

241-266

05/13/1999

ACCEPTED

MAY 13 1999

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under  
EPA Reg. No. 241-266

**AVENGE®**  
wild oat herbicide

**FOR USE IN BARLEY AND WHEAT**

**ACTIVE INGREDIENT:**

difenzoquat methyl sulfate ..... 31.2%

**INERT INGREDIENTS** ..... 68.8%

**TOTAL** ..... 100.0%

(1 gallon contains 2 lbs. of difenzoquat cation)

EPA Reg. No. 241-266

EPA Est. No.

**KEEP OUT OF REACH OF CHILDREN**

**DANGER/PELIGRO!**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand this label, find someone to explain it to you in detail.)

**STATEMENT OF PRACTICAL TREATMENT**

**If in eyes:** Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

**If swallowed:** Call a doctor or get medical attention. Do not induce vomiting or give anything by mouth to an unconscious person. Drink promptly a large quantity of milk, eggwhites, gelatin solution, or if these are not available, drink large quantities of water. Avoid alcohol.

**If on skin:** Wash with plenty of soap and water. Get medical attention.

**If inhaled:** Remove victim to fresh air. If not breathing, give artificial respiration preferably mouth-to-mouth. Get medical attention.

**NOTE TO PHYSICIAN:** Probable mucosal damage may contraindicate the use of gastric lavage.

**See Inside For Additional Precautionary Statements.**

**See Directions For Use Inside**

In case of an emergency endangering life or property involving this product,  
call collect, day or night, Area Code (973) 683-3100.

Net Contents:



American Cyanamid Company  
North America Agricultural Products Division  
Crop Protection Products Department  
One Campus Drive, Parsippany, NJ 07054 ©1999

**PRECAUTIONARY STATEMENTS**  
**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**DANGER!**

**Corrosive:** causes irreversible eye damage. May be fatal if absorbed through the skin. **DO NOT** get in eyes, on skin, or on clothing. Harmful if swallowed or inhaled. Avoid breathing spray mist.

**Personal Protective Equipment (PPE):**

**Applicators and other handlers must wear:**

- coveralls over short-sleeved shirt and short pants
- waterproof gloves
- shoes plus socks
- protective eyewear
- dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH approved respirator with any N, R, P or HE filter. **Note:** Follow manufacturer's recommendations about use time.

**Mixer/Loader:** Wear a chemical resistant apron.

**Overhead Exposure:** Wear chemical resistant head gear.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. **DO NOT** reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**User Safety Recommendations:**

**Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**ENVIRONMENTAL HAZARDS**

**DO NOT** apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. **DO NOT** apply when weather conditions favor run-off and/or drift from target area. **DO NOT** contaminate water when disposing of equipment washwaters.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. **DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**DO NOT** apply this product through any type of irrigation system.

This label must be in the possession of the user at the time of pesticide application.

#### **AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**DO NOT** enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plant, soil, or water, is:

- coveralls over short-sleeved shirt and short pants
- waterproof gloves
- shoes plus socks
- protective eyewear.

#### **STORAGE AND DISPOSAL**

Keep from freezing. AVENGE should be stored at temperatures at or above 40°F (5°C). Ice will form in the container at 15° F (-10° C). If ice occurs place container at room temperature until ice melts. Stability of AVENGE is not affected by freezing and thawing.

**DO NOT** contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. **DO NOT** reuse empty container.

**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the hazardous waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL FOR 2.5 GALLONS:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. Consult federal, state or local authorities for approved alternative disposal procedures.

**CONTAINER DISPOSAL FOR FIELD KEG, MINI-BULK AND BULK:** Return empty container for reuse.

## GENERAL INFORMATION

AVENGE is a selective herbicide for the postemergence control of wild oats in barley and wheat. See the section DIRECTIONS FOR USE for varietal restrictions.

If broadleaf weeds must also be controlled in these crops, AVENGE may be tank mixed with certain broadleaf herbicides which are listed under the HOW TO USE AVENGE PLUS BROADLEAF HERBICIDES section. AVENGE alone or in combination can be applied postemergence by ground equipment or aircraft.

Maximum control of wild oats in barley and wheat with AVENGE alone, or in combination, is obtained when temperature, moisture, fertility and cultural practices provide favorable conditions for plant growth. When applied under poor conditions for plant growth such as cold/wet or hot/dry weather or low soil fertility, AVENGE can produce yellowing or slight tip burn of barley or wheat. However, recovery is rapid when good growth conditions return. A slight reduction of yield may result under conditions described above.

Observe all cautions and limitations on this label and the labels of products used in tank mixtures with AVENGE. The use of AVENGE not consistent with this label can result in injury to crops, animals or persons. Keep containers closed to avoid spills and contamination.

Following the use of this product and chemically related products with the same mode of action, naturally occurring biotypes\* of some of the weeds listed on this label cannot be effectively controlled by this and related products. This product should be tank-mixed or applied sequentially with an appropriate registered herbicide having a different mode of action to ensure control of resistant biotypes.

\*A weed biotype is a naturally occurring individual within a given species that has a slightly different, but distinct genetic makeup from other individuals.

See your local Cyanamid representative for additional information.

**WHERE TO USE AVENGE:** Follow the **RECOMMENDED** and **NOT RECOMMENDED** table for restricted varieties of barley and wheat.

|                          | <b>RECOMMENDED</b><br>Apply AVENGE to the following varieties:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>NOT RECOMMENDED</b><br>DO NOT apply AVENGE to the following varieties:                                                                                     |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>BARLEY TYPE</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                               |
| All Varieties.           | All varieties.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | No restrictions.                                                                                                                                              |
| <b>WHEAT TYPE</b>        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                               |
| Fall and Winter Seeded   | All varieties not listed in the NOT RECOMMENDED for AVENGE column.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Borah, Klasic, Mexican durums, Probrand 771, RSI-5, Tadinia, WS 1809, WS 1877, WS 1859                                                                        |
| Soft-White Spring Seeded | All varieties.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | No restrictions.                                                                                                                                              |
| Spring Seeded Durums     | All varieties not listed in the NOT RECOMMENDED for AVENGE column.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Cortez, Duraking, Durex, Durfort, Edmore, Fjord, Kofa, Kyle, Kronos, Laker, Lakota, Lloyd, Regal, Renville, Vic, Wakooma, Wascona, Westbred 803, Westbred 881 |
| Hard White Spring        | All varieties not listed in the NOT RECOMMENDED for AVENGE column.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | IDD 377s                                                                                                                                                      |
| Hard Red Spring Seeded   | Amidon, Apex, Baart, Benito, Bronze Chief, Buckshot, Butte, Butte 86, Canuck, Centa, Chester, Columbus, Copper, Coteau, Courtney, Era, Erik, Express, Federation, Fjeld, Fortuna, Germain 444, Glenlea, Glennman, HY320, Katepwa, Kitt, Kodiak, Leader, Lief, McKay, Marberg, Marshall, Minnpro, Newana, Neepawa, NK(PB) 751, Nomad, Norak, Norana, Norm, Olaf, Oslo, Pinnacle, Pioneer 2369, Pioneer 2385, Pondera, Probrand 711, Probrand 751, Prodax, Rambo, Selkirk, Serra, Sharp, Solar, Sonja, Spillman, Stoa, Success, Telemark, Vance, Victory, W 2502, Walera, Westbred 936, Wheaton, Yecoro rojo | DO NOT apply to varieties of hard red spring wheat not listed on the RECOMMENDED variety list or supplemental variety list.                                   |

For further information regarding wheat tolerance to an AVENGE treatment, contact your Cyanamid representative or your local seed supplier for a list of potentially sensitive wheat varieties.

**WHEN TO USE AVENGE:** AVENGE or AVENGE/broadleaf tank mix combinations are to be applied when the majority of wild oat plants are in the 3- to 5-true leaf stage of growth (tillering). The timing of AVENGE application to wild oats frequently coincides with barley in the 2- to 7-leaf stage, spring-seeded wheat in the 5- to 6-leaf stage, and fall-seeded wheat in the 4-leaf to tillered stage of growth. To achieve maximum control, the growth stage of wild oats in each field to be treated should be examined frequently to determine the 3- to 5-true leaf stage (tillering) for proper timing of AVENGE application. Density of wild oats per square foot should also be determined to select the correct AVENGE application rate.

### WILD OAT STAGES

(artwork)

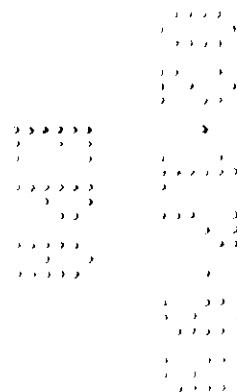
(artwork)

(artwork)

3-true leaf stage

4-true leaf stage

5-true leaf stage



## EQUIPMENT APPLICATION INSTRUCTIONS

The spray equipment must be clean and properly calibrated before treatments are applied. For best results, use flat fan nozzles, at pressures of 20 to 40 psi to achieve uniform spray distribution and minimize drift. **DO NOT** use flood jet nozzles. Keep the by-pass line on or near the bottom of the tank to minimize foaming. In ground applications, check nozzles for even distribution of spray droplets. In aerial applications, it is recommended that a flagman be located at each end of the field, or an automatic mechanical flagging unit be attached to the aircraft to ensure uniform aerial application and to avoid overlapping and possible crop injury.

## AVENGE APPLICATION

**DO NOT** apply AVENGE when the flagleaf is exposed or crop injury may occur. **DO NOT** apply AVENGE if rain is predicted within 6 hours. **DO NOT** spray AVENGE when freezing temperatures are forecast or when plants are wet with dew or rain. **DO NOT** apply AVENGE or AVENGE tank mix combinations under severe conditions for plant growth such as drought, extreme temperature fluctuation, low soil fertility and plant disease.

Apply AVENGE alone and AVENGE plus broadleaf herbicide combinations in 10 to 20 gallons of water per acre by ground equipment or 5 to 10 gallons of water per acre by aircraft. **DO NOT** let spray drift onto adjacent crops.

For spray volumes in excess of 10 gallons of spray per acre (gpa), the addition of a surfactant is required. Use any non-ionic surfactant of at least 80% active ingredient cleared for application to growing crops. Consult Surfactant Addition Table below for amount of surfactant required.

## HOW TO USE AVENGE ALONE

Maximum weed control with AVENGE alone or in combination is obtained when temperature, moisture, fertility and cultural practices provide favorable conditions for active plant growth. AVENGE should be mixed at a rate of 2.5 to 4 pints per acre depending on wild oat density. For low to moderate wild oat populations (1 to 25 plants per square foot), mix 2.5 to 3 pints AVENGE per acre. For high wild oat populations (greater than 25 plants per square foot), mix 4 pints AVENGE per acre.

## ASSERT®/AVENGE® Tank Mix for Wild Oat Control

ASSERT herbicide may be tank mixed with AVENGE wild oat herbicide for the control of wild oats only. Follow all varietal restrictions present on the AVENGE label. ASSERT should be mixed at a rate of  $\frac{3}{4}$  (three-quarter) pint per acre with AVENGE at 2 pints per acre.

This mixture can be applied from the 2-5 true leaf stage of wild oats. **DO NOT** apply this tank mix when the wheat/barley flagleaf is exposed. The tank mix should be applied in a minimum of 10 gallons of water per acre (gpa) by ground equipment and in 5 or more gpa by aircraft. **FOR WILD OAT POPULATIONS IN EXCESS OF 25 PLANTS PER SQUARE FOOT, USE A MINIMUM SPRAY VOLUME OF 15 GALLONS PER ACRE BY GROUND OR 5 GALLONS PER ACRE BY AERIAL APPLICATION.** Use a non-ionic surfactant containing at least 80% active ingredient at a rate of 2 pints per 100 gallons spray solution up to an application rate of 15 gpa. For application rates greater than 15 gpa consult the SURFACTANT ADDITION TABLE below for surfactant requirements.

### SURFACTANT ADDITION TABLE

| Gallons Per Acre | Surfactant Required Per 100 Gallons<br>(pints) |
|------------------|------------------------------------------------|
| ≤10              | 0                                              |
| 15               | 2                                              |
| 20               | 4                                              |

### HOW TO USE AVENGE PLUS BROADLEAF HERBICIDES

AVENGE may be tank mixed with the following broadleaf herbicides:

|                      |                            |
|----------------------|----------------------------|
| 2,4-D amine or ester | Curtail M <sup>3</sup>     |
| Ally <sup>1</sup>    | Express <sup>1</sup>       |
| Amber <sup>2</sup>   | Glean <sup>1</sup>         |
| bromoxynil           | Harmony Extra <sup>1</sup> |
| bromoxynil plus MCPA | Harmony <sup>1</sup>       |
| Canvas <sup>1</sup>  | MCPA amine or ester        |
| Curtail <sup>3</sup> | Peak <sup>2</sup>          |

In order to assure optimum broadleaf weed control follow label recommendations of your broadleaf herbicide. Be sure that application timings coincide with application timings for AVENGE. **DO NOT** apply AVENGE tank mix combinations when the crop flagleaf is exposed or crop injury may occur. **DO NOT** apply AVENGE tank mix combinations under stress conditions. **DO NOT** tank mix AVENGE with any product not registered in specific states of intended use. Follow the most restrictive precautions, directions, and recropping/rotation limitations that appear on combination partner product labels.



## MIXING INSTRUCTIONS

### HOW TO MIX AVENGE ALONE

1. Fill tank one-half to three-quarters full with clean water and start agitation.
2. When using AVENGE alone, add AVENGE and surfactant to the partially filled tank while agitating. When AVENGE is thoroughly mixed, fill remainder of tank with water while agitating.
3. Allow mixture to agitate and recycle for at least five minutes before spraying.
4. Agitation must be continued until spraying is complete.

### HOW TO MIX AVENGE PLUS BROADLEAF HERBICIDES

1. Fill tank one-half to three-quarters full with clean water and start agitation.
2. When using AVENGE with a broadleaf herbicide, add the broadleaf herbicide first to the partially filled tank while agitating.
3. When the broadleaf herbicide is thoroughly mixed, add the AVENGE and surfactant to the tank, then complete filling the tank with water while agitating.
4. Allow mixture to agitate and recycle for at least five minutes before spraying.
5. Agitation must be continued until spraying is completed.

### HOW TO MIX AVENGE PLUS ASSERT HERBICIDE

When tank mixing AVENGE with ASSERT or other labeled tank mix partner(s):

1. Fill the spray tank two-thirds full with clean water.
2. Add the tank mix partner herbicide(s) to the spray tank first while agitating the solution. Add the broadleaf herbicide partner(s) before adding AVENGE® wild oat herbicide when using the ASSERT/AVENGE tank mix. If a broadleaf herbicide partner is not used, add AVENGE before adding ASSERT.

**NOTE: TO PREVENT MIXING PROBLEMS, TANK MIX PARTNERS MUST BE THOROUGHLY MIXED BEFORE ADDING ASSERT.**

3. After the herbicide solution is thoroughly mixed, add ASSERT to the partially filled tank while continuing agitation.
4. After the ASSERT is thoroughly mixed with the tank mix partners, add the NIS at a rate of 2 pints per 100 gallons final spray solution. Continue filling the tank with clean water while maintaining agitation.
5. Allow mixture to agitate and recycle for at least five minutes before spraying.
6. Agitation must be continued until spraying is completed.

**NOTE: DO NOT MAKE MORE THAN ONE APPLICATION OF AVENGE PER GROWING SEASON. DO NOT GRAZE TREATED FIELDS OR CUT TREATED FORAGE FOR SILAGE OR HAY. BARLEY OR WHEAT CAN BE REPLANTED IF LOSS OF CROP OCCURS. AFTER HARVEST, BARLEY AND WHEAT GRAIN AND STRAW FROM TREATED FIELDS CAN BE FED TO LIVESTOCK. ROTATION TO OTHER CROPS CAN BE MADE THE FOLLOWING YEAR, EXCEPT WHERE LIMITED BY TANK MIX PARTNER LABEL RESTRICTION.**

**DISCLAIMER**

The label instructions for the use of this product reflect the opinion of experts based on research and field use. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, herbicide resistant weed populations, or the use of, or application of the product contrary to label instructions, all of which are beyond the control of American Cyanamid Company. All such risks shall be assumed by the user.

American Cyanamid Company shall not be responsible for losses or damages resulting from use of this product in any manner not set forth on this label. User assumes all risks associated with the use of this product in any manner not specifically set forth on this label. American Cyanamid Company warrants only that the material contained herein conforms to the chemical description on the label and is reasonably fit for the use therein described when used in accordance with the directions for use, subject to the risks referred to above. **CYANAMID DOES NOT MAKE OR AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE ANY OTHER WARRANTIES, EXPRESS OR IMPLIED AND EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

**BUYER'S EXCLUSIVE REMEDY AND AMERICAN CYANAMID'S EXCLUSIVE LIABILITY, WHETHER IN CONTRACT, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL BE LIMITED TO REPAYMENT OF THE PURCHASE PRICE OF AVENGE.** In no case shall Cyanamid or the seller be liable for consequential, special or indirect damages resulting from the use or handling of this product.

## USES WITH OTHER PRODUCTS (TANK MIXES)

**If this product is used in combination with any other product except as specifically recommended in writing by American Cyanamid Company, then American Cyanamid Company shall have no liability for any loss, damage, or injury arising out of its use in any such combination not so specifically recommended. If used in a combination recommended by American Cyanamid Company, the liability of American Cyanamid Company shall in no manner extend to any damage, loss or injury not directly caused by the inclusion of the American Cyanamid Company product in such combination use, and in any event shall be limited to return of the amount of the purchase price of the product.**

For additional information regarding the use of AVENGE wild oat herbicide, call telephone number (800) 942-0500.

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