

(Container)



# Impede™ Herbicide

GROUP	4	HERBICIDE
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**Impede™ is a selective herbicide for postemergent control of annual and perennial broadleaved weeds in spring wheat, durum wheat, and spring barley.**

FOR SALE FOR USE IN THE PRAIRIE PROVINCES, THE PEACE RIVER REGION, AND INTERIOR OF BRITISH COLUMBIA.

AGRICULTURAL

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING  
KEEP OUT OF REACH OF CHILDREN

ACTIVE INGREDIENT:                    clopyralid     90 g a.e./L  
  (present as monoethanolamine salt)  
  fluroxypyr   90 g a.e./L  
  (present as 1-methylheptyl ester)  
Emulsifiable Concentrate

REGISTRATION NO. 32359 PEST CONTROL PRODUCTS ACT

**WARNING - EYE IRRITANT**

NET CONTENTS: 1 L - bulk

**Corteva Agriscience Canada Company**  
Suite 240, 115 Quarry Park Rd. SE  
Calgary, AB  
T2C 5G9  
1-800-667-3852

™Trademark of Corteva Agriscience and its affiliated companies.

## **PRECAUTIONS**

### **KEEP OUT OF REACH OF CHILDREN**

### **DO NOT APPLY USING AERIAL APPLICATION EQUIPMENT**

Causes eye irritation. DO NOT get in eyes. Avoid inhalation of vapour or spray mist and contact with eyes, skin or clothing.

Do not take internally. Handle with care and mix only in a closed container. Use only in a well ventilated area. Wash thoroughly after handling and before eating, drinking, smoking or using the bathroom. Take a shower immediately after work. If clothing becomes contaminated, remove immediately and wash. Store and wash all protective clothing separately from household laundry. Wash in detergent and hot water before reuse. Wear freshly laundered clothes daily.

**Do not** enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12-hours.

DO not use in residential areas. Residential areas are defined as any use site where bystanders, including children, could be exposed during or after application. This includes homes, schools, parks, playgrounds, playing fields, public buildings, or any other area where the general public, including children, could be exposed.

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

Do not contaminate domestic or irrigation water, lakes, ditches, streams or ponds by the cleaning of equipment or the disposal of wastes. Do not apply where run-off or erosion is likely to occur.

## **PROTECTIVE CLOTHING AND EQUIPMENT**

### **All Application Equipment**

During mixing, loading, clean-up or repair workers must wear a long-sleeved shirt, long pants, shoes plus socks, chemical-resistant gloves as well as goggles or face shield. Applicators must wear a long-sleeved shirt, long pants, shoes plus socks. Gloves are not required to be worn during groundboom applications but are required for mixing/loading, clean-up and repair.

## **PHYSICAL OR CHEMICAL HAZARDS**

**COMBUSTIBLE.** Do not use or store near heat or open flame.

## **FIRST AID**

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

**If swallowed:** Call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give **any** liquid to the person. 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.

### **TOXICOLOGICAL INFORMATION**

This product contains petroleum distillates. Vomiting may cause aspiration pneumonia. The decision of whether to induce vomiting or not should be made by the attending physician. If lavage is performed, suggest endotracheal and/or oesophageal control. Danger from lung aspiration of petroleum based solvents must be weighed against toxicity when considering emptying the stomach. No specific antidote. Employ supportive care. Treatment should be based on judgement of the physician in response to reactions of the patient. Treat symptomatically.

### **ENVIRONMENTAL PRECAUTIONS**

TOXIC to non-target terrestrial plants and aquatic organisms. Observe buffer zones specified under DIRECTIONS FOR USE.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

This product contains an active ingredient and aromatic petroleum distillate which are toxic to aquatic organisms. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning equipment.

### **Leaching**

The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (e.g. sand, loamy sand and sandy loam soils) and/or the depth to the water table is shallow.

### **STORAGE**

Store in original, tightly-closed container and do not allow water to be introduced into this container. To prevent contamination, store this product away from food or feed. Do not ship or store near food, feed, seed and fertilizers. Store in cool (above 5°C) dry, locked, well-ventilated area without floor drain. If product is frozen, bring to room temperature and agitate before use. Herbicides should be shipped or stored separately from other pesticides to avoid cross-contamination.

### **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.

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For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

**NOTICE TO USER:** This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in any way that is inconsistent with the directions on the label.

(Booklet)



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#### **Returnable Containers:**

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

#### **Refillable Containers:**

For disposal, this container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not reuse this container for any other purpose.

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

### GENERAL INFORMATION

Impede is diluted in water and applied by ground application equipment for the control of the following broadleaved weeds:

Canada thistle♦	stork's-bill (suppression) (1-8 leaf)
Cleavers (1-4 whorls)	volunteer flax (1-12 cm)
Kochia (2-8 leaf)	wild buckwheat (1-4 leaf)

♦Season long control, with some regrowth in the fall. Apply from 10 cm to pre-bud stage.

### DIRECTIONS FOR USE

#### Application Rate: 1.1 L/ha

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

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

Field sprayer application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) coarse classification. Boom height must be 60 cm or less above the crop or ground.

Best results are obtained when Impede is applied to actively growing weeds in the seedling stage and when Canada thistle is between 10 cm and up to but not including the early bud stage. Poor weed control may result under cool or dry conditions.

#### Spring Wheat, Durum Wheat and Spring Barley

Apply to the crop from 3 leaf to just before flag leaf. Apply Impede as a ground treatment using enough spray volume to provide adequate spray coverage. Apply a minimum of 100 L/ha total spray volume by ground. Higher spray volumes will provide better coverage and weed control, particularly when the weeds are not actively growing. Maximum 1 application per year.

#### Spray Preparation

1. Fill sprayer tank 1/2 full of water.
2. Start sprayer tank agitation.
3. Add the required amount of Impede and continue to agitate.
4. Add the required amount of tank-mix partner, if needed.
5. Fill the sprayer tank with sufficient water to spray 100 L of spray mixture per hectare.

**Note: Add only the adjuvant on the tank-partner label and follow tank-mix partner label for order of mixing.**

The use of flood jet or hollow cone nozzles is not recommended because of uneven and inadequate spray coverage. Ensure thorough and uniform spray coverage over the entire leaf area of the target weeds.

### GENERAL USE PRECAUTIONS

**DO NOT APPLY USING AERIAL APPLICATION EQUIPMENT.**

### **Sensitive Plants**

Do not apply Impede directly to or otherwise permit it to come into contact with sunflowers, legumes, fruit or vegetable crops, flowers or other desirable broadleaved plants and take precautions to avoid spray mists drifting onto them.

### **Crop Rotation**

Fields previously treated with Impede can be seeded the following year to wheat, barley, oats and rye (not under-seeded to forage legumes, clover or alfalfa), canola, flax, mustard, field peas, or fields can be summerfallowed. Seed only those crops listed above in the year following treatment.

**Note:** Do not seed field peas for at least 10 months following treatment. Very dry soil conditions following application can result in a risk of injury to field peas grown in rotation. If severe drought conditions are experienced during the months of June to August inclusive in the year of application, delay seeding field peas an additional 12 months (total 22 months following application). Contact your local Corteva Agriscience Canada representative or retailer for more information before seeding field peas following drought conditions in the previous year.

### **Tank Mixtures**

In some cases, tank mixing a pest control product with another pest control product or a fertilizer can result in biological effects that could include, but are not limited to: reduced pest efficacy or increased host crop injury. The user should contact Corteva Agriscience Canada Company at 1-800-667-3852 or [www.corteva.ca](http://www.corteva.ca) for information before mixing any pesticide or fertilizer that is not specifically recommended on this label.

### **Preharvest/Grazing Interval**

- Livestock may be grazed on treated crops 3 days following application.
- Do not harvest the treated crop within 60 days after application.

### **Stress Conditions**

When weeds are stressed due to drought, flooding or prolonged hot or cool temperatures (8°C or less), control can be reduced or delayed since weeds are not actively growing. Weed escapes may occur under prolonged stress conditions or low fertility. Do not make applications to weeds stressed longer than 20 days due to lack of moisture as unsatisfactory control can result.

### **To Reduce Spray Drift**

- Use coarse sprays at low pressures (200 to 275 kPa).
- Use a minimum of 100 L/ha of spray solution.
- Spray when the wind velocity is 16 km/hr or less.

### **Sprayer clean-out**

To avoid injury to desirable plants, thoroughly clean equipment used to apply this product before re-use or using it to apply other chemicals.

1. Immediately after spraying, completely drain the sprayer tank. Any contamination on the outside of the spraying equipment should be removed by washing with clean water.
2. First rinse:
  - Spray the inside of tank with clean water and fill the sprayer with at least one tenth of the spray tank volume.
  - Agitate and circulate for 15 minutes, and flush through booms and hoses.
  - Remove end caps or open ball valves on the ends of each boom section, and flush solution through the boom ends to ensure there is no spray solution trapped between the boom end and the nozzles.
  - Drain tank completely.
3. Second rinse:
  - Fill the tank with clean water.



- Add All Clear Spray Tank Decontaminator, or Clean-Out Spray Tank Cleaner, or 1 L of household ammonia (containing a minimum of 3 % ammonia) per 100 L of water, or similar tank cleaning agent as per manufacturer's recommendations while filling the tank with clean water.
  - Agitate and then flush the boom and hoses with the cleaning solution. Top up with water making sure the tank is completely full. Allow to stand for 15 minutes with agitation. Flush the solution out of the spray tank through the spray booms. Remove end caps or open ball valves on the ends of each boom section, and flush solution through the boom ends to ensure there is no spray solution trapped between the boom end and the nozzles.
  - If possible, let the solution stand in the sprayer tank and booms for an extended period of time, overnight if possible.
  - After flushing the boom and hoses, drain tank completely.
  - Remove nozzles and screens and clean separately with a cleaning agent or an ammonia solution (100 mL in 10 L water).
4. Third rinse:
- Rinse the tank with clean water and flush through the boom and hoses using at least one tenth of the spray tank volume.
  - Remove end caps or open ball valves on the ends of each boom section, and flush solution through the boom ends to ensure there is no spray solution trapped between the boom end and the nozzles.
  - Drain tank completely.

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

**TANK-MIXES WITH IMPEDE FOR BROAD SPECTRUM BROADLEAVED WEED CONTROL IN WHEAT AND BARLEY**

Impede may be tank-mixed with one of the tank-mix partners indicated in the table below for wide spectrum control. All broadleaved weeds listed elsewhere on this label plus the annual weeds listed below for each tank-mix partner will be controlled by the tank-mix. Follow all precautions, directions, and recropping/rotation limitations that appear on both product labels and follow those that are the most restrictive.

<b>Herbicide Tank-Mix Partner</b>	<b>Crops</b>	<b>Tank-Mix partner rate product/ha</b>	<b>Additional Weeds Controlled (Refer to MCPA labels for weed stages)</b>
MCPA Ester 500 MCPA Ester 600	spring wheat, durum wheat, barley	840 mL 700 mL	burdock, cocklebur, field horsetail**, flixweed* (2-4 leaf), lamb's-quarters, mustards (except dog and tansy), plantain**, prickly lettuce, ragweed, shepherd's-purse*, stinkweed*, volunteer sunflower, vetch, wild radish, wild (annual) sunflower
MCPA Ester 500 MCPA Ester 600	spring wheat, durum wheat, barley	1120 mL 930 mL	the above listed weeds plus: common groundsel, dandelion♦, redroot pigweed, Russian pigweed, scentless chamomile (2-4 leaf), smartweed, sow-thistle (annual), sowthistle (perennial) ♦♦, tartary buckwheat, volunteer canola, wild buckwheat

♦ Spring rosettes only

♦♦ Top growth only

**TANK-MIXES WITH IMPEDE OR IMPEDE TANK MIXED WITH MCPA ESTER FOR BROADLEAVED AND ANNUAL GRASS CONTROL IN WHEAT**

Impede may be tank-mixed with one of the tank-mix partners indicated in the table below for annual grass control. All broadleaved weeds listed elsewhere on this label plus the annual grasses listed below for each tank-mix partner will be controlled by the tank-mix. Follow all precautions, directions, and recropping/rotation limitations that appear on both product labels and follow those that are the most restrictive.

<b>Herbicide Tank-Mix Partner</b>	<b>Crops</b>	<b>Tank-Mix Partner Rate</b>	<b>Adjuvant Rate</b>	<b>Additional Weeds Controlled</b>
Everest Solupak 70DF	Spring wheat, durum wheat	43 g/ha	Refer to Everest 70DF label	Wild oats, green foxtail
Horizon 240EC	Spring wheat, durum wheat	230 mL/ha	Score at 0.8% v/v	Wild oats, green & yellow foxtail, volunteer (tame) oats, barnyard grass, volunteer canary seed
Foothills A		230 mL/ha	Foothills B at 0.8% v/v	
Horizon NG		930 mL/ha	Not required	
Simplicity™	Spring wheat, durum wheat	500 mL/ha	Not required	Wild oats, yellow foxtail, green foxtail (suppression), Japanese brome, downy brome*, barnyard grass, chickweed, hemp nettle, redroot pigweed, smartweed, volunteer canola (excluding Clearfield)
Axial 100EC	Spring wheat, barley	600 mL/ha	Adigor at 700 mL/ha	Wild oats, green foxtail, yellow foxtail, barnyard grass, proso millet, volunteer canary seed, tame oats
Axial Herbicide	Spring wheat, barley	1200 mL/ha	Not required	Wild oats, green foxtail, yellow foxtail, barnyard grass, proso millet, volunteer canary seed, tame oats
Marengo or Liquid Achieve	Spring wheat, durum wheat, barley	500 mL/ha	Turbocharge at 0.5% v/v	Wild oats, green foxtail, yellow foxtail, barnyard grass, Persian darnel, volunteer oats
Wildcat or Puma <sup>120</sup> Super	Spring wheat, durum wheat, barley	770 mL/ha	Not required	Wild oats, green foxtail, yellow foxtail, barnyard grass
		385 mL/ha		Green foxtail only
Traxos Herbicide	Spring wheat, durum wheat	1.2 L/ha	Not required	Wild oats, green and yellow foxtail, barnyard grass, volunteer (tame) oats, volunteer canary seed, Persian darnel, proso millet

\* suppressed in the spring season.

**BUFFER ZONES**

Spot treatments using hand-held equipment **DO NOT** require a buffer zone.

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

Method of application	Crop	Buffer Zones (metres) Required for the Protection of:				
		Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:		Terrestrial Habitat
		Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m	
Field sprayer	Spring wheat, durum wheat, spring barley, canary seed	1	0	1	1	1

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

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

#### RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, please note that Impede Herbicide is a Group 4 herbicide. Any weed population may contain plants naturally resistant to Impede and other Group 4 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same fields. 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 Impede Herbicide or other Group 4 herbicides within a growing season (sequence) or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group when such use is permitted. To delay resistance, the less resistance-prone partner should control the target weed(S) as effectively as the more resistance-prone partner.
- Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates; precision fertilizer application method and timing to favour the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Monitor treated weed populations after herbicide application for signs of resistance development. (for example, only one weed species on the herbicide label not controlled). If resistance is suspected, prevent weed seed production in the affected area if possible by an alternative herbicide from a different group. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.

- For further information or to report suspected resistance, contact Corteva Agriscience Canada Company at 1-800-667-3852 or at [www.corteva.ca](http://www.corteva.ca).

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