

GROUP	2	HERBICIDE
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PulseStar®

AGRICULTURAL

FOR SALE FOR USE IN THE PRAIRIE PROVINCES &
PEACE RIVER REGION OF BRITISH COLUMBIA ONLY

SOLUTION

GUARANTEE: imazethapyr ... 240 g/L

REGISTRATION NO. 29259 PEST CONTROL PRODUCTS ACT

NET CONTENTS: 3.3 Litres

IN CASE OF EMERGENCY ENDANGERING LIFE OR PROPERTY
INVOLVING THIS PRODUCT, CALL DAY OR NIGHT

1-800-454-2673

READ THE LABEL AND BOOKLET BEFORE USING

KEEP OUT OF REACH OF CHILDREN

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

Distributed By
Viterra Inc.
2625 Victoria Avenue
Regina, SK
Canada
S4T 7T9
1-866-569-4411

PulseStar® is a registered trademark of Viterra Inc.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

MAY BE HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH THE SKIN.

DO NOT CONTAMINATE FOOD OR FEED PRODUCTS.

AVOID CONTACT WITH EYES, SKIN AND CLOTHING.

AVOID BREATHING VAPOUR OR SPRAY MIST.

May cause eye damage.

May cause skin irritation.

Use with adequate ventilation.

Wear dust and/or splash-proof goggles or face shield and chemical-resistant gloves when mixing, loading and during application, clean-up and repair.

Wear long-sleeved shirt and long-legged pants when handling.

Do not eat, drink or smoke when using.

Wash hands and face before eating, drinking, smoking and using the toilet.

Wash thoroughly with soap and water after handling.

Take a shower IMMEDIATELY after work.

Store and wash all protective clothing separately from normal laundry.

Clean protective equipment (gloves, goggles, face shield) upon removal with soapy water.

Wash in detergent and hot water before reuse.

Wear freshly laundered clothes daily.

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

DO NOT APPLY BY AIR.

FIRST AID

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

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

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

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

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

TOXICOLOGICAL INFORMATION

Treat symptomatically.

STORAGE

Keep from freezing. DO NOT store below 0°C. If the product is exposed to temperatures below 0°C during shipment or storage, make sure the product has thawed completely, and shake the container vigorously.

DISPOSAL

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

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

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements. For information on the disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

NOTICE TO USER

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

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1. GENERAL INFORMATION

PulseStar is a selective herbicide that can be applied as an early post-emergence treatment in alfalfa (newly seeded purestand for forage or seed production and established for seed production), chickling vetch (seed production only), dry beans (Pinto, Pink, Red), field peas, and soybeans (Manitoba only).

Do not spray before all weeds have emerged. When **PulseStar** is applied early post-emergence, absorption may occur through both the roots and foliage. Susceptible weeds stop growing and eventually die.

2. REGISTERED USES

2.1 REGISTERED SOIL ZONES

PulseStar is only registered in the black and grey wooded soil zones of the Prairie Provinces. **PulseStar** is not registered for use in the brown and dark brown soil zones with the exception of dry beans and alfalfa (newly seeded purestand for forage or seed production) under irrigation.

2.2 REGISTERED CROPS

PulseStar is registered for use as an early post-emergence in the following crops.

• Alfalfa (newly seeded purestand for forage or seed production)
• Alfalfa (established for seed production)
• Chickling vetch (seed production only)
• Dry beans (Pinto, Pink, Red)
• Field peas
• Soybeans (Manitoba only)

3. DIRECTIONS FOR USE

3.1 CROP USE RATES

Crop	Use Rate (mL/ha)	Water Volume (L/ha)
Alfalfa (newly seeded purestand for forage or seed production)	210	100-400
Alfalfa (established for seed production)	210	100-400
Chickling vetch (seed production only)	210	100-400
Dry beans (pinto, pink, red)	210	100-400
Field peas	210	100-400
Soybeans (Manitoba only)	210	100-400

For all applications, a non-ionic surfactant containing at least 80% active ingredient (Agral® 90, Agsurf®) at the rate of 0.25% (v/v) must be added to the spray solution (e.g., 2.5 L of surfactant per 1000 L of spray solution).

See crop specific section for additional details.

3.2 WEEDS CONTROLLED

EARLY POST- EMERGENCE WEED CONTROL (up to and including the 4 leaf stage)

Weeds	Application Timing	
	Field Peas	Newly seeded pure stand alfalfa for forage or seed production
Broadleaf weeds		
Common groundsel	-	PC
Chickweed**	C	-
Cleavers**	C	-
Green smartweed	-	C
Hemp-nettle	C	-
Redroot pigweed	C	C
Shepherd's purse**	C	PC
Smartweed	C	-
Stinkweed**	C	C
Volunteer canola	C	C
Wild buckwheat	S	-
Wild mustard**	C	C
Grasses		
Green foxtail	C	PC
Wild oats	C*	-

C = Control PC = Partial Control and Reduced Competition S = Suppression

* For control of wild oats apply **PulseStar** between the 2-4 leaf stage of the weed.

** Certain populations of these weed are known to be resistant to group 2. If you suspect this potential on your farm, follow recommendations in Resistance-Management Recommendations, Section 6.

3.3 CROP SPECIFIC RECOMMENDATIONS

3.3.1 FIELD PEAS

Timing	Early post-emergence
Soil Zones	PulseStar is registered for use in black and grey wooded soils ONLY.
Rate	210 mL/ha + Adjuvant
Weeds Controlled	See Section 3.2 for a complete list of weeds controlled.
Remarks	<p>PulseStar, by early post-emergence application up to the 4-true leaf stage of the weeds, will control weeds listed in Section 3.2.</p> <p>Field peas up until the sixth (6th) trifoliate leaf stage.</p> <p>An interval of 60 days must follow the PulseStar application before field peas are harvested.</p> <p>Field peas treated with PulseStar may be fed to livestock 30 days after application.</p>

3.3.2 ALFALFA (NEWLY SEEDED PURESTAND FOR FORAGE OR SEED PRODUCTION)

Timing	Early post-emergence
Soil Zones	Black, grey wooded and irrigated brown soil zones.
Rate	210 mL/ha + Adjuvant
Weeds Controlled	See Section 3.2 for a complete list of weeds controlled.
Remarks	<p>PulseStar can be applied as an early post-emergence treatment in newly seeded purestand alfalfa in the year of establishment.</p> <p>PulseStar may be applied when the crop has developed at least one (1) fully expanded trifoliate leaf and up to and including the 4 leaf stage of susceptible weeds.</p> <p>PulseStar is intended for use on purestand alfalfa in the year of establishment, on stands that will remain for 3 or more years.</p> <p>Apply only in the year of establishment and only after the crop has one fully developed trifoliate leaf.</p> <p>ONLY ONE (1) application of PulseStar may be made during the life of the alfalfa stand.</p> <p>DO NOT graze or harvest for forage until 14 days after treatment.</p> <p>Mature seed from treated plants should not be used for human consumption.</p>

3.3.3 ALFALFA (ESTABLISHED FOR SEED PRODUCTION PURPOSES)

Timing	Early post-emergence
Soil Zones	Black and grey wooded soil zones
Rate	210 mL/ha + Adjuvant
Weeds Controlled	Stinkweed, wild mustard, volunteer canola, redroot pigweed and suppression of green foxtail
Remarks	One application per year; post-emergent; ground application; apply before alfalfa reaches 30 cm. Do not use PulseStar in the last year of the alfalfa stand.

3.3.4 DRY BEANS (PINTO, PINK, RED)

Timing	Early post-emergence
Soil Zones	Black, grey wooded and irrigated brown soil zones only
Rate	210 mL/ha + Adjuvant
Weeds Controlled	Hairy nightshade
Remarks	One application per year; ground sprayer; apply in 100 - 400 L water/ha post-emergence; apply up to the 2nd trifoliate leaf stage of the dry bean; up to 6 leaf stage of hairy nightshade; PHI of 75 days

3.3.5 CHICKLING VETCH / GRASS PEA (FOR SEED PRODUCTION ONLY)

Timing	Early post-emergence
Soil Zones	Black and grey wooded soil zones
Rate	210 mL/ha + Adjuvant
Weeds Controlled	Labelled weeds
Remarks	One application per year; post-emergent; ground application; PHI 60 days; apply at the 5-7 leaf stage of chickling vetch/grass pea

3.3.6 SOYBEANS (MANITOBA ONLY)

Timing	Early post-emergence
Soil Zones	Black and grey wooded soil zones
Rate	210 mL/ha + Adjuvant
Weeds Controlled	Annual grass and broadleaf weeds
Remarks	Apply as post-emergent application once per season at 1 to 3 leaves of soybean growth; ground application only; PHI 85 days

4. MIXING INSTRUCTIONS

- (1) Fill the spray tank one-half to three-quarters full with water.
- (2) Using a calibrated measuring device, add the required amount of PulseStar while agitating the spray solution.
- (3) While the solution remains agitating, add the required amount of non-ionic surfactant.
- (4) Fill the remainder of the tank with water.

5. FOLLOW CROPPING

There is the possibility of residual soil activity from PulseStar the year following application. Research studies have shown the following crops can be safely grown in black and grey wooded soil zones the year following a PulseStar application.

0 - 12 months after application In case of crop failure, the following crops can be planted in the same season:	1 year after application The following crops can be planted in the following season:
field peas imazethapyr and imazamox tolerant canola ¹	spring barley spring wheat lentils alfalfa field peas imazethapyr and imazamox tolerant canola ¹
Conduct a field bioassay (a test strip grown to maturity) the year BEFORE growing any other crop than those listed above.	

6. RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, PulseStar is a Group 2 herbicide. Any weed population may contain or develop plants naturally resistant to PulseStar and other Group 2 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance:

- Where possible, rotate the use of PulseStar or other Group 2 herbicides with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group when such use is permitted.
- Herbicide use should be based on an IPM program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical), cultural, biological and other chemical control practices.

- Monitor treated weed populations for resistance development.
- Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact BASF at 1-877-371-2273.

7. WARNINGS

- (1) DO NOT APPLY **PulseStar** on brown & dark brown soil zones unless under irrigation as the follow crop label ONLY pertains to the black and grey wooded soil zones. Use in non-irrigated brown/dark brown soil zones could result in rotational crop injury.
- (2) DO NOT over-apply **PulseStar**. Over application may result in injury particularly if the crop is under stress.
- (3) DO NOT let spray drift contaminate crops other than those being sprayed.
- (4) DO NOT apply 2 applications of **PulseStar** within the same year. ONLY ONE (1) application of **PulseStar** may be made during the season.
- (5) DO NOT tank-mix **PulseStar**.
- (6) In cases of crop failure, only field peas or imazethapyr and imazamox tolerant canola¹ (e.g. canola varieties with the CLEARFIELD trait) may be re-planted in the year of application.
- (7) DO NOT APPLY BY AERIAL APPLICATION - GROUND APPLICATION ONLY.
- (8) Over-spray or drift to important wildlife habitats such as shelterbelts, water bodies, wetlands and woodlots, vegetated ditch banks, hedgerows & other cover on the edge of the field should be avoided. Leave a 15-meter buffer zone between the last spray swath and the edge of any of these habitats.

® All other products listed are registered trademarks of their respective companies.

¹Methods of growing plants which are resistant to certain acetohydroxyacid synthase (AHAS) herbicides are protected by Canadian Patent No. 1341465. The use of this product in the practice of patented methods could constitute patent infringement. The purchase of this product conveys no license to the purchaser to practice the patented methods. Further information can be obtained by contacting BASF Canada at 1-877-371-2273.

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