



PRECISIONPAC[®]
APPLICATION INNOVATION

AGRONOMIC **GUIDE**

The flexibility of PrecisionPac[®] herbicides gives growers the power to fully customize their weed control.

The end result is:



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



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PrecisionPac[®] herbicides available: Minimum and Maximum acres per dispense

Product Name	Rate / Acre (g/acre)	MIN Acres	MAX Acres	Bag Size
NC  Non-Crop Weed Control				
NC-00439	7.08	50	320	Medium
NC-0050	6.07	40	320	Medium
DB-878	46.07	20	160	Mega
EC  Extended Weed Control				
SZ-75	57	20	120	Large
PP  Post-Emergent Broadleaf Weed Control				
PP-2525	12.14	20	320	Large
PP-23235	13.15	50	320	Large
PP-3317	12.15	20	320	Large
DB-8454	52.64	20	130	Mega
Triton [®] C	39.14	20	140	Large
Ally [®] (high rate)	3	50	320	Medium
Ally [®] (low rate)	2	50	320	Medium
CS  Cross-Spectrum Grassy and Broadleaf Weed Control				
CS-100-2525	40.14	20	200	Mega
CS-75-2525	33.14	20	220	Mega
CS-100-23235	41.15	50	200	Mega
CS-75-23235	34.15	50	220	Mega
CS-100-12	40	20	200	Mega
CS-75-12	33	20	220	Mega

Non-Crop Weed Control

PRECISION PAC
APPLICATION INNOVATION

- 4 NC-0050 herbicide
- 6 NC-00439 herbicide
- 8 DB-878 herbicide

NC-0050 herbicide

Hard-hitting burnoff weed control with maximum flexibility

PrecisionPac® NC-0050 herbicide gives glyphosate a boost in pre-seed, chemfallow and post-harvest applications. Its systemic activity gets right to the root of your toughest weed problems, yet it leaves you with maximum cropping flexibility so you can seed a wide variety of crops 24 hours after application. As a PrecisionPac herbicide, you also get the flexibility to customize your package size to fit your sprayer tank or field size.

Weeds Controlled (NC-0050 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
Common chickweed 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 ¹	Canada thistle ¹	Rosette
¹ Suppression. [†] Original 360 g/L formulation		

PrecisionPac NC-0050 herbicide plus glyphosate on dandelion (Pre-seed burnoff)



NC-0050 15 g/ha + glyphosate (833mL/ha)

Untreated

Olds, AB, 2020 18 DAA

NC-0050 herbicide

% Tank-mix Options: PrecisionPac[®] NC-0050 herbicide can be tank-mixed with any glyphosate product: Aim[®] EC herbicide, Authority[®] 480 herbicide (faba bean, field pea, soybean), 2,4-D Ester (summer fallow and post harvest), Authority[®] Supreme herbicide (field peas and soybeans) and Focus[®] herbicide (spring and winter wheat, soybeans).

🕒 Timing: Add PrecisionPac NC-0050 herbicide to your glyphosate for:

- pre-seed
- chemfallow
- post-harvest applications

🔄 Crop Rotation:

Pre-seed burnoff: Seed spring wheat, winter wheat, durum, barley, oats, alfalfa*, red clover*, alsike clover* (seed or forage production), smooth brome grass*, meadow brome grass*, timothy* and creeping red fescue*, canary seed and pulse crops** (including chickpeas, dry bean, faba bean, field pea, lentils, lupin and soybean) 24 hours after application.

**Note: injury may occur on coarse-textured soils, low in organic matter (less than 3%) or in fields with variable soils, gravely areas, sandy areas or eroded knolls. Avoid planting crops in soils containing more than 50% sand. 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. Any of the above crops can be seeded 24 hours after application. Two (2) months after application, you can also seed canola, flax.

Fall application: Seed winter wheat 24 hours after application. Next spring you can seed any spring wheat (including durum), spring barley, oats, red clover, alsike clover, smooth brome grass, meadow brome grass, timothy, creeping red fescue, canola, flax, canary seed, field corn, alfalfa or pulse crops (including chickpeas, dry bean, faba bean, field pea, lentils, lupin and soybean) or the fields may be summerfallowed. To seed canola, flax or field corn the following spring after a fall application, contact FMC for specific timing of the fall application.

? Application Information:

Rates: 6.07 g/ac

Acres per grower bag: Minimum: 40 acres; **Maximum:** 320 acres

Surfactant: Not required when tank-mixed with a minimum of 0.5 L/ac equivalent of glyphosate. If applying less than 0.5 L/ac glyphosate rate, the addition of a recommended non-ionic surfactant (NIS) at 3.5 L per 1000 L of spray solution (0.35% v/v) is required.

Water Volume: Minimum 5 imp. gal/ac

Mixing Instructions: For complete mixing instructions, see page 46.

Rainfastness: If rain occurs soon after application control may be reduced. Environmental conditions that slow the drying of the spray mixture on the foliage such as high relative humidity, cool air temperatures or cloud cover, may increase the time required.

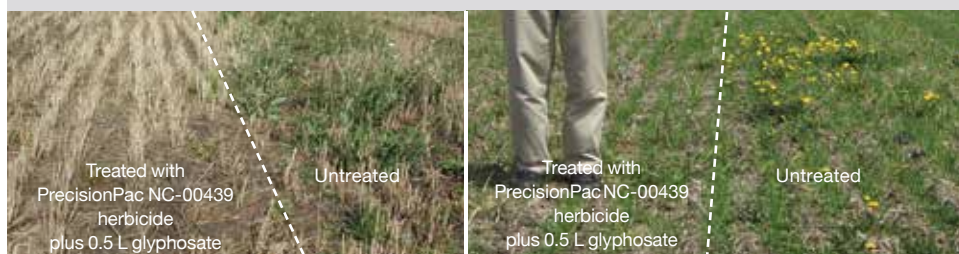
NC-00439 herbicide

Multi-active burnoff with extended control

PrecisionPac® NC-00439 herbicide offers extended control of key broadleaf weeds in pre-seed, chemfallow and post-harvest applications. It can be applied up to 24 hours prior to seeding wheat (spring, durum, winter) or spring barley. When tank-mixed with glyphosate, PrecisionPac NC-00439 herbicide can provide up to 15 days of extended control* on some of the toughest weeds in your fields, including cleavers, dandelion, narrow-leaved hawk's-beard and volunteer canola.

Weeds Controlled (NC-00439 herbicide plus 0.5 L/ac glyphosate equivalent) [†] :		Stage
Canada fleabane Cleavers^E Common ragweed	Narrow-leaved hawk's-beard^E Scentless chamomile Night flowering catchfly ¹	Up to 8 cm
Chickweed		1 - 6 leaf
Dandelion^E 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^{E*} (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 ¹	Rosette
¹ Suppression. [†] Original 360 g/L formulation. ^E Extended control. ^{E*} Will not provide extended control of Group 2 herbicide tolerant canola.		

PrecisionPac NC-00439 herbicide plus glyphosate



*Degree and duration of extended control is dependent on weed infestation levels and environmental conditions at and following application.

NC-00439 herbicide

% Tank-mix Options: PrecisionPac® NC-00439 herbicide can be tank-mixed with any glyphosate product, Aim® EC herbicide and Focus® herbicide (spring and winter wheat).

🕒 Timing: Pre-seed: Wait a minimum of 24 hours after the application of PrecisionPac NC-00439 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 or fields may be summerfallowed.

Note: Limit of one application of PrecisionPac NC-00439 or any other herbicide containing metsulfuron, per growing season.

🔄 Crop Rotation:

24 hours: Fields treated with PrecisionPac NC-00439 herbicide may be seeded to wheat (spring, durum or winter) or spring barley

10 months: Canola, dry beans, fababeans, field corn, flax, lentils, peas and soybeans.

Post Harvest: Wheat (spring, durum), barley, oats may be seeded anytime in the following season.

❓ Application Information:

Rates: 7.08 g/ac

Acres per grower bag: Minimum: 50 acres; **Maximum:** 320 acres

Surfactant: Not required when tank-mixed with a minimum of 0.5 L/ac equivalent of glyphosate. If applying less than 0.5 L/ac glyphosate rate, the addition of a recommended non-ionic surfactant (NIS) at 3.5 L per 1000 L of spray solution (0.35% v/v) is required.

Water Volume: Minimum 5 imp. gal/ac

Mixing Instructions: For complete mixing instructions, see page 46.

Rainfastness: If rain occurs soon after application, control may be reduced. Environmental conditions that slow the drying of the spray mixture on the foliage, such as high relative humidity, cool air temperatures or cloud cover, may increase the time required.

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Refer to the PrecisionPac NC-00439 herbicide label for complete use instructions.

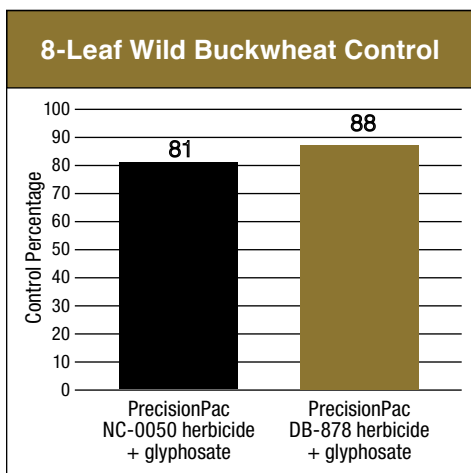
DB-878 herbicide

Resistance management customized to your weed spectrum

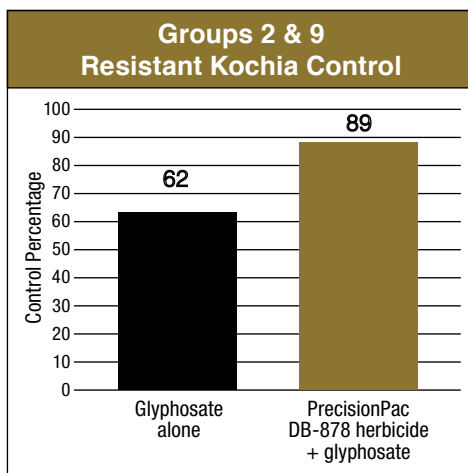
PrecisionPac® DB-878 herbicide is a customized burnoff add-in that gets right to the root of your toughest weed problems in wheat (spring, durum or winter), spring barley and oats. Because of its built-in multiple modes of action, PrecisionPac DB-878 herbicide provides an excellent resistance management tool for pre-seed control of key broadleaf weeds like kochia, narrow-leaved hawk's-beard, dandelion and wild buckwheat.

Weeds Controlled (DB-878 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 [†]	Up to 8 cm
Cleavers Dandelion Downy brome Flixweed Giant foxtail Green foxtail Hemp-nettle Lady's-thumb Lamb's-quarters Persian darnel	Redroot pigweed Russian thistle Stinkweed Volunteer barley Volunteer canola (including glyphosate-tolerant varieties) Volunteer flax Volunteer wheat Wild mustard Wild oats	Up to 15 cm
Cow cockle		Up to 3 leaf
Wild buckwheat		Up to 8 leaf
Canada thistle [†]	White cockle [†]	Rosette

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



Source: FMC Trials, 2017, 42-53 DAA with no crop competition



Source: FMC Trials, 2015, 39-57 DAA

DB-878 herbicide

% Tank-mix Options: PrecisionPac® DB-878 herbicide must be tank-mixed with a glyphosate product, Aim® EC herbicide, 2,4-D Ester and Focus® herbicide (spring and winter wheat).

🕒 Timing: Add PrecisionPac DB-878 herbicide to your glyphosate for pre-seed, chemfallow or post-harvest.

Pre-seed burnoff: May be seeded to wheat (spring, durum or winter), spring barley or oats a minimum of 24 hours after application.

Chemfallow: May be seeded to any crop the following season.

Post-harvest: May be spring seeded to spring and durum wheat, barley and oats. To seed canola, field corn, lentils, soybean, or white beans the spring after a fall application, contact FMC for specific timing of the fall application.

? Application Information:

Rates: 46.07 g/ac

Acres per grower bag: Minimum: 20 acres; **Maximum:** 160 acres

Surfactant: Not required when tank-mixed with a minimum of 0.5 L/ac equivalent of glyphosate.

Water volume: Minimum 5 imp. gal/ac

Mixing Instructions: For complete mixing instructions, see page 46.

Rainfastness: If rain occurs soon after application, control may be reduced. Environmental conditions that slow the drying of the spray mixture on the foliage, such as high relative humidity, cool air temperatures or cloud cover, may increase the time required.

Extended Weed Control

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12 SZ-75 Herbicide

SZ-75 herbicide

Give your crop the clean start it deserves

PrecisionPac® SZ-75 herbicide is a flexible pre-emergent Group 14 herbicide for soybeans, field peas, flax, chickpeas and sunflowers.

PrecisionPac SZ-75 herbicide has best in class control of kochia, including Group 2 and 9 resistant biotypes.

Only use PrecisionPac SZ-75 or any product containing sulfentrazone one out of every two years.


Weeds controlled

Kochia (including Group 2, 4 and 9 bio types)



SZ-75 on chickpeas, Gravelbourg, SK. 3 foot drill miss. 57 g/ac applied May 2, 2020. Picture taken June 9, 2020

SZ-75 herbicide

 **Crops:** Chickpeas, field peas, flax, sunflowers, soybeans

 **Tank-mix Options:**

- **Glyphosate**
- **Express® SG herbicide + glyphosate** (Consult the tank-mix partner label for specific application use and restrictions. Always follow the most restrictive label)
Crops: field peas and soybeans.
- **Aim® EC herbicide**

 **Timing:**

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

Note: PrecisionPac® SZ-75 herbicide requires 1/2" of rainfall for activation. For best control, SZ-75 Herbicide should be applied when there are no weeds present or a postemergence herbicide is tank mixed to remove emerged weeds.

 **Crop Rotation:**

Anytime: Chickpeas, field peas, flax, soybeans, sunflowers

4 months: Winter wheat

12 months: Alfalfa, barley, canola, field corn

24 months: Lentils, sorghum, sweet corn, popcorn

 **Application Information:**

Rates: 57 g/ac

Acres per grower bag: Minimum: 20 acres; Maximum: 120 acres

Water volume: Minimum 10 imp gal/ac

If tank-mixing with glyphosate, use glyphosate at a rate of 450 g ae/ha.

PrecisionPac SZ-75 herbicide should be applied in a uniform broadcast soil application.

Restrictions:

Make one pre-plant or pre-emergence application per season.

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

Do not apply in fine-textured soils with less than 1.5% organic matter.

Do not use on any type of soils with an organic matter content greater than 6%.

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

Do not tank mix with Chateau® herbicides (flumioxazin) or with other products containing sulfentrazone.

Post-Emergent Broadleaf Weed Control

Post-Emergent
Weed Control

PRECISIONPAC[®]
APPLICATION INNOVATION

- 16 PP-2525 herbicide
- 18 PP-23235 herbicide
- 20 PP-3317 herbicide
- 22 DB-8454 herbicide

PP-2525 herbicide

Gentle on crops, tough on the toughest weeds

For consistent in-crop weed control in spring wheat, winter wheat, durum, barley and oats*, PrecisionPac® PP-2525 herbicide controls a wide spectrum of weeds, including narrow-leaved hawk's-beard, hemp-nettle, redroot pigweed, cow cockle and volunteer canola. A fit in all major soil zones, PrecisionPac PP-2525 herbicide offers tank-mix and re-cropping flexibility.

* only when tank-mixed with MCPA Ester






Major weeds controlled		
Annual smartweed	Kochia ¹ (including Group 2 resistant biotypes, seedling up to 10 cm)	Scentless chamomile ²
Cleavers ¹	Lamb's-quarters	Shepherd's-purse ¹
Common chickweed (1–6 leaf)	Narrow-leaved hawk's-beard	Stinkweed
Cow cockle	Night flowering catchfly	Stork's-bill ¹
Dandelion ²	Redroot pigweed	Volunteer canola ³
Flixweed	Round-leaved mallow ¹	Volunteer flax ¹
Hemp-nettle	Russian thistle	Wild buckwheat
	Perennial sow thistle	Wild mustard
		White cockle ²
Weeds suppressed		
Canada thistle (≤15 cm)		
¹ For control, tank-mix with Perimeter® II.		
² For control, tank-mix with MCPA Ester.		
³ Tank-mix with MCPA Ester to control Group 2 herbicide tolerant canola.		

Wild buckwheat control



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PP-2525 herbicide

-  **Crops:** Wheat (spring, durum, winter), barley and oats*
** only when tank-mixed with MCPA Ester*
-  **Tank-mix Options:**
 - 2,4-D Ester 700LV:** Enhanced broadleaf weed control.
 - Axial®:** Wild oats control in spring wheat and barley.
 - Axial® + MCPA Ester:** Wild oats and broadleaf weed control (including volunteer Clearfield® canola varieties) in spring wheat and barley.
 - Axial® Xtreme:** Wild oats and broadleaf weed control including kochia and cleavers in spring wheat and barley.
 - Banvel® II:** Extended broadleaf weed control, plus Group 2-resistant kochia.
 - Everest® 3.0:** One-pass grass and broadleaf weed control in spring wheat.
 - Clodinafop:** One-pass grass and broadleaf weed control in spring and durum wheat.
 - MCPA Ester:** Enhanced broadleaf weed control.
 - Perimeter® II:** For added broadleaf control including cleavers and kochia.
 - Puma® Advance:** One-pass grass and broadleaf weed control.
 - Simplicity™ GoDri™:** One-pass grass and broadleaf weed control in spring and durum wheat.
 - Traxos®:** Wild oats and broadleaf weed control in spring and durum wheat.
 - Varro™:** One-pass grass and broadleaf weed control in spring and durum wheat.
-  **Timing:** **Wheat (spring, durum and winter) and barley:** 2-leaf to just before the flag leaf.
Oats with the addition of MCPA Ester: 3-leaf to just before the flag leaf.
-  **Crop Rotation: Two (2) months:** Alfalfa, canola, flax and lentils.
Following growing season: All crops.
-  **Application Information:**
 - Rates:** 12.14 g/ac
 - Acres per grower bag: Minimum:** 20 acres; **Maximum:** 320 acres
 - Surfactant:** Add a registered surfactant such as Agral® 90, Ag-Surf®, Liberate Adjuvant, Ag-Surf® II, HiActivate® Non-ionic Liquid Spreader/Activator, Super Spreader Adjuvant or Enhance® at a rate of 2 L per 1000 L spray solution when used alone or when tank mixing with 2, 4-D Ester or Perimeter II. When tank-mixing with a grass herbicide, use the surfactant provided with the product.
 - Water Volume:** Minimum 5 imp. gal/ac.
 - Rainfastness:** One (1) hour
 - Mixing Instructions:** For complete mixing instructions, see page 46.
 - PrecisionPac PP-2525 herbicide is also registered for aerial application.**

PP-23235 herbicide

Biennial and perennial weed specialist for dark brown, black and grey soil zones

PrecisionPac® PP-23235 herbicide provides premium control of a broad spectrum of weeds, with particularly good performance on perennial and biennial weeds.

Major weeds controlled

Annual smartweed	Kochia ²	Shepherd's-purse (up to 20 cm)
Annual sow thistle*	Lamb's-quarters	Stinkweed
Canada thistle ¹ (top growth)	Narrow-leaved hawk's-beard (Up to 20cm)	Stork's-bill
Cleavers ² (1-6 whorl)	Night-flowering catchfly	Volunteer canola** (2-4 leaf stage)
Common chickweed (up to 6 leaf)	Perennial sow thistle	Volunteer flax ² (up to 12cm in height)
Cow cockle	Redroot pigweed	White cockle
Dandelion (spring or fall rosettes up to 20 cm in diameter)	Round-leaved mallow (1-6 leaf)	Wild buckwheat
Flixweed	Russian thistle	Wild mustard
Hemp-nettle	Scentless chamomile	

¹ Suppression.

² For control tank-mix with Perimeter® II

* For control, tank-mix with MCPA Ester.

** Including Group 2 herbicide tolerant canola when tank-mixed with MCPA.

Note: DO NOT use PrecisionPac PP-23235 herbicide in the same year if you've used a pre-seed burnoff with PrecisionPac® NC-00439 herbicide or Express® PRO herbicide.

Volunteer canola control



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PP-23235 herbicide

 **Crops:** Wheat (spring, durum) and barley

 **Tank-mix Options:**

2,4-D Ester LV 700: For enhanced broadleaf weed control.

Axial® + Perimeter® II: Wild oats and broadleaf weed control in spring wheat and barley.

Axial® + MCPA Ester + Perimeter II: Wild oats and broadleaf weed control (including volunteer Clearfield® canola varieties) in spring wheat and barley.

Axial® Xtreme: Wild oats and broadleaf weed control including kochia and cleavers in spring wheat and barley.

Everest® 3.0: One-pass grass and broadleaf weed control in spring wheat.

Clodinafop: Wild oat, green foxtail and broadleaf weed control in spring and durum wheat.

Perimeter II: For added broadleaf control, including cleavers and kochia.


Perimeter II + MCPA Ester: For added broadleaf weed control (including volunteer Clearfield canola varieties) in spring wheat and barley.

Puma® Advance: One-pass grass and broadleaf weed control.

Varro™: One-pass grass and broadleaf weed control in spring and durum wheat.

Simplicity™ GoDri™ : One-pass grass and broadleaf weed control in spring and durum wheat.

 **Timing: Wheat (spring, durum) and barley:** 2-leaf to just before the flag leaf

 **Crop Rotation: 10 months:** Canola, lentils, dry beans, faba beans, field corn, soybeans, oats, field peas and flax.

 **Application Information:**

Rates: 13.15 g/ac

Acres per grower bag: Minimum: 50 acres; **Maximum:** 320 acres

Surfactant: Add a registered surfactant such as Agral® 90, Ag-Surf®, Liberate Adjuvant, Ag-Surf® II, HiActivate® Non-ionic Liquid Spreader/Activator, Super Spreader Adjuvant or Enhance® at a rate of 2 L per 1000 L spray solution when used alone or when tank mixing with 2, 4-D Ester or Perimeter II. When tank-mixing with a grass herbicide, use the surfactant provided with the product.

Water Volume: Minimum 5 imp. gal/ac.

Rainfastness: One (1) hour.

Mixing Instructions: For complete mixing instructions, see page 46.

PP-3317 herbicide

Proven performance with maximum flexibility

PrecisionPac® PP-3317 herbicide delivers exceptional value with proven performance on wild buckwheat (up to the 5-leaf stage), hemp-nettle, narrow-leaved hawk's-beard and chickweed in spring wheat, durum, barley, oats and winter wheat. You can further customize your weed control with 20 tank-mix options, including Perimeter® II for improved control of kochia and cleavers. Plus, it leaves you with complete re-cropping flexibility the following year.

Major weeds controlled

Ball mustard	Hemp-nettle	Stinkweed
Chickweed (1–6 leaf)	Lady's-thumb	Tartary buckwheat
Common groundsel	Lamb's-quarters	Volunteer canola ¹
Corn spurry	Narrow-leaved hawk's-beard	Volunteer sunflower
Cow cockle	Redroot pigweed	Wild buckwheat (up to the 5-leaf stage)
Flixweed	Russian thistle	Wild mustard
Green smartweed	Shepherd's purse	

Weeds suppressed

Canada thistle	Scentless chamomile	Stork's-bill (2–6 leaf)
Cleavers (1-3 whorls)	Sow-thistle	Toadflax
Round-leaved mallow		

¹For control of Group 2 herbicide tolerant varieties tank-mix with MCPA Ester.

Wild buckwheat



One (1) week after application

Three (3) weeks after application

PP-3317 herbicide

Crops: Wheat (spring, durum, winter), barley, oats and grass species (forage and seed production), meadow brome grass, pubescent wheatgrass, smooth brome grass, tall wheatgrass, creeping red fescue, slender wheatgrass, tall fescue, streambank wheatgrass, orchard grass, northern wheatgrass, crested wheatgrass, western wheatgrass, intermediate wheatgrass, Kentucky bluegrass (established only)

Tank-mix Options:

- 2,4-D
- Assert®
- Attain®
- Axial®
- Axial® Xtreme
- Banvel® II
- Curtail® M
- Clodinafop
- Everest 3.0,
- Everest 3.0 + 2,4-D (Amine or Ester)
- Lontrel™
- MCPA
- Perimeter® II
- Puma® Advance
- Simplicity™ GoDri™
- Traxos® (wild oats only)
- Varro®

Timing: Wheat (spring, durum, winter), oats, barley and grass stands: 2-leaf to full flag leaf

Crop Rotation: Two (2) months: Alfalfa, canola, flax, and lentils
Following year: No re-cropping restrictions

Application Information:

Rates: 12.15 g/ac

Acres per grower bag: Minimum: 20 acres; **Maximum:** 320 acres

Surfactant: Add a registered non-ionic surfactant (NIS) at 2 L per 1000 L of spray solution. When tank-mixing with a grass herbicide, use the surfactant provided with the product.

Water Volume: Minimum 5 imp. gal/ac

Rainfastness: One (1) hour

Aerial Application: PrecisionPac® PP-3317 herbicide is registered for aerial application. See label for further details.

Mixing Instructions: Ensure that PrecisionPac PP-3317 herbicide is fully dissolved before adding tank-mix partners. For complete mixing instructions, see page 46.

DB-8454 herbicide

Weed control for the brown soil zone

PrecisionPac® DB-8454 herbicide provides control of the toughest weeds in the brown soil zones, especially when it comes to annual weeds like wild buckwheat, stinkweed, volunteer canola and flixweed. It also offers solid control of Group 2-resistant kochia, narrow-leaved hawk's-beard, dandelion and Russian thistle. It contains both Groups 2 and 4 to help manage weed resistance and can be used in spring wheat, durum and barley.

Major weeds controlled		
Dandelion (spring or fall rosettes <15 cm in diameter)	Kochia (including Group 2-resistant) Narrow-leaved hawk's-beard	Russian thistle Wild buckwheat (up to 5-leaf)
Also controls		
Annual smartweed (Green smartweed and Lady's-thumb)	Corn spurry Cow cockle Flixweed	Shepherd's purse Stinkweed Tartary buckwheat
Ball mustard	Hemp-nettle	Volunteer canola*
Chickweed (1–6 leaf)	Lamb's-quarters	Volunteer sunflower
Common groundsel	Redroot pigweed	Wild mustard
Weeds suppressed		
Canada thistle	Scentless chamomile	Stork's-bill (2–6 leaf)
Cleavers (1–3 whorls)	Sow thistle (<15 cm in height)	Toadflax (<15 cm in height)
Round-leaved mallow (2-6 leaf)		
*excluding group 2 herbicide tolerant canola		

DB-8454 herbicide

Crops: Wheat (spring, durum) and barley

Tank-mix Options:

Traxos®: One-pass grass and broadleaf weed control in spring and durum wheat.

Clodinafop: One-pass grass and broadleaf weed control in spring and durum wheat.

Everest® 3.0: One-pass grass and broadleaf weed control in spring and durum wheat.

Timing: Wheat (spring, durum) and barley: 2-leaf to 5-leaf

Crop Rotation: Any crop can be seeded the year following the application of PrecisionPac® DB-8454 herbicide.

Application Information:

Rates: 52.64 g/ac

Acres per grower bag: Minimum: 20 acres; Maximum: 130 acres

Surfactant: Add a registered surfactant such as Agral® 90, Ag-Surf® or Citowett® Plus at a rate of 2 L per 1000 L of spray solution. When tank-mixing with a grass herbicide, use the surfactant provided with the product.

Water Volume: Minimum 5 imp. gal/ac

Rainfastness: Four (4) hours

Aerial Application: PrecisionPac DB-8454 herbicide is registered for aerial application. See label for further details.

Mixing Instructions: Ensure that PrecisionPac DB-8454 herbicide is fully dissolved. Reduce agitation then add tank-mix partner. If required, add the surfactant last. For complete mixing instructions, see page 46.

POWERED BY SOLUMAX®



Refer to the PrecisionPac DB-8454 herbicide label for complete use instructions.

Cross-Spectrum Grassy and Broadleaf Weed Control

PRECISIONPAC
APPLICATION INNOVATION

- 26 CS-100-2525 herbicide
- 28 CS-75-2525 herbicide
- 30 CS-100-23235 herbicide
- 32 CS-75-23235 herbicide
- 34 CS-100-12 herbicide
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- 38 PrecisionPac® Cross Spectrum herbicides

CS-100-2525 herbicide

One-pass grassy and broadleaf weed control tailored to your farm

PrecisionPac® CS-100-2525 herbicide offers tailor-made, one pass weed control for spring and durum wheat. PrecisionPac CS-100-2525 herbicide delivers outstanding control of your toughest broadleaf and grassy weeds, including Group 1-resistant wild oats, Japanese brome, dandelion¹ and narrow-leaved hawk's-beard. As a PrecisionPac herbicide, you also get the flexibility to customize your package size to fit your sprayer tank or field size.

Grassy weeds controlled

Barnyard grass (1-5 leaf)	Green foxtail ¹ (1-5 leaf)	Wild oats (up to 4 leaf, 2 tiller)
Downy brome ¹ (2-6 leaf, 4 tiller)	Japanese brome (1-6 leaf)	Yellow foxtail (1-5 leaf)

Broadleaf weeds controlled

Annual smartweed	Flixweed	Russian thistle
Canada thistle ¹ (up to 30 cm tall, pre-bud)	Hemp-nettle	Shepherd's purse (up to 20 cm tall)
Cleavers (up to 6 whorl)	Kochia ³	Stinkweed (up to 30 cm tall)
Common chickweed (up to 10 cm)	Lamb's-quarters	Stork's bill ³ (1-6 leaf)
Corn spurry (up to 2 whorl stage, <10 cm in height)	Narrow-leaved hawk's-beard	Volunteer tolerant canola ² (1-6 leaf)
Cow cockle	Night flowering catchfly	Volunteer flax ³ (up to 12 cm in height)
Dandelion ¹ (seedlings and overwintered rosettes less than or equal to 20 cm)	Perennial sow thistle	Wild buckwheat
	Redroot pigweed	Wild mustard
	Round-leaved mallow (up to 6 leaf stage, <10 cm in size)	

¹ Suppression.

² Tank-mix with MCPA Ester to control Group 2 tolerant canola.

³ For control tank-mix with Perimeter® II herbicide

Outstanding grassy and broadleaf weed control in seeding miss



PrecisionPac CS-100-2525 herbicide. 13 DAA



Untreated Check

Source: Carman, MB, 2016

CS-100-2525 herbicide

Crops: Wheat (spring and durum)

Tank-mix Options:

Perimeter® II: For added broadleaf control including kochia (including Group 2 resistant biotypes; seedling to 8-leaf stage), volunteer flax (up to 12 cm in height) and stork's bill (1-6 leaf).

2,4-D Ester: For added control of kochia (including group 2 resistant biotypes)

MCPA Ester: For control of volunteer Group 2 herbicide tolerant canola, dandelion, scentless chamomile and white cockle.

Timing: Spring and durum wheat: 3 leaf to before the flag leaf stage

Crop Rotation: 11 months: barley, brown mustard, canola, dry bean (of the species *Phaseolus vulgaris*), flax, canola quality Brassica juncea, lentils, oats, field peas, chickpea, spring wheat, soybean and yellow mustard or fields can be summerfallowed.
10 months: sunflower and potatoes.

Application Information:

Rates: Full Spectrum– 40.5 g/ac

Acres per grower bag: **Minimum:** 20 acres; **Maximum:** 200 acres

Surfactant: Add Agral® 90, Liberate® Adjuvant, Ag-Surf® II, HiActivate® Non-ionic Liquid Spreader/Activator, Super Spreader Adjuvant, Enhance®, Pro-Surf® II or Sentry® at 2.5 L per 1000 L of spray solution.

Water Volume: 5-10 imp. gal/ac

Rainfastness: Two (2) hours

Mixing Instructions: Ensure that PrecisionPac® CS-100-2525 herbicide is fully dissolved before adding tank-mix partners. For complete mixing instructions, see page 46.

PrecisionPac CS-100-2525 herbicide is also registered for aerial application.

Excellent wild buckwheat control



Source: Carman, MB, 2016. 29 DAA

CS-75-2525 herbicide

Great weed control, exceptional value


PrecisionPac® CS-75-2525 herbicide is a cost-effective, all-in-one solution for controlling lower wild oat populations that combines a reduced rate of our Group 2 graminicide with PrecisionPac PP-2525 herbicide. That way, you get wild oat activity without compromising on exceptional broadleaf weed control in your spring and durum wheat.

Grassy weeds controlled		
Wild oats* (up to 4 leaf, 2 tiller)		
Broadleaf weeds controlled		
Annual smartweed	Kochia ⁴	Stinkweed
Canada thistle ¹	Lamb's-quarters	Stork's bill ⁴ (1-6 leaf)
Cleavers ⁴ (1-6 whorl)	Narrow-leaved hawk's-beard	Volunteer canola ² (1-6 leaf)
Common chickweed (1-6 leaf)	Night flowering catchfly	Volunteer flax ⁴ (up to 12 cm in height)
Cow cockle	Perennial sow thistle	White cockle ³
Dandelion ³ (spring and fall rosettes, up to 15 cm in diameter)	Redroot pigweed	Wild buckwheat
Flixweed	Round-leaved mallow	Wild mustard
Hemp-nettle	Russian thistle	
	Scentless chamomile ³	
*For control of low wild oat populations (<75 plants/m ²) only		
¹ Suppression		
² Tank-mix with MCPA Ester to control Group 2 herbicide tolerant canola		
³ When tank-mixed with MCPA		
⁴ For control tank-mix with Perimeter® II herbicide		

Excellent wild buckwheat control



CS-75-2525 herbicide

 **Crops:** Wheat (spring and durum)

 **Tank-mix Options:**

Perimeter® II: For added broadleaf control including cleavers, kochia, stork's-bill and volunteer flax

2,4-D Ester: For additional kochia control, including group 2 biotypes

MCPA Ester: For control of volunteer Group 2 herbicide tolerant canola, dandelion, scentless chamomile and white cockle.

 **Timing:** Spring and durum wheat (3-leaf to before the flag leaf stage)

 **Crop rotation:**

11 months: Barley, brown mustard, canola, dry bean (of the species *Phaseolus vulgaris*), flax, canola quality Brassica juncea, lentils, oats, field peas, chickpea, spring wheat, soybean and yellow mustard or fields can be summerfallowed

10 months: Sunflower and potatoes

 **Application Information:**

Rates: 33.14 g/ac use when wild oat populations are <75 plants/m²

Acres per grower bag: Minimum: 20 acres; **Maximum:** 220 acres

Surfactant: Add a registered non-ionic surfactant (NIS) such as: Agral® 90, Liberate® Adjuvant, Ag-Surf® II, HiActivate® Non-ionic Liquid Spreader/Activator, Super Spreader Adjuvant, Enhance, Pro-Surf® II or Sentry® at 2.5 L per 1000 L of spray solution.

Rainfastness: Two (2) hours

Water volume: 5-10 imp gal/ac

Mixing Instructions: Ensure that PrecisionPac® CS-75-2525 herbicide is fully dissolved before adding tank-mix partners. For complete mixing instructions, see page 46.

PrecisionPac CS-75-2525 herbicide is also registered for aerial application.

CS-100-23235 herbicide

One pass, one solution for your most challenging fields

PrecisionPac® CS-100-23235 herbicide is a new, all-in-one blend for the dark brown, black and grey soil zones that combines our Group 2 graminicide and PrecisionPac PP-23235 herbicide together for uncompromising control of broadleaf and grassy weeds in spring and durum wheat.

Grassy weeds controlled

Barnyard grass (1-5 leaf)	Green foxtail ¹ (1-5 leaf)	Wild oats (up to 4 leaf, 2 tiller)
Downy brome ¹ (2-6 leaf, 4 tillers)	Japanese brome (1-6 leaf)	Yellow foxtail (1-5 leaf)
	Persian darnel ¹ (1-4 leaf, 2 tiller)	

Broadleaf weeds controlled

Annual smartweed (green smartweed, lady's-thumb)	Flixweed	Scentless chamomile
Annual sow thistle ³	Hemp-nettle	Shepherd's purse (up to 30 cm)
Canada thistle ¹	Kochia ⁴	Stinkweed
Cleavers (1-6 whorl)	Lamb's-quarters	Stork's bill
Common chickweed (up to 10 cm)	Narrow-leaved hawk's-beard (up to 20 cm)	Volunteer canola ² (1-6 leaf)
Corn spurry (up to 2 whorl stage, <10 cm in height)	Night flowering catchfly	Volunteer flax ⁴
Cow cockle	Perennial sow thistle	White cockle
Dandelion (spring or fall rosettes up to 20 cm in height)	Redroot pigweed	Wild buckwheat
	Round-leaved mallow (1-6 leaf, <10 cm in size)	Wild mustard
	Russian thistle	

¹ Suppression

² Including Group 2 herbicide tolerant canola varieties when tank-mixed with MCPA Ester.

³ When tank-mixed with MCPA Ester

⁴ When tank-mixed with Perimeter® II Herbicide


Volunteer canola control



Night-flowering catchfly



CS-100-23235 herbicide

 **Crops:** Wheat (spring and durum)

 **Tank-mix Options:**

Perimeter® II: For added broadleaf control including volunteer flax and kochia

2,4-D Ester: For additional kochia control, including group 2 biotypes

MCPA Ester: For control of volunteer Group 2 herbicide tolerant canola and annual sow thistle

 **Timing:** Spring and durum wheat (3-leaf to before the flag leaf stage)

 **Crop rotation:**

10 months: Field corn

11 months: Barley, canola, dry beans, flax, lentils, oats, peas, soybeans and spring wheat

 **Application Information:**

Rates: 41.15 g/ac

Acres per grower bag: Minimum: 50 acres; **Maximum:** 200 acres

Surfactant: Add a registered non-ionic surfactant (NIS) such as Agral® 90, Liberate® Adjuvant, Ag-Surf® II, HiActivate® Non-ionic Liquid Spreader/Activator, Super Spreader Adjuvant, Enhance®, Pro-Surf® II or Sentry® at 2.5 L per 1000 L of spray solution.

Rainfastness: Two (2) hours

Water volume: 5-10 imp gal/ac

Mixing Instructions: Ensure that PrecisionPac® CS-100-23235 herbicide is fully dissolved before adding tank-mix partners. For complete mixing instructions, see page 46.

CS-75-23235 herbicide

Wild oat activity, broadleaf performance, exceptional value

PrecisionPac® CS-75-23235 herbicide combines a reduced rate of our Group 2 graminicide and PrecisionPac PP-23235 herbicide in a cost-effective, all-in-one solution that delivers wild oat activity and exceptional broadleaf weed control for your spring and durum wheat.

Grassy weeds controlled

Japanese brome (1-4 leaf, 2 tiller; under good growing conditions)

Wild oats* (up to 4 leaf, 2 tiller)

Broadleaf weeds controlled

Annual smartweed (green smartweed, lady's-thumb)

Kochia³

Stinkweed

Annual sowthistle⁴

Lamb's-quarters

Stork's bill

Canada thistle¹ (up to 15 cm)

Narrow-leaved hawk's-beard (up to 20 cm)

Volunteer canola² (2-4 leaf)

Cleavers³

Night flowering catchfly

Volunteer flax³ (up to 12 cm in height)

Common chickweed (1-6 leaf)

Perennial sow thistle

White cockle

Cow cockle

Redroot pigweed

Wild buckwheat

Dandelion (spring or fall rosettes up to 20 cm in diameter)

Round-leaved mallow (1-6 leaf)

Wild mustard

Flixweed

Russian thistle

Hemp-nettle

Scentless chamomile

*For control of low wild oat populations (<75 plants/m²)

¹ Suppression

² Including Group 2 herbicide tolerant when tank-mixed with MCPA Ester.


³ When tank-mixed with Perimeter® II Herbicide

⁴ When tank-mixed with MCPA Ester

Volunteer canola control



CS-75-23235 herbicide

 **Crops:** Wheat (spring and durum)

 **Tank-mix Options:**

Perimeter® II: For added broadleaf control including volunteer flax, cleavers and kochia

2,4-D Ester: For additional kochia control, including group 2 biotypes

MCPA Ester: For control of volunteer Group 2 herbicide tolerant canola and annual sow thistle

 **Timing:** Spring and durum wheat (3-leaf to before the flag leaf stage)

 **Crop rotation:**

10 months: Field corn

11 months: Barley, canola, dry beans, flax, lentils, oats, peas, soybeans and spring wheat

 **Application Information:**

Rates: 34.15 g/ac

Acres per grower bag: Minimum: 50 acres; **Maximum:** 220 acres

Surfactant: Add a registered non-ionic surfactant (NIS) such as: Agral® 90, Liberate® Adjuvant, Ag-Surf® II, HiActivate® Non-ionic Liquid Spreader/Activator, Super Spreader Adjuvant, Enhance®, Pro-Surf® II or Sentry® at 2.5 L per 1000 L of spray solution.

Rainfastness: Two (2) hours

Water volume: 5-10 imp gal/ac

Mixing Instructions: Ensure that PrecisionPac® CS-75-23235 herbicide is fully dissolved before adding tank-mix partners. For complete mixing instructions, see page 46.


CS-100-12 herbicide

Customizable control and flexible application timing

For cereal growers, PrecisionPac® CS-100-12 herbicide is an all-new blend that controls a wide range of broadleaf and grassy weeds. PrecisionPac CS-100-12 herbicide is a cost-effective option for growers with lighter broadleaf weed pressure.

Grassy weeds controlled		
Barnyard grass (1-5 leaf)	Green foxtail ¹ (1-5 leaf)	Wild oats (up to 4-leaf, 2 tiller)
Downy brome ¹ (2-6 leaf, 4-tiller)	Japanese brome (1-6 leaf)	Yellow foxtail (1-5 leaf)
	Persian darnel (1 leaf to 4 leaf, 2 tiller) ¹	
Broadleaf weeds controlled		
Canada thistle ¹ (up to 30 cm tall, pre-bud)	Flixweed	Shepherd's purse (up to 30 cm tall)
Cleavers (up to 6 whorl)	Hemp-nettle (1-8 leaf)	Smartweed (lady's-thumb, 1-5 leaf)
Common chickweed	Kochia ³	Stinkweed (up to 30 cm tall)
Corn spurry (up to 2 whorl stage, less than 10 cm height)	Lamb's-quarters	Volunteer canola ² (1-6 leaf)
Cow cockle (up to 8 leaf)	Narrow-leaved hawk's beard (rosette)	White cockle ¹
Dandelion ¹ (seedlings and overwintered rosettes less than or equal to 20 cm)	Redroot pigweed (1-8 leaf)	Wild buckwheat
	Round-leaved mallow (up to 6-leaf, less than 10 cm)	Wild mustard
	Russian thistle	
¹ Suppression. ² Including Group 2 herbicide tolerant when tank-mixed with MCPA Ester ³ When tank-mixed with Perimeter® II		

CS-100-12 herbicide

 **Crops:** Wheat (spring, durum and winter)

 **Tank-mix options for enhanced broadleaf weed control:**

MCPA Ester: For enhanced broadleaf weed control including Group 2 herbicide tolerant canola

Perimeter® II: For added broadleaf control, including kochia

 **Timing:**

Spring and durum wheat: 3 leaf to before flag leaf stage

Winter wheat: Apply in the spring when winter wheat is in the 2-7 leaf, 4 tiller stage

 **Crop rotation:**

11 months: Barley, brown mustard, canola, dry bean (of the species *Phaseolus vulgaris*), flax, canola quality Brassica juncea, lentils, oats, field peas, chickpea, spring wheat, soybean and yellow mustard or fields can be summerfallowed.

10 months: Field corn, sunflower and potatoes

 **Application Information:**

Rates: 40 g/ac

Acres per grower bag: Minimum: 20 acres; **Maximum:** 200 acres

Surfactant: Add a registered non-ionic surfactant (NIS) such as: Agral® 90, Liberate® Adjuvant, Ag-Surf® II, HiActivate® Non-ionic Liquid Spreader/Activator, Super Spreader Adjuvant, Enhance®, Pro-Surf® II or Sentry® at 2.5 L per 1000 L of spray solution.

Rainfastness: Two (2) hours

Water volume: 5-10 imp gal/ac

Mixing Instructions: Ensure that PrecisionPac® CS-100-12 herbicide is fully dissolved before adding tank-mix partners. For complete mixing instructions, see page 46.

PrecisionPac CS-100-12 herbicide is also registered for aerial application.

CS-75-12 herbicide

Meet your new broadleaf weed specialist

PrecisionPac® CS-75-12 herbicide is a new blend for cereal growers that delivers cost-effective control of broadleaf weeds including chickweed, lamb's-quarters and wild buckwheat.

PrecisionPac CS-75-12 herbicide offers farmers an economical solution for growers with low wild oat pressure.

Grassy Weeds Controlled

Wild oats (up to 4 leaf, 2 tiller) for control of wild populations <75 plants/m²
Japanese brome (1 leaf to 4 leaf, 2 tiller; under good growing conditions)

Broadleaf Weeds Controlled


Cleavers ¹	Hemp-nettle	Russian thistle
Common chickweed (1-6 leaf)	Kochia ¹ , Lamb's-quarters	Smartweed (Lady's thumb) Stinkweed
Corn spurry	Narrow-leaved hawk's beard	Volunteer canola ²
Cow cockle	(seedlings and overwintered rosettes prior to bolting) ³	Wild mustard
Green smartweed	Redroot pigweed	Wild buckwheat (1-3 leaf)

¹ Tank-mix with Perimeter® II herbicide for control

² Will control Group 2 herbicide tolerant canola when tank-mixed with MCPA Ester

³ Suppression

CS-75-12 herbicide

 **Crops:** Wheat (spring, durum and winter)

 **Tank-mix Options for enhanced broadleaf weed control:**

MCPA Ester: For enhanced broadleaf weed control including volunteer Group 2 herbicide tolerant canola

Perimeter® II: For added broadleaf control, including cleavers and kochia

 **Timing:**

Spring and durum wheat: 3 leaf to before flag leaf stage

Winter wheat: Apply in the spring when winter wheat is in the 2-7 leaf, 4 tiller stage

 **Crop rotation:**

11 months: Barley, brown mustard, canola, dry bean (of the species *Phaseolus vulgaris*), flax, canola quality Brassica juncea, lentils, oats, field peas, chickpea, spring wheat, soybean and yellow mustard or fields can be summerfallowed.

10 months: Field corn, sunflower and potatoes

 **Application Information:**

Rates: 33 g/ac

Acres per grower bag: Minimum: 20 acres; **Maximum:** 220 acres

Surfactant: Add a registered non-ionic surfactant (NIS) such as: Agral® 90, Liberate® Adjuvant, Ag-Surf® II, HiActivate® Non-ionic Liquid Spreader/Activator, Super Spreader Adjuvant, Enhance®, Pro-Surf® II or Sentry® at 2.5 L per 1000 L of spray solution.

Rainfastness: Two (2) hours

Water volume: 5-10 imp gal/ac

Mixing Instructions: Ensure that PrecisionPac® CS-75-12 herbicide is fully dissolved before adding tank-mix partners. For complete mixing instructions, see page 46.

PrecisionPac CS-75-12 herbicide is also registered for aerial application.

Cross-Spectrum Herbicides Weed Control Summary

	CS- 100-2525	CS- 75-2525	CS- 100-23235	CS- 75-23235	CS- 100-12	CS- 75-12
BROADLEAF WEEDS						
Annual smartweed (green, lady's thumb)	C	C	C	C	C	C
Canada thistle	S	S	S	S	S	
Cleavers (up to 6 whorl)	C		C		C	
Common chickweed (1-6 leaf)	C	C	C	C	C	C
Corn spurry	C		C		C	C
Cow cockle	C	C	C	C	C	C
Dandelion	S		C	C	S	
Flixweed	C	C	C	C	C	
Hemp-nettle	C	C	C	C	C	C
Lamb's-quarters	C	C	C	C	C	C
Narrow-leaved hawk's-beard	C	C	C	C	C	S
Night flowering catchfly	C	C	C	C		
Redroot pigweed	C	C	C	C	C	C
Round-leaved mallow	C		C	C	C	
Russian thistle	C	C	C	C	C	C
Scentless chamomile			C	C		
Shepherd's-purse	C		C		C	
Sow thistle (perennial)	C	C	C	C		
Stinkweed	C	C	C	C	C	C
Stork's-bill			C	C		
Volunteer canola*	C	C	C	C	C	C
White cockle			C	C	S	
Wild buckwheat	C	C	C	C	C	C
Wild mustard	C	C	C	C	C	C
GRASSY WEEDS						
Barnyard grass (1-5 leaf)	C		C		C	
Downy brome (2 - 6 leaf, 4 tillers)	S		S		S	
Green foxtail (1-5 leaf)	S		S		S	
Japanese brome (1-6 leaf)	C		C		C	
Japanese brome (1-4 leaf, 2 tiller)				C		C
Persian darnel (1 to 4 leaf, 2 tiller)			S		S	
Wild oats (up to 4 leaf, 2 tiller) Low population (<75 plants/m ₂)	C	C	C	C	C	C
Wild oats (up to 4 leaf, 2 tiller) High population (>75 plants/m ₂)	C		C		C	
Yellow foxtail (1 - 5 leaf)	C		C		C	

C - Control

S - Suppression

* Excluding Group 2 herbicide tolerant varieties

Apply to young, actively growing weeds that are less than 10 cm in height or diameter, unless otherwise indicated

Cross-Spectrum Herbicides Application Information Summary

	CS-100-2525	CS-75-2525	CS-100-23235	CS-75-23235	CS-100-12	CS-75-12
Rate	40.14 g/ac	33.14 g/ac	41.15 g/ac	34.15 g/ac	40 g/ac	33 g/ac
Crop	Spring wheat and durum				Winter wheat, spring wheat and durum	
Staging	3-leaf to before the flag leaf				Winter wheat: 2-7 leaf, 4 tiller stage Spring wheat and durum: 3-leaf to before the flag leaf	
Ground Application	√	√	√	√	√	√
Water Volume	22 L/acre					
Air Application	√	√	Not Registered		√	√
Water Volume	10 – 20 L/acre When a tank mixture is used, consult the labels of the tank-mix partners					
Comments	Must have 0.25% v/v of registered adjuvant added. Registered adjuvants: Agral® 90, Ag-Surf® II, Liberate Adjuvant, HiActivate® Nonionic Liquid Spreader/Activator, Super Spreader Adjuvant, Enhance®, ProSurf II® and Sentry™					

Registered Tank Mixes

Product	Rate	Additional weeds controlled
Wheat (spring, durum)		
MCPA Ester 500 or MCPA Ester 600	226 ml/ac (MCPA Ester 500) 190 ml/ac (MCPA Ester 600)	CS-100-23235, CS-75-23235: Weeds controlled or suppressed by herbicide alone, as well as annual sow thistle and volunteer Group 2 tolerant canola varieties (e.g. Clearfield* canola or other varieties with Group 2 tolerance). Apply when volunteer canola is in the 1-6 leaf stage with CS-100-23235 or 2-4 leaf stage with CS-75-23235. CS-100-2525, CS-75-2525: White cockle, dandelion (spring & fall rosettes, up to 15 cm in diameter), scentless chamomile, Group 2 herbicide tolerant canola (1-6 leaf stage)
Perimeter II + 0.25% v/v adjuvant	85 ml/ac	CS-100-23235, CS-75-23235, CS-100-2525, CS-75-2525: for control of kochia (including Group 2 resistant biotypes, seedling to 8 leaf), volunteer flax. CS-75-23235: + cleavers (1-6 whorl). CS-100-2525, CS-75-2525: + stork's bill (1-6 leaf)

FMC recommends to add a NIS at 0.25% v/v for all above tank mixes. FMC supports the following tank mixes that are not on **CS-100-12** and **CS-75-12** labels: Perimeter® II herbicide, MCPA Ester. Apply mix according to the most restrictive use limitations for either product. FMC Corporation supports the following mix that is not on all the listed PrecisionPac Cross Spectrum Herbicide labels. Apply mix according to the most restrictive use limitations for either product: 2,4-D ester.

Cross-Spectrum Herbicides

Other Information

Mixing Instructions

Use mixing instructions as described in the Preparation and Application of Pesticides section of the Crop Guide.

Application Tips

Effectiveness may be reduced if spray mixture remains in the tank for more than 24 hours. Do not apply to crops underseeded to legumes or grasses as injury to forage may result.

How it Works

Absorbed by foliage. Inhibits cell elongation.

Expected Results

Cross Spectrum Herbicides stop the growth of susceptible weeds immediately. However, typical symptoms (discoloration) of dying weeds may not be noticeable for 1 - 3 weeks after application, depending on growing conditions and weed susceptibility. Degree of control and duration of effect depend on weed sensitivity, weed size, spray coverage and growing conditions.

Restrictions

Rainfall: 2 hours.

Grazing: May not be grazed or fed to livestock within 7 days of application.

Pre-harvest Intervals: Allow 60 days between application and harvest.

Recropping:

- **Crops that can be seeded after applications of CS-100-23235, CS-75-23235:**
 - 11 months after application: barley, canola, flax, lentils, oats, peas, soybeans, dry beans and spring wheat
 - 10 months after application: field corn.
- **Crops that can be seeded after applications of CS-100-2525, CS-75-2525, CS-100-12, CS-75-12:**
 - 11 months after application: barley, brown mustard, canola, dry bean (of the species *Phaseolus vulgaris*), flax, canola quality Brassica juncea, lentils, oats, field peas, chickpea, spring wheat, soybean and yellow mustard or fields can be summer fallowed
 - 10 months after application: sunflower and potatoes
- **Crops that can be seeded after applications of CS-100-12, CS-75-12:**
 - 10 months after application: field corn

Toxicity

Low oral toxicity. Oral LD₅₀ (rats) > 5000 mg/kg. Potential skin sensitizer, eye irritant.

Storage

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

Additional products designed for use with PrecisionPac[®] herbicides

42 Perimeter[®] II herbicide

Perimeter® II herbicide

Perimeter® II herbicide


This Group 4 herbicide can be tank-mixed with several PrecisionPac® herbicides to help manage weed resistance and improve control of cleavers and several other broadleaf weeds. It can be used on wheat (spring, durum, winter), oats and barley.

Major weeds controlled (refer to label for specific rates)

Cleavers (1–8 whorls)	Kochia (2–8 leaf) (including Group 2-resistant)	Volunteer flax (1–12 cm)
Chickweed (up to 8 cm) (including Group 2-resistant)	Round-leaved mallow (1–6 leaf)	


Weeds suppressed


Hemp-nettle (2–6 leaf)	Stork's-bill (1–8 leaf)	Wild buckwheat (1–4 leaf)
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 **Crops:** Wheat (spring, durum, winter), barley and oats


Tank-mix Options:

- PP-2525 herbicide
- PP-23235 herbicide
- PP-3317 herbicide
- CS-100-2525 herbicide
- CS-75-2525 herbicide
- CS-100-23235 herbicide
- CS-75-23235 herbicide
- CS-100-12 herbicide
- CS-75-12 herbicide

 **Timing:** Apply to actively growing wheat, oats and barley from the 2-leaf crop growth stage up to and including initiation of stem elongation.

 **Crop Rotation: Following year:** Alfalfa, barley, canola, corn, dry beans, faba beans, flax, forage grasses, lentils, mustard, oats, peas, potatoes, soybeans, sugar beets, sunflowers, rye or wheat fields can be summerfallowed.

 **Packaging:** 3.4 L, 80 L Jug (333 g/L)

 **Application Information:** Refer to individual labels for application information

Water Volume: 5 imp. gal/ac.

Rainfastness: One (1) hour

Mixing Instructions: For complete mixing instructions, see page 46.

Other Resources

- 44 Best Practices for Applying FMC Soluble Granule (SG) formulations
- 45 Solumax[®] soluble granules
- 46 Herbicide Mixing Instructions
- 48 Certified PrecisionPac[®] Herbicide Retailers

Best practices for applying FMC Soluble Granule (SG) formulations

1. Ensure the Soluble Granules have Dissolved

After water, FMC SG herbicides should always be added to the tank **first**. Agitating after adding FMC SG herbicides is the key step to ensure there are no issues at the back end of the sprayer. Make sure the SG herbicides have completely dissolved before adding tank mix partners and/or glyphosate. If a grower is seeing gumming up of nozzles, this is most likely the cause.

What can the applicator do if there is a problem?

- Always use 50 mesh screens.
- Grower can add Finish (ammonia) to the tank to help finish dissolving the granules.

2. Repeat Tank Loads

For repeat tank loads, reduce the spray solution in the tank to 10% of the original volume or less before proceeding with fill.

- Remaining chemicals may prevent the SG herbicides from completely dissolving.
- If this is not possible, pre-slurry the SG herbicide in at least 20 litres of water... the more water the better. Use this amount for at least every 80 acres of product. Mixing 240 acres in a 10 litre jug does not WORK!!!
- Once dissolved, SG herbicides will not settle out
- Do not let the spray solution sit for more than 24 hours.
- When spraying multiple tanks over multiple days
 - Flush out the interior of the tank at the end of the day, fill tank half full, add Finish (7% ammonia), charge booms and leave overnight.
 - 10 litre jug of Finish for 400 gallons of water

3. Do not use GLYPHOSATE CONDITIONERS

FMC SG herbicides are optimized in a high pH spray solution. Glyphosate products are weak acids that lower the pH of the spray solution. When a glyphosate conditioner is added, it further reduces the pH of the spray solution which inhibits SG herbicides from going into solution.

- Do not use LI 700[®]
- Do not use pHix (Omex)
- Do not use N-pHuric

4. Impact of Cold Water

Cold water can also slow the dissolution of FMC SG herbicides in solution.

- Provide adequate time for FMC SG herbicides to dissolve
- If possible, fill nurse tanks ahead of time, allowing the water to warm up



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

Many sulfonylurea herbicides from FMC are formulated using the unique technology of Solumax® soluble granules to deliver active ingredients that completely dissolve in water, creating a clear solution. That means you get 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 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 DF herbicide.

2. Lower risk to sensitive crops.

Because it is easier to remove product residue from the tank, the impact to subsequently sprayed crops like peas or canola is minimized.

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.



Dry flowable (DF)

Soluble granules (SG)

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 putting your operations at risk.



Herbicide mixing instructions for herbicides powered by Solumax[®] soluble granules.

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

Wettable powders, dispersible granules, soluble granules (WG, DF, SG, WP, SP)

Agitate tank-mix thoroughly

Micro-encapsulated suspensions (ME)

Liquid flowables and suspensions (SC, SL, SN, Li, SU, SE)

Emulsifiable concentrate formulations (EC) – Fill spray tank nearly full with water

Glyphosate formulations

Surfactants – Complete filling the spray tank to the desired level

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

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.

Certified PrecisionPac® Herbicide Retailers

Alberta

Agro Plus Holdings

Foremost (403) 647-6213

Agro Plus Inc.

Lethbridge (403) 327-7070

Central Alberta Coop Ltd.

Innisfail (403) 227-3466

Consort Agro Services

Consort (403) 577-3020

Crop Management Network Inc.

Edberg (780) 877-0003

Vegreville (780) 632-6661

Foster's Seed and Feed Ltd.

Beaverlodge (780) 354-2107

Kneehill Soil Services Ltd.

Linden (403) 546-4050

McEwen's Fuels & Fertilizers Inc.

Fort Saskatchewan (780) 998-2058

Neerlandia Coop Association Ltd.

County of Barrhead (780) 674-3020

Nutrien Ag Solutions

Coronation (403) 578-3302

Crossfield (403) 946-4588

Della (403) 364-3735

Edgerton (780) 755-3734

Enchant (403) 739-2012

Fort Macleod (403) 553-3774

Hairy Hill (780) 768-3825

Leduc (780) 985-2449

Medicine Hat (403) 526-9499

Rycroft (780) 765-2865

Sexsmith (780) 568-6060

Strathmore (403) 934-2204

Strome (780) 376-3552

St Paul (780) 645-5915

Sturgeon County (780) 998-2808

Trochu (403) 442-2700

Vermilion (780) 853-4711

Westlock (780) 349-4525

Parrish & Heimbecker Limited

Sedgewick (780) 384-2265

Wainwright (780) 842-3306

Richardson Pioneer

Dunmore (403) 527-6600

Hussar (403) 787-3931

Lamont (780) 895-2353

Magrath (403) 758-3162

Nampa (780) 322-3737

Oyen (403) 664-2620

Provost (780) 753-8415

Stirling (403) 756-3452

Three Hills (403) 443-2548

Vermilion (780) 853-6565

Veteran (403) 575-4600

Vulcan (403) 485-6696

Waskatenau (780) 358-2720

Schoorlemmer Seeds Ltd.

Rycroft (780) 864-5949

Smoky Seed Company

Guy (780) 837-4454

South Country Coop Limited

Medicine Hat (403) 528-6609

St. Isidore Co-op Ltd.

Falher (780) 837-2205

United Farmers of Alberta

Grande Prairie (780) 532-1281

Westview Coop Ltd.

Hanna (403) 854-2820

British Columbia

Nutrien

Fort St. John (250) 785-3445

Manitoba

Ag Advantage

Marquette (204) 322-5351

GJ Chemical Co. Ltd.

Arnaud (204) 427-2337

Nutrien Ag Solutions

Beausejour	(204) 265-3584
Carberry	(204) 834-2180
Ninga	(204) 534-6806
Reston	(204) 877-3128
Souris	(204) 483-3860

Richardson Pioneer

Landmark	(204) 355-4061
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Siernes Seed Service

Somerset	(204) 744-2883
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Saskatchewan**Blair's Fertilizer Limited**

Lanigan	(306) 365-3150
Liberty	(306) 847-4444
Lipton	(306) 336-2260
McLean	(306) 699-2822
Nokomis	(306) 528-3150
Rosthern	(306) 232-4223
Watrous	(306) 946-3150

Cargill Limited

Clavet	(306) 242-5400
Unity	(306) 228-4144

Clearview Agro

Invermay	(306) 593-2234
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Emerge Ag Solutions Inc.

Eston	(306) 962-4132
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G-Mac's AgTeam Inc.

Eatonia	(306) 967-2211
Plenty	(306) 932-4622
Rosetown	(306) 882-2600

Hawk's Agro

Central Butte	(306) 796-4787
Gravelbourg	(306) 648-3110
Pasqua	(306) 624-2399
Rouleau	(306) 776-4787
Strongfield	(306) 860-7891

Innova Ag Solutions Inc.

Central Butte	(306) 796-2102
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Kenzie Seeds Inc.

Wadena	(306) 338-3505
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Meadow Lake Cooperative Association

Meadow Lake	(306) 236-3644
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Nutrien Ag Solutions

Balcarres	(306) 334-2440
Humboldt	(306) 682-2509
Kerrobert	(306) 834-5007
Kincaid	(306) 264-1000
Landis	(306) 658-2002

Lucky Lake	(306) 858-2188
Paradise Hill	(306) 344-2229
Pasqua	(306) 692-3644
Perdue	(306) 237-4304
Prairie River	(306) 889-2172
Regina	(306) 757-3501
Swift Current	(306) 773-3181
Weyburn	(306) 842-5471

Parrish & Heimbecker Limited

Yorkton	(306) 782-2814
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Pasquia Agro Services

Carrot River	(306) 768-3888
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Paterson Grain Crop Inputs

Assiniboia	(306) 642-4295
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Pioneer Coop

Frontier	(306) 296-2233
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Pioneer Coop Agronomy Centre

Swift Current	(306) 778-8876
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Precision Ag Services Inc.

Carlyle	(306) 453-2255
Griffin	(306) 457-2220

Rack Petroleum

Broderick	(306) 867-8371
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Richardson Pioneer

Grenfell	(306) 697-3377
Langenburg	(306) 743-2252
Maple Creek	(306) 662-2420
North Battleford	(306) 445-7163
Pasqua	(306) 691-0256
Saskatoon	(306) 249-2200

River Valley Ag

Saskatoon	(306) 978-9094
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Saskatoon Cooperative Association Ltd.

Saskatoon	(306) 933-3835
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Sharpe's Crop Services.

Langenburg	(306) 743-2677
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Super Seed Inc.

Yellow Grass	(306) 465-2727
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SWT

Cabri	(306) 587-2408
Gull Lake	(306) 672-4112
Hazenmore	(306) 264-3250
Kyle	(306) 375-1333
Shaunavon	(306) 297-4045
Wymark	(306) 778-0555

SynergyAG Services Corp.

Govan	(306) 484-1000
Yorkton	(306) 782-3276

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