

**RESTRICTED USE PESTICIDE**

DUE TO GROUND AND SURFACE 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.

**HOT LINE NUMBER**

Have the product container or label with you when calling a poison control center or doctor or going for treatment. In case of emergency, call ChemTrec at 1-800-424-9300.

EPA REG. NO. 5905-470  
NET CONTENTS:

EPA EST. NO.:  
AD 070710

# ATRAZINE 4L

## HERBICIDE

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

**ACTIVE INGREDIENTS:**

Atrazine (2-chloro-4-ethylamino)-6-(isopropylamino)-s-triazine.....	41.12%
Related Compounds.....	0.88%
<b>INERT INGREDIENTS:</b> .....	<b>58.00%</b>
<b>TOTAL</b> .....	<b>100.00%</b>

This product contains 4 lbs. of atrazine per gallon.

**KEEP OUT OF REACH OF CHILDREN**

### CAUTION

See Inside Panel for Additional Use Precautions and Directions for Use

**PRECAUTIONARY STATEMENTS**

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

### CAUTION

Causes moderate eye irritation. Do not get in eyes, skin, or clothing. Harmful if swallowed, absorbed through skin, or inhaled. Avoid breathing spray mist.

**FIRST AID**

**IF IN EYES:**

- Hold eyelid open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
- Call a poison control center or doctor immediately for treatment advice.

**IF SWALLOWED:**

- Call a poison control center or doctor immediately for treatment advice.
- Do not induce vomiting unless told to do so by a poison control center or doctor.
- Have a person sip a glass of water if able to swallow.
- Do not give anything to an unconscious or convulsing person.

**IF ON SKIN OR CLOTHING:**

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor immediately for treatment advice.

**IF INHALED:**

- Move victim to fresh air.
- If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.

**MANUFACTURED FOR**

HELENA CHEMICAL COMPANY  
225 SCHILLING BOULEVARD, SUITE 300  
COLLIERVILLE, TENNESSEE 38017

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some of the materials that are chemical-resistant to this product are polyethylene or polyvinyl chloride. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

**Applicators using spray equipment mounted on their backs must wear:** Coveralls over long-sleeved shirt and long pants, Chemical-resistant footwear plus socks, and Chemical-resistant gloves, such as polyethylene or polyvinyl chloride .

**Mixers, loaders, all other applicators, flaggers, and other handlers must wear:** Long-sleeved shirt and long pants, Chemical-resistant gloves, such as polyethylene or polyvinyl chloride, Shoes plus socks, and Chemical-resistant apron, when mixing/loading, cleaning up spills, cleaning equipment, or otherwise exposed to the concentrate.

See engineering controls for additional requirements.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

**ENGINEERING CONTROLS STATEMENT**

Mixers and loaders supporting aerial applications at a rate greater than 3 lbs ai/A must use a closed system that meets the requirements for dermal protection listed in the Worker Protection Standard (WPS) for Agricultural Pesticides [40 CFR 170.240(d)(4)] and must:

- wear the personal protective equipment required for mixers and loaders,
- wear protective eyewear if the system operates under pressure, and
- be provided and have immediately available for use in an emergency, such as a spill or equipment breakdown: chemical-resistant footwear.

Pilots must use an enclosed cockpit in a manner that is consistent with the WPS for Agricultural Pesticides [40 CFR 170.240(d)(6)]. Pilots must wear the PPE required on this labeling for applicators; however, they need not wear chemical-resistant gloves when using an enclosed cockpit.

Flaggers supporting aerial applications must use an enclosed cab that meets the definition on the Worker Protection Standard for Agricultural Pesticides [40 CFR 170.240(d)(5)] for dermal protection.

Disclaimer: Always refer to the label on the product before using Helena or any other product.

When applicators use enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(5)], the handler PPE requirements may be reduced or modified as specified in the WPS.

#### USER SAFETY RECOMMENDATIONS:

##### User should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE 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.

#### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store in original container only. In case of leak or spill, contain material and dispose as waste.

**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:

**NONREFILLABLE CONTAINER (EQUAL TO OR LESS THAN 5 GALLONS):** Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling, if available.

##### NONREFILLABLE CONTAINER (GREATER THAN 5 GALLONS):

Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Offer for recycling, if available.

**REFILLABLE CONTAINER:** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or

rinsate collection system. Repeat this rinsing procedure two more times.

#### ENVIRONMENTAL HAZARDS

Atrazine can travel (seep or leach) through soil and can enter ground water which may be used as drinking water. Atrazine has been found in ground water. Users are advised not to apply Atrazine to sand and loamy sand soils where the water table (ground water) 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 ground water.

Product must not be mixed or loaded within 50 feet of intermittent streams and rivers, natural or impounded lakes and reservoirs. Product must not be applied within 66 feet of points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 feet of natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66 foot buffer or setback from runoff entry points must be planted to crop, or seeded with grass or other suitable crop.

Product must not be mixed or loaded, or used within 50 feet of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 ft. of any well are prohibited, unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse of wash water, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above-specified minimum containment capacities do not apply to vehicles when delivering pesticide to the mixing/loading sites.

Additional State imposed requirements regarding well-head setbacks and operational area containment must be observed.

One of the following restrictions must be used in applying Atrazine to tile-outletted terraced fields containing standpipes:

- Do not apply within 66 feet of standpipes in tile-outletted terraced fields.
- Apply **ATRAZINE 4L** to the entire tile-outletted terraced field and immediately incorporate it to a depth of 2-3 inches in the entire field.
- Apply **ATRAZINE 4L** to the entire tile-outletted terraced field under a no-till practice only when a high crop residue management practice is practiced. High crop residue management is described as a crop management practice where little or no crop residue is removed from the field during and after crop harvest.

This pesticide is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Runoff and drift from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash water.

#### DIRECTIONS FOR USE

ANY USE OF THIS PRODUCT IN AN AREA WHERE USE IS PROHIBITED IS A VIOLATION OF FEDERAL LAW. Before using this product, you must consult the Atrazine Watershed Information Center (AWIC) to determine whether the use of this product is prohibited in your watershed. AWIC can be accessed through [www.atrazine-watershed.info](http://www.atrazine-watershed.info), or [1-866-365-3014]. If use of this product is prohibited in your watershed, you may also return this product to your point of purchase or contact Helena Chemical Company for a refund.

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.

When tank-mixing or sequentially applying Atrazine or products containing Atrazine to corn or sorghum, do not exceed an application rate of 2.0 pounds active ingredient of Atrazine per acre for any single application, and the total pounds of Atrazine applied (lbs. a.i./A) must not exceed 2.5 pounds active ingredient per year.

When tank-mixing or sequentially applying Atrazine or products containing Atrazine to crops other than corn or sorghum, the total pounds of Atrazine applied (lbs active ingredient/A) must not exceed the specific seasonal rate limits as noted in the use directions.

#### 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,  
Shoes plus socks,  
Chemical-resistant gloves, such as any waterproof material, and  
Protective eyewear.

#### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter or allow others to enter until sprays have dried.

#### GENERAL INFORMATION

This herbicide controls many annual broadleaf and grass weeds in corn, sorghum, sugarcane, and certain other crops specified on this label. It is also effective in industrial sites for control of most annual and many perennial broadleaf and grass weeds. This product may be applied before or after weeds emerge.

Following many years of continuous use of this product and chemically related products, biotypes of some of the weeds listed on this label have been reported which cannot be effectively controlled by this and related herbicides. Where this is known or suspected and weeds controlled by this product are expected to be present along with resistant biotypes, we recommend the use of this product in combinations or in sequence with other registered herbicides which are not triazines. If only resistant biotypes are expected to be present, use a registered non-triazine herbicide. Consult with your state Agricultural Extension Service for specific recommendations.

Since this product acts mainly through root absorption, its effectiveness depends on moisture to move it into the root zone. If weeds develop, a shallow cultivation or rotary hoeing will generally result in better weed control.

This product is nonflammable.

Avoid using near adjacent desirable plants or in green houses, or injury may occur.

To avoid spray drift, do not apply under windy conditions. Avoid spray overlap as crop injury may result.

Where the use directions give a range of rates, use the lower rate on coarse-textured soil and soil low in organic matter; use the higher rate on fine-textured soil and soil high in organic matter.

**Note:** Helena Chemical Company does not recommend applications in combination with other herbicides or oils, except as specifically described on this label.

#### APPLICATION PROCEDURES

**Ground application:** Use conventional ground sprayers equipped with nozzles that provide accurate and uniform application. Be certain that nozzles are uniformly spaced and are the same size. Calibrate sprayer

before use and recalibrate at the start of each season and when changing carriers. Unless otherwise specified, use a minimum of 10 gals. of spray mixture/A for all preplant incorporated, preplant surface, preemergence, and postemergence application (with or without oil or surfactant) with ground equipment.

**Use a pump with capacity to:** (1) maintain 35-40 psi at nozzles, (2) provide sufficient agitation in tank to keep mixture in suspension, and (3) to provide a minimum of 20% bypass at all times. Use centrifugal pumps which provide propeller shear action for dispersing and mixing this product. The pump should provide a minimum of 10 gals/minute/100 gal. tank size circulated through a correctly positioned sparger tube or jets.

Use screen to protect the pump and to prevent nozzles from clogging. Screens placed on the suction side of the pump should be 18-mesh or coarser. Do not place a screen in the recirculation line. Use 50-mesh or coarser screens between the pump and boom, and where required, at the nozzles. Check nozzle manufacturer's recommendations.

**Aerial application:** Use aerial application only where broadcast applications are specified. Apply in a minimum of 1 qt. of water for each quart of this product applied per acre. For postemergence treatments on corn and sorghum, apply recommended rate in a minimum of 2 gals. of water/A. Avoid applications under conditions where coverage cannot be obtained or where excessive spray drift may occur.

## SPRAY DRIFT MANAGEMENT

Avoiding 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 and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target drift 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.

1. The distance of the outer nozzle on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
2. 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 Information.

## AERIAL DRIFT REDUCTION ADVISORY INFORMATION IMPORTANCE OF 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 Inversion section of this label).

## 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-** Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

**Number of Nozzles-** Use the minimum of nozzles that provide uniform coverage.

**Nozzle Orientation-** Orienting nozzles so that the spray is released backwards, parallel to the airstream, will produce larger droplets than other orientations. Significant deflection from the horizontal will reduce the 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 larger droplets than other nozzle types.

**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-** Applications should not be made at a height greater than 10 feet above the top of the largest 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 must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drop, 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 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

**Disclaimer:** Always refer to the label on the product before using Helena or any other product.

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 temperature 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 connected cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards 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, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

**Application in water or liquid fertilizer:** Nitrogen solution or complete liquid fertilizer may replace all or part of the water as a carrier for preemergence, preplant incorporated, or preplant surface ground application on corn and sorghum. Check the compatibility of this product with liquid fertilizer and or nitrogen solution as shown below before use. Do not apply in nitrogen solution or complete liquid fertilizer after corn or sorghum emerges, except as noted under Lay-by treatment for corn, or crop injury may occur.

**For band applications, calculate amount to be applied per acre as follows:**

$$\frac{\text{band width in inches needed}}{\text{row width in inches field}} \times \text{Broadcast rate per acre} = \text{amount per acre of}$$

**Compatibility Test:** Since liquid fertilizers can vary, even within the same analysis, always check compatibility with herbicide(s) each time before use. Be especially careful when using complete suspension or fluid fertilizer, as serious compatibility problems are more likely to occur. Commercial application equipment may improve compatibility in some instances. The following test assumes a spray volume of 25 gals. per acre. For other spray volumes, make appropriate changes in the ingredients. Check compatibility using this procedure:

Within rate ranges in all tables on this label, use the lower rate on soil relatively coarse-textured or low in organic matter; use the higher rate on soil relatively fine-textured or high in organic matter.

**Rotation Crops:** (1) Do not rotate to any crop except corn or sorghum until the following year, or injury may occur. (2) If applied after June 10, do not rotate with crops other than corn or sorghum the next year or crop injury may occur. (3) In the High Plains and Intermountain areas of the West where rainfall is sparse and erratic

or where irrigation is required, use only when corn or sorghum is to follow corn or sorghum or when a crop of untreated corn or sorghum is to precede other rotational crops. (4) In eastern parts of the Dakotas, KS, western MN, and NE, do not rotate to soybeans if the rate applied to corn or sorghum was more than 4 pts. of **ATRAZINE 4L/A** or equivalent band application rate, or soybean injury may occur. (5) Injury may occur to soybeans planted the year following application on soils having a calcareous surface layer. (6) Do not plant sugar beets, tobacco, vegetables (including dry beans), spring-seeded small grains, or small-seeded legumes and grasses the year following application, or injury may occur.

**ATRAZINE 4L APPLIED ALONE - CORN OR GRAIN SORGHUM\***

The maximum application rate of corn and sorghum is 2.5 lbs. active ingredient (5 pts. **ATRAZINE 4L**) per acre per calendar year. Application for quackgrass suppression in corn and sorghum are restricted to a spring application only. No fall applications are permitted. Postemergence application to corn and sorghum must be made before corn and sorghum reaches 12 inches in height.

Preplant surface - Applied, Preplant Incorporated, or Preemergence (or Postemergence at 4 pts. **ATRAZINE 4L /A with Oil**). The maximum single application rate for corn and sorghum is 2 lbs active ingredient per acre per year.

**Broadleaf or Grass Weeds Controlled**

- barnyard grass\*\*\*
  - (watergrass)
  - cocklebur\*\*
  - nightshade
  - giant foxtail\*\*
  - groundcherry
  - pigweed
  - green foxtail\*\*\*
  - jimsonweed
  - purslane
  - large (hairy) crabgrass\*\*
  - kochia
  - ragweed
  - wild oats
  - lambsquarters
  - sicklepod\*\*
  - witchgrass
  - annual morningglory
  - velvetleaf
  - (panicum capillare)\*\*\*
  - mustards
  - (buttonweed)\*\*\*
  - yellow foxtail\*\*\*
- Postemergence with Emulsifiable Oil or Oil Concentrate in Water (2 + 2.4 pts./A)

**Broadleaf Weeds Controlled**

- annual morningglory
- lambsquarters
- ragweed
- cocklebur
- mustards
- smartweed
- jimsonweed
- pigweed

**Disclaimer:** Always refer to the label on the product before using Helena or any other product.

wild buckwheat  
velvetleaf\*\*

\*Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or higher set-backs) which are different from the label, the more restrictive/protective requirements apply. Certain states may have established rate limitations within specific geographical areas. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.

\*\*Partial control only

\*\*\*Partial control only on medium and fine-textured soils.

## CORN

**Preplant Surface-Applied (Broadleaf and grass control):** Use on medium and fine-textured soil with minimum-tillage or no-tillage systems only in CO, IL, IN, IA, KS, KY, MN, MO, MT, NE, ND, SD, WI, and WY. Apply 2/3 the recommended rate of **ATRAZINE 4L** shown in Table 1 for the soil texture as a split treatment 30-45 days prior to planting and the remainder at planting. Applications made less than 30 days prior to planting may be as either a split or single treatment. On coarse-textured soils, do not apply more than two weeks prior to planting.

If weeds are present at the time of treatment, apply in tank mix combination with a contact herbicide, (for example, Gramoxone® or Roundup®). Observe directions for use, use precautions, and restrictions on the label of the contact herbicide. Note: To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished.

**Preplant Incorporated (Broadleaf and grass control):** Broadcast in spring after plowing at rate in Table 1. Apply to the soil and incorporate before, during, or after final seedbed preparation. Avoid deep incorporation. For best results, apply within two weeks prior to planting.

**Preemergence or At-Planting (Broadleaf and grass control):** Apply during or shortly after planting before weed emergence at rate in Table 1.

**Postemergence (Broadleaf and grass control):** Apply before weeds exceed 1.5 inches in height, and before corn exceeds 12 inches in height at rate in Table 1.

### Table 1: Broadleaf and Grass Weed Control on Corn\* FOR ALL SOIL APPLICATIONS PRIOR TO CROP EMERGENCE On Highly Erodible Soils (as defined by the Natural Resource Conservation Service)

If conservation tillage is practiced, leaving at least 30% of the soil covered with plant residues at planting, apply a maximum of 2.0 pounds active ingredient (4 pints of **ATRAZINE 4L**) per acre as a single pre-emergence application.

If the soil coverage with plant residue is less than 30% at planting, apply a maximum of 1.6 pounds active ingredient (3.2 pints of **ATRAZINE 4L**) per acre as a single pre-emergence application.

## On Soils Not Highly Erodible

Apply a maximum of 2 pounds active ingredient (4 pints of **ATRAZINE 4L**) per acre as a single preemergent broadcast spray.

## FOR POSTEMERGENCE APPLICATION

If no atrazine was applied prior to corn emergence, apply a maximum of 2.0 pounds active ingredient (4 pints of **ATRAZINE 4L**) per acre broadcast. If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 pounds active ingredient (5 pints of **ATRAZINE 4L**) per acre per calendar year.

\*Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or higher set-backs) which are different from the label, the more restrictive/protective requirements apply. Certain states may have established rate limitations within specific geographical areas. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.

**\*Broadleaf control (eastern CO, western KS, western NE, NM, OK Panhandle, west TX, and eastern WY):** On sand, loamy sand, sandy loam, mild to strongly alkaline soil, and all recently leveled soil, apply no more than 2.4 pts. of **ATRAZINE 4L** /A, either preplant surface, preplant incorporated, or preemergence. On other soils in these areas, apply rate in Table 1 for broadleaf and grass control.

**Lay-by treatment (Broadleaf and grass control):** Broadcast 2-4 pts. of **ATRAZINE 4L** /A before weeds are 1.5 inches tall and before corn is 12 inches tall. When using nitrogen solutions, direct the spray to lower 3-4 inches of cornstalks to avoid corn foliage injury.

**Postemergence with emulsifiable oil or oil concentrate in water:** Add the following volume of one of the type oils indicated for aerial or ground application unless the oil label specifies otherwise:

TYPE OIL	GROUND APPLICATION	AERIAL APPLICATION
Oil concentrate		
(Crop or Petroleum-derived)	1 qt. a.i./A	1/2 - 1 qt. a.i./A
Petroleum-derived oil	1 gal. a.i./A	2 qts. a.i./A

**Note:** Crop-derived or petroleum-derived oil concentrates should contain at least 1% but not more than 20% suitable emulsifier or surfactant blend. Petroleum-derived oils should contain at least 1% suitable emulsifier.

**Broadleaf and grass control:** For postemergence control of those weeds listed under Preplant Incorporated and Preemergence, broadcast 4 pts. of **ATRAZINE 4L** /A plus emulsifiable oil or oil concentrate after weed emergence, but before weeds reach 1.5 inches in height.

**Broadleaf control:** For postemergence control of those weeds listed under Post-emergence with emulsifiable oil or oil concentrate in water, broadcast 2.4 pts. of **ATRAZINE 4L** /A plus emulsifiable oil or oil concentrate before pigweed and lambsquarters reach 6 inches in height and before all other weeds reach 4 inches in height. A cultivation may be necessary if all weeds are not controlled or if weeds regrow.

**Use precautions for applications with emulsifiable oil or oil concentrate in water:** (1) Inbred lines or any breeding stock may be severely injured by applications with emulsifiable oil or oil concentrate.

(2) Adding other insecticides, herbicides, liquid fertilizers, or other materials is not recommended, because they may cause compatibility problems or crop injury. (3) Store and handle emulsifiable oil and oil concentrate carefully. Oil contaminated with even a small amount of water may not emulsify properly when added to the tank. To avoid crop injury, (4) Do not apply when crop is

under stress from prolonged cold, wet weather, poor fertility, or other factors, or when crop is wet and succulent from recent rainfall. (5) Do not exceed 2.5 lbs. active ingredient (or 5 pts. of **ATRAZINE 4L**) per acre per calendar year. (6) Postemergence applications to corn must be made before corn reaches 12 inches in height.

### **TANK MIXTURES FOR CORN**

This product may be tank mixed with these herbicides for control of certain broadleaf and grass weeds in corn.

Dual® (metolachlor)	Lasso® or Lasso® EC + Roundup®
Dual® + Gramoxone®	Lasso® or Lasso® EC + Gramoxone®
Dual® + Roundup® (glyphosate)	Gramoxone®
Dual® + Princep®	Princep®
Dual® + Princep® + Gramoxone®	Princep® + Gramoxone®
Dual® + Princep® + Roundup®	Princep® + Roundup®
Ramrod® (propachlor)	Roundup®
Lasso® or Lasso® EC (alachlor)	Sencor® 4
	Sutan + ®

Use tank mix direction appearing on the labels of the above herbicides when tank mixing with this product. Observe all use precautions and limitations on labeling of products used in a particular tank mix.

**Note:** When the labels of the above herbicides refer to Atrazine 80W, use equivalent rates of **ATRAZINE 4L**. One lb. of 80W equals 1.6 pts. of **ATRAZINE 4L**.

Princep® 80W, Princep® 4L, or Princep® Caliber® 90

In addition to the weeds listed under **ATRAZINE 4L** Applied Alone - Corn and Grain Sorghum - Preplant Surface-Applied, Preplant Incorporated, or Preemergence, this combination also controls crabgrass, fall panicum, and carpetweed.

Broadcast tank mix before planting, at planting, or after planting, but before crop and weeds emerge, at rates in Table 2. Use the 1:1 ratio for control of most weeds. Use the 1:2 ratio for expected heavy infestations of crabgrass and fall panicum. Cultivate shallowly if weeds develop.

**Preplant Surface-Applied:** Use on medium- and fine-textured soils with minimum-tillage or no-tillage systems only in CO, IL, IN, IA, KS, KY, MN, MO, MT, NE, ND, SD, WI, and WY. Apply 2/3 the recommended rate of **ATRAZINE 4L** and Princep® shown in Table

2 for the soil texture as a split treatment 30-45 days prior to planting and the remainder at planting. Applications made less than 30 days prior to planting may be as either a split or single treatment. On coarse-textured soils, do not apply more than two weeks prior to planting. Refer to the **ATRAZINE 4L** Alone - Preplant Surface-Applied section of the corn label for additional details.

If weeds are present at time of treatment, apply in a tank mix combination with a contact herbicide (for example, Gramoxone® or Roundup®). Observe directions for use, use precautions, and restrictions on the label of the contact herbicide.

**Note:** To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished.

**Preplant Incorporated:** Apply to the soil and incorporate in the spring before, during or after final seedbed preparation. Avoid deep incorporation. For best results, apply within two weeks prior to planting.

**Preemergence:** Apply during or shortly after planting, but before crop and weeds emerge.

Refer to Corn sections of this label and to Princep® 80W, Princep® Caliber 90®, or Princep® 4L labels for further directions, limitations, and use precautions.

**Table 2: Tank Mixtures with Princep® on Corn**

Soil Texture	Broadcast Rate/A			
	1:1 Ratio*		1:2 Ratio**	
	This Product	Princep® 80W <sup>1</sup>	This Product	Princep® 80W <sup>1</sup>
Sand, loamy sand, sandy loam	2 pts.	1.25 lbs.	1.32 pts.	1.67 lbs
Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with low organic matter	2.4 pts.	1.5 lbs.	1.6 pts.	2 lbs.
Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with medium to high organic matter, and clay (including dark prairie soils of the Corn Belt)	3 pts.	1.8 lbs.	1.92 pts.	2.4 lbs.

\*For control of most weeds

\*\*For control of expected heavy infestations of crabgrass and fall panicum.

<sup>1</sup>When using Princep® Caliber 90® or Princep® 4L use equivalent rates. One lb. of Princep® 80W equals 0.9 lb. of Princep® Caliber 90® or 1.6 pts. of Princep® 4L.

For soil applications prior to crop emergence (i.e., early preplant, preplant incorporated, preplant surface, at planting or preemergence) the following applies:

- On highly erodible soils, as defined by the Natural Resource Conservation Service (NRCS), if conservation tillage is utilized ( $\geq 30\%$  plant residue), the maximum rate is 2 pounds active ingredient (4 pints of **ATRAZINE 4L**)/A. If plant residue is  $< 30\%$ , the maximum rate is 1.6 pounds active ingredient (3.2 pints of **ATRAZINE 4L**)/A.
- Apply a maximum of 2 pounds active ingredient (4 pints of **ATRAZINE 4L**) per acre as a single preemergent broadcast application.

For postemergence applications, if there has been no previous soil application to that crop, the maximum rate is 2 pounds active ingredient (4 pints of **ATRAZINE 4L**)/A. If there has been a previous soil application to that crop, do not exceed a total of 2.5 pounds active ingredient (5 pints of **ATRAZINE 4L**)/A per calendar year.

**Princep® 80W, Princep® 4L or Princep® Caliber 90® plus Roundup®:** Use as tank mixture for preemergence and postemergence control of certain broadleaf and grass weeds where corn will be planted directly into a cover crop, established sod, or in previous crop residues. Refer to Roundup® label for all directions, weeds controlled, use precautions, and limitations.

**Princep® 80W, Princep® 4L or Princep® Caliber 90® plus Gramoxone®:** Use as tank mixture with Princep® and Gramoxone® to kill existing vegetation and for residual weed control where corn will be planted directly into a cover crop, established sod, or in previous crop residues. Add this product and Princep® to water in spray tank, agitating until thoroughly mixed. Then add Gramoxone® and a nonionic surfactant, such as INDUCE®. Continue agitation during application. Broadcast 2-4 pts. of **ATRAZINE 4L** plus 1.25-  
**Disclaimer:** Always refer to the label on the product before using Helena or any other product.

2.5 lbs. Princep® 80W [or 2-4 pts. Princep® 4L, or 1.1-2.2 lbs. Princep® Caliber 90®] plus 1.5-2.5 pts. Gramoxone® in 20-60 gals. of water per sprayed acre. Apply before, during, or after planting, but before corn emerges. Add 0.5 pt. of a nonionic surfactant, such as INDUCE®, per 100 gals. of spray mixture. Use the 2.5 pt. rate of Gramoxone® if existing vegetation is 4-6 inches tall. This mixture will not control weeds taller than 6 inches.

Refer to further limitations and use precautions on labels for this product, Princep® and Gramoxone®.

**Use precautions for all applications to corn:** (1) To avoid crop injury and illegal residues, do not apply more than 5 pts. of **ATRAZINE 4L** /A of this product per year. For postemergence applications, if there has been no previous soil application to that crop, the maximum rate is 2 lbs. active ingredient (4 pints of **ATRAZINE 4L**)/A. If there has been a previous soil application to that crop, do not exceed a total of 2.5 lbs. active ingredient (5 pints of **ATRAZINE 4L**)/A per calendar year. (2) Following harvest, plow (moldboard or disk-plow) and thoroughly till soil in fall or spring to minimize possible injury to spring-seeded rotational crops, regardless of rate used.

**Note for all applications to corn:** Do not graze or feed forage from treated areas for 21 days following application, or illegal residues may result. Field corn forage uses: 60-day PHI. Sweet corn forage uses: 45-day PHI.

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

**Preplant Surface-Applied (Broadleaf and grass control):** Use on medium- and fine-textured soil with minimum tillage or no-tillage systems only in CO, IL, IN, IA, KS, KY, MN, MO, MT, NE, ND, SD, WI, and WY. Apply 2/3 the recommended rate of **ATRAZINE 4L** shown in Table 3 for the soil texture as a split treatment 30-45 days prior to planting and the remainder at planting.



Applications made less than 30 days prior to planting may be as either a split or single treatment. Under dry conditions, irrigation after application is recommended to move **ATRAZINE 4L** into the soil.

If weeds are present at time of treatment, apply in a tank mix combination with a contact herbicide (for example, Gramoxone® or Roundup®). Observe directions for use, use precautions, and restrictions on the label of the contact herbicide.

**Note:** To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished.

**Preplant Incorporated (Broadleaf and grass control):** Broadcast in spring after plowing at rate shown in Table 3. Apply before, during, or after final seedbed preparation. If soil is tilled or worked after application, avoid deep incorporation. For best results, apply within two weeks prior to planting.

**Preemergence (Broadleaf and grass control):** Apply during or shortly after planting but prior to weed or crop emergence at rate shown in Table 3. Pre-emergent sorghum forage uses: 60-day PHI.

**Table 3: Broadleaf and Grass Weed control in Sorghum\*  
FOR ALL SOIL APPLICATIONS PRIOR TO CROP EMERGENCE  
On Highly Erodible Soils (as defined by the Natural Resource  
Conservation Service)**

If conservation tillage is practiced, leaving at least 30% of the soil covered with plant residues at planting, apply 2.0 pounds active ingredient (4 pints of **ATRAZINE 4L**) per acre as a single pre-emergence application.

If the soil coverage with plant residue is less than 30% at planting, apply a maximum of 1.6 pounds active ingredient (3.2 pints of **ATRAZINE 4L**) per acre as a single pre-emergence application.

**On Soils Not Highly Erodible**

Apply a maximum of 2 pounds active ingredient (4 pints of **ATRAZINE 4L**) per acre as a single preemergent broadcast application.

**FOR ALL POSTEMERGENCE APPLICATION**

If no atrazine was applied prior to sorghum emergence, apply a maximum of 2.0 pounds active ingredient (4 pints of **ATRAZINE 4L**) per acre broadcast. If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 5 pints of **ATRAZINE 4L** per acre per calendar year.

\*Do not apply preplant surface or preplant incorporated in AL, AR, FL, GA, LA, MS, NC, NM, OK, SC, TN, or TX. Do not apply preemergence in NM, OK, or TX, except in northeast OK and the TX Gulf Coast.

In case of planting failure, sorghum or corn may be replanted. Do not make a second broadcast application, or injury may occur. If originally applied in a band and sorghum or corn is replanted in untreated row middles, this product may be applied in a band to the

second planting. However, the maximum application rate for sorghum is 5 pts. of **ATRAZINE 4L** per acre per calendar year.

**Preemergence broadleaf weed control in furrow irrigated bedded sorghum (AZ and CA only):** For preemergence control of many broadleaf weeds, broadcast 1.6-2.4 pts. of **ATRAZINE 4L** /A after bed preparation, during or after planting, but before sorghum and weeds emerge and before the first furrow irrigation. Follow with several regular irrigations, making sure to thoroughly wet all soil.

**Use precautions for preemergence application to furrow irrigated bedded sorghum in AZ and CA:** To avoid possible sorghum injury, do not use on sand or loamy sand soil or on sorghum planted in furrows. Applications to sorghum growing in alkali soils or where cuts, fills, or erosion have exposed calcareous or alkali subsoils may cause crop injury. In case of crop failure, do not replant sorghum for 8 months following application. Corn may be planted immediately.

**Postemergence (Broadleaf and grass control):** Apply at rate shown in Table 3 before weeds exceed 1.5 inches in height. Postemergence application to sorghum must be made before sorghum reaches 12 inches in height. Postemergent sorghum forage uses: 45-day PHI.

**Postemergence broadleaf weed control with emulsifiable oil or oil concentrate in water:** Broadcast 2.4 pts. of **ATRAZINE 4L** /A for control of many broadleaf weeds. Apply before pigweed and lambsquarters reach 6 inches in height and before all other weeds reach 4 inches in height. In CO, western KS, NM, OK, TX, and desert regions of AZ and CA, apply when sorghum is 6-10 inches in height, but before it reaches boot stage or no higher than 12". Add 1 gal. of emulsifiable oil/A for ground application and 0.5 gal./A for aerial application, or add 1 qt./A of oil concentrate for ground application. A cultivation may be necessary if all weeds are not controlled or if weeds regrow.

For the list of weeds controlled, see **ATRAZINE 4L**, Applied Alone - Corn or Grain Sorghum - Postemergence with Emulsifiable Oil or Oil Concentrate in Water.

**Use precautions for applications with emulsifiable oil or oil concentrate in water:** See "Use Precautions" for applications with emulsifiable oil or oil concentrate in water" in Corn section.

**Postemergence broadleaf weed control with surfactant (CO, western KS, NM, OK, TX, and desert regions of AZ and CA only):** Broadcast 2-4 pts. of **ATRAZINE 4L** /A plus 0.75-1.5 pts. of surfactant after sorghum reaches 6 inches in height, but before weeds exceed 1.5 inches in height. Apply only on sandy loam and finer textured soil.

**Use precautions for all applications to sorghum:** (1) Heavy rain immediately following application tends to cause excessive concentrations of herbicide in seed furrow, resulting in possible crop injury. Do not apply to furrow-planted sorghum until furrows are leveled (plowed in). Level deep planter marks or seed furrows before application. (2) Application to sorghum growing under stress caused by minor element deficiency or to sorghum growing on highly calcareous soil may result in crop injury. (3) Following harvest, plow (moldboard or disk-plow) and thoroughly till soil in fall or spring to minimize possible injury to spring-seeded rotational crops, regardless of rate used. (4) Injury may occur if both this herbicide, preplant surface, preplant incorporated, or preemergence, and an at-planting systemic insecticide applied in-furrow are used.

**Disclaimer:** Always refer to the label on the product before using Helena or any other product.

**Note:** Do not graze or feed forage from treated areas for 21 days following application, or illegal residues may result.

#### TANK MIXTURES FOR GRAIN SORGHUM

Dual® 8E: Use as tank mixture with Dual® 8E for control of those weeds listed on the Dual® label, as well as on this label. Use this tank mixture only on sorghum seed treated with Concep®. Refer to the Dual® 8E label for all directions, use precautions, and limitations.

#### WINTER WEED CONTROL IN TEXAS

For post emergence control of winter weeds only, such as henbit, seedling dock, and annual thistle on fall bedded land in the Gulf Coast and Blackland of Texas. Apply 1.6-2 pints active ingredient /A postemergence to the weeds in November or December to land that will be planted to corn, grain, or sorghum, or forage sorghum the following spring. For best results, add a suitable surfactant, such as INDUCE®, at the rate of 0.5% of the spray volume, an emulsifiable oil at the rate of 1.0% of the spray volume, or an oil concentrate at the rate of 2 pints per acre.

Normal weed control programs may be used in the following corn, grain sorghum or forage sorghum crop.

**Note:** Do not plant any crops except corn, grain sorghum, or forage sorghum the spring following this treatment, or illegal residues may result.

#### ATRAZINE 4L ALONE - CHEMICAL FALLOW

**Wheat-Sorghum-Fallow:** To control annual broadleaf and grass weeds following wheat harvest and in the following sorghum crop when grown under minimum tillage, broadcast 4.5 pts. of **ATRAZINE 4L** /A to wheat stubble immediately following wheat harvest. If weeds are present at application, remove them with a sweep plow or other suitable implement after application, or use an approved contact herbicide before or after the application of **ATRAZINE 4L**. Plant sorghum into wheat stubble the following spring with minimum soil disturbance. 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. Only one application is allowed per cycle for all chemical fallow applications.

For the list of weeds controlled, see **ATRAZINE 4L** Applied Alone - Corn or Grain Sorghum-Preplant Surface-Applied, Preplant Incorporated, or Preemergence.

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

**Note:** To avoid illegal residues, do not graze or feed forage from treated area to livestock. To avoid illegal residues and crop injury, do not plant any crop other than those on this label within 18 months following treatment.

**Wheat-Corn-Fallow (CO, KS, ND, NE, SD, & WY):** 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.

On soils in ND and SD with a high pH greater than 7.5, do not exceed 1.5 lbs. active ingredient (3.0 pints of **ATRAZINE 4L**)/A for any application. For all other locations: Do not apply more than 2.25 pounds active ingredient (4.5 pints of **ATRAZINE 4L**) per acre for any application. Do not make more than one application per cycle. For soils with a pH less than 7.5 in ND and SD, apply 1-2 lbs. active ingredient (2-4 pints of **ATRAZINE 4L**)/A. Do not apply more than 2.0 lbs. active ingredient (4 pints of **ATRAZINE 4L**) /A for any application. Do not make more than one application per cycle. Use the higher rate on finer textured soils and where heavy weed infestations are expected. Use the lower rate on coarse-textured soils and where light weed infestations are expected. In the event grasses are present in the following spring, use a grass herbicide registered for use in corn.

Follow directions for use, notes, and use 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 preemergence 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, broadcast 1-2 pts. of **ATRAZINE 4L** /A on all soils except those listed under "Use Precautions." For control of pigweed and wild sunflower, use the higher rate. Apply to stubble ground. Treat only once during same fallow period. On soils in ND and SD with a pH greater than 7.5, do not exceed 1.5 lbs. active ingredient (3 pints of **ATRAZINE 4L**) /A for any application. For all other locations: Do not apply more than 2.25 pounds active ingredient (4.5 pints of **ATRAZINE 4L**) per acre for any application. Do not make more than one application per cycle. For soils with a pH less than 7.5 in ND and SD, apply 1-2 lbs. active ingredient (2-4 pints of **ATRAZINE 4L**)/A. Do not apply more than 2.0 lbs. active ingredient (4 pints of **ATRAZINE 4L**) /A for any application. Do not make more than one application per cycle.

#### TANK MIXTURES FOR CHEMICAL FALLOW

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

Gramoxone®: If weeds are present at application, a tank mix with Gramoxone® may be used. Broadcast 4.5 pts. of **ATRAZINE 4L** plus 1.5-2.5 pts. of Gramoxone® in 20-60 gals. of water/A by ground equipment. Add 0.5-1 pt. of a nonionic surfactant, such as INDUCE® per 100 gals. of spray mixture. Add **ATRAZINE 4L** to spray tank first and thoroughly mix with water. Then add Gramoxone®, followed by surfactant. Use the 2.5 pt. rate of Gramoxone® if weeds are 4-6 inches tall. This mixture will not control weeds taller than 6 inches. Apply to stubble ground. Treat only once during same fallow period. Refer to Gramoxone® label for further directions, use precautions, and limitations. Do not apply more than 2.25 lbs. active ingredient (4.5 pints of **ATRAZINE 4L**) /A for any application. Do not make more than one application per cycle. Only one application is allowed per cycle for all chemical fallow applications.

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

Gramoxone®: If weeds are present at application, a tank mix with Gramoxone® may be used. Broadcast 1-2 pts. of **ATRAZINE 4L** plus 1.5-2.5 pts. of Gramoxone® in 20-60 gals. of water/A by ground equipment. Add 0.5-1 pts. of a nonionic surfactant, such as INDUCE®, per 100 gals.

**Disclaimer:** Always refer to the label on the product before using Helena or any other product.

of spray mixture. Add ATRAZINE to spray tank first and thoroughly mix with water. Then add Gramoxone®, followed by surfactant. Use the 2.5 pt. rate of Gramoxone® if weeds are 4-6 inches tall. On soils in ND and SD with a pH greater than 7.5, do not exceed 1.5 lbs. active ingredient (3 pints of ATRAZINE 4L)/A for any application. For all other locations: Do not apply more than 2.25 pounds active ingredient (4.5 pints of ATRAZINE 4L) per acre for any application. Do not make more than one application per cycle. For soils with a pH less than 7.5 in ND and SD, apply 1-2 lbs. active ingredient (2-4 pints of ATRAZINE 4L) /A. Do not apply more than 2.0 lbs. active ingredient (4 pints of ATRAZINE 4L) /A for any application. Do not make more than one application per cycle. Only one application is allowed per cycle for all chemical fallow applications.

This mixture will not control weeds taller than 6 inches. Apply to stubble ground. Treat only once during same fallow period. Refer to Gramoxone® label for further directions, use precautions, and limitations.

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 Gramoxone®, plant at least 2 inches deep and 12 months or more after application.

**Use Precautions:** To avoid crop injury, (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 of 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 application, or illegal residues may result.

**Aerial application:** In order to assure that spray will be controllable within the target area when used according to label directions, make applications at a maximum height of 10 ft., using low drift nozzles at a maximum pressure of 40 psi, and restrict application to periods when wind speed does not exceed 10 mph. To assure that spray will not adversely affect adjacent sensitive non-target plants, apply ATRAZINE 4L alone by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

#### ROADSIDES

To control certain annual weeds in established perennial grasses along roadsides in CO, KS, MT, NE, ND, SD, and WY, including cheatgrass (downy brome, chess), common (annual) broomweed, little barley, medusahead, sagewort, and tumble mustard, broadcast 2 pts. of ATRAZINE 4L /A in a minimum of 10 gallons of water by ground equipment in the fall before ground freezes, or after thawing in the spring, but before the established grasses green-up and before weeds emerge. Examples of desirable established grasses include big bluestem, side-oats grama, switchgrass, and Western wheatgrass. Apply only once per year. Temporary discoloration or

other form of injury to the desirable perennial grasses may occur following application.

**Notes:** To avoid illegal residues, (1) Do not cut or feed roadside grass hay, (2) Do not allow livestock to graze treated areas, (3) Do not apply more than 1.0 pound of active ingredient (2 pints of ATRAZINE 4L) per acre for any application, and (4) Do not apply more than one application per year.

#### CONSERVATION RESERVE PROGRAM (CRP) (NE, OK, OR, & TX)

For control or suppression of the following weeds: annual ragweeds, barnyardgrass, black nightshade, cheat, cocklebur, downy brome, fall panicum, field pennycress, giant foxtail, yellow foxtail, Japanese brome, Kentucky bluegrass, kochia, lambsquarters, little barley, marehail, pigweed, prickly lettuce, smooth brome, and sunflower, refer to the directions, notes, and use precautions below:

Pure stands of newly seeded big bluestem, switchgrass, and eastern gamagrass.

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

**Establishment:** Broadcast 4 pints ATRAZINE 4L /A preplant incorporated or preemergence at time of seeding and prior to emergence of weeds. Prepare a good firm seedbed. Plant 1/2 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, cultipack or roll after planting.

Renovation of existing stands of big bluestem and switchgrass planted on CRP acres.

Broadcast 2-4 pints ATRAZINE 4L /A to existing stands of big bluestem and switchgrass prior to the emergence of weeds. Use the low rate on soils containing from 1-2% organic matter. Use the high rate on soils with 2% or more organic matter.

#### Renovation of existing stands of the following perennial range grasses planted on CRP acres:

Blue grama, indiagrass, little bluestem, sand lovegrass, sideoats grama, and western wheatgrass.

Broadcast 1-2 pints ATRAZINE 4L /A in the spring prior to weed emergence or in the fall before the ground freezes and prior to weed emergence after these species have been established for at least one growing season for control or partial control of the weeds listed above. Use the low rate for weeds controlled or suppressed easily. Use the higher rate on other weeds claimed in an earlier section of the label.

**Aerial Application:** Make applications at a maximum height of 10 ft. above vegetation. Use low drift nozzles at a maximum pressure of 40 psi. Restrict application to periods when wind speed does not exceed 10 mph to control drift. To assure that drift will not adversely affect adjacent sensitive non-target plants, apply by aircraft at a minimum upwind distance of 400 ft. from sensitive plants. Use 3-5 gals./A total water volume; use the higher water volume when a dense, heavy ground cover is present.

**Notes:** (1) Do not cut or feed grass hay to livestock. (2) Do not graze treated areas. (3) Do not use seeds for bird food. (4) Do not dump or spill product or dispose of containers within reach of livestock. (5) Follow all

applicable restrictions for the Conservation Reserve Program. (6) Do not apply more than 2 pounds of active ingredient (4 pints of **ATRAZINE 4L**) per acre for any application. (7) Do not make more than one application per year.

**Use precautions:** To avoid crop injury, make only one application per year. Slight discoloration of desirable grasses may occur following treatment. Injury may be enhanced when used on neutral or alkaline soils.

#### SEVERE DROUGHT CONDITIONS

Do not graze forage or cut forage for hay. Under severe drought conditions, the Conservation Reserve Program allows grazing and making of hay from CRP acres, as so specified by the local ASCS (Agricultural Stabilization & Conservation Service) office. This label **does not** allow grazing or making of hay from CRP acres that have been treated with atrazine under any circumstance.

#### SUGARCANE

For control of many broadleaf and grass weeds, including amaranths, crabgrass, fireweed, Flora's paintbrush, foxtails, junglerice, and wiregrass, broadcast 4-8 pts. of **ATRAZINE 4L /A** at time of planting or ratooning, but before sugarcane emerges.

Broadcast aerially in a minimum of 5 gals. of spray per acre, or broadcast or band by ground equipment in a minimum of 20 gals. per acre, unless indicated otherwise. One additional application may be made over the sugarcane as it emerges, and two additional applications may be made interline after emergence as directed sprays. Repeat treatments, where needed, may be applied broadcast, band, or interline as suggested with the final application being prior to close-in. Do not exceed the maximum rate of 10 pounds active ingredient (20 pints of **ATRAZINE 4L**) per acre per crop of sugarcane.

**Note:** Where high rates of **ATRAZINE** are used alone, apply in a minimum of 2 pints of water for each 2 pints of **ATRAZINE** applied per acre. Do not apply more than 4.0 pounds of active ingredient (8 pints of **ATRAZINE 4L**) per acre for any application. Do not apply more than 10 pounds active ingredient (20 pints of **ATRAZINE 4L**) per acre per crop.

**Aerial application:** In order to assure that spray will be controllable within the target area when used according to label directions, make applications at a maximum height of 10 ft., using low drift nozzles at a maximum pressure of 40 psi, and restrict application to periods when wind speed does not exceed 10 mph. To assure that spray will not adversely affect adjacent sensitive non-target plants, apply **ATRAZINE 4L** alone by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

#### Florida

For control of emerged pellitory weed: Apply 0.8-1.2 pts. of **ATRAZINE 4L /A** in at least 40 gals. of water as directed spray by ground equipment prior to close-in. Add 4 qts. of surfactant for each 100 gals. of spray. Thoroughly cover weed foliage.

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

1. Apply 8 pts. of **ATRAZINE 4L /A** preemergence. Follow with one or two applications, as needed, postemergence to sugarcane and weeds, at 4 pts. of **ATRAZINE 4L /A**. Treat before weeds exceed 1.5 inches in height.

2. Apply 1-3 times, as needed, at 4 pts. of **ATRAZINE 4L /A** postemergence to sugarcane and weeds. Treat before weeds exceed 1.5 inches in height.

#### Louisiana

For control of annual weeds during the summer fallow period, apply 4 pts. of **ATRAZINE 4L /A** to weed-free beds immediately after bed formation. Follow normal weed control after planting.

**Use precautions:** To avoid crop injury, (1) Do not apply more than 20 pints/A to any one crop of sugarcane. (2) If making 4 pts. of **ATRAZINE 4L /A** application during summer fallow period, do not exceed 16 pints **ATRAZINE 4L /A** during the remainder of the growing season, or illegal residues may result. (3) Do not apply more than 4.0 pounds of active ingredient (8 pints of **ATRAZINE 4L**) per acre for any application. (4) Do not apply more than 10.0 pounds of active ingredient (20 pints of **ATRAZINE 4L**) per acre per year.

#### Texas

Use **ATRAZINE 4L** for control of barnyardgrass, pigweed purslane, and sunflower in plant or ratoon sugarcane.

Apply 8 pts. of **ATRAZINE 4L /A** preemergence. Follow with one or two applications, as needed, at 6 pts. of **ATRAZINE 4L /A** postemergence to sugarcane and weeds.

For best results when weeds are emerged, add a nonionic surfactant at a concentration of 4 pints **ATRAZINE 4L /100 gals.** to the spray and apply before weeds exceed 1.5 inches in height.

**Use precautions:** (1) Injury to sugarcane may occur when under moisture stress, when soil is of low adsorptive capacity, or when land is first cropped to sugarcane. (2) Do not apply after close-in. (3) Do not apply more than 20 pts. of **ATRAZINE 4L /A** to any one crop of sugarcane, or crop injury may result. (4) Do not apply more than 4.0 pounds of active ingredient (8 pints of **ATRAZINE 4L**) per acre for any application. (5) Do not apply more than 10.0 pounds of active ingredient (20 pints of **ATRAZINE 4L**) per acre per year.

#### TURFGRASSES FOR SOD (FLORIDA ONLY)

St. Augustinegrass, Centipedegrass, and Zoysia Grass  
Broadcast 4-8 pts. of **ATRAZINE 4L /A** according to soil texture to control those weeds listed under **ATRAZINE 4L Applied Alone - Corn or Grain Sorghum-Preplant Surface-Applied, or Preplant Incorporated, or Preemergence.**

Muck or peat	8 pts.
Old beds:	Within 2 days after lifting sod
New beds:	3-4 days after sprigging or plugging
Sandy soil	4 pts.
Old beds:	Within 2 days after lifting sod

New beds: 7-10 days after sprigging or plugging

If weeds regrow, apply an additional 4 pts. of **ATRAZINE 4L /A** on muck or peat, or 2 pts. of **ATRAZINE 4L /A** on sandy soil.

**Use precautions:** To avoid crop injury,

- (1) Do not apply within 30 days prior to cutting or lifting.
- (2) Do not apply in combination with surfactants or other spray additives.
- (3) Use only on turfgrass reasonably free of infestation of insects, nematodes, and diseases.
- (4) On newly sprigged turfgrass, temporary slowing of growth may follow application.
- (5) For muck or peat soils:
  - (a) Do not apply more than 4 pounds of active ingredient (8 pints of **ATRAZINE 4L**) per acre for an application.
  - (b) Do not apply more than 6 pounds of active ingredient (12 pints of **ATRAZINE 4L**) per year.
- (6) For sandy soils:
  - (a) Do not apply more than 2 pounds of active ingredient (4 pints of **ATRAZINE 4L**) per acre for any application.
  - (b) Do not apply more than 3 pounds of active ingredient (6 pints of **ATRAZINE 4L**) per year.

#### **TURFGRASSES FOR FAIRWAYS, LAWNS, SOD PRODUCTION\* AND SIMILAR AREAS**

##### **Turfgrasses for Sod (For All Areas Other Than Florida)**

\*In states other than Florida. For use on turfgrass for sod in Florida, see "Turfgrasses for Sod (Florida only)" section above.

**Use precautions:** (1) For muck or peat soils: Do not apply more than 4 pounds of active ingredient (8 pints of **ATRAZINE 4L**) per acre for any application. Do not apply more than 6 pounds of active ingredient (12 pints of **ATRAZINE 4L**) per year. (2) For sandy soils: Do not apply more than 2 pounds of active ingredient (4 pints of **ATRAZINE 4L**) per acre for any application. Do not apply more than 3 pounds of active ingredient (6 pints of **ATRAZINE 4L**) per year.

##### **Turfgrass At Residential Sites (including homes, daycare facilities, schools, playgrounds, parks, recreational areas and sports fields)**

Bermudagrass, Centipedegrass, St. Augustinegrass, and Zoysia Grass

Apply **ATRAZINE 4L** after October 1 before emergence of winter annual weeds for control of annual bluegrass, burclover, carpet burweed, chickweed, corn speedwell, henbit, hop clover, and spurweed. **ATRAZINE 4L** will control annual bluegrass even if it emerged at time of treatment. For control of summer annual weeds listed in the preemergence portion of the **ATRAZINE 4L** Applied Alone-Corn or Grain Sorghum section of the label, also apply **ATRAZINE 4L** in late winter before the weeds emerge. Apply in a minimum of 15 gals. of water per acre or 1 gal. per 1,000 sq. ft. Where annual bluegrass is the major weed, use 2 pints **ATRAZINE 4L /A** (22 ml or 0.75 fl. oz. per 1,000 sq. ft.). Use 2 pints **ATRAZINE 4L /A** (22 ml or 0.75 fl. oz. per 1,000 sq. ft.) for control of the other weeds named above. Do not exceed 2 pints **ATRAZINE 4L /A** per treatment on newly sprigged turfgrass or on hybrid bermudagrass such as Tiflawn, Tifway, and Ormond.

For continued summer annual weed control, apply another 2 pints active ingredient /A at least 30 days after the previous application, but not after April 15. However, do not make more than two applications of this product per year.

##### **Restrictions:**

- (1) Do not apply more than 1.0 pound active ingredient (2 pints of **ATRAZINE 4L**) per acre for any application.
  - (2) Do not apply more than 2.0 pounds active ingredient (4 pints of **ATRAZINE 4L**) per acre per year
- Note:** Do not graze or feed turf clippings to animals, or illegal residues may result.

**Use precautions:** On newly sprigged turfgrass and hybrid bermudagrass, temporary slowing of growth and yellowing may occur following application. To avoid turf injury, (1) Use only on turfgrass reasonably free of infestations of insects, nematodes, and diseases. (2) Do not use on golf greens. (3) Do not use north of NC (except may be used in Virginia Coastal Plains) or west of the high rainfall areas of eastern OK and eastern TX. (4) Do not use on muck or alkaline soils. (5) Do not apply over the rooting area of trees or ornamentals not listed on this label. (6) Do not overseed with desirable turfgrass within 4 months before or 6 months after treatment. (7) Do not apply this product to newly seeded bermudagrass until it has overwintered and has a well-developed rhizome system. Do not exceed 4 pints **ATRAZINE 4L /A** within 12 months of seeding bermudagrass.

##### **MACADAMIA NUTS**

For preemergence control of many broadleaf and grass weeds, including crabgrass, foxtail, wiregrass, Flora's paintbrush, spanishneedles, and fireweed, broadcast 4-8 pts. **ATRAZINE 4L /A** before harvest and before weeds emerge. Repeat as necessary. Do not spray when nuts are on ground during harvest period. Do not apply by air.

**Notes:** (1) Do not apply more than 4 pounds of active ingredient (8 pints of **ATRAZINE 4L**) per acre for any application. (2) Do not apply more than 8 pounds of active ingredient (16 pints of **ATRAZINE 4L**) per year.

##### **GUAVA**

Use only on established plantings which are at least 18 months old. Apply as a directed spray at 4-8 pts. of **ATRAZINE 4L /A** in 20-50 gals. of spray mix preemergence or early postemergence to weeds. When applying postemergence, the use of a surfactant and greater spray volume (80-100 gals. of spray mix per acre) may enhance weed control. This product controls many annual broadleaf and grass weeds, including fireweed, purslane, scarlet pimpernel, spanishneedles and sowthistle.

**Notes:** (1) Do not allow spray to contact foliage or fruit. (2) Do not apply more frequently than at 4- month intervals. (3) Do not apply more than 16 pts. of **ATRAZINE 4L** per year. (4) Do not apply more than 4 pounds of active ingredient (8 pints of **ATRAZINE 4L**) per acre per any application. (5) Do not apply more than 8 pounds of active ingredient (16 pints of **ATRAZINE 4L**) per year.

##### **CONIFERS**

For control of annual broadleaf and grass weeds prior to transplanting, after transplanting or in established conifers [including Douglas fir, grand fir, noble fir, white fir, Austrian pine, bishop pine, Jeffrey pine, knobcone pine, loblolly pine, lodgepole pine (shore pine), Monterey pine, ponderosa pine, Scotch pine, slash pine, blue spruce, and Sitka spruce]: Broadcast

4-8 pts. **ATRAZINE 4L** in a minimum of 5 gals. of water per acre by air or 10 gals. of water by ground before weeds are 1.5 inches tall. Apply to established trees between fall and early spring while trees are dormant. For new transplants, apply during or soon after transplanting. For applications prior to transplanting allow sufficient precipitation to activate **ATRAZINE 4L** before transplanting. In areas where spring and summer rainfall is inadequate to activate **ATRAZINE 4L**, apply during fall prior to spring transplanting. For the list of weeds controlled, see **ATRAZINE 4L** Applied Alone-Corn or Grain Sorghum-Preplant Surface-Applied, Preplant Incorporated, or Preemergence.

**Quackgrass control:** Broadcast 8 pts. **ATRAZINE 4L** in a minimum of 5 gals. of water per acre by air or 10 gals. of water by ground between fall and early spring while trees are dormant and before quackgrass is more than 1.5 inches tall.

**Use precautions:** (1) In areas west of the Rocky Mountains (except the Great Basin), grazing may begin 7 months after a fall application or 3 months after a winter or spring application. (2) To prevent illegal residues, do not graze treated areas of the Great Basin, or areas east of the Rocky Mountains. (3) Temporary injury to trees may occur following use of **ATRAZINE** on coarse-textured soil. (4) To avoid crop injury, do not apply to seedbeds. (5) Also apply only once per year. (6) Do not apply more than 4 pounds of active ingredient (8 pints of **ATRAZINE 4L**) per acre for any application. (7) Do not apply more than 4 pounds of active ingredient (8 pints of **ATRAZINE 4L**) per year.

**Aerial application:** In order to assure that spray will be controllable within the target area when used according to label directions, make applications at a maximum height of 10 ft. above vegetation, using low drift nozzles at a maximum pressure of 40 psi, and restrict application to periods when wind speed does not exceed 10 mph. To assure that spray will not adversely affect adjacent sensitive non-target plants, apply **ATRAZINE 4L** by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

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

**Read the Conditions of Sale - Warranty and Limitations of Liability and Remedies before using this product. If the terms are not acceptable, return the product, unopened, and the full purchase price will be refunded.**

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 or the failure to follow the label directions or good application practices, all of which are beyond the control of Helena Chemical Company (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 shall be limited to, at Helena Chemical Company's election, one of the following:

1. Refund of the purchase price paid by buyer or user for product bought, or
2. Replacement of the product used

To the extent allowed by law, 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.

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## SUPPLEMENTAL LABELING

# ATRAZINE 4L

## EPA REG. NO. 5905-470

This labeling must be in the possession of the actual product user at the time of application.

### TILE-OUTLETTED TERRACED FIELDS CONTAINING STANDPIPES

One of the following restrictions must be used in applying Atrazine to tile-outletted fields containing standpipes:

1. Do not apply within 66 feet of standpipes in tile-outletted fields.
2. Apply this product to the entire tile-outletted field and incorporate it to a depth of 2 - 3 inches in the entire field.
3. Apply this product to the entire tile-outletted field under a no-till practice only when a high crop residue management practice is practiced. High crop residue management is described as a crop management practice where little or no crop residue is removed from the field during or after crop harvest.

Always consult the label for other use directions and limitations.

MANUFACTURED FOR  
HELENA CHEMICAL COMPANY  
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