries (bearing)	Tarnished plant bugs	1.1 L/ac	7 days	Apply first spray when first blooms appear and the second application 10 to 12 days after if needed.
Strawberries (bearing and non-bearing)	Aphids Mites	911 mL/ac	7 days	Spray when insects first appear and repeat as necessary using sufficient water for good coverage.

¹Suppression

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds.

Do not apply this product or allow it to drift to blooming crops or weeds if bees are foraging the treatment area.

Notes: _____

High performing insecticide for control of striped and crucifer flea beetles as well as cutworms

- Excellent control of both striped and crucifer flea beetles in canola
 - Cutworm control in a wide variety of crops
 - Synthetic pyrethroid
 - Stable in sunlight resulting in longer control versus other pyrethroids
 - 🚫 **Crops:** Canola, cereals (barley, wheat, oats), cole crops (cabbage, cauliflower, broccoli, brussels sprouts), corn, flax, lentils, peas, potato, sunflower, sweet corn
 - 🧪 **Chemical Group:** Group 3
 - 📊 **Registered and Supported Tank-Mix Options:** For tank-mixing with other products, please perform a jar test for compatibility.
Coragen[®] insecticide, Coragen[®] MaX insecticide (up to 5 leaf stage canola)
Liberty[®] 150 SN herbicide (up to 5 leaf stage canola)
Liberty[®] 150 SN herbicide + Centurion[®] herbicide (up to 5 leaf stage canola)
Glyphosate (up to 5 leaf stage canola)
 - 🕒 **Timing:** Depends on the crop. Please refer to the application chart.
 - 🔄 **Crop Rotation:** No recropping restrictions
 - ❓ **Application Information:** Please refer to the application chart.
- Rates and Packaging:** 2 x 10 L jugs/case and 12 x 1 L jugs/case
- Surfactant:** Specific to pest and crop
- Water Volume:** Ground - 10 US gal/ac (100 L/ha) Air - 3 US gal/ac (30 L/ha)
- Rainfastness:** Once dry on the leaf surface. Do not apply if rain is imminent in forecast.
- Mixing Instructions:** Please check with the label for complete mixing instructions based on crop and application.



Striped flea beetle (left) and crucifer flea beetle (right)



Cutworms

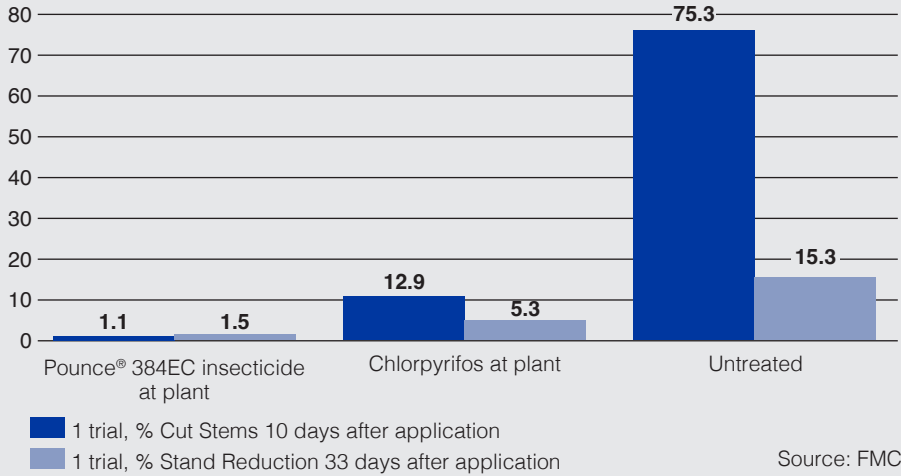
Pests Controlled and Application Timing

Crop	Pest	Recommended Rate*	PHI	Application Information
Canola	Crucifer flea beetle Striped flea beetle	62 mL/ac (160 ac/10 L jug)	Apply only up to 5 leaf stage	Crop Staging: Up to 5 leaf Ground application: Apply in sufficient water for good coverage when insects are present. Application should be made when the beetles are actively feeding. For severe infestations, use 73 mL/ac. Aerial application: Apply in 1- 4 gal/ac (11-35 L/Ha) spray water. Can only be applied by air once per season.
Canola, cereals, corn, flax, lentils, peas, potatoes, sugar beets, sunflowers	Cutworms: army, black, dark-sided, pale western, red-backed, white	125 mL/ac (80 ac/10 L jug)	Apply only up to 5 leaf stage	Crop Staging: Up to 5 leaf Ground application should be made under warm, moist conditions in the evening or at night when cutworm activity is highest. Do not disturb soil surface for 5 days after treatment.
Cole Crops (cabbage, cauliflower, broccoli, brussels sprouts)	Cabbage looper, diamondback moth, imported cabbage worm, diamondback moth larvae, crucifer flea beetle	71 mL/ac (140 ac/10 L jug)	Broccoli – 7 days PHI Remaining crops – 3 days PHI	Ground application: Apply in 40-70 gal/ac (400-650 L/ Ha) spray water on a 7-10 day schedule when insects or insect damage first appears. Add Agral® 90 wetting agent at 300 mL per 1000 L of water to improve wetting and coverage. Do not apply by air.
Corn (sweet only)	European corn borer Corn earworm	143 mL/ac (70 ac/10 L jug)	1 day PHI	Ground application: Apply specified dosage in 35-50 gal of water/ac. Spray when first feeding is observed. For second brood borers in plantings, apply before tassels show. For control of corn earworm, direct the spray to ensure coverage of ears and silks. Aerial application: Application by air is permitted. Apply specified rate in 1- 4 gal/ac (11-35 L/Ha) spray water. Do not apply more than twice per year by air.
	Fall armyworm	71 mL/ac (140 ac/10L jug)		

Pests Controlled and Application Timing				
Crop	Pest	Recommended Rate*	PHI	Application Information
Potato	Colorado potato beetle, potato flea beetle, potato leafhopper, tarnished plant bug (lygus bug)	100 mL/ac (100 ac/10 L jug)	1 day PHI	<p>Ground application: Apply in sufficient water for thorough coverage. Repeat as necessary.</p> <p>Aerial application: Application by air is permitted, provided there is no hazard of drift to other crops or to areas occupied by people or livestock. Apply specified rate in 1-4 gal/ac (11-35 L/Ha) spray water. Can be applied by air once per season.</p>
	Cutworms, European corn borer	73 mL/ac (137 ac/10L jug)		<p>Variegated cutworm Ground application: Apply when insects or damage appears - usually late July or during August, depending on location. Good control is dependent on spray penetration of dense foliage.</p> <p>European corn borer Ground application: Apply in sufficient water for good coverage. Apply when egg masses begin to hatch.</p> <p>Aerial application: Application by air is permitted. Apply specified rate in 1-4 gal/ac (11-35 L/Ha) spray water. Can be applied by air once per season.</p>

* For complete crop and insect listing, with application rate ranges, refer to label.

% Cut Stems and Stand Reduction at Emergence (Canola)



Pounce 384EC insecticide control of striped flea beetles in canola



Source: St. Francois Xavier, MB
Pounce 384EC insecticide 160 ac/jug

Refer to the Pounce 384EC insecticide label for complete use instructions.



Other

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Other

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The Benefits of Solumax® Soluble Granules

The convenience and benefits of a dry herbicide, that works like a liquid

Many sulfonylurea herbicides from FMC are formulated, using Solumax® soluble granules, which deliver active ingredients that completely dissolve in water, creating a clear solution. This unique technology gives you all the convenience and benefits of a dry herbicide that works just like a liquid.

Here are the three (3) key benefits:

1. Solumax will save you time, money and water with easier sprayer cleanout.

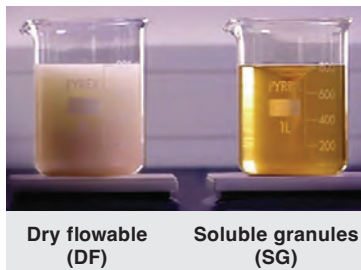
Products powered by Solumax fully dissolve into solution so less active ingredient adheres to the sides of the tank, and particles won't clog nozzles or become trapped in filters or other pinch points. In tests, cleanout times were reduced by up to 70% when compared to a dry flowable herbicide.

2. Lower risk to sensitive crops.

Removing product residue from spray tanks is easier, which helps minimize the potential impact to subsequently sprayed crops, like peas or canola.

3. Consistent weed control.

Solumax increases the bioavailability of the active ingredient to the weed. The active is rapidly absorbed into the weed, which provides fast, effective and consistent weed control.



Remember, not all dry herbicides are alike! If your dry herbicide isn't powered by Solumax, you may not be maximizing your weed control and may be putting your operation at risk.



The clear liquid on the leaf surface is a herbicide powered by Solumax. It is completely dissolved into a clear solution. The DF herbicide is cloudy because its particles are merely in suspension.

Herbicide Mixing Instructions

1. Start with a clean empty sprayer. Ensure sprayer is equipped with 50 mesh screens or filters when using FMC products.
2. Fill sprayer tank 1/2 full with clean water in order to ensure enough water for added product to dilute properly.
3. With agitator running, add the FMC products according to their formulation as shown below in the **WAMLEGS** chart. Add the products slowly.
4. If loading FMC granular products, agitate well to ensure granules are completely dissolved prior to moving to the next step. This can take longer in spring with cold water sources.
Do not aggressively agitate SE, SC or EC formulations. Moderate agitation is sufficient. If the spray mixture looks like its boiling, then there is too much agitation.
5. If using a mix & fill tank, add the FMC product to as large a volume of water as possible in a chemical handler.
6. If combining multiple products, ensure application water volume is sufficient to dilute the mixture.
7. Proceed with adding additional products as per the **WAMLEGS** chart and water while maintaining agitation. Slowly add each tank mix partner, before proceeding to the next tank mix partner.
8. For repeat tank loads, start off with an empty tank or ensure spray solution is reduced to 10%, or less, of the original volume.
9. (Recommended) For the last load of the day, add 10L of household ammonia (containing at least 3% ammonia) to the tank heel PRIOR to the addition of the FMC product, water and glyphosate. Follow steps 2 through 6.
10. (Recommended) When spraying an FMC extended weed control liquid formulated product multiple days in a row, it is important, at the end of each day to fill the sprayer with water overnight, to prevent any film from developing on the tank walls.

- W**ettable powders, dispersible granules, soluble granules (WG, DF, SG, WP, SP)
- A**gitate tank mix thoroughly
- M**icro-encapsulated suspensions (ME)
- L**iquid flowables and suspensions (SC, SL, SN, Li, SU, SE)
- E**mulsifiable concentrate formulations (EC)
 - Fill spray tank nearly full with water
- G**lyphosate formulations
- S**urfactants
 - Complete filling the spray tank to the desired level

Special mixing instructions for soluble granule (SG) herbicides when using a CHEM HANDLER:

1. Ensure the chem handler is clean (rinsed with ammonia).
2. For best results, add the SG herbicide to the top of the sprayer tank.
3. If you do use a chem handler, make sure that all of the SG herbicide is completely dissolved and injected into the main tank with agitation, before adding other chemicals.
4. Low water volumes in some chem handlers can cause the water to become saturated with soluble granules, leaving undissolved granules. In that case, rinse the chem handler with clean water before adding any other chemicals.
5. Always dissolve the soluble 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 chem handler.

Sprayer Cleanout Procedure



1. Empty tank completely and flush entire spraying system with clean water. Ensure the boom is flushed well by removing boom end caps or opening boom end valves.
2. Visually inspect all sprayer parts, including in-line filters, to ensure removal of all visible herbicide residues.
3. Prepare a sprayer cleaning solution by adding 3 (three) litres of ammonia per 100 litres of clean water. Prepare sufficient cleaning solution to allow the spray system to operate for a minimum of 15 minutes.

Household ammonia (containing at least 3% active), agricultural ammonia such as Finish or Flush are recommended. When tank mixing a Group 2 herbicide with a petroleum based formulation or adjuvant, add a detergent at 0.25L/100 L to the ammonia rinse. The detergent breaks down the petroleum coating to allow the ammonia access to the Group 2 product.

4. Flush the cleaning solution through the entire sprayer system and then add more water to completely fill the tank. The use of top-mounted tank rinse nozzles allow for a reduction in use of rinse volume by utilizing 3 rinses totaling 10% of the tank volume. Sit with agitation for at least 15 minutes or allow to sit overnight.
5. Drain the tank.
6. Remove nozzles, screens and filters and clean separately in a bucket of water and cleaning agent.
7. Thoroughly rinse the tank with clean water for 5 minutes minimum, flushing water throughout the entire sprayer system.

Frequent sprayer cleaning throughout the spraying season with ALL pesticides make any single cleaning operation more efficient and effective.

Assessing the Performance of FMC Herbicides

Establishing a check strip and answering these key questions will help with the performance evaluation of a burnoff, pre-emergent extended weed control or post-emergent in-crop herbicide.

For Pre-Emergent Extended Control Herbicide Performance Assessment

- How much rainfall was received after application and when did it occur?
- What is the soil texture, soil organic matter and pH level?
- What amount of soil disturbance occurred during seeding?
- What was the product application rate?

For Burnoff Herbicide Assessment

- What was the weed stage at time of application?
- What was the temperature 1-2 days prior to application and day of application?
- What was the weed condition at the time of application?
- What is the soil texture, soil organic matter and pH level?

For Post-Emergent In-Crop Control Herbicide Assessment

- What was the crop stage at time of application?
- What was the weed stage at time of application?
- What was the temperature 1-2 days prior to application and day of application?
- What was the crop/weed condition at the time of application?

There is Value in a Check Strip

Untreated check strips are required to determine and easily show the value of the application.

They can help with:

- Conveying the value of an early pre-seed application
- Showing the degree of control against a baseline
- Developing a clearer discussion to evaluate what has or has not occurred

Guidelines for Establishing a Check Strip

Here are some key points to keep in mind when establishing a check strip:

- Is it an area representative of the field for weeds and crops?
- Is there easy access for follow-up?
- How should the check strip be established?
 - By shutting the boom off for 1 - 2 seconds
 - By placing a tarp on the ground prior to spraying
 - Mark the area with flags to find the check strip

Product Storage

Storage requirements		
Heated storage required	Aim® EC	Cygon® 480-AG
	Ally®	Focus®
	Authority® 480	Intruvix™
	Authority® Supreme	Muster® Toss-N-Go
	Barricade® II	Pinnacle® SG Toss-N-Go
	Command® Charge	Pounce® 384 EC
	Command® 360 ME	Predicade®
	Coragen® MaX	
Heated storage NOT required	Carbine™	Refine® M
	Express® FX	Refine® SG
	Express® PRO	Travallas®
	Express® SG	UpBeet®



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