

Group	8	Herbicide
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Avenge[®]

200 – C Difenzoquat Liquid Post-Emergence

WILD OAT HERBICIDE

For control of wild oats in

SPRING WHEAT

(AC Barrie, Biggar, Bluesky, CDC Makwa, CDC Teal, Columbus, Conway, Cutler, Fielder, Genesis, Glenlea, Katepwa, Lancer, Leader, Neepawa, Oslo, Pasqua, Selkirk and Wildcat varieties only)

**BARLEY TRITICALE*, WINTER WHEAT*,
FALL RYE*, CANARY GRASS* and UNDERSEEDDED FORAGES***
(*For specific varieties see this pamphlet)

AGRICULTURAL

GUARANTEE: difenzoquat ... 200 g/L
(PRESENT AS METHYL SULFATE)

REGISTRATION NO. 12853 PEST CONTROL PRODUCTS ACT



WARNING

POISON

***IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL, FIRE OR POISONING,
CALL 1-800-327-8633 (FASTMED)***

READ THE LABEL AND ATTACHED PAMPHLET BEFORE USING

NET CONTENTS: 10 Litres

Amvac Chemical Corporation
4100 E. Washington Boulevard
Los Angeles, CA 90023

Distributed by: Syngenta Canada Inc.
140 Research Lane, Research Park
Guelph, ON N1G 4Z3
Telephone: 1-877-964-3682

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH THE SKIN.

CORROSIVE - CAUSES EYE IRRITATION

Avoid contact with eyes, skin and clothing.

Wear goggles or face shield and chemical resistant gloves when handling.

Wash thoroughly with soap and water after handling.

Do not contaminate water, food and feed products by storage or disposal.

Wear long-sleeved shirt and pants when handling or applying.

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 website at www.croplife.ca.

FIRST AID INSTRUCTIONS

If in eyes: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention or call a poison control centre IMMEDIATELY.

If swallowed: Drink promptly a large quantity of milk, egg white, gelatin solution or, if these are not available, large quantities of water. Avoid alcohol. Get medical attention or call a poison control centre IMMEDIATELY.

If on skin: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash clothing before re-use. Get medical attention or call a poison control centre IMMEDIATELY.

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

TOXICOLOGICAL INFORMATION

Probable mucosal damage may contraindicate the use of gastric lavage.

Symptoms of poisoning - lethargy, diuresis, diarrhea and prostration.

DISPOSAL

Recyclable Container

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 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.

DIRECTIONS FOR USE

Stage of Wild Oat Growth

AVENGE herbicide should give successful wild oat control during an extended period from the 3 - 4 leaf stage to the 5th leaf stage.

Early Treatments	AVENGE herbicide should be applied when a majority of the wild oats are in the 3 - 4 leaf stage to minimize early wild oat competition and provide maximum yield increases. AVENGE herbicide will not control wild oat plants that are in the 1 - 2 leaf stage.
Later Treatments	AVENGE herbicide, applied at the 4 - 5 leaf stage will give very good control but yield increases may be reduced.
NOTE	<p>Maximum wild oat control and yield increase of crop are obtained under conditions of strong crop competition. Early treatments will promote stronger crop competition than later treatments. For best results, AVENGE herbicide should be applied when the crop and wild oats are growing vigorously.</p> <p>AVENGE herbicide controls wild oats by stopping their growth. Obvious signs of plant death may not be seen for 3 to 4 weeks but the competitive effect of these plants will have been removed.</p>

CROPS: Spring wheat	AC Barrie, Biggar, Bluesky, CDC Makwa, CDC Teal, Columbus, Conway, Cutler, Fielder, Genesis, Glenlea, Katepwa, Lancer, Leader, Neepawa, Oslo, Pasqua, Selkirk, and Wildcat varieties only
Barley	All varieties
Triticale	Welsh, Carman
Winter wheat	Norstar
Fall rye	Cougar, Puma, Frontier, Rymin, Kodiak
Canary grass	Seed used as feed for song birds
Forages underseeded to barley or wheat	Alfalfa, red clover, sweet clover, birdsfoot trefoil, creeping red fescue, red fescue, meadow fescue, brome grass, timothy, crested wheatgrass, orchardgrass, Russian wildrye grass, reed canarygrass, Kentucky bluegrass
Seedling grasses (Apply up to 3-leaf stage of wild oats)	Meadow foxtail, tall wheatgrass, streambank wheatgrass, pubescent wheatgrass, tall fescue, meadow brome grass
NOTE	<p>DO NOT treat forages without a companion crop. DO NOT treat the wheat and barley companion crops and the underseeded forages if the forages are to be grazed or harvested for feed during the year of seeding. DO NOT harvest seedling grasses for forage or graze the crop in the year of seeding. Rotation to other crops can be made the following season. AVENGE herbicide may shorten wheat straw slightly but this does not affect the crop yield.</p> <p>Grasses may show signs of damage in the year of application but will recover the following year.</p>

WILD OAT INFESTATIONS	<p>201 or more wild oat plants per square meter (m^2). Apply 4.25 litres of this product (850 g active) in 100 litres of spray per hectare.</p> <p>1 - 200 wild oat plants per m^2. Apply 3.5 litres of this product (700 g active) in 100 litres of spray per hectare.</p> <p>Most infested fields have more than 200 wild oat plants per m^2 and require the 4.25 L/ha rate. The lower rates may be adequate in following years when the wild oat population has been reduced.</p>
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GROUND APPLICATION

Volume of spray per hectare:

A uniform spray of 100 litres per hectare which thoroughly covers the wild oat plants must be used. See chart for amounts of water to be added when a 20 litre pail of AVENGE herbicide is being used. See chart on this following pages for tips and tip pressures.

CROPS	Volume spray per hectare	Use a 20-litre pail of AVENGE Wild Oat Herbicide	Water needed	Total solution	Hectares covered per 20-litre pail
Spring wheat Barley Triticale	100 L	To apply 4.25 L/ha (850 g active)	450 L	470 L	4.70
Winter wheat Fall rye Canary grass Underseeded forages	100 L	To apply 3.5 L/ha (700 g active)	550 L	570 L	5.70

TIPS For 100 L rate	TRACTOR Speed	TIP PRESSURE	DIRECTION of spray
Tee Jet 6502, 8002 or 11002	8 km/h	For all tips 275 kPa	For all tips 45° forward
Tee Jet 8001 LP	6.5 km/h		
Delavan LF 2 65° or 80°	8 km/h		

AERIAL APPLICATION

Apply AVENGE herbicide at the recommended rates in 20 - 50 litres water per hectare.

DO NOT apply when the wind velocity exceeds 15 km/h. Application should be made as close to the growing crop as feasible.

DO NOT permit spray drift to contaminate crops other than those being sprayed. It is recommended that a flagman be located at each end of the field or that an automatic mechanical flagging unit be attached to the aircraft to ensure uniform aerial application and to avoid overlapping. If flagmen, are present they should wear chemical resistant disposable coveralls, goggles or face shield and a respirator with appropriate filter. Caution should be exercised to prevent bystander exposure to spray.

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.

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 *Basic Knowledge Requirements for Pesticide Education in Canada: Applicator Core* and *Aerial Module*, developed by CAPCO.

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in finer particles. Do not apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. Do not spray when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

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.

Read and understand the entire label before opening this product. If you have questions, call the manufacturer at 1-877-964-3682 or obtain technical advice from the distributor or your provincial agricultural representative.

MIXING

Fill the spray tank 3/4 full with clean, filtered water then add required quantity of AVENGE. Add additional water required. Circulate the spray mixture in the tank for 5 minutes before spraying begins to ensure thorough mixing.

WAITING INTERVALS

For any broadleaf herbicide registered for tank-mixing with AVENGE, a waiting interval is not required between its application and the application of AVENGE.

Allow a minimum 5 day interval between the application of any other pesticide not registered for tank-mixing with AVENGE and the application of AVENGE. Failure to observe this interval may result in poor wild oat control. A longer waiting interval may be required if any sign of crop stress is evident.

FOAMING

AVENGE herbicide may cause foaming in certain types of water. If this occurs agitation should be kept to a minimum and a silicone anti-foaming agent added, for example, HALT[®].

SPRAYER INFORMATION

Flat fan spray tips are recommended over cone tips.

Pressure at nozzle tips should be 275 kPa, lower pressures may result in poor control.

Tilt spray boom forward 45° if flat fan nozzle tips are used.

Wash sprayer thoroughly after spraying has been completed.

WARNINGS

Use ONLY on the crop varieties listed in this pamphlet. (See Directions for Use).

DO NOT apply after 6-leaf stage of barley, wheat and canary grass.

Under cool weather conditions, or under high humidity the crop may show some initial burning on lower leaves, however, there will be no adverse effects on crop maturity or yield.

DO NOT apply AVENGE if the crop is under extreme drought stress or is showing effects of excessive moisture (poor drainage).

DO NOT make more than one application of AVENGE per growing season.

DO NOT allow livestock to graze treated crops within 8 weeks of treatment. Straw from treated fields can be fed to livestock 8 weeks after application.

DO NOT treat the wheat and barley companion crops and underseeded forages if the forages are to be grazed or harvested for feed during the year of seeding.

As AVENGE herbicide is highly water-soluble, do not spray if crop plants are wet with heavy dew or rain since product will run off.

DO NOT spray if rain is forecast within 6 hours.

DO NOT spray in winds over 15 - 25 kilometers per hour or reduced wild oat control will result.

DO NOT let spray drift into adjacent fields.

Keep out of lakes, streams and ponds.

DO NOT spray if freezing temperatures are forecast.

DO NOT use felt-type filter elements because they cause pressure restrictions and cannot be

easily cleaned.

Use a 50 or 60 mesh stainless screen element in the main "line strainer" unit.

Use a 50-mesh screen on nozzle strainers when applying 100 litres of solution per hectare.

NOTE: Rotation to other crops can be made the following season.

AVENGE herbicide may shorten wheat straw slightly but this does not affect the crop yield.

HOW TO USE AVENGE WILD OAT HERBICIDE PLUS BROADLEAF HERBICIDES

- Select the proper AVENGE herbicide application rate as described in the AVENGE RECOMMENDATIONS TABLE.
- DO NOT apply AVENGE tank-mix combinations under stress conditions.
- In order to assure optimum broadleaf weed control, follow label recommendations of the broadleaf herbicides used with AVENGE. Refer to the tankmix partner label for recommended rates.
- When tank-mixing broadleaf herbicides use only on barley, canary grass and wheat, and apply only those listed below following the mixing instructions.
- When tank-mixing follow the most restrictive precautions, directions and recropping/rotation limitations that appear on both products labels.

TANKMIX	NOTE:
MCPA ester Bromoxynil (Pardner®) (See Note 1) 2,4-D ester (See Note 2) MCPA ester plus bromoxynil (Buctril® M, Bromox® 450 M, Bromox) 2,4-DB (Embutox® 625, Cobutox® 400, 2,4-D Butyric 400, Caliber® 400) (See Note 2) 2,4-D Ester plus dichlorprop (CleanCrop, see Diphenoprop® 600, Estaprop®, Turboprop® 600, Dichlorprop-D®, Interprop®) (See Note 3)	(1) DO NOT APPLY BY AIR. (2) DO NOT apply to Canary grass. (3) Wheat and barley only. DO NOT apply when underseeded to legumes.
Apply the above tank mix combination at a rate of 100 litres spray per hectare by ground equipment or 20 to 50 litres spray per hectare by aircraft.	
Laser®	Use only on Hard Red Spring wheat. Use ground equipment only. Will control wild oats and green foxtail.
Ally® Refine® Refine® Extra	Use only on wheat and barley grown in soils with a pH of 7.5 or lower. DO NOT apply to canary grass. DO NOT add surfactant. DO NOT APPLY BY AIRCRAFT.

TANKMIX	NOTE:
Accord [®]	Use only on Spring wheat varieties listed on this label when wild oats are between 1-200 plants per m ² . Use ground equipment only. Addition of surfactants other than MERGE [®] adjuvant is not required.
Accord [®] plus either Buctril M, 2,4-D Ester (assume 500 series), MCPA Ester (assume 500 series) or Refine Extra	Use only on Spring wheat varieties listed on the label. For control of wild oats between 1-200 plants per m ² and certain broadleaf weeds. Use ground equipment only. Addition of surfactants other than MERGE [®] adjuvant is not required.
Curtail [®] M	Use with wheat and barley only. Prairie Provinces or Peace River Region of B.C. only. Not undersown with forages or other companion crops. DO NOT APPLY BY AIR. For control of wild oats and infestations of Canada thistle. Refer to CURTAIL M label for weed stages and rates. Use at 3-6 leaf stage of crop.
Thumper [®]	Use only on Spring wheat and barley at the 4-6 leaf stage, not underseeded to legumes. Wild oats must be in the 3 to 5 leaf stage and broadleaf weeds in the seedling stage as indicated on the THUMPER label. DO NOT APPLY BY AIR.

Mixing Note: AVENGE and dry flowable herbicides

When tank-mixing a dry flowable herbicide such as Accord, Ally, Refine or Refine Extra with Avenge:

Make sure the dry flowable is thoroughly dissolved in the water before adding AVENGE herbicide. On repeated tank-loads, if any tank-mix solution remains in the tank, prepare a dry flowable/water slurry and add it to the required water volume in the spray tank prior to adding AVENGE.

CAUTION

- DO NOT mix AVENGE herbicide with or spray within 5 days any formulation containing MCPA amine, 2,4-D amine, Banvel[®], Target[®], DyVel[®], Blagal[®] or any herbicide other than those listed above as crop injury or reduced weed control may result.
- DO NOT tank-mix AVENGE with ANY broadleaf herbicide, except 2,4-DB, for use on underseeded forages.
- DO NOT tank-mix AVENGE herbicide with any formulation containing 2,4-D ester or 2,4-DB on canary grass.

MIXING INSTRUCTIONS FOR TANK MIXES OTHER THAN DRY FLOWABLES

1. Fill tank one-half to three-quarters full with clean water and start agitating.

2. Add the broadleaf herbicide to the partially filled tank while agitating.
3. Add AVENGE herbicide when tank is three-quarters filled while agitating. Fill tank and agitate, or, recycle for at least five minutes before spraying.
4. Continue agitation until spraying is completed.

RESISTANCE MANAGEMENT

For resistance management, AVENGE herbicide is a Group 8 herbicide. Any weed population may contain or develop plants naturally resistant to AVENGE herbicide and other Group 8 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 AVENGE herbicide or other Group 8 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 and to report suspected resistance, contact Syngenta Canada Inc. company representatives at 1-87-SYNGENTA (1-877-964-3682) or at www.syngenta.ca.

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