

(Container)



# Challenger™ Herbicide

GROUP	1	HERBICIDE
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A SUSPENSION CONCENTRATE HERBICIDE FOR POST EMERGENCE CONTROL OF ANNUAL GRASSES IN SMALL GRAIN CEREALS AND IN SELECTED FORAGE GRASSES GROWN FOR SEED ONLY.

AGRICULTURAL

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

GUARANTEE: Tralkoxydim .....400 grams per litre  
Contains 1,2-benzisothiazolin-3-one at 0.025 % as a preservative.  
Liquid

REGISTRATION NO. 29617 PEST CONTROL PRODUCTS ACT

**CAUTION: SKIN AND EYE IRRITANT**

NET CONTENTS: 4 L - bulk

**Corteva Agriscience Canada Company** 2450, 215 – 2nd Street S.W.  
Calgary, Alberta  
T2P 1M4  
1-800-667-3852

™Trademark of Corteva Agriscience and its affiliated companies.

## **PRECAUTIONS**

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

Harmful if swallowed. May cause skin and eye irritation. Do not get on skin or in eyes. Do not wear contact lenses when using chemicals. DO NOT ingest. DO NOT get on skin, clothing, or in eyes. Do not smoke, eat, or drink while using this product.

Workers must wear coveralls over long-sleeved shirt, long pants, safety goggles, boots, and chemical resistant gloves when mixing, loading and during clean up or when adjusting or repairing sprayer.

Wash gloves thoroughly with water before removing them during any operation.

Applicators must wear long-sleeved shirt and long pants.

Wash hands thoroughly with soap and water after using the product and before eating, drinking or smoking.

Do not contaminate food, water supplies or animal feed.

For all uses, **DO NOT** enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

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](http://www.croplife.ca).

## **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. 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.

## **TOXICOLOGICAL INFORMATION**

Treat symptomatically for ingestion and/or skin and eye contact. Symptoms are likely to be those of Central Nervous System (CNS) depression. Avoid respiratory depressants unless otherwise indicated.

## **ENVIRONMENTAL HAZARDS**

**TOXIC** to non target terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE.

To reduce runoff from treated areas to aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil or clay. 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. Avoid application when heavy rain is forecast.

## **STORAGE**

Store in a cool, dry place, away from children, animals, food, feed or fertilizers. Keep unused product in resealed original container. Store above  $-5^{\circ}\text{C}$ . Shake well before use.

### **SPILL CLEANUP**

Wear appropriate protective equipment (gloves, glasses, apron) when attempting to clean up the spill. If the container is leaking, secure leak and place the container into a drum or heavy gauge plastic bag. Contact Corteva Agriscience Canada Company for further information.

For spills and leaks - contain the liquid with dikes of inert material (soil, clay, kitty litter etc.). Absorb the spill onto inert material and shovel into a sealable waste container.

On hard surfaces - sprinkle spill area with detergent and scrub in a small quantity of water with a coarse broom. Let stand 10 minutes then absorb onto an inert material and shovel into the waste container.

On soil - remove the top 15 cm of soil in the spill area and replace with fresh soil. Dispose of all waste including scrub brush in accordance with provincial requirements. Contact the manufacturer and the provincial regulatory agency in case of a spill and for clean-up of spills.

### **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.

### **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.

**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.

(Booklet)



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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.

## **PRODUCT INFORMATION**

Challenger Herbicide is a systemic, postemergence herbicide for the selective control of wild oats, volunteer tame oats, green foxtail, yellow foxtail, barnyard grass and Persian Darnel in spring wheat, durum wheat, winter wheat, barley, triticale, spring rye, winter rye, and selected forage grasses (except Timothy) grown for seed only.

## **DIRECTIONS FOR USE**

### **Rates of Use**

Apply Challenger Herbicide at 0.5 L/ha in 50-100 L/ha of water.

**Note:** Always add Challenger or Intake Adjuvant to the spray solution at a rate of 0.5 L per 100 L of spray mixture (0.5% v/v). Under adverse conditions, such as dense weed population, late weed growth stage, or poor environmental conditions apply 1.0% V/V of Intake Adjuvant (10 L Intake Adjuvant /1000 L spray mixture) The incorrect Challenger or Intake Adjuvant rate can result in unacceptable weed control or crop injury. See MIXING and SPRAYING INSTRUCTION sections.

Only one application per season is permitted.

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.

**Challenger Herbicide can be used on the following crops:**

**CEREAL CROPS:** (Spring Wheat, Durum Wheat, Winter Wheat, Barley, Triticale, Spring Rye and Winter Rye) Challenger Herbicide can be used in all varieties of spring wheat (including Canada Western red spring, amber durum, soft white spring, extra strong and Canada prairie spring), red winter wheat, all 2 or 6 row varieties of barley (malting and feed varieties), all varieties of triticale, spring rye and winter rye.

**Note:** Tillered cereal crops may incur injury if applications are made within 48 hours of freezing temperatures. Non-tillering cereal crops which are exposed to temperatures of 4°C or less up to 48 hours before or after application may incur injury. Tank mixing Challenger Herbicide with a broadleaf weed herbicide under adverse conditions may increase severity of crop injury. Crops under stress from foliar diseases or low fertility are more susceptible to injury from Challenger Herbicide.

**Do not use in tame oat crops. Avoid drift onto tame oat and corn crops.  
Do not replant treated areas to tame oats or corn for at least 4 weeks after application.**

**In Eastern Canada** Challenger Herbicide is to be used only for the control of wild oats in spring wheat, winter wheat, durum wheat, barley and all varieties of triticale and spring and winter rye.

**Minimum Interval to Harvest**

Immature cereal crops may be grazed or cut for hay 16 days after treatment. Grain may be harvested 60 days after treatment. Mature straw may be fed to livestock. Do not feed or graze underseeded forage crops in the year of treatment, sufficient data are not available to support this use.

**CEREAL CROPS UNDERSEEDED TO FORAGE LEGUMES:** alfalfa, birdsfoot trefoil, sainfoin and clovers.

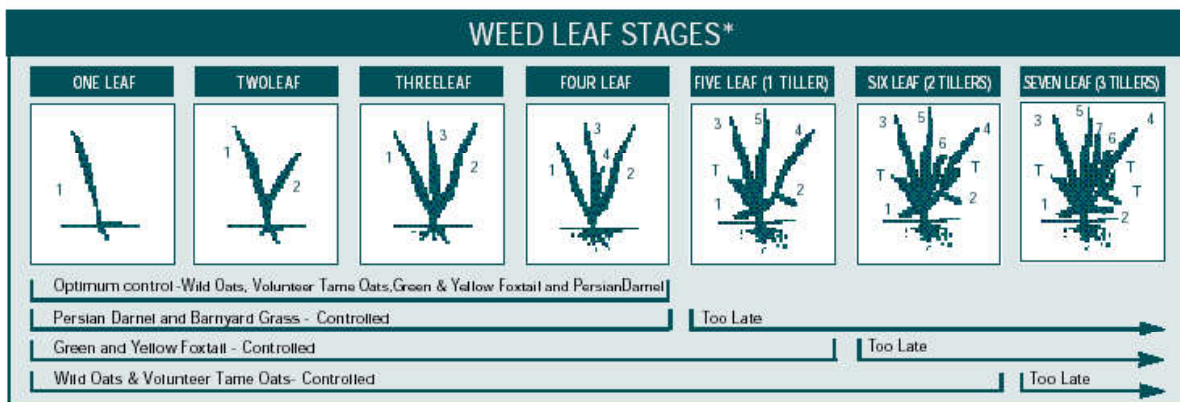
**Note:** Do not tank-mix Challenger Herbicide with any broadleaf herbicides when applying to cereal crops underseeded to forage legumes, as the forages may be injured or killed.

**WEEDS CONTROLLED**

Apply Challenger Herbicide to actively growing weeds for best results. Weeds emerging after application of Challenger Herbicide will not be controlled.

<b>CROP</b>	<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE (ZADOKS or BBCH)</b>
WHEAT DURUM BARLEY TRITICALE RYE	WILD OATS, VOLUNTEER OATS	1-6 leaf (11,20 to 14,22)
	GREEN FOXTAIL, YELLOW FOXTAIL	1-5 leaf (11,20 to 14,21)
	BARNYARD GRASS PERSIAN DARNEL	1-4 leaf (11 to 14)

Optimum weed control and crop yield response occurs when grassy weeds are removed before they begin to tiller. Refer to the illustration.



### Weed Control Notes

- Perennial grasses such as quack grass will not be controlled.
- Susceptible grassy weeds treated with Challenger Herbicide cease growth soon after application, however, complete die-back of the weeds could take up to 2 weeks.
- When grass weeds are stressed due to drought, heat, lack of fertility, flooding or prolonged cool temperatures, control can be reduced or delayed since the grasses are not actively growing. Grass escapes or re-tillering may occur when application is made under prolonged stress conditions. Optimum weed control will be obtained if application of Challenger Herbicide is delayed until the stress conditions have ended and weeds are once again actively growing.
- The herbicidal activity of Challenger Herbicide can be negatively affected if water containing high concentrations (>400 ppm) of bicarbonate ions is used as a diluent. Water from deep wells is more likely to contain high concentrations of bicarbonate ions. Ammonium sulfate at 9 to 18 kg per 1000 litres of spray solution, can be used to counteract this antagonistic effect. Use only granular or liquid ammonium sulfate formulations which do not contain additional wetters or surfactants.
- Challenger Herbicide is not affected by rain falling one hour or more after application.

### TANK MIXES OF CHALLENGER HERBICIDE WITH BROADLEAF WEED HERBICIDES

Challenger Herbicide alone will not control broadleaf weeds. For broad spectrum control of both annual grasses and broadleaf weeds, Challenger Herbicide can be tank mixed with a variety of broadleaf weed herbicides. Refer to the following table for details and additional guidance. Read the appropriate broadleaf herbicide label for information on broadleaf weeds controlled.

#### Tank Mixing Notes

1. Read and strictly adhere to the use directions and precautions on the label of the product(s) that is/are being tank mixed with Challenger Herbicide. Also note all environmental restrictions and guidance such as rain fastness and maximum spraying temperatures on the label of the other product(s) being tank mixed.
2. Do not tank mix with amine formulations of 2,4-D or with amine formulations of MCPA or with any other herbicide, insecticide, fungicide, fertilizer solution or adjuvant not recommended on the label as poor grass control and/or unacceptable crop injury may result.
3. With reduced water volumes, tank mixes with Buctril M, Thumper or Pardner may result in some initial injury in the form of "tip burn". This injury, however, will not have any adverse effect on crop maturity or yield.
4. Do not tank mix Challenger Herbicide with broadleaf herbicides when applying to cereal crops underseeded to forage legumes as the forages may be injured or killed.
5. Tank mixes with the high rate of Attain XC A Herbicide + Attain XC B Herbicide or high rate of Prestige XC Herbicide may cause temporary crop injury if applied before the 4 leaf stage, however, yield will not normally be affected. These tank mixes may provide a lower level of wild oat control than Challenger Herbicide alone.



6. Temporary crop injury may occur with registered tank mixes, in particular 2,4-D Ester/dichlorprop products, under extreme weather conditions or when the crop is suffering from stress due to inadequate or abnormally high moisture levels, or extreme temperatures. Barley may be injured with tank mixes of 2,4-D Ester/dichlorprop and Buctril M plus MCPA.
7. Herbicides not listed on this label for tank mixing with Challenger Herbicide may be applied separately in sequence. Always apply Challenger Herbicide first and allow at least 7 days after the application of Challenger Herbicide before applying the other herbicide. Herbicides labelled for tank mixing with Challenger Herbicide may also be applied sequentially, either before or after application of Challenger Herbicide.

#### TANK MIXES OF CHALLENGER HERBICIDE WITH INSECTICIDES

Challenger Herbicide alone or in combination with Buctril M products or Pardner can be tank mixed with Matador®120EC Emulsifiable Concentrate Insecticide or Decis® Flowable for one pass weed and insect control. Always add Matador 120EC Emulsifiable Concentrate Insecticide or Decis Flowable to the spray tank after the herbicides but before adding Challenger or Intake Adjuvant.

<b>FOR ALL TANK MIXES, USE 0.5 LITRES CHALLENGER HERBICIDE PER HECTARE PLUS THE FOLLOWING:</b>	
<b>MIXING PARTNER</b>	<b>REMARKS</b>
Infinity	Maximum rate of 0.83 L/ha for control of common ragweed and suppression of round-leaved mallow.
Buctril M	Additional MCPA Ester may be added to this tank mix to improve control of certain broadleaf weeds (i.e. hemp nettle, volunteer canola). Refer to the Buctril M label for recommended MCPA Ester rates. A reduction in control of green foxtail may occur with the tank-mix of Buctril M and additional MCPA Ester. Maximum rate of Buctril M of 1 L/ha.
Attain™ XC A Herbicide + Attain XC B Herbicide	Apply postemergence when weeds are in the seedling stage (2-4 leaf) and when spring wheat and spring barley are in the 4-leaf to flag-leaf stage. Apply to winter wheat in the spring from the 3 tiller stage to just before the flag leaf stage. Do not apply later than the flag-leaf emergence stage. See Attain XC A Herbicide use directions for application of the low rate or high rate depending on broadleaf weed species.
Koril 324 Liquid Herbicide	Maximum rate of 1.2 L/ha
Pardner	Maximum rate of 1 L/ha
Approve Herbicide	Maximum rate of 1.24 L/ha
Thumper	Maximum rate of 1 L/ha
Dichlorprop/ 2,4-D Ester	Maximum rate of 1.75 L/ha (assuming 600 g dichlorprop/2,4-D Ester ai/L). To ensure optimum crop safety, do not apply prior to the 4 leaf stage of the crop as per the dichlorprop/2,4-D Ester label timing.
2,4-D Ester	Maximum rate of 0.9 L/ha (assuming 600 g 2,4-D ai/L). Do not apply prior to the 4 leaf stage of the crop as temporary crop injury could occur, particularly in spray overlaps.
MCPA Ester	Maximum rate of 930 mL/ha (assuming 600 g MCPA ai/L).
Lontrel™ Herbicide + MCPA Ester	Maximum rate of 0.28 L/ha + 1.12 L/ha (assuming 500 g MCPA ai/L). Apply between 3 leaf expanded to before flag leaf of the crop. DO NOT apply after 6 leaf stage of the crop.
Curtail™ M Herbicide	Apply between 3 leaf expanded to before flag leaf of the crop. DO NOT apply after 6 leaf stage of the crop. Rate range of 1.5 - 2 L/ha.

<b>FOR ALL TANK MIXES, USE 0.5 LITRES CHALLENGER HERBICIDE PER HECTARE PLUS THE FOLLOWING:</b>	
<b>MIXING PARTNER</b>	<b>REMARKS</b>
Prestige™ XC Herbicide	For use on spring barley and wheat (spring, durum and winter) only. Apply postemergence when weeds are in the seedling stage (2-4 leaf) and when spring wheat and spring barley are in the 3-leaf to just before the flag-leaf emergence stage. Do not apply later than the flag-leaf emergence stage. See Prestige XC Herbicide use directions for application of the low rate or higher rate depending on broadleaf weed species.
Mextrol 450 Liquid Herbicide	1.25 L/ha for use on spring wheat, durum and barley only
Decis Flowable Insecticide	Maximum rate of 120 mL/ha.
Trophy Herbicide	Apply post-emergence when weeds are in the seedling stage (2-4 leaf) and when spring wheat, durum wheat and spring barley are in the 3-leaf to flag-leaf stage. Do not apply later than the flag-leaf stage. Trophy A Emulsifiable Concentrate Herbicide 0.6 L/ha + Trophy B Emulsifiable Concentrate Herbicide 1.12 L/ha rates. <b>DO NOT APPLY BY AIR</b>
Matador 120EC Emulsifiable Concentrate Insecticide	Apply 63-83 mL/ha for control of grasshoppers.
Starane™ Herbicide	Apply 0.4 L/ha for control of cleavers (1-4 whorls). Apply 0.6 L/ha for control of cleavers (1-4 whorls), kochia (2-8 leaf), volunteer flax (1-12 cm) and suppression of storks bill (1-8 leaf). Apply 0.8 L/ha for control/suppression of aforementioned weeds plus control of round-leaved mallow (1-6 leaf), and suppression of chickweed (up to 8 cm), hempnettle (2-6 leaf) and wild buckwheat (1-4 leaf).
OcTTain™XL Herbicide	For use on spring barley and wheat (spring, durum and winter) only. Apply postemergence when weeds are in the seedling stage (2-4 leaf, unless otherwise noted), and actively growing, and when spring wheat, durum wheat and spring barley are in the 4-leaf to flag-leaf stage. Apply to winter wheat in the spring from the 3 tiller stage to just before the flag leaf stage. Do not apply later than the flag-leaf stage. Apply 1.1 L/ha of OcTTain XL Herbicide

### **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. The user assumes the risk of losses that result from the use of tank mixes that do not appear on this label or that are not specifically recommended by Corteva Agriscience Canada Company.

## MIXING INSTRUCTIONS

Follow the mixing instructions below for adding Challenger Herbicide to the spray tank.

1. Only use sprayers in good running condition with high agitation. Ensure the sprayer and pre-mix tank is cleaned according to instructions on label of the product used prior to Challenger Herbicide. Use only clean water for the spray solution. Ensure that all in-line strainer and nozzle screens in the sprayer are 50 mesh or coarser. Screens of 80 mesh size or finer should not be used.
2. Begin to fill sprayer tank or premix tank with clean water, and engage agitator. Agitation must be continued throughout the entire mixing and spraying procedure.
3. When the sprayer or premix tank is three quarters full of water, add Challenger Herbicide. If more than 1 case of Challenger Herbicide is to be used, add the Challenger Herbicide from all cases prior to adding tank mixed products or Challenger or Intake Adjuvant.
4. If tank mixing, add the recommended product(s) next.
5. Lastly, add Challenger or Intake Adjuvant, and then continue to fill tank to desired level with water.

## Sprayer Clean-Out Instructions

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 odour which may cause eye, nose, throat and lung irritation. Do not clean equipment in an enclosed area.

## GROUND SPRAYING INSTRUCTIONS

1. Apply in a spray volume of 50-100 L/ha at a pressure of 275 kPa to ensure proper dispersion, spraying characteristics and performance of Challenger Herbicide.
2. Flat fan nozzles of 80° or 110° are recommended for optimum coverage. Do not use floodjet nozzles or controlled droplet application equipment. Nozzles may be angled forward 45° to enhance penetration of the crop and provide better coverage. Ensure that all in-line strainer and nozzle screens in the sprayer are 50 mesh or coarser. Screens of 80 mesh or finer should not be used.
3. Always ensure that agitation is continued until spraying is completed, even if stopped for brief periods of time. **If the agitation is stopped for more than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying. Do not begin spraying until fully re-suspended. Challenger Herbicide must be sprayed within the same day of mixing.**
4. When spraying is completed and prior to using other products, ensure the sprayer tank is thoroughly rinsed with clean water to remove any remaining Challenger Herbicide residues. Using a pressure washer and the addition of a detergent or Agral 90 to the rinse water will enhance removal of residues.

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

## AERIAL APPLICATION

### Generic Aerial Application Label Instructions - Directions for Use

Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.

Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

### Use Precautions

Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in the *National Aerial Pesticide Application Manual*, developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides.

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified buffer zones should be observed.

**DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply when wind speed is greater than 16 km/h at flying height at the site of application. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification. To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wing or rotorspan.

### Operator Precautions

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

#### **AERIAL SPRAYING INSTRUCTIONS**

1. Apply in a spray volume of 30 to 45 L/ha at a pressure of 140-275 kPa to ensure proper dispersion, spraying characteristics and performance of Challenger Herbicide.
2. Flat fan nozzles of 80° or 110° are recommended for optimum coverage. Do not use floodjet nozzles or controlled droplet application equipment. **Ensure that all in-line strainer and nozzle screens in the sprayer are 50 mesh or coarser. Screens of 80 mesh size or finer should not be used.**
3. Always ensure that agitation is continued until spraying is completed, even if stopped for brief periods of time. **If the agitation is stopped for more than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying. Challenger Herbicide must be sprayed within the same day of mixing.**
4. Do not apply Challenger Herbicide if the wind is more than 13 km/h. This will avoid spray drift onto non-target areas.
5. **Do not spray** Challenger Herbicide if tame oats are present in adjacent, downwind fields.
6. When spraying is completed and prior to using other products, ensure the sprayer tank is thoroughly rinsed with clean water to remove any remaining Challenger Herbicide residues. Using a pressure washer and the addition of a detergent or Agral 90 to the rinse water will enhance removal of residues.
7. DO NOT APPLY within 50 m of non-crop areas. This includes fish-bearing waters, wetlands (potholes, sloughs etc.) and wildlife habitat (hedgerows, rights of way, etc.).

#### **READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR SPECIAL USE APPLICATIONS:**

**NOTE TO USER: READ THE FOLLOWING BEFORE USING THIS PRODUCT FOR THE INDICATED SPECIAL USE APPLICATIONS:** The DIRECTIONS FOR USE for this product for the use(s) described below were developed by persons other than Corteva Agriscience Canada Company and accepted for registration by Health Canada under the User Requested Minor Use Label Expansion program. Corteva Agriscience Canada Company itself makes no representation or warranty with respect to performance (efficacy) and/or crop tolerance (phytotoxicity) claims for this product when used on the crop(s) listed below.

Accordingly, the Buyer and User assumes all risks related to performance and crop tolerance arising, and agrees to hold Corteva Agriscience Canada Company harmless from any claims based on efficacy and/or phytotoxicity in connection with the use(s) described on this label.

<b>DIRECTIONS FOR USE</b>	
Pest(s)	Wild Oats, volunteer oats, green foxtail, yellow foxtail, Persian Darnel.
Rate of application	0.5 L Challenger Herbicide/ ha in 50 - 100 L of water/ ha. Add Challenger or Intake Adjuvant at a rate of 0.5 L/100 L spray mixture (0.5% v/v). Under adverse conditions, such as dense weed population, late weed growth stage, or poor environmental conditions apply 1.0% V/V of Intake Adjuvant (10 L Intake Adjuvant /1000 L spray mixture).
Site (Crop)	<p><u>For the following forage grasses grown for seed only:</u></p> <ul style="list-style-type: none"> <li>• Seedling and established intermediate and crested wheatgrass, creeping red fescue, meadow and smooth bromegrass either underseeded to cereals or grown alone.</li> <li>• For establishment of northern wheatgrass, western wheatgrass and slender wheatgrass.</li> </ul>
Application Timing	Prior to tillering of the weeds (< 4 leaf stage)
Pre-Harvest Interval	NA
Other	<p>DO NOT APPLY BY AIR</p> <p>Do not feed or graze forage crops, sufficient data are not available to support this use.</p> <p>One application per season.</p>

**CAUTIONS:**

Do not tank mix Challenger Herbicide with other herbicides, insecticides, fungicides, fertilizers, micronutrients or adjuvants other than those listed on this label, when applying to these forage grasses. Apply Challenger Herbicide prior to tillering of the weeds. Applications made after the weeds have tillered may result in unacceptable weed control due to poor crop competition compared to cereal crops. Crop injury or slight yield reductions may be expected following treatment in the year of establishment, however, the injury is transient and the crop will recover the following year.

<b>DIRECTIONS FOR USE</b>	
Pest(s)	Wild Oats, volunteer oats, green foxtail, yellow foxtail, Persian Darnel.
Rate of application and Spray Volume	0.5 L Challenger Herbicide/ ha in 50 - 100 L of water/ ha. Add Challenger or Intake Adjuvant at a rate of 0.5 L/100 L spray mixture (0.5% v/v). Under adverse conditions, such as dense weed population, late weed growth stage, or poor environmental conditions apply 1.0% V/V of Intake Adjuvant (10 L Intake Adjuvant /1000 L spray mixture).
Site (Crop)	For Perennial Cereal Rye grown in the year of crop establishment
Application Timing	Prior to tillering of the weeds (1-4 leaf, 1-5 leaf, 1-6 leaf depending on the species)
Pre-Harvest Interval	16 days
Other	<p>DO NOT APPLY BY AIR</p> <p>One application per season.</p> <p>FOR USE IN THE PRAIRIE PROVINCES ONLY</p>

**CAUTIONS:**

Do not tank mix Challenger Herbicide with other herbicides, insecticides, fungicides, fertilizers, micronutrients or adjuvants other than those listed on this label, when applying to these forage grasses. Apply Challenger Herbicide prior to tillering of the weeds. Applications made after the weeds have tillered may result in unacceptable weed control due to poor crop competition compared to cereal crops. Crop injury or slight yield reductions may be expected following treatment in the year of establishment, however, the injury is transient and the crop will recover the following year.

**BUFFER ZONES**

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).

Method of Application	Buffer Zones (metres) Required for Protection of:
	Terrestrial Habitat
Field Sprayer	3
Aerial (fixed-wing)	100
Aerial (rotary-wing)	80

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

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

**RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management, Challenger Herbicide is a Group 1 herbicide. Any weed population may contain or develop plants naturally resistant to Challenger Herbicide and other Group 1 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 Challenger Herbicide or other Group 1 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 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).

**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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