

34704-69

11/23/2007

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

November 23, 2007

Mr. John T. Tice
Manager, Registrations
LOVELAND PRODUCTS INC.
P.O. Box 1286
Greeley, Colorado 80632-1286

Subject: Label Notification

Dear Mr. Tice:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated 10/25/07 for **EPA Registration 34704-69**. The Registration Division (RD) has conducted a review of this request for applicability under PRN 98-10 and finds that the label change(s) requested falls within the scope of PRN 98-10. The label has been date-stamped "Notification" and will be placed in our records.

If you have any questions, please contact me directly at 703-305-6249 or Sherada Hobgood of my staff at 703-308-8893.

Sincerely,

LS/

Linda Arrington
Notifications & Minor Formulations Team Leader
Registration Division (7505P)
Office of Pesticide Programs

 United States Environmental Protection Agency Washington, DC 20460	<input type="checkbox"/> Registration <input type="checkbox"/> Amendment <input checked="" type="checkbox"/> Other	OPP Identifier Number
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Application for Pesticide - Section I

1. Company/Product Number 34704-69	2. EPA Product Manager Jim Tompkins	3. Proposed Classification <input type="checkbox"/> None <input checked="" type="checkbox"/> Restricted
4. Company/Product (Name) Atrazine 4 L Herbicide	PM# 25	
5. Name and Address of Applicant (Include ZIP Code) Loveland Products, Inc. P.O. Box 1286 Greeley, Colorado 80632-1286 <input type="checkbox"/> Check if this is a new address		6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to: EPA Reg. No. <u>NOTIFICATION</u> Product Name <u>NOV 23 2007</u>

Section - II

<input type="checkbox"/> Amendment - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.

Explanation: Use additional page(s) if necessary. (For section I and Section II.)



Insertion of the word, "terraced" in the Environmental Hazard Statements associated with "tile-outletted" terraced fields". This insertion of the word "terraced" in four places is the only change made to this label.

This notification is consistent with the provisions of PR Notice 98-10 and EPA Regulations at 40 CFR 152.46 and not other changes have been made to the labeling or the confidential statement of formula for this product. I understand that it is a violation of 18 U.S.C. Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms or PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

Section - III

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			<input type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
* Certification must be submitted If "Yes" Unit Packaging wgt. No. per container		If "Yes" Package wgt No. per container			
3. Location of Net Contents Information		4. Size(s) Retail Container		5. Location of Label Directions	
<input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		2.5 gal and larger		<input type="checkbox"/> _____ <input checked="" type="checkbox"/> In booklet attached to the label	
6. Manner in Which Label is Affixed to Product				<input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled	
				<input checked="" type="checkbox"/> Other <u>Self adhesive booklet.</u>	

Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name John T. Tice	Title Manager Registrations	Telephone No. (Include Area Code) 970-347-1484
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped) 
2. Signature 	3. Title Manager Registrations	
4. Typed Name John T. Tice	5. Date 10-25-2007	

RESTRICTED USE PESTICIDE

(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. USERS MUST READ AND FOLLOW ALL PRECAUTIONARY STATEMENTS AND INSTRUCTIONS FOR USE IN ORDER TO MINIMIZE POTENTIAL FOR ATRAZINE TO REACH GROUND AND SURFACE WATER.



ATRAZINE 4L HERBICIDE

NOTIFICATION

NOV 23 2007

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

ACTIVE INGREDIENTS:

Atrazine (2-chloro-4-ethylamino-6-isopropylamino-s-triazine)	42.2%
Related compounds	0.8%
INERT INGREDIENTS:	57.0%
TOTAL	100.0%

ATRAZINE 4L CONTAINS 4 LBS. ACTIVE INGREDIENTS PER GALLON

KEEP OUT OF REACH OF CHILDREN CAUTION

See Below For Additional Precautionary Statements

EPA REG. NO. 34704-69

EPA EST. NO. 34704-NB-2

NET CONTENTS 2 1/2 GAL. (9.46 L)

IHT

032807 V3 10P07

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes, or clothing. Keep away from food and feedstuffs.

FIRST AID

If swallowed:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have a person sip a glass of water if able to swallow. • Do not induce vomiting unless told to do so by the poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If inhaled:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
If on skin or clothing:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes:	<ul style="list-style-type: none"> • Hold eye 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 eye. • Call a poison control center or doctor for treatment advice.

**FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL:
1-800-301-7976.**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Note to Physician: There is no specific antidote for atrazine. If this product is ingested, induce emesis or lavage stomach. The use of an aqueous slurry of activated charcoal may be considered.

Personal Protective Equipment (PPE):

Some materials that are chemical-resistant to this product are listed below. If you

want more options, follow the instructions for Category A on an EPA chemical resistant 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 Barrier Laminate, Nitrile Rubber, Neoprene Rubber or Viton.

Mixers, loaders, all other applicators, flaggers, and other handlers must wear: Long-sleeved shirt and long pants, chemical resistant gloves such as Barrier Laminate, Nitrile Rubber, Neoprene Rubber or Viton, 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 material that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Engineering Controls:

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)] 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.

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

Users 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.

ENVIRONMENTAL HAZARDS

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.

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

ATRAZINE 4L HERBICIDE

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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 or 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 this product to the entire tile-outletted terraced field and immediately incorporate it to a depth of 2-3 inches in the entire field.
- Apply this product 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, or [1-866-365-3014]. If use of this product is prohibited in your watershed, you may return this product to your point of purchase or contact Loveland Products, Inc. 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.

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, chemical-resistant gloves such as any waterproof material, and shoes plus socks.

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 treated area until sprays have dried.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Do not store under conditions which might adversely affect the container or its ability to function properly. Do not store below temperature of 0°F. If frozen, warm to 40°F and reconstitute before using by rolling or shaking the container. Store in safe manner. Store in original container only. Keep container tightly closed when not in use. Reduce stacking height where local conditions can affect package strength. Personnel should use clothing and equipment consistent with good pesticide handling.

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: Plastic: 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. **Metal:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities. For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC - 1-800-424-9300.

GENERAL INFORMATION

ATRAZINE 4L herbicide controls many annual broadleaf and grass weeds in the crops included on this label. ATRAZINE 4L may be applied before or after weeds emerge.

Important Note: 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. These weeds may include lambsquarters, pigweed, black nightshade, kochia, and others. Where this is known or suspected, we recommend the use of this product in combination with other registered herbicides which are not triazines. Consult your State Agricultural Extension Service about specific weed resistance to atrazine in your area and weed control recommendations. Within the specific crop directions on this label, certain weeds are indicated for suppression only. Weed suppression is a visual reduction in weed competition (reduced population and/or vigor) as compared to an untreated area. Degree of suppression will vary with rate used, size of weeds, and environmental conditions following treatment.

In each case where a range of rates is given, the lower rate should be used on light soils low in organic matter, and the higher rate should be used on heavy soils high in organic matter.

Since ATRAZINE 4L acts mainly through root absorption, its effectiveness depends on rainfall or irrigation to move it into the root zone. Should weeds develop, a shallow cultivation or rotary hoeing will generally result in better weed control.

Care should be taken to avoid using ATRAZINE 4L where adjacent desirable trees, shrubs, or plants might be injured.

Note: Loveland Products, Inc. does not recommend the use of ATRAZINE 4L in combination with other herbicides or oils except as specifically described on this label or other literature distributed by Loveland Products, Inc.

APPLICATION PROCEDURES

Ground Application

For the most uniform distribution of broadcast applications use 80° flat fan type nozzles. For band applications, use flat fan even spray nozzles. Screens and strainers should be no finer than 50 mesh. Use a pump with capacity to (1) provide sufficient hydraulic agitation during mixing and application to keep the material in suspension and (2) maintain 35-40 psi operating pressure. Use a minimum of 5 gallons of water per acre for preplant incorporated, pre-emergence and post (without oil or surfactant) applications. Use a minimum of 10 gallons of water per acre for all postemergence applications combined with oil or surfactant.

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

Band width in inches	x	Rate/A for broadcast treatment	=	Amount needed for band treatment
Row width in inches				

Aerial Application

For preplant and pre-emergence broadcast treatments, apply at a 1:1 ratio of ATRAZINE 4L to water (example: recommendation calls for 1 quart of product and is mixed with 1 quart of water) to be applied per acre. For postemergence treatments, on corn and sorghum, apply the recommended rate of ATRAZINE 4L or ATRAZINE 4L plus oil in a minimum of 2 gallons of water per acre. Avoid applications under conditions where uniform coverage cannot be obtained or where excessive drift may occur.

Avoid application directly to animals. Flagmen or loaders should avoid inhalation of spray mist.

With fixed-wing aircraft or helicopter application, an exactly even swath deposition cannot be achieved, and consequently crop injury or pesticide nonperformance may result wholly or in part. Do not apply by air during periods of thermal inversion.

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

ATRAZINE 4L in water application

ATRAZINE 4L, a liquefied formulation, should be mixed with water and applied as a spray. Pour ATRAZINE 4L into the tank during or after filling. Hydraulic (jet) or mechanical agitation is recommended during mixing and application to keep the materials 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.

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TANK MIX REQUIREMENTS

When tank-mixing or sequentially applying atrazine or products containing atrazine to corn or sorghum, the total pounds of atrazine applied (lbs. a.i. per acre) 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 ai/A) must not exceed the specific seasonal rate limits as noted in the use directions.

ATRAZINE 4L in liquid fertilizer applications

Nitrogen solutions or complete liquid fertilizers may replace all or part of the water as a carrier for pre-emergence and preplant applications of ATRAZINE 4L on corn or sorghum. Mixing should be accomplished as described under water applications. Do not apply after corn or sorghum has emerged as there is danger of liquefied fertilizers causing crop injury.

IMPORTANT - Check the compatibility of this product with liquid fertilizers and/or nitrogen solutions before use. Prepare the proposed mixture on a small scale and evaluate its suitability for spraying before mixing a large quantity.

Dry Bulk Fertilizer Impregnation Uses:

- Impregnation of bulk fertilizer is restricted to commercial facilities. On-farm fertilizer impregnation is prohibited.
- No more than 500 tons of dry bulk fertilizer can be impregnated per day.
- No single facility may impregnate fertilizer with this product for more than 30 days per calendar year.
- The commercial facility impregnating the dry bulk fertilizer must inform, in writing, the user (applicator) of the dry bulk fertilizer that:
 - Applicators must wear long-sleeved shirt, long pants, shoes and socks.
 - The restricted entry interval is 12 hours.

Application in water plus emulsifiable oil or oil concentrate

Adding emulsifiable oil or oil concentrate to postemergence water-based sprays may improve weed control in corn and sorghum. However, under certain conditions, use of either emulsifiable oil or oil concentrate may seriously damage corn or sorghum. To minimize this possibility, follow directions, procedures, and use precautions below. Use a crop oil designed for use with this product containing 1-2% suitable emulsifier, or a suitable crop oil concentrate designed for use with this product and containing not more than 20% emulsifier or surfactant blend. Several oils and crop oil concentrates of these types are on the market. Emulsifiable oil and oil concentrate contaminated with water or other materials can cause compatibility problems and/or crop injury.

Use Precautions for Application of ATRAZINE 4L plus Emulsifiable Oil or Oil Concentrate in Water to Corn and Sorghum

- 1) Do not use oil in ATRAZINE 4L sprays 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 as crop injury may occur.
- 2) Do not use oil in ATRAZINE 4L 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 4L and emulsifiable oil in water per season.

Mixing procedures - all uses: (1) Be sure sprayer is clean and not contaminated with other products like 2,4-D or other materials, as crop injury may result. (2) Fill tank 1/2 to 3/4 full with clean water. (3) Start agitation. (4) Pour product directly from container into tank. (5) Add emulsifiable oil, or oil concentrate, or a tank mix herbicide.

(6) Finish filling tank with water, nitrogen solution, or liquid fertilizer. (7) Empty tank as completely as possible before refilling to prevent buildup of oil or emulsifiable concentrate residue in tank. Maintain agitation to avoid separation of other materials from water, nitrogen solution, or liquid fertilizer remaining in tank. (8) If an oil or oil concentrate film starts to build up in tank, drain it, and clean with strong detergent solution or solvent. (9) Clean sprayer thoroughly immediately after use by flushing system with water containing a detergent. (10) For liquid nitrogen or liquid fertilizer, use suction screens of 16-mesh or coarser.

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 most nozzles on the boom must not exceed 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 shall be observed. The applicator should be familiar with and take into account the information covered in the 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 Inversions 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 number of nozzles that provide uniform coverage.
- Nozzle Orientation - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the larger droplets than other nozzle types.

Boom length

For some use patterns, reducing the effective boom length to less than 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 crosswind, the swath will be displaced downward. 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 drops, etc.)

Wind

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

Temperature and Humidity

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

Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions.

Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

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

ROTATIONAL CROP RESTRICTIONS FOR ALL USES

- 1) Land treated with ATRAZINE 4L should not be planted to any crop except corn or sorghum until the following year or injury may occur.
- 2) 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.
- 3) In the High Plains and Intermountain areas of the West where rainfall is sparse and erratic or where irrigation is required, use ATRAZINE 4L only when corn or sorghum is to follow corn or sorghum, or a crop of untreated sorghum or corn is to precede other rotational crops.
- 4) In Western Minnesota and Eastern parts of the Dakotas, Nebraska, and Kansas, corn or sorghum treated with ATRAZINE 4L should not be followed with soy beans if the broadcast rate applied was more than 4 pts. per acre (or comparable rate in a band) or injury may occur.
- 5) Injury may occur to soybeans planted in North Central Iowa and South Central Minnesota the year following an ATRAZINE 4L application on Harps, Canisteo, Stroden or other soils having 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 ATRAZINE 4L application or injury may occur.

WEEDS CONTROLLED OR SUPPRESSED BY ATRAZINE 4L ALONE IN CORN AND SORGHUM

Preplant, Preemergence or Postemergence at 4 Pints Per Acre (See CORN and SORGHUM sections of label):

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Grass weeds: Barnyard grass (watergrass)**
 Giant foxtail*
 Green Foxtail**
 Large (hairy) crabgrass*
 Wild oats
 Witchgrass (Panicum capillare) **
 Yellow foxtail*

Broadleaf Weeds: Cocklebur*
 Kochia*
 Lambsquarters*
 Morningglory (annual)
 Mustard
 Nightshade*
 Pigweed*
 Purslane
 Ragweed
 Velvetleaf (buttonweed)**

Note: For best control of Cocklebur and Velvetleaf, do not apply less than the recommended 4 pints per acre.

Postemergence With Emulsifiable Oil or Oil Concentrate in Water at 2% Pints Per Acre

Broadleaf Weeds: Cocklebur*
 Lambsquarters*
 Morningglory (annual)
 Mustard
 Pigweed*
 Ragweed
 Smartweed
 Wild Buckwheat

* Maximum rate limitations and local resistance may result in suppression only or lack of control. Refer to IMPORTANT NOTE within GENERAL INFORMATION SECTION of this label.

** Suppression or partial control only on medium and fine textured soils.

MAXIMUM RATES PRIOR TO CORN OR SORGHUM EMERGENCE

For single preemergent broadcast applications (including early preplant, preplant incorporated, preplant surface, at planting or pre-emergence) the following maximum use rates apply.

Soil Erodibility Classification*	Plant Residue Amount	Maximum Rate Per Acre
Highly erodible	30% or more (conservation tillage program)	2 lbs. active ingredient
	Less than 30% (conventional tillage program)	1.6 lbs. active ingredient
Not highly erodible	No limit	2 lbs. active ingredient

*As defined by the Natural Resource Conservation Service

MAXIMUM RATES AFTER CORN OR SORGHUM EMERGENCE

For postemergence applications, the following maximum rates apply to the total of all atrazine treatments:

Previous Soil Application of Atrazine To Crop	Total Maximum Rate Per Acre Per Calendar Year
No	2 lbs. active ingredient post-emergence
Yes	2.5 lbs. active ingredient combined from soil and postemergence applications

ATRAZINE 4L contains 0.5 lb. active ingredient per pint.

CORN

ATRAZINE 4L may be applied either before planting, at planting or after planting at the rate indicated in Table 1.

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

PREPLANT: Broadcast in the spring after plowing at the rate indicated in Table 1A.

Apply 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 Table 1A.

POSTEMERGENCE: Apply before weeds exceed 1½ inches in height and before corn is 12 inches tall, at the rate indicated in Table 1B. When using nitrogen solutions, direct the spray to avoid corn foliage injury. Maintain agitation in spray tank during application.

TABLE 1

A. FOR ALL SOIL APPLICATIONS PRIOR TO CORN EMERGENCE
 (including early preplant, preplant incorporated, preplant surface, at planting or preemergence)

Soil Erodibility Classification*	Plant Residue Amount	Maximum Rate Per Acre ¹
Highly erodible	30% or more (conservation tillage program)	4 Pints
	Less than 30% (conventional tillage program)	3½ Pints
Not highly erodible	No limit	4 Pints

*As defined by the Natural Resource Conservation Service

B. FOR CORN POSTEMERGENCE APPLICATION

Previous Soil Application Of Atrazine To Crop	Total Maximum Rate Per Acre Per Calendar Year
No	4 Pints postemergence
Yes	5 Pints combined from soil and postemergence applications

Postemergence applications to corn must be made before corn reaches 12 inches in height.

1 For Preplant or Preemergence Applications in Western KS, Western NE, Eastern CO, Eastern WY, NM, West TX and the Pan Handle of OK. On sands, loamy sands, sandy loams, mild to strongly alkaline soils and all recently leveled soils, apply 2½ pts. per acre for broadleaf weed control. Broadleaf weeds such as pigweed, lambsquarters, nightshade, purslane and kochia will be controlled. On other soil types in the areas above, make applications at the rate shown in Table 1 for broadleaf and grass control.

Postemergence with emulsifiable oil or oil concentrate in water. IMPORTANT: Be sure to read use precautions under "Application in water plus emulsifiable oil or oil concentrate."

BROADLEAF AND GRASS CONTROL: Broadcast 4 pts. per acre after weed emergence, but before weeds reach 1½ inches in height and before corn is 12 inches tall. Add emulsifiable oil at rate of 1 gal. per acre for ground applications and ½ gal. per acre for aerial applications. Add oil concentrate at rate of 1 qt. per acre for ground applications.

BROADLEAF CONTROL: Broadcast 2½ pts. per acre for control of broadleaf weeds, such as annual morningglory, cocklebur, lambsquarters, mustard, pigweed, ragweed, smartweed, and wild buckwheat. Add emulsifiable oil at rate of 1 gal. per acre for ground applications and ½ gal. per acre for aerial applications. Add oil concentrate at rate of 1 qt. per acre for ground applications. Apply before pigweed and lambsquarters reach 6 inches in height, before all other weeds reach 4 inches in height and before corn is 12 inches tall. A cultivation may be necessary if all weeds are not controlled or if weeds regrow.

TANK MIXTURES WITH ATRAZINE 4L IN CORN

ATRAZINE 4L + Paraquat

For control of existing vegetation and residual control where corn will be planted directly into cover crop, established sod or in previous crop residues - Broadcast 4 pts. ATRAZINE 4L and recommended label rate of Paraquat per acre in 20 to 60 gallons of water per acre. Following the Paraquat label, add recommended rate of nonionic surfactant per 100 gallons of diluted spray. Add ATRAZINE 4L to spray tank first and thoroughly mix with water. Add the Paraquat and surfactant last.

Refer to the Paraquat label for further directions, limitations and cautions.

ATRAZINE 4L HERBICIDE

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ATRAZINE 4L + Alachlor

Use a tank mixture of ATRAZINE 4L + alachlor for the control of most annual broadleaf and grass weeds in corn (field and silage corn only) such as annual morningglory, barnyardgrass, black nightshade, brachiaria, butonweed (velvetleaf), carpetweed, cocklebur, crabgrass, fall panicum, Florida pusley, giant foxtail, green foxtail, yellow foxtail, goosegrass, lambsquarter, pigweed, purslane, mustard, common ragweed, smartweed and witchgrass.

Applications may be made preplant, within 7 days of planting; pre-emergence, or postemergence, until weeds reach the two leaf stage and the corn is more than 5 inches tall.

Refer to the alachlor label for application rates and directions. Applicable limitations and use precautions on this and the alachlor label must also be followed.

ATRAZINE 4L + Alachlor + Paraquat or Glyphosate For Minimum-Tillage or No-Tillage Systems

For control of many emerged annual weeds, suppression of many emerged perennial weeds, and preemergence control of many annual grasses and weeds in areas where corn will be planted directly into a cover crop, established sod or in previous crop residues. Regrowth from perennial weeds will not be controlled. Do not apply by air.

Make application immediately before, during, or after planting, but before crop emergence. Refer to the alachlor label for application rates and directions. All applicable directions, limitations, and use precautions on this and the alachlor and paraquat or glyphosate labels must be followed.

ATRAZINE 4L + Propachlor

Use a tank mixture of ATRAZINE 4L + propachlor for control of most annual broadleaf and grass weeds in corn (field, hybrid seed, silage and sweet corn only), such as annual morningglory, annual ryegrass, barn-yardgrass (watergrass), butonweed (velvetleaf), carpetweed, cocklebur, crabgrass, fall panicum, Florida pusley, giant foxtail, green foxtail, yellow foxtail, goosegrass, groundsel, jimsonweed, lambsquarters, mustard, nightshade, pigweed, purslane, ragweed, smartweed and sunflower. Broadcast 2 1/2 to 3 1/2 pts. of ATRAZINE 4L plus recommended rate of propachlor per acre on the soil surface any time from immediately after planting until broadleaf and grasses reach the two-leaf stage. Use the lower rates of ATRAZINE 4L and propachlor on light-textured soils low in organic matter. Use the higher rates on heavy-textured soils high in organic matter. A minimum of 2 1/2 pts. per acre of ATRAZINE 4L in the tank mixture will give better control of annual morningglory, butonweed (velvetleaf), cocklebur and sunflower.

Apply in a minimum of 20 gallons of water per acre. Non-pressure fluid fertilizer may replace all or part of the water used as a carrier for applications applied to the soil surface before crop and weeds emerge. Add the ATRAZINE 4L to the spray tank first and thoroughly mix with water.

Refer to propachlor label for further directions, limitations and cautions.

ATRAZINE 4L + Dual (Metolachlor) 8E OR ATRAZINE 4L + Dual (Metolachlor) 8E + Simazine PREPLANT/PREEMERGENCE

Use a tank mixture of ATRAZINE 4L + Metolachlor 8E or ATRAZINE 4L + Metolachlor 8E + simazine as a preplant surface, preplant incorporated or pre-emergence application for the control of barnyardgrass, crabgrass, crowfootgrass, fall panicum, foxtail millet, giant foxtail, goosegrass, green foxtail, prairie cupgrass, red rice, signalgrass (Brachiaria), southwestern cupgrass, witchgrass, yellow foxtail, yellow nutsedge, black nightshade, carpetweed, Florida pusley, galinsoga, pigweed, browntop panicum, cocklebur, common purslane, hairy nightshade, lambsquarters, morningglory, ragweed, smartweed, and velvetleaf in corn.

To apply, refer to the tank mix directions appearing on the Metolachlor 8E label. Note, where directions specify AAtrex 4L, substitute ATRAZINE 4L. All applicable directions, limitations, and use precautions on this and the Metolachlor 8E and simazine labels must be followed.

POSTEMERGENCE

Use a tank mixture of ATRAZINE 4L plus Metolachlor 8E as a postemergence application for the control of barnyardgrass, crabgrass, crowfootgrass, fall panicum, foxtail (giant, green and yellow), jimsonweed, mustard, pigweed, prickly sida, purslane, ragweed, smartweed, and velvetleaf and for partial control of cocklebur, morning-glory, and yellow nutsedge. To apply, follow the tank mix directions appearing on the Metolachlor 8E label. Note, where directions specify AAtrex 4L, substitute ATRAZINE 4L. All applicable directions, limitations, and precautions on the Metolachlor 8E label must be followed.

ATRAZINE 4L + Dual (Metolachlor) 8E + Paraquat or ATRAZINE 4L + Dual (Metolachlor) 8E + Glyphosate or ATRAZINE 4L + Dual (Metolachlor) 8E + Simazine + Paraquat or ATRAZINE 4L + Dual (Metolachlor) 8E + Simazine + Glyphosate.

For Minimum-Tillage or No-Tillage Systems.

Use a tank mixture of ATRAZINE 4L + Metolachlor 8E with paraquat or glyphosate, or ATRAZINE 4L + Metolachlor 8E + simazine with paraquat or glyphosate in minimum-tillage or no-tillage systems where corn is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues.

The paraquat tank mixtures will control most emerged annual weeds and suppress many perennial weeds, in addition to controlling most pre-emergence annual broadleaf weeds and grasses. The glyphosate tank mixtures will control emerged annual and perennial weeds, in addition to controlling most pre-emergence annual broadleaf weeds and grasses.

Make application before, during, or after planting but before the corn emerges. To

apply, follow the tank mix directions appearing on the Metolachlor 8E label. Note, where directions specify AAtrex 4L, substitute ATRAZINE 4L. All application directions, limitations, and use precautions on this and the Dual 8E, simazine, paraquat and glyphosate labels must be followed.

ATRAZINE 4L + Simazine 80W or Simazine 4L or Simazine 90DF

Use a tank mixture of ATRAZINE 4L + simazine for the control of crabgrass, fall panicum and carpetweed, in addition to the control of the weeds listed for ATRAZINE 4L alone.

Make broadcast application of tank mix before planting, at planting, or after planting, but prior to emergence of corn and weeds. Apply at the rates shown in the table below. Cultivate shallowly if weeds develop.

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

If weeds are present at time of treatment, apply in a tank mix combination with a contact herbicide (for example, paraquat or glyphosate). All applicable directions, precautions and limitations on the contact herbicides' label must be followed.

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: Make soil application and incorporate in the spring before, during, or after final seedbed preparation. Avoid deep incorporation. For best results, apply within two weeks before planting.

PREEMERGENCE: Apply during or shortly after planting, but prior to crop and weeds emergence.

All applicable directions, use precautions, and limitations on this and the simazine label must be followed.

TABLE 2
Tank Mixtures With Simazine on Corn

BROADCAST RATE PER ACRE							
1:1 RATIO*				1:2 RATIO**			
Atrazine 4L	Simazine 80W	Simazine 90DF	Simazine 4L	Atrazine 4L	Simazine 80W	Simazine 90DF	Simazine 4L
2 1/2 pts.	1 1/2 lbs.	1 1/2 lbs.	2 pts.	1 1/2 pts.	1 1/2 lbs.	1 1/2 lbs.	2 1/2 pts.

SOIL TEXTURE:

Sand, loamy sand, sandy loam:

2 pts.	1 1/2 lbs.	1 1/2 lbs.	2 pts.	1 1/2 pts.	1 1/2 lbs.	1 1/2 lbs.	2 1/2 pts.
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Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with low organic matter:

2 1/2 pts.	1 1/2 lbs.	1 1/2 lbs.	2 1/2 pts.	1 1/2 pts.	2 lbs.	1 1/2 lbs.	3 1/2 pts.
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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 1/2 lbs.	1 1/2 lbs.	3 pts.	1 1/2 pts.	2 1/2 lbs.	2 1/2 lbs.	3 1/2 pts.
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* For control of most weeds.

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

ATRAZINE 4L + Simazine 80W, Simazine 4L, or Simazine 90DF with Glyphosate

Use a tank mixture of ATRAZINE 4L + simazine + glyphosate for control of certain broadleaf weeds and grasses where corn will be planted directly into a cover crop, established sod, or in previous crop residues. Refer to glyphosate label for rates and tank mix directions. All applicable directions, limitations, and use precautions on this, the simazine, and the glyphosate label must be followed.

ATRAZINE 4L + Simazine 80W, Simazine 4L, or Simazine 90DF with Paraquat

Use a tank mixture of ATRAZINE 4L + simazine + paraquat to control most emerged weeds and for residual weed control where corn will be planted directly into a cover crop, established sod or in previous crop residues. Add ATRAZINE 4L and simazine to water in spray tank. Agitate until thoroughly mixed. Next add paraquat and a nonionic surfactant, such as X-77, LOVELAND ACTIVATOR 90, or similar nonionic surfactant approved for agricultural use.

Continue agitation during application. Apply 2 to 4 pts. of ATRAZINE 4L plus 1 1/2 to 2 1/2 lbs. Simazine 80 (or 2 to 4 pts. Simazine 4L, or 1 1/2 to 2 1/2 lbs. Simazine 90DF) plus 1 to 2 pts. Paraquat in 20 to 60 gals. of water per sprayed acre. Make broadcast application before, during, or after planting, but before emergence of corn. Add 1/2 pt. of a nonionic surfactant per 100 gallons of spray mixture. Use the higher rate of paraquat if existing weeds are 4 to 6 inches tall. Weeds taller than 6 inches will not be controlled.

All applicable directions, limitations, and use precautions on this, the simazine and the paraquat labels must be followed.

USE PRECAUTIONS FOR ALL APPLICATIONS TO CORN

- 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. per acre) must not exceed 2.5 pounds active ingredient per acre per year.

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- 2) Follow a preharvest interval of 60 days for field corn forage use and 45 days for sweet corn forage use.
- 3) Following harvest of a treated crop, plow (moldboard or disk-plow) and thoroughly till the soil in the fall or spring to minimize possible injury to rotational spring-seeded crops, regardless of the rate used.
- 4) Do not graze treated area or feed treated forage to livestock for 21 days following application.
- 5) For postemergence applications plus emulsifiable oil, see additional use precautions under that section of this label.
- 6) Postemergence application to corn must be made before crop reaches 12 inches in height.

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

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

Use only on medium and fine textured soils having a minimum of 1% organic matter, except as separately recommended for furrow-irrigated bedded sorghum grown in Arizona and California. Post-emergence applications to sorghum must be made before sorghum exceeds 12 inches in height.

Preplant (Broadleaf and Grass Control):

Broadcast in the spring after plowing at the rate indicated in Table 3. 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.

Pre-emergence (Broadleaf and Grass Control):

Apply during or shortly after planting, but prior to weed or crop emergence at the rate indicated in Table 3.

**TABLE 3
FOR ALL SOIL APPLICATIONS PRIOR TO SORGHUM EMERGENCE**
(including early preplant, preplant incorporated, preplant surface, at planting or preemergence)

Soil Erodibility Classification*	Plant Residue Amount	Maximum Rate Per Acre ¹
Highly erodible	30% or more (conservation tillage program)	4 Pints
	Less than 30% (conventional tillage program)	3½ Pints
Not highly erodible	No limit	4 Pints

* As defined by the Natural Resource Conservation Service
¹ ATRAZINE 4L should not be applied preplant to sorghum grown in NM, OK, TX, Western KS, Eastern CO, AR, LA, TN, MS, AL, GA, FL, SC, and NC, or pre-emergence to sorghum grown in NM, TX, OK, Western KS, Eastern CO, except in Northeastern OK and the Texas Gulf Coast.
 In case of planting failures, sorghum can be replanted into soil previously treated with ATRAZINE 4L. Do not make a second broadcast application or injury may occur. If ATRAZINE 4L is applied in a band and sorghum is replanted in the untreated row middles, ATRAZINE 4L may be applied in a band to the second planting provided the maximum application rate of 2.5 lbs. a.i./A atrazine per calendar year is not exceeded.

Pre-emergence Broadleaf Weed Control in Furrow Irrigated Bedded Sorghum (Arizona and California only):

For pre-emergence control of broadleaf weeds such as ground cherry, lambsquarters, morningglory, mustard, pigweed and purslane, broadcast 1½ to 2½ pts. per acre. Use the lower rate on coarse-textured soils and soils low in organic matter and use the high rate on fine-textured soils and soils high in organic matter. Make application after bed preparation, during or after planting, but before sorghum and weeds have emerged and before the first furrow irrigation. Several regular irrigations should follow the application, making sure that all soil is thoroughly wet.

Use Precautions for Pre-emergence Applications for ATRAZINE 4L to Furrow Irrigated Bedded Sorghum Grown in Arizona and California:

To avoid possible sorghum injury, do not use on sand or loamy sand soils or on sorghum planted in the furrow. Additionally, applications made to sorghum growing on alkali soils or where cuts, fills, or erosions have exposed calcareous or alkali subsoils, may result in crop injury. In case of crop failure, do not replant sorghum for eight months following application. Corn may be planted immediately.

Postemergence Broadleaf and Grass Weed Control:

Apply before weeds exceed 1½ inches in height at the rate indicated in Table 4. Sorghum should be completely emerged. Applications may be made up before crop height reaches 12 inches.

**TABLE 4
FOR SORGHUM POSTEMERGENCE APPLICATION**

Previous Soil Application Of Atrazine To Crop	Total Maximum Rate Per Acre Per Calendar Year
No	4 Pints postemergence
Yes	5 Pints combined from soil and postemergence applications

Postemergence Broadleaf Weed Control with ATRAZINE 4L plus Emulsifiable Oil in Water:

Broadcast 2½ pts. per acre for control of broadleaf weeds such as annual morningglory, cocklebur, lambsquarters, mustard, pigweed, ragweed, smartweed and wild buckwheat. Application should be made before pigweed and lambsquarters reach six inches in height, before all other weeds reach four inches in height and before sorghum exceeds 12 inches tall. In TX, NM, OK, Western KS, CO and the desert regions of CA and AZ, apply when sorghum is about 6-10 inches in height, but before it reaches 12 inches tall. In all other areas, apply after sorghum reaches the three-leaf stage and before sorghum reaches 12 inches tall. Add emulsifiable oil at the rate of 1 gallon per acre for ground applications and ½ gallon per acre for aerial applications. A cultivation may be necessary if all weeds are not controlled or if regrowth of weeds occur.

IMPORTANT: Be sure to read use precautions under "Application in water plus emulsifiable oil or oil concentrate."

Postemergence Broadleaf Weed Control with ATRAZINE 4L plus Surfactant in OK, NM, TX, Western KS, CO and Desert regions of AZ and CA only:

Broadcast 2½ pts. of ATRAZINE 4L plus ¾ to 1½ pts. of surfactant per acre when sorghum is 6 to 11¼ inches in height, but before weeds reach 1½ inches in height. Apply only on sandy loam and finer textured soils.

**TANK MIXTURES WITH ATRAZINE 4L IN SORGHUM
ATRAZINE 4L + DUAL (METOLACHLOR) 8E (FOR USE ONLY ON SEED TREATED WITH CONCEP®)**

Use a tank mixture of ATRAZINE 4L + Metolachlor 8E for control of most annual broadleaf weeds and grasses. For use only when the sorghum seed has been properly treated by the seed company with Concep. Refer to the Metolachlor 8E label for directions, precautions, and limitations.

USE PRECAUTIONS FOR ALL APPLICATIONS TO SORGHUM

- 1) Follow a 60 day preharvest interval for preemergent sorghum forage use and a 45 day preharvest interval for postemergent sorghum forage use.
- 2) 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 (plow-in). Deep planter marks or seed furrows should also be leveled before application.
- 3) Application made to sorghum growing under stress caused by minor element deficiency or to sorghum growing on highly calcareous soils may result in crop injury.
- 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 disk-plow) and thoroughly till the soil in the fall or spring to minimize possible injury to rotational spring-seeded crops, regardless of rate used.
- 6) For applications to furrow-irrigated bedded sorghum in Arizona and California and for postemergence applications plus emulsifiable oil, see additional use precautions under these sections of this label.
- 7) 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. per acre) must not exceed 2.5 pounds active ingredient per acre per year.
- 8) For all soil applications prior to crop emergence (except for preemergence use on bedded sorghum in AZ and CA), do not apply to coarse-textured soils, i.e., sand, loamy sand, sandy loam, or to medium and fine-textured soils having less than 1% organic matter, or injury may occur.
- 9) For postemergence applications, do not apply to sand or loamy sand, or injury may occur.
- 10) Postemergence application to sorghum must be made before crop reaches 12 inches in height.

SORGHUM POSTEMERGENCE WINTER WEED CONTROL IN TEXAS

For use on fall bedded land and in the Gulf Coast and Blacklands of Texas. Broadcast ¾ to 1 qt. per acre postemergence for control of winter weeds only, such as henbit, seedling dock and annual thistle on land that will be planted to corn, grain sorghum, or forage sorghum the following spring.

For best results, add a suitable surfactant such as X-77 or ACTIVATOR 90, at a rate of 0.5% of spray volume, an emulsifiable oil at a rate of 1.0% of spray volume, or an oil concentrate at rate of 1 qt. 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.

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ATRAZINE 4L HERBICIDE

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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 4.5 pts. 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.

Use 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. (*Local resistance may result in suppression only or lack of control of some weeds. Refer to IMPORTANT NOTE within GENERAL INFORMATION SECTION of this label.)

WHEAT-CORN-FALLOW (KS, NE)

This treatment controls cheatgrass (downy brome, chess), Kochia*, mustards, pigweed*, Russian thistle, wild lettuce, wild sunflower, and volunteer wheat following wheat harvest. Control may extend into the following corn crop when grown under minimum tillage.

Apply 4.5 pts. per acre to wheat stubble immediately following wheat harvest. If weeds are present, remove them with a sweep plow or other suitable implement after application. Plant corn 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.

Use Precautions: (1) Use only on silt loam or finer textured soil. (2) Wheat-corn-fallow cropping sequence must be followed. (3) Do not apply following corn 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. (*Local resistance may result in suppression only or lack of control. Refer to IMPORTANT NOTICE within GENERAL INFORMATION SECTION of this label.)

WHEAT-FALLOW-WHEAT (CO, KS, MT, NE, ND, SD, and WY)

This treatment controls cheatgrass (downy brome, chess), common lambsquarters*, field pennycress, Kochia*, mustard, Russian thistle, wild lettuce, and suppresses volunteer wheat during fallow period of a wheat-fallow-wheat rotation. Apply 1 to 2 pts. per acre. Use higher rate to control wild sunflower and pigweed*. Apply to stubble ground. Apply only once during the same fallow period. Use only on silt loam or finer textured soil.

(*Local resistance may result in suppression only or lack of control. Refer to IMPORTANT NOTE within GENERAL INFORMATION SECTION of this label.)

CHEMICAL FALLOW USE RESTRICTIONS

For soils in North and South Dakota with a pH of 7.5 or greater:

- Do not apply more than 1.5 pounds active ingredient per acre for any application. Do not apply more than one application per cycle.

For soils in North and South Dakota with a pH of less than 7.5:

- Do not apply more than 2.0 pounds active ingredient per acre for any application. Do not apply more than one application per cycle.

For all other locations:

- Do not apply more than 2.25 pounds active ingredient per acre for any application. Do not apply more than one application per cycle.

SUGARCANE

To control many broadleaf and grass weeds, such as amaranths*, crabgrass, fireweed, flora's paintbrush, foxtails*, junglerice*, and wiregrass, apply 4 to 8 pts. per acre at the time of planting or ratooning, but before emergence of sugarcane. Broadcast by air in a minimum of 5 gallons of spray per acre, or broadcast or band by ground equipment in a minimum of 20 gallons of spray per acre, unless otherwise indicated. One additional application may be made over sugarcane as it emerges, and two additional applications may be made interline after emergence as directed sprays. Where needed, repeat treatments may be applied broadcast, band, or interline as suggested with the final application being made prior to close-in. Do not exceed the rate of ATRAZINE 4L recommended for any one crop of sugarcane.

Note: Where high rates of ATRAZINE 4L are used alone, apply in a minimum of 1 qt. of water for each 2 pts. of ATRAZINE 4L applied per acre.

Aerial Application: Apply at a maximum height of 10 feet, 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 nontarget plants, apply ATRAZINE 4L alone by aircraft at a minimum upwind distance of 400 feet from sensitive plants.

(*Local resistance may result in suppression only or lack of control. Refer to IMPORTANT NOTE within GENERAL INFORMATION SECTION of this label.)

FLORIDA

To control emerged pellitory weed, apply 1/2 to 1 1/2 pts. per acre in at least 40 gallons of water per acre. Apply as a directed spray, by ground equipment, prior to

close-in. Add 4 quarts of surfactant for each 100 gallons of spray. Thoroughly cover the weed foliage.

To control alexandergrass*, large crabgrass, pellitory (artillery) weed, and spiny amaranth*, make application by one of the following methods at planting or ratooning:

- Apply 8 pts. per acre, preemergence. Make one or two additional applications, as needed, postemergence to sugarcane and weeds, at 4 pts. per acre. Make application before weeds are greater than 1 1/2 inches in height.
- Apply one to three times, as needed, at 4 pts. per acre postemergence to both sugarcane and weeds. Make application before weeds are greater than 1 1/2 inches in height.

LOUISIANA

To control annual weeds during summer fallow period, apply 4 pts. per acre to weed free beds, immediately after beds are formed. After planting, follow normal weed control.

Use Precautions: (1) Do not apply more than 20 pts. per acre to any one sugarcane crop. (2) If applying 4 pts. per acre during summer fallow period, do not apply more than 8 pts. per acre during the remainder of the growing season.

TEXAS

To control barnyardgrass*, pigweed*, purslane, and sunflower, in plant or ratoon sugarcane, apply preemergence at 8 pts. per acre. Make one or two additional applications, as needed, at 6 pts. per acre postemergence to sugarcane and weeds.

To achieve best results when weeds are emerged, add a nonionic surfactant at a concentration of 4 pts. per 100 gallons of spray and apply before the weeds are greater than 1 1/2 inches in height.

(*Local resistance may result in suppression only or lack of control. Refer to IMPORTANT NOTE within GENERAL INFORMATION SECTION of this label.)

Use Precautions: (1) Do not apply more than 4.0 pounds active ingredient per acre for any application. (2) Do not apply more than 10 pounds active ingredient per acre per crop. (3) Sugarcane may be injured when under moisture stress, when soil is of low absorptive capacity, or when land is first planted to sugarcane. (4) Do not apply after close-in. (5) Do not apply more than 20 pts. per acre to any one crop of sugarcane.

MACADAMIA NUTS

For preemergence control of many broadleaf and grass weeds including crabgrass, foxtail*, wiregrass, flora's paintbrush, spanishneedles, and fireweed, apply 4 to 8 pts. per acre before harvest. Repeat as necessary. Do not apply when nuts are on the ground during harvest period. Do not apply by air.

- Do not apply more than 4 pounds active ingredient per acre for any application.
- Do not apply more than 8 pounds active ingredient per year.

GUAVA

For the control of many annual broadleaf and grass weeds, including fireweed, purslane, scarlet pimpernel, Spanishneedles and sowthistle. Apply only on established plantings, at least 18 months old. Apply preemergence or early postemergence to weeds as a directed spray at 4 to 8 pts. per acre in 20 to 50 gallons of spray mix. When applying postemergence, the use of a surfactant and greater spray volume (80 to 100 gallons of spray mix per acre) may enhance weed control. **Note:** (1) Do not allow spray to come into contact with foliage or fruit. (2) Do not apply more frequently than at 4 month intervals. (3) Do not apply more than 4 pounds active ingredient per acre for any application. (4) Do not apply more than 8 pounds active ingredient per year.

TURF GRASSES FOR SOD

ST. AUGUSTINEGRASS, CENTIPEDEGRASS, AND ZOYSIA GRASS

For the control of most annual broadleaf and grass weeds such as barnyardgrass*, witchgrass* (*Panicum capillare*), yellow foxtail*, green foxtail*, wild oats, large (hairy) crabgrass, velvetleaf*, morningglory, lambsquarters*, ragweed, nightshade*, purslane and mustard. (*Local resistance may result in suppression only or lack of control. Refer to IMPORTANT NOTE within GENERAL INFORMATION SECTION of this label.)

Apply at the rates indicated in the table below:

Soil Texture	Broadcast Rate Per Acre	Application Timing
Muck or Peat	8 pts.	Old Beds: Within 2 days after lifting sod. New Beds: 3 to 4 days after sprigging or plugging.
Sandy Soil	4 pts.	Old Beds: Within 2 days after lifting sod. New Beds: 7 to 10 days after sprigging or plugging.

If weeds regrow, apply an additional 4 pts. per acre on muck or peat, or 2 pts. per acre on sandy soil.

Use Restrictions: (1) For muck or peat soils do not apply more than 4 pounds active ingredient per acre for any application, and do not apply more than 6 pounds active ingredient per year. (2) For sandy soils do not apply more than 2 pounds active ingredient per acre for any application, and do not apply more than 3 pounds active ingredient per year.

ATRAZINE 4L HERBICIDE

EPA REG. NO. 34704-69

Use Precautions: (1) Do not apply within 30 days before cutting or lifting. (2) In Florida do not apply in combination with surfactants or other spray additives. (3) Use only on turfgrass that is reasonably free of insect, nematode, and disease infestations. (4) On newly sprigged turfgrass, temporary slowing of growth may follow application.

TURFGRASS at Residential sites (including homes, daycare facilities, schools, playgrounds, parks, recreational areas, and sports fields.

BERMUDAGRASS, CENTIPEDEGRASS, ST. AUGUSTINEGRASS, AND ZOYSIA GRASS

To control annual bluegrass*, burdock, carpet burweed, chickweed, corn speedwell, henbit, hop clover, and spurweed, make application after October 1, prior to emergence of winter annual weeds. Annual bluegrass will be controlled even if it is emerged at time of treatment. To control summer annual weeds such as barnyardgrass*, witchgrass* (*Panicum capillare*), yellow foxtail*, green foxtail*, wild oats, large (hairy) crabgrass, velvetleaf*, morningglory, lambsquarters*, ragweed, nightshade, purslane and mustard, apply ATRAZINE 4L in late winter before the weeds emerge. Apply in a minimum of 15 gallons of water per acre or 1 gallon per 1,000 sq. ft. (*Local resistance may result in suppression only or lack of control. Refer to IMPORTANT NOTE within GENERAL INFORMATION SECTION on this label.)

In areas where the major weed is annual bluegrass, apply 2 pts. per acre (0.75 fl. oz. per 1,000 sq. ft.). To control the other weeds listed above, apply 2 pts. per acre (1.5 fl. oz. per 1,000 sq. ft.). Do not apply more than 2 pts. 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 pts. per acre at least 30 days after the previous application, but not after April 15. Do not make more than 2 applications of this product per year.

Use Precautions: On newly sprigged turfgrass and hybrid bermudagrass, temporary slowing of growth and yellowing may occur following application. To avoid turf injury, (1) Do not apply more than 1.0 pounds active ingredient per acre for any application, and do not apply more than 2.0 pounds active ingredient per acre per year. (2) Use only on turfgrass that is reasonably free of insect, nematode, and disease infestations. (3) Do not use on golf greens. (4) Do not use north of NC (may be used in Virginia Coastal Plains) or west of the high rainfall areas of eastern OK and eastern TX. (5) Do not use on muck or alkaline soils. (6) Do not apply over the rooting area of trees or ornamentals not listed on this label. (7) Do not overseed with desirable turfgrass within 4 months before or 6 months after treatment. Note: Do not graze or feed turf clippings to animals.

ROADSIDES

For control of certain annual weeds such as cheatgrass (downy brome, chess), common (annual) broomweed, little barley, medusahead, sagewort, and tumble mustard in established perennial grasses along roadsides in CO, KS, MT, NE, ND, SD, and WY. Apply 2 pts. per acre in a minimum of 10 gallons of water by ground equipment. Apply in the fall before spring thawing, but before established grasses green up and weeds emerge. Apply only once per year. Following application, temporary discoloration or other forms of injury may occur to the perennial grasses.

Use Precautions: (1) Do not graze treated areas. (2) Do not cut or feed roadside grass for hay. (3) Do not apply more than 1.0 pounds active ingredient per acre for any application. (4) Do not apply more than one application per year.

CONIFERS

For control of annual broadleaf and grass weeds such as barnyardgrass*, witchgrass* (*Panicum capillare*), yellow foxtail*, green foxtail*, wild oats, large (hairy) crabgrass, velvetleaf*, morningglory, lambsquarters*, ragweed, nightshade*, purslane, and mustard, in 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 to 8 pts. in a minimum of 5 gals. of water per acre by air or 10 gals. by ground prior to transplanting, soon after transplanting, or in established conifers between fall and early spring while trees are dormant. Apply before weeds are 1-½ inches tall. 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.

Quackgrass* Control: Broadcast 8 pts. in a minimum of 5 gals. of water per acre by air or 10 gals. by ground in fall or early spring while trees are dormant and before quackgrass is more than 1½ inches tall. (*Local resistance may result in suppression only or lack of control. Refer to IMPORTANT NOTE within GENERAL INFORMATION SECTION of this label.)

Use Precautions: (1) Do not apply more than 4 pounds active ingredient per acre for any application. (2) Do not apply more than 4 pounds active ingredient per year. (3) In areas west of Rocky Mountains (except Great Basin), grazing may begin 7 months after a fall application or 3 months after a winter or spring application. (4) To prevent illegal residues, do not graze treated areas of the Great Basin, or areas east of the Rocky Mountains. (5) Temporary injury to trees may occur following use on coarse-textured soil. (6) To avoid crop injury, do not apply to seedbeds. (7) Also apply only once 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 nontarget plants, apply by aircraft at a minimum upwind distance 400 ft. from sensitive plants. Note: In very hilly or mountainous terrain where the 10 foot flying height is unsafe, fly as low as possible. There may be increased risk of spray drift and uneven application.

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