

PM25

10182-426

3/1/99

1 of 12

**ACHIEVE® 40DG Herbicide**

**A Postemergence Herbicide for Control of Wild Oats, Green Foxtail,  
Yellow Foxtail, Annual Ryegrass (Italian) and Persian Darnel in Wheat and Barley**

**ACTIVE INGREDIENT:**

Tralkoxydim

2-Cyclohexen-1-one, 2-[1-(ethoxyimino)propyl]-3-hydroxy-

5-(2,4,6-trimethylphenyl)-(9Cl) ..... 40.0%

**INERT INGREDIENTS:** ..... 60.0%

**Total** ..... 100.0%

Contains 4 pounds of active ingredient per 10 pounds.

EPA Reg No. 10182-426  
EPA Est. No. 10182-NB-1

Net Contents:

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

<b>ACCEPTED</b>
MAR 1 1999
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 10182- <del>011</del> 426

Active Ingredient Made in the United Kingdom, Packaged in U.S.A

ZENECA Ag Products  
ZENECA Inc.  
Wilmington, DE 19850-5458

See side panels for additional  
precautionary statements

**STATEMENT OF PRACTICAL TREATMENT**

**FIRST AID**

Immediately start the procedures given below. If further treatment is required, contact a Poison Control Center, a physician, or the nearest hospital.

**IF SWALLOWED:** Immediately give several glasses of water and induce vomiting by placing a finger on the back of the victim's tongue. Give fluids until vomitus is clear. Do not give anything by mouth to an unconscious or convulsing person.

**IF IN EYES:** Flush with plenty of water. Call a physician if irritation persists.

**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 by mouth-to-mouth. Get medical attention.

---

**FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE, CALL 1-800-F-A-S-T-M-E-D (327-8633).**

**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.**

---

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

#### CAUTION

HARMFUL IF SWALLOWED OR ABSORBED THROUGH SKIN. CAUSES EYE IRRITATION.  
Avoid breathing dust. Avoid contact with skin, eyes, or clothing.

#### Personal Protective Equipment

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

Follow manufacturer's instructions for cleaning/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 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. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate.

**Spray Drift:** Do not make aerial applications under conditions involving possible drift to nontarget plants. Refer to the local state laws, regulations, and guidelines for proper application to avoid off-target movement.

### PHYSICAL AND CHEMICAL HAZARDS

Do not use or store near heat or open flame.

**CONDITIONS OF SALE  
AND LIMITATION OF WARRANTY AND LIABILITY**

---

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

---

The Directions for Use of this product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of ZENECA or Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold ZENECA and Seller harmless for any claims relating to such factors.

ZENECA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or ZENECA, and Buyer and User assume the risk of any such use. ZENECA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

In no event shall ZENECA or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF ZENECA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF ZENECA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

ZENECA and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by a duly authorized representative of ZENECA.

## 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.

---

## 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 12 hours. Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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 plants, soil, or water, is:

- Coveralls
  - Waterproof gloves
  - Shoes plus socks
-

---

## STORAGE AND DISPOSAL

**PROHIBITIONS:** Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Keep away from heat and flame.

**STORAGE:** Keep container tightly closed when not in use. Do not store near seed, fertilizers, or foodstuffs. Can be stored at temperatures as low as minus 50°F.

**PESTICIDE DISPOSAL:** Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER DISPOSAL:** Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

---

## GENERAL INFORMATION AND INSTRUCTIONS

ACHIEVE® 40DG herbicide is a systemic, postemergence herbicide for the selective control of wild oats, green foxtail, yellow foxtail, annual ryegrass (Italian), and Persian dandelion in all wheat and barley varieties. Perennial grasses such as quackgrass will not be controlled. Although susceptible grassy weeds treated with ACHIEVE 40DG cease growth soon after application, complete die-back of the weeds could take up to 4 weeks.

ACHIEVE 40DG does not control broadleaf weeds; however, some broadleaf weed herbicides can be tank mixed with ACHIEVE 40DG to provide broad spectrum weed control in cereals (see appropriate section of label for this information).

ACHIEVE 40DG is not affected by rain falling one hour or more after application.

### SPRAY DRIFT

Avoid spray drift. Do not apply when weather conditions may cause drift. Do not allow this product to drift onto nontarget areas. Drift may result in illegal residues or injury to adjacent crops and vegetation. To avoid spray drift, DO NOT apply aerially when wind speed is greater than 10 mph or during periods of temperature inversions. Use of larger droplet size will also reduce spray drift.

**AVOID SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.**

The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses, or to applications using dry formulations.

The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.

Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the "Aerial Drift Reduction Advisory" below.

#### **AERIAL DRIFT REDUCTION ADVISORY**

(This section is advisory in nature and does not supersede the mandatory label requirements.)

- **Information on Droplet Size**

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see "Wind", "Temperature and Humidity", and "Temperature Inversions").

- **Controlling Droplet Size**

**Volume**

Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

**Pressure**

Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

**Number of Nozzles**

Use the minimum number of nozzles that provide uniform coverage.

**Nozzle Orientation**

Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

**Nozzle Type**

Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

- **Boom Length**

For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

- **Application Height**

Applications should not be made at a height greater than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

- **Swath Adjustment**

When applications are made with a cross wind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator should compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

- **Wind**

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

- **Temperature and Humidity**

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

- **Temperature Inversions**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the *light variable winds common during inversions*. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates, indicates good vertical air mixing.

- **Sensitive Areas**

The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, nontarget crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

Where states have more stringent regulations, they should be observed.

## INFORMATION ON WEED RESISTANCE

Naturally occurring biotypes of certain grass species with resistance to this herbicide and related products (same mode of action) are known to exist. Selection of resistant biotypes through repeated use of these herbicides may result in control failures. If poor performance cannot be attributed to adverse weather conditions or improper application methods, a resistant biotype may be present. In such a case, additional treatments with this herbicide or related products is not recommended. Consult your local Zeneca Ag Products representative or agricultural advisor for assistance.

## GENERAL USE PRECAUTIONS

ACHIEVE 40DG is to be used as a postemergence herbicide in wheat and barley. Do not use in tame oat crops. Avoid drift onto tame oat and corn crops. Tillered cereal crops may incur injury if applications are made within 48 hours of freezing temperatures. Nontillering cereal crops which are exposed to temperatures of less than 40°F, to 48 hours before or after application, may incur injury. Unacceptable crop injury could also occur when ACHIEVE 40DG is applied to crops under stress due to high temperatures, drought, foliar diseases, insect damage, or lack of fertility.

When 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 ACHIEVE 40DG is delayed until the stress conditions have ended and weeds are once again actively growing.

Do not apply ACHIEVE 40DG to crops or weeds that have heavy dew cover.

Rotational crops of cereal grains and leafy crop groups may be planted 30 days after application of ACHIEVE 40DG. All other rotational crops may be planted 106 days after application of ACHIEVE 40DG.

Do not apply this product through any type of irrigation system.

Flood or sprinkler irrigation can cause subsequent germination of wild oats and other grassy weeds. For optimum weed control in irrigated crops, apply ACHIEVE 40DG after irrigation when new weed germination is complete.

### **Harvesting Intervals:**

Minimum interval to harvest is 60 days after treatment with ACHIEVE 40DG.

Immature crops (forage) may be grazed or cut for hay 30 days after treatment.

Mature straw and grain may be fed to livestock 45 days after treatment.

## CROPS

ACHIEVE 40DG can be used in all varieties of wheat and all 2- or 6-row varieties of barley (malting and general-purpose varieties including semidwarf and hulless).

## Weeds Controlled and Use Rates:

A maximum seasonal application rate is 0.25 lb ai/A. For control of wild oats, green foxtail, yellow foxtail, annual ryegrass (Italian) and Persian dandel, apply ACHIEVE 40DG at 0.44 - 0.60 pounds per acre (0.18 - 0.24 lb ai/A). Use the high rate when soil is dry, weeds are large, weed population is high, or crop canopy is dense. Apply by ground sprayers in a minimum spray volume of 10 gallons water per acre. For aerial applications, a minimum of 5 gallons water per acre should be used.

Always add SUPERCHARGE® adjuvant to the spray solution at a rate of 4 pints per 100 gallons of water (0.5% v/v). Use of incorrect SUPERCHARGE rates or alternative adjuvants may result in unacceptable weed control or crop injury. In addition, always add ammonium sulfate to the spray solution at a rate of 15 pounds per 100 gallons when spray water contains more than 400 ppm bicarbonate ions. Only use granular or liquid ammonium sulfate formulations which do not contain additional wetters or surfactants. Water from deep wells is more likely to require addition of ammonium sulfate compared to surface water sources. Addition of ammonium sulfate can also provide enhanced weed control under low moisture or high temperature stress conditions as well as when tank mixing with broadleaf weed herbicides.

Apply ACHIEVE 40DG to actively growing weeds for best results. Weeds emerging after application of ACHIEVE 40DG will not be controlled. ACHIEVE 40DG will not control broadleaf weeds. See APPLICATION DIRECTIONS section of label for information on approved tankmixes.

Apply ACHIEVE 40DG to wild oats at the 1-6 leaf stage of growth (total leaves including tillers). Wild oats will be controlled up to the emergence of the third tiller.

For control of green foxtail and yellow foxtail, apply ACHIEVE 40DG at 1-5 leaf stage of growth (total leaves including tillers).

For control of annual ryegrass (Italian) and Persian dandel, apply ACHIEVE 40DG at the 1-4 leaf stage of growth (total leaves including tillers). Best control of ryegrass is obtained when application is made in the fall, prior to the dormancy period.

Optimum weed control and crop yield response occurs when wild oats and Persian dandel are removed before they begin to tiller.

## APPLICATION DIRECTIONS

### Tankmixing Instructions

Follow the recommendations on the tankmix products for all use directions and restrictions.

For broad spectrum control of both annual grasses and many broadleaf weeds, ACHIEVE 40DG can be tank mixed with MCPA ester, bromoxynil/MCPA esters (such as Bronate®), bromoxynil ester (such as Buctril®), Curtail® M, and Stinger®. ACHIEVE 40DG may be tank mixed with Starane®, either with or without 2,4-D ester or MCPA ester. A tankmix of ACHIEVE 40DG and Harmony® GT is recommended only for wild oats control. Note: Green foxtail, yellow foxtail, Persian dandel, and other grass weeds will not be controlled by this tankmix, and the wild oats control may be reduced. To minimize the reduction in wild oats control, use the higher rate of ACHIEVE 40DG when using rates of Harmony GT greater than 0.3 ounce per acre. Do not exceed 0.5 ounce per acre rate of Harmony GT with this tankmix. For greater spectrum of broadleaf weed control, this tankmix may also include 2,4-D ester, MCPA ester, bromoxynil or bromoxynil/MCPA.

In North Dakota, South Dakota, and Minnesota, ACHIEVE 40DG may also be tank mixed with 2,4-D ester when ammonium sulfate is also used. When tank mixing ACHIEVE 40DG with 2,4-D ester or bromoxynil ester, green and yellow foxtail control may be reduced with adverse growing conditions. Do not exceed 8 oz. ai/A of MCPA ester or 2,4-D ester as reduced weed control may occur. **Read and strictly adhere to the use directions and precautions on the label of the product tank mixed with ACHIEVE 40DG.**

Do not tank mix with amine formulations of labeled herbicides or 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.

Temporary crop injury may occur with registered tankmixes under extreme weather conditions or when the crop is suffering from stress due to inadequate or abnormally high moisture levels or extreme temperatures.

Weed control can be reduced when ACHIEVE 40DG is applied to fields which received a soil residual sulfonylurea herbicide treatment the previous year.

Herbicides not approved on this label for tank mixing with ACHIEVE 40DG may be applied separately in sequence. Always apply ACHIEVE 40DG first and allow at least 5 days after the application of ACHIEVE 40DG before applying other herbicides. If other herbicides have been applied, wait at least 15 days before ACHIEVE 40DG application. Reduced grass control should be expected if ACHIEVE 40DG is not applied first. Unacceptable weed control may be obtained when ACHIEVE 40DG is applied with spray equipment containing residual spray solution or other spray residues from a previous sulfonylurea herbicide application. Ensure such sprayers are thoroughly cleaned before adding ACHIEVE 40DG to the spray tank.

### **Sprayer Loading And Mixing Instructions**

Follow the mixing instructions below for adding ACHIEVE 40DG to the spray tank.

1. Only use sprayers in good running condition with high agitation. Ensure the sprayer is cleaned according to instructions on label of the product used prior to ACHIEVE 40DG. 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 ammonium sulfate and agitate until completely dissolved. Then add ACHIEVE 40DG slowly. Remove straining screen from filler opening of spray tank before adding ACHIEVE 40DG. (NOTE: ACHIEVE 40DG must be added directly into the sprayer through the tank opening and not through injector or hopper systems, for sprayers so equipped.) For shallow spray tanks where water depth is 24 inches or less, add ACHIEVE 40DG towards agitator unit and away from outlet in the bottom of the tank to enhance dispersion.
4. Wait at least one minute after the last of the ACHIEVE 40DG has been added to the tank to allow for complete dispersion of the granules. A longer agitation period may be required to disperse ACHIEVE 40DG when using cold water from sources such as deep drilled wells.
5. If tank mixing, add the recommended product next.
6. Lastly, add adjuvant and then continue to fill tank to desired level with water.

12 of 12

## Spraying Instructions

ACHIEVE 40DG may be applied by either ground sprayers or by aerial application.

For **ground** sprayers, apply in a minimum spray volume of 10 gallons per acre. Apply at a pressure of 30 PSI to 40 PSI to ensure proper dispersion, spraying characteristics, and performance of ACHIEVE 40DG.

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 size or finer should not be used.

Always ensure that agitation is maintained until spraying is completed, even if stopped for brief periods of time. If the agitation is stopped for more than 5 minutes, resuspend the spray solution by running on full agitation prior to spraying. ACHIEVE 40DG must be sprayed within the same day of mixing.

For **aerial** applications, a minimum of 5 gallons water per acre should be applied. When grass foliage is dense, higher water volumes should be used. Use sufficient spray volume to ensure complete dispersion of ACHIEVE 40DG in the spray tank when mixing and during applications to target grass weeds. When making aerial applications, care should be taken to avoid drift to crops other than wheat or barley. Avoid drift to nontarget areas. Do not spray when conditions are favorable for drift or when wind velocity exceeds 10 mph.

When spraying is completed and prior to using other products, ensure the sprayer tank is thoroughly rinsed with clean water to remove any remaining ACHIEVE 40DG residues. Using a pressure washer and the addition of a detergent or a nonionic surfactant to the rinse water will enhance removal of residues.

ACHIEVE® and SUPERCHARGE® are trademarks of a ZENECA Group Company.  
Bronate® and Buctril® are trademarks of Rhone-Poulenc.  
Curtail®, Starane®, and Stinger® are trademarks of Dow AgroSciences.  
Harmony® is a trademark of DuPont Agricultural Products.

(Note: A weed leaf-stage diagram will be placed at end of text on printed label.)