

Judy Oldham  
 Registration Specialist  
 Helena Chemical Company  
 5100 Poplar, Clark Tower, Suite 38137  
 Memphis, TN 38137

Dear Ms. Oldham:

Subject: Atrazine 4L  
 EPA Reg. No. 5905-470  
 Re: Atrazine Voluntary Exposure Reductions Measures  
 Your Amendment Submission Dated April 20, 1990

The labeling referred to above, submitted in connection with the Federal Insecticide, Fungicide, and Rodenticide Act, as amended is acceptable with the following comments:

1. On page 4 under section entitled NORTHERN NUTGRASS OR YELLOW NUTSEDGE CONTROL, revise application rate to comply with the 3 lb. ai per acre per year limit, or delete this section from label.
2. The primary registrant of Atrazine, CIBA-GEIGY, has announced it will no longer submit data in support of the following uses of Atrazine: Rangeland; Pineapples; Prose Millet. If applicable, please delete those uses from your label or submit to EPA, within 30 days, your intentions to support such uses.
3. Add the following statement to your label where appropriate:  

"Postemergence application to corn and sorghum must be made before crop reaches 12 inches in height."
4. Where applicable, replace the term "Boot Stage" with "12 inches" or "Boot Stage but no higher than 12 inches".

Please submit five (5) copies of your final printed labeling incorporating this amendment and above mentioned comments before you release the product for shipment. All technical and end-use products released for shipment, must have amended labels after September 1, 1990.

Sincerely yours,

*Robert J. Taylor*  
 Robert J. Taylor  
 Product Manager (25)

CONCURRENCE Fungicide-Herbicide Branch

Registration Division (H7505C)

SYMBOL	H7505C						
SURNAME	man						
DATE	5/1/90						

RESTRICTED USE PESTICIDE  
(GROUND WATER CONCERNS)

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

THIS PRODUCT IS A RESTRICTED USE HERBICIDE DUE TO GROUND WATER CONCERNS. USERS MUST READ AND FOLLOW ALL PRECAUTIONARY STATEMENTS AND INSTRUCTIONS FOR USE IN ORDER TO MINIMIZE POTENTIAL FOR ATRAZINE TO REACH GROUND WATER.

ATRAZINE 4L  
HERBICIDE

For Season-long Weed Control in Corn, Sorghum and  
Certain Other Crops

ACTIVE INGREDIENTS:

Atrazine (2-chloro-4-ethylamino)-6-(isopropylamino)-s-triazine .....	40.8%
Related Compounds .....	2.2%

INERT INGREDIENTS: .....	57.0%
TOTAL .....	100.0%

This product contains 4 lbs. of atrazine per gallon.

KEEP OUT OF REACH OF CHILDREN

CAUTION

See Inside Panel for Additional Precautionary Statements.

PRECAUCION AL USUARIO: Si usted no lee ingles no use este producto hasta que le etiqueta haya sido explicado ampliamente.

EPA REG. NO. 5905-470

NET CONTENTS:

EPA EST. NO.: First two letters of batch

code indicate producing establishment -

5905-FL-1=TF . 5905-GA-1=CG . 5905-CA-1=KC

5905-IA-1=DI . 5905-AR-1=WA

**ACCEPTED**  
with COMMENTS  
In EPA Letter Dated:

Manufactured by  
HELENA CHEMICAL COMPANY  
Memphis, TN 38137

MAY - 3 1990

PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful or fatal if swallowed. Causes moderate eye irritation. Do not get in eyes, on skin, or on clothing. Wear goggles. Harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating. Remove contaminated clothing and wash before reuse. Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

Users are required to wear long sleeve shirts and long pants or equivalent, chemical resistant gloves, and boots (waterproofed). In addition, persons involved in mixing/loading operations are required to use chemical resistant rubber or neoprene gloves and a face shield or goggles.

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Call a physician or poison control center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

IF IN EYES: Immediately flush eyes with plenty of water. Get medical attention if irritation develops.

IF ON SKIN: Immediately flush skin with plenty of soap and water while removing contaminated clothing and shoes. If irritation develops, seek medical attention.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic invertebrates. Do not apply directly to water or wetlands. Runoff and drift from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

ATRAZINE can travel (seep or leach) through soil and can enter groundwater which may be used as drinking water. ATRAZINE has been found in groundwater. Users are advised not to apply ATRAZINE to sand and loamy sand soils where the water table (groundwater) is close to the surface and where these soils are very permeable, i.e. well-drained. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

RE-ENTRY STATEMENT

Do not enter treated areas without protective clothing until sprays have dried. Because certain states may require more restrictive re-entry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

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Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information. "CAUTION. Area treated with atrazine on (date of application). Do not enter without appropriate protective clothing until sprays have dried. In case of accidental exposure, flush eyes or skin with plenty of water. If irritation persists, consult a physician. Contaminated clothing should be washed before reuse."

#### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

#### CHEMIGATION PROHIBITION

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

#### STORAGE AND DISPOSAL

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

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

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

ATRAZINE 4L herbicide controls most annual broadleaf and grass weeds in corn and sorghum.

Apply at the rates given under each crop before or after weeds emerge. Use lower rates on light soils and low organic matter soils. Use higher rates on heavy soils and high organic matter soils.

ATRAZINE 4L acts mainly through root absorption so rainfall or irrigation is needed to move it into the root zone. Should weeds develop, a shallow or rotary hoeing will generally result in better weed control.

Avoid using ATRAZINE 4L near adjacent desirable trees, shrubs, or plants as injury may occur.

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NOTE: Helena Chemical Company does not recommend ATRAZINE 4L in combination with other herbicides or oils except as specifically described on the label.

Ground water contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material.

This product may not be mixed/loaded, or used within 50 feet of all wells including abandoned wells, drainage wells, and sink holes.

#### APPLICATION PROCEDURES:

ATRAZINE 4 L, a liquified formulation, should be mixed with water or liquid fertilizer and applied as a spray. Pour ATRAZINE 4 L into the tank during or after filling. Hydraulic (jet) or mechanical agitation is recommended during mixing and application to keep the material in suspension. All return lines to the tank must discharge below liquid level and agitation should not be so violent as to cause air bubbles to form in the liquid. Wash sprayer thoroughly after use.

GROUND APPLICATION: Apply ATRAZINE 4 L in 10-40 gallons of water per acre to assure even coverage unless otherwise specified. Use TeeJet 8002, 8003, or 8004 fan type or other appropriate nozzles with equal or greater size openings for broadcast applications. Use TeeJet 8002-E, 8003-E, or 8004-E or similar nozzles for band applications. Screens in nozzles and in suction and inline strainers should be no finer than 50-mesh. Use a pump with capacity sufficient to maintain 35-40 psi operating pressure.

AERIAL APPLICATION: Use only where broadcast applications are specified. Apply a minimum of 1 gallon of water for each 2 pints of ATRAZINE 4 L to be applied per acre. Do not apply where uniform coverage cannot be obtained or where excessive spray drift may occur. Avoid application directly to animals or humans. Flagmen or loaders should avoid inhalation of spray mist or contact with skin and should wash thoroughly before eating and at the end of each day's operation.

POSTEMERGENCE WEED CONTROL WITH ATRAZINE 4 L PLUS EMULSIFIABLE OIL IN WATER: The addition of oil to ATRAZINE 4 L in water sprays may speed the activity of ATRAZINE 4 L and provide quicker kill of weeds. However, under certain conditions the use of oil may seriously damage corn or sorghum. To minimize the possibility of damage, follow the directions, procedures, and precautions given below.

For combining with ATRAZINE 4 L, use a crop oil designated for use with ATRAZINE 4 L containing at least 1% suitable emulsifier. Oils contaminated with water or other materials can cause compatibility problems and/or injury.

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EQUIPMENT PROCEDURES FOR ATRAZINE 4 L AND EMULSIFIABLE OIL: 1. Thoroughly clean sprayer prior to use. Do not use sprayer contaminated with 2,4-D or other materials as crop damage or spray clogging may result. 2. Fill the spray tank with water, allowing for the addition of the ATRAZINE 4 L. 3. With the agitation system in operation, add the ATRAZINE 4 L. 4. Add the emulsifiable oil last. 5. Empty the tank as completely as possible before refilling to prevent a buildup of oil in the tank. Keep the agitation system in operation to avoid a separation of the oil from the water in the spray mixture still remaining in the tank. 6. If an oil film starts to build up in the tank, drain the tank and clean out with a strong detergent solution or solvent. 7. Clean the sprayer thoroughly immediately after use by flushing the system with water containing a detergent.

NOTE: 1) Do not use oil in ATRAZINE 4 L sprays when corn or sorghum is under stress from prolonged cold, wet weather, poor fertility, or other factors or when corn or sorghum is wet and succulent from recent rainfall as crop injury may occur. 2) Do not use oils in sprays when treating inbred lines or any breeding stock as injury may occur. 3) Adding other insecticides, herbicides, liquid fertilizers, or other materials is not recommended because they may cause compatibility problems or crop injury. 4) Store and handle emulsifiable oil carefully. Oil contaminated with even a small amount of water may not emulsify properly when added to the tank. 5) Do not make more than one application of ATRAZINE 4 L and emulsifiable oil in water per season. 6) All return lines to the tank must discharge below liquid level.

## CORN

The maximum application rate of corn is 3 lbs. a.i. (6 pts. ATRAZINE 4L) per acre per calendar year. Application for quackgrass suppression in corn are restricted to a spring application only. No fall applications are permitted.

One application will control most broadleaf and grass weeds such as barnyardgrass, witchgrass (*Panicum capillare*), yellow foxtail, green foxtail, wild oats, large (hairy) crabgrass, giant foxtail, velvet-leaf, morningglory, lambsquarters, pigweed, ragweed, nightshade, purslane, and mustard.

ATRAZINE 4 L may be applied either before planting, at planting or after planting at the rate indicated below.

For preplant and preemergence applications, nitrogen solutions or complete liquid fertilizers may replace all or part of the water as a carrier of ATRAZINE 4 L. Do not apply after corn has emerged as there is danger of liquid fertilizer causing crop injury.

### PREPLANT:

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Broadcast in the spring after plowing at the rate indicated below.

Apply before, during or after final seedbed preparation. If soil is tilled or worked after application, avoid deep incorporation of ATRAZINE 4 L. Best results have been obtained when ATRAZINE 4 L is applied within two weeks prior to planting.

PREEMERGENCE:

Apply during or shortly after planting prior to weed emergence at the rate indicated below:

POSTEMERGENCE:

Apply before weeds exceed 1 1/2 inches in height at the rate indicated below:

Soil Texture	Rate per acre of ATRAZINE 4 L		
	Broadcast In 10-40 gals. of water/A	20-inch band * In 5-20 gals. of water/A	13-inch band * In 4-14 gals. of water/A
Light soils: Sands, loamy sands and sandy loams	4 pints	2 pints	1 1/4 pints
Medium soils: Silt and clay loams that are low in organic matter	4 3/4 pints	2 1/2 pints	1 1/2 pints
Heavy soils: Silt and clay loams with medium to high organic matter and clays	6 pints	3 pints	2 pints
Peats, muck, and high organic clays (Apply postemergence only)	6 pints	3 pints	2 pints

\*Based on 40-inch row spacing. For other band or row widths, adjust the rate in proportion to the area actually treated.

NORTHERN NUTGRASS OR YELLOW NUTSEDGE (*Cyperus Esculentus*) CONTROL:

Broadcast 8 pts. per acre preplant, preemergence, or postemergence before nutgrass is more than 1 1/2 inches high. If applied before nutgrass begins growth, cultivate within 2-3 weeks. If applied after nutgrass has emerged, cultivate within 10-14 days.

QUACKGRASS CONTROL ON LAND GOING INTO CORN PRODUCTION:

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Split Application: Broadcast 3 pts. per acre in the spring and plow 1-3 weeks later. Broadcast a second application at the rate of 3 pts. per acre in the spring before, during or after planting, but before weeds are 1 1/2 inches high.

Single Application: Broadcast 6 pts. per acre in the spring. Plow 1-3 weeks after application.

Postemergence weed control with ATRAZINE 4L plus emulsifiable oil in water:

GROUND APPLICATION: Broadcast 4 pts. of ATRAZINE 4L and 1 gal. of emulsifiable oil in 20-40 gals. of water per acre after emergence but before weeds reach 1-1/2 inches in height.

AERIAL APPLICATION: Broadcast 4 pts. of ATRAZINE 4L in 1/2 gal. of emulsifiable oil in no less than 5 gals. of water per acre after weed emergence but before weeds reach 1-1/2 inches.

PRECAUTIONS: 1) Do not apply more than 6 pts. of ATRAZINE 4L to corn in any one year. 2) Land treated with ATRAZINE 4L should not be planted to any crop except corn until the following year or injury may occur. 3) Following harvest of a treated crop, plow (moldboard or diskplow) and thoroughly till the soil in fall or spring to minimize possible injury to rotational spring-seeded crops, regardless of the rate used. 4) If ATRAZINE 4L is applied after June 10, do not rotate with crops other than corn or sorghum the next year or injury may occur. 5) If ATRAZINE 4L is used at a broadcast rate higher than 6 pts. per acre (or comparable rates in a band application), a crop of untreated corn or sorghum should precede the next rotational crop. 6) In the High Plains and Intermountain areas of the West where rainfall is sparse and erratic or where irrigation is required, use ATRAZINE 4L to control weeds in corn only when corn is to follow corn or a crop of untreated corn or sorghum is to precede other rotational crops. 7) In western Minnesota and eastern parts of the Dakotas, Nebraska and Kansas, corn treated with ATRAZINE 4L should not be followed with soybeans if the broadcast rate applied was more than 4 pts. per acre (or comparable rate in a band) or injury may occur. 8) Do not plant sugar beets, tobacco, vegetables (including dry beans), spring-seeded small grains, or small-seeded legumes and grasses the year following ATRAZINE 4L application or injury may occur. 9) Do not graze treated area or feed treated forage to livestock for 21 days following application.

#### SORGHUM AND SORGHUM - SUDAN HYBRIDS (GRAIN AND FORAGE TYPES)

##### PREPLANT OR PREEMERGENCE (EASTERN AND CENTRAL NEBRASKA AND NORTHEAST KANSAS ONLY)

For preplant and preemergence applications, nitrogen solutions or complete liquid fertilizers may replace all or part of the water as a carrier for ATRAZINE 4L. Do not apply after sorghum has emerged as there is danger of liquid fertilizers causing crop injury.

PREPLANT: Broadcast in the spring after plowing at the rate indicated in the table below. Application may be made before, during or after final seedbed preparation. If soil is tilled or worked after application, avoid deep incorporation of ATRAZINE 4L. Best results have been obtained when ATRAZINE 4L is applied within two weeks prior to planting.

PREEMERGENCE: Apply during or shortly after planting prior to weed emergence at the rate indicated in the table below.

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Preplant and Preemergence Application (In Eastern and Central Nebraska and Northeastern Kansas Only)

Broadleaf and grass weed control

Soil Texture	Rate per acre of		
	Broadcast In 10-40 gals. of water/A	20-inch band * In 5-20 gals. of water/A	13-inch band In 4-14 gals. of water/A
Sand to sandy loam, eroded slopes and soils low in organic matter	DO NOT USE		
Other soils (shallow incorporation may improve control)	4-4 3/4 pints	2-2 1/2 pints	1 1/4-1 1/2

\* Based on 40-inch row spacing. When making band applications. reduce the broadcast rate per acre in proportion to the area treated.

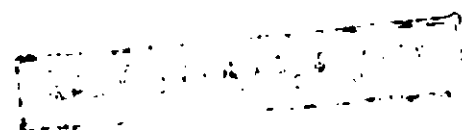
POSTEMERGENCE BROADLEAF WEED CONTROL WITH ATRAZINE 4 L PLUS EMULSIFIABLE OIL IN WATER ( NEW MEXICO, OKLAHOMA & TEXAS ONLY):

Apply when sorghum is 6-10 inches high and before boot stage. Treat broadleaf weeds before they reach 6 inches.

GROUND APPLICATION: Broadcast 2 1/2 pts. of ATRAZINE 4 L and 1/2-1 gal. of emulsifiable oil in 20-40 gals. of water per acre.

AERIAL APPLICATION: Broadcast 2 1/2 pts. of ATRAZINE 4 L and 1/2 gal. of emulsifiable oil in no less than 5 gallons of water per acre.

POSTEMERGENCE: For the control of broadleaves and grasses, apply post-emergence applications of ATRAZINE 4 L in no less than ten gallons of water per acre at the rate indicated in the table below. Weeds should not exceed 1 1/2 inches in height at application.



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POSTEMERGENCE APPLICATION \*\* (WEEDS SHOULD NOT BE MORE THAN 1 1/2 INCHES HIGH)

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Rate per acre of ATRAZINE 4 L

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Weeds to be controlled and soil	Stage or hgt. of sorghum at treatment	Broadcast in 10-40 gals. of water/A	20-inch band * in 5-20 gals. of water/A	13-inch band * in 4-14 gals. of water/A
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Broadleaf and grass weeds

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Sand or loamy sand

DO NOT USE

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Sandy loam

See broadleaf weeds below

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Silt loam to sandy clay loam

Completely emerged

4-4 3/4 pts.

2-2 1/2 pts.

1 1/4-1 1/2 p

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Olton and Pullman Clay soils

At least 6 inches high

4-4 3/4 pts.

2-2 1/2 pts.

1 1/4-1 1/2 p

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Silty Clay loams and heavier soils

Completely emerged

6 pints

3 pints

2 pints

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Broadleaf weeds

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Sandy loams and heavier soils in Okla.,

New Mexico  
Texas, West  
Kan., Colo.,  
and desert  
regions of  
Ariz. and  
Calif. only

At least 6 inches high

2 1/2 pts.  
plus 3/4-1 1/2  
pints surfactant

1 1/4 pts. plus  
3/8-3/4 pint  
surfactant

3/4 pts. plus  
1/4-1/2 pint  
surfactant

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\* Based on 40-inch row spacing.

\*\* Up to "Close-in".

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PRECAUTIONS: 1) Heavy rains immediately following application tend to result in excessive concentrations of herbicide in seed furrow, resulting in possible crop injury. Applications to furrow-planted sorghum should not be made until furrows are leveled (plowed-in). Deep planter marks or seed furrows should also be leveled before application. 2) Application made to sorghum growing under stress caused by minor element deficiency or to sorghum growing on highly clacareous soils may result in crop injury. 3) Do not plant any rotational crops other than those specified in the Suggestions For Rotational Crops section below for 18 months following application. 4) Do not graze or feed forage from treated areas for 21 days following application. 5) Following harvest of a treated crop, plow (moldboard or diskplow) and thoroughly till the soil in fall or spring to minimize possible injury to rotational spring-seeded crops, regardless of the rate used.

#### SUGGESTIONS FOR ROTATIONAL CROPS:

- 1) Sorghum or corn may be planted the year following treatment.
- 2) All other rotational crops may be planted 18 months after application.
- 3) When the broadcast rate used does not exceed 2-1/2 pts. per acre fall wheat may be planted 15 months after application.

#### SUGARCANE

For control of many annual broadleaf and grass weeds, including amaranths, crabgrass, fireweed, Flora's paintbrush, foxtails, junglerice and wiregrass:

Broadcast 2-4 quarts in 20-50 gallons of water/A for adequate coverage of the soil surface at time of planting or ratooning, but before cane emerges. One additional application may be made over cane as it emerges, and two additional applications may be made interline after emergence as directed sprays.

For Control of Emerged Pellitory Weed (Florida only): Apply 0.8-1.2 pints in at least 40 gallons of water/A as a directed spray. Add 2 quarts of surfactant for each 50 gallons of spray. Thoroughly cover weed foliage.

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PRECAUTIONS: (1) Do not apply after "close-in". (2) Do not apply more than 10 quarts/A to any one crop of cane.

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For control of alexandergrass, large crabgrass, pellitory (artillery) weed and spiny amaranth, use only one of the following methods at planting or ratooning (Florida only.)

1. Apply 4 quarts in 20-50 gallons of water/A pre-emergence, broadcast or banded. Follow with one or two broadcast or banded over-the-top applications as needed, post-emergence to sugarcane and weeds, at 2 quarts in 20-50 gallons of water/A. Treat before weeds exceed 1.5 inches in height.
2. Apply 1-3 times as needed, at 2 quarts in 20-50 gallons of water/A, either broadcast or banded over-the-top, post-emergence to sugarcane and weeds. Treat before weeds exceed 2.5 inches in height.

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## CHEMICAL FALLOW

### Wheat-Sorghum Fallow

This treatment controls annual broadleaf and grass weeds following wheat harvest and in the following sorghum crop when grown under minimum tillage.

Apply 6 pints to wheat stubble immediately following wheat harvest. If weeds are present, remove them with a sweep plow or other suitable implement after application. Plant sorghum into wheat stubble the following spring with minimum disturbance of the soil. Use a surface planter or a planter leaving a shallow furrow. If weeds are present at planting, remove them with a sweep plow or other suitable implement before planting.

**Precautions:** (1) Use only on silt loam or finer textured soil. (2) Wheat-sorghum-fallow cropping sequence must be followed. (3) Do not apply following sorghum harvest.

**Note:** Do not graze or feed forage from treated area to livestock. Do not plant any crop other than those on this label within 18 months following treatment.

### Wheat-Corn-Fallow (KS, NE)

This product controls cheatgrass (downy brome, chess), kochia, mustards, pigweed, Russian thistle, wild lettuce, wild sunflower, and volunteer wheat during period after wheat harvest. Weed control may extend into following corn crop grown under minimum tillage.

Apply with ground equipment only.

Follow directions for use notes, and precautions in the "Wheat-Sorghum-Fallow" section above, substituting corn for references to sorghum.

### Wheat-Fallow-Wheat (CO, KS, MT, NE, ND, SD, and WY)

For pre-emergence control of cheatgrass (downy brome, chess), common lambsquarters, field pennycress, kochia, mustard, Russian thistle, wild lettuce, and suppression of volunteer wheat during fallow period of a wheat-fallow-wheat rotation, apply 1-2 pints in 10-40 gallons of water / A for ground application, on all soils except those listed under "Precautions." For control of pigweed and wild sunflower, use the higher rate. Apply to stubble ground. Treat only once during same fallow period.

If weeds are present at application and this product is used alone, use either an approved contact herbicide before or after treatment, or tillage after treatment.

Use tillage to control weeds which escape during fallow period. Till before planting. For this product applied alone or in tank mixture with Paraquat CL, plant at least 2 inches deep and 12 months or more after application.

**Precautions:** (1) Do not use on sand soil. (2) Do not treat eroded hillsides, caliche and rocky outcroppings, or exposed calcareous subsoil. (3) Do not treat soils or the Rosebud and Canyon Series in western NE and adjoining counties in CO and WY. (4) Do not treat soils with calcareous surface layers. (5) Avoid spray overlap.

**Note:** Do not graze treated areas within 6 months after applications.

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### **Rangeland**

This product controls certain weeds, including cheatgrass (downy brome, chess) tumble mustard, sagewort, and annual or common broomweed. Use lower rate where cheatgrass is major problem weed; use higher rate for other weeds.

**For Ground Applications:** Use a minimum of 10 gallons of water / A.

**For Aerial Applications:** Use a minimum of 5 gallons of water / A.

See "Application Procedures" for additional information.

### **Establishment of perennial range grasses (CA, ID, NV, OR, UT, WA)**

Apply 1.6 - 2 pints / A in fall after rains begin but before ground freezes. Perennial range grass may be seeded when rain begins the next fall following treatment. Plant in deep furrows such as those made by a deep furrow rangeland drill. Treated areas may be grazed 7 months after seedling. However, to provide sufficient time for establishment of desirable range grasses, treated areas should not be grazed until the fall following seedling.

**Renovation of existing stands of perennial range grasses Fall treatment in Central Great Plains (CO, KS, MT, NE, ND, SD, WY):** Apply 1.6 - 2 pints / A in fall before ground freezes.

**Spring treatment in Southern Great Plains (OK, TX):** Apply 2 pints / A in spring before April 30.

*Do not apply to crested and intermediate wheatgrasses. Do not cut or feed range grass hay. Do not graze treated areas within 7 months following fall application or 3 months following spring application. Apply only once per year.*

### **Warm Season Perennial Range Grasses — Midwest**

#### **Switchgrass**

For control of many annual broadleaf grass weeds including cheatgrass, foxtails (giant, green, and yellow), lambsquarters, pigweed, ragweed, smartweed, and velvetleaf.

**For Ground Application:** Use a minimum of 15 gallons of water / A.

Use only on loam, silt loam, silty clay loam, and silty clay soils with at least 1 percent organic matter.

**New Seeding:** Apply 2 quarts / A after planting but before weeds emerge. Prepare a good, firm seedbed. Plant ½ inch deep with a grassland drill (preferred method) or a conventional drill. If a conventional drill is used on prepared seedbeds, remove all tension from the disk openers. For best results, siltupack or roll after planting. Clip weeds that escape in July or August. Avoid clipping switchgrass seedlings.

**Established Stands:** Apply 2 quarts / A in April or early May, before weed emergence.

**Rotational Crops:** See "Rotational Crops" in Corn section.

**Note:** Do not cut for hay. Do not graze treated areas within 4 months following application at seedling or 3 months following application to established switchgrass. Treat only once per year.

## **Non-Selective Weed Control On Non-Cropland**

This product provides long term weed control on industrial sites, highway medians and shoulders, railroad right-of-ways, lumber yards, petroleum tank farms and in non-crop areas on farms, such as around buildings, equipment and fuel storage areas, along fences and lanes.

Apply before or soon after weeds begin growth. Make post-emergence applications when weeds are young and actively growing. Use the higher rates on fine clay and muck soils. Use sufficient water to assure thorough coverage.

**Annual broadleaf and grass weeds (including barnyardgrass, cheatgrass, crabgrass, lambsquarters, foxtail, ragweed puncturevine and turkey mullein).** Apply 1.5 - 2.5 gallons per acre.

**Hard-to-kill annual and perennial broadleaf and grass weeds (including bluegrass, burdock, Canada thistle, dogfennel, orchardgrass, plantain, quackgrass, purpletop, redtop, and smooth brome).** Apply 2.5 gallons per acre.

**NOTE:** Application rates to non crop land for industrial weed control cannot exceed a maximum of 10 lbs. active ingredient per acre per calendar year.

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CONDITIONS OF SALE - LIMITED WARRANTY  
AND LIMITATIONS OF LIABILITY AND REMEDIES

The directions on this label are believed to be reliable and should be followed carefully. Insufficient control of pests and/or injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions, the failure to follow the label directions, or good application practices, all of which are beyond the control of Helena (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use subject to the factors noted above which are beyond the control of the Company. The Company makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

The exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damage and in no event shall damages or any other recovery of any kind against the Company exceed the price of the product which causes the alleged loss, damage, injury, or other claim. The Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income.

The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability and remedies.