

5905-522

1-3-2003

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Please read instructions on reverse before completing form.

Form Approved. OMB No. 2070-0060. Approval expires 2-28-95

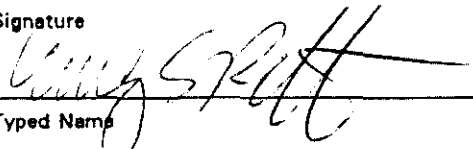
	United States <b>Environmental Protection Agency</b> Washington, DC 20460	<input type="checkbox"/> Registration <input checked="" type="checkbox"/> <b>Amendment</b> <input type="checkbox"/> Other	OPP Identifier Number
	<b>Application for Pesticide - Section I</b>		

1. Company/Product Number <b>5905-522</b>	2. EPA Product Manager <b>J. Tompkins</b>	3. Proposed Classification <input type="checkbox"/> None <input checked="" type="checkbox"/> Restricted
4. Company/Product (Name) <b>Atrazine 90DF</b>	PM#	
5. Name and Address of Applicant (Include ZIP Code) Helena Chemical Company 225 Schilling Boulevard, Suite 300 Collierville, Tennessee 38017 <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. _____ Product Name _____	

<b>Section - II</b>		<b>NOTIFICATION</b> <b>JAN 3 - 2003</b>
<input checked="" type="checkbox"/> Amendment - Explain below. <input type="checkbox"/> Resubmission in response to Agency letter dated _____ <input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____ <input type="checkbox"/> "Me Too" Application. <input type="checkbox"/> Other - Explain below.	

**Explanation:** Use additional page(s) if necessary. (For section I and Section II.)  
 Amended draft labeling by notification per PR Notice 98-10 to correct typographical errors. Certification attached in correspondence.

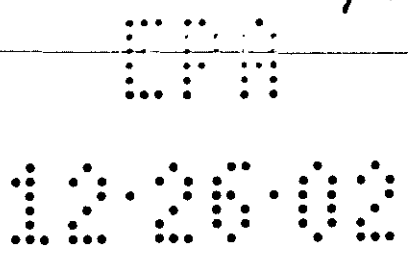
<b>Section - III</b>					
1. Material This Product Will Be Packaged In:					
Child-Resistant Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/>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

<b>Section - IV</b>		
1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)		
Name Emily Smathers Ratliff	Title Product Registration Supervisor	Telephone No. (Include Area Code) 901/752-4421
<b>Certification</b> 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 Product Registration Supervisor	
4. Typed Name Emily Smathers Ratliff	5. Date 12/19/2002	

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**HELENA CHEMICAL COMPANY**  
225 Schilling Blvd., Suite 300  
Collierville, Tennessee 38017  
Telephone: 901/761-0050



**VIA FEDERAL EXPRESS**

December 19, 2002

Document Processing Desk (NOTIF)  
Office of Pesticide Programs (7504C)  
U. S. Environmental Protection Agency  
1921 Jefferson Davis Highway  
Crystal Mall #2; Room 266A  
Arlington, VA 22202

**RE: AMENDMENT BY NOTIFICATION TO CORRECT TYPOGRAPHICAL/PRINTING ERROR**

- |   |          |
|---|----------|
| 1. 2,4-D AMINE                                  | 5905-72  |
| 2. 2,4-D LV ESTER                               | 5905-93  |
| 3. 2,4-D LV ESTER 4                             | 5905-90  |
| 4. 3 LB. CHLORATE DEFOLIANT-DESICCANT           | 5905-118 |
| 5. 3.5 LB. LIQUID COPPER CONCENTRATE            | 5905-483 |
| 6. 6 LB. SODIUM CHLORATE DEFOLIANT-DESICCANT    | 5905-461 |
| 7. ATRAZINE 4L                                  | 5905-470 |
| 8. ATRAZINE 90DF                                | 5905-522 |
| 9. BRUSH RHAP LV 4-D HERBICIDE                  | 5905-98  |
| 10. CITRUSPERSE SULPHUR                         | 5905-350 |
| 11. COPPER-Z 6/2 GRANULAR                       | 5905-524 |
| 12. DUSTING SULPHUR                             | 5905-288 |
| 13. HELENA 3.5 LB LIQUID COPPER CONCENTRATE     | 5905-483 |
| 14. LIQUID SULFUR SIX                           | 5905-437 |
| 15. MSMA PLUS HC                                | 5905-164 |
| 16. MSMA PLUS                                   | 5905-66  |
| 17. MSMA ARSONATE LIQUID                        | 5905-67  |
| 18. PAR F 70 SOLUBLE OIL                        | 5905-520 |
| 19. SOL OIL 97                                  | 5905-294 |
| 20. WEED RHAP A-4D                              | 5905-501 |
| 21. WEED RHAP A-6D                              | 5905-503 |
| 22. WEED RHAP LOW VOLATILE GRANULAR D HERBICIDE | 5905-507 |
| 23. WEED RHAP LV-6D                             | 5905-508 |
| 24. WEED RHAP LV-4D                             | 5905-505 |

Dear Sherada:

Attached is draft amended labeling for the above referenced Helena Chemical Company products. All of these products are being amended by notification as allowed by PR Notice 98-10. The change consists only of a correction to the First Aid Statement which had a typographical/printing error caused by copy and paste on all items (except Weed Rhap A-4D 5905-501 – we are also doing a warranty update on

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Letter from Helena Chemical Company to Sherada Hobgood – U. S. EPA December 19, 2002

that label). Per the PM's on this topic, as well as Linda, this type of correction, which would usually be just a non-notification is better done by a notification in this case, therefore:

I hereby certify that these notifications are consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of 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 of 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.

In support of this action, please find the following enclosed for each of the listed products:

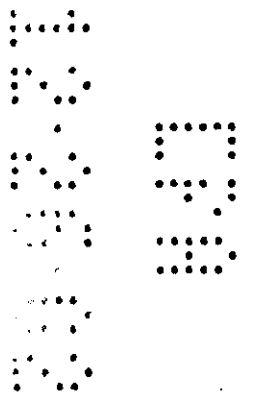
- 1. EPA Form 8570-1 – Application for Registration for Each
- 2. Two (2) Copies of Draft Amended Labeling for Each

If there are any questions about this submission, please contact me at 901-752-4421. Thank you for your attention to and assistance with this matter.

Sincerely,  
HELENA CHEMICAL COMPANY



Emily Smathers Ratliff  
Product Registration Supervisor



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**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. THIS PRODUCT IS A RESTRICTED USE HERBICIDE DUE TO GROUND AND SURFACE WATER CONCERNS. 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 90DF  
HERBICIDE**

For season-long weed control in corn, sorghum, and certain other crops

**ACTIVE INGREDIENTS:**

Atrazine (2-chloro-4-ethylamino-6-isopropylamino-s-triazine)... 85.50%  
Related Compounds..... 4.50%

**INERT INGREDIENTS:** ..... 10.00%  
**TOTAL**..... 100.00%

**KEEP OUT OF REACH OF CHILDREN  
WARNING/AVISO**

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

**PRECAUTIONARY STATEMENTS**

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
WARNING**

Causes substantial, but temporary eye injury. Harmful if swallowed or absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Wear goggles or face shield.

**FIRST AID**

<b>IF IN EYES:</b>	<ul style="list-style-type: none"> <li>• Hold eyelid open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.</li> <li>• Call a poison control center or doctor immediately for treatment advice.</li> </ul>
<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Have a person sip a glass of water if able to swallow.</li> <li>• Do not give anything to an unconscious or convulsing person.</li> </ul>
<b>IF INHALED:</b>	<ul style="list-style-type: none"> <li>• Move victim to fresh air.</li> <li>• If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> </ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor immediately for treatment advice.</li> </ul>

**NOTIFICATION**

**JAN 3 - 2003**

**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.

**SEE INSIDE BOOKLET FOR ADDITIONAL PRECAUTIONS AND DIRECTIONS FOR USE.**

EPA REG. NO. 5905-522  
EPA EST. NO.

NET CONTENTS:

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

**PERSONAL PROTECTIVE EQUIPMENT**

Some of the 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-resistance category selection chart. Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride
- Shoes plus socks
- Protective eyewear

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

**Engineering Controls Statements**

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

**USER SAFETY RECOMMENDATIONS**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**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.

This product may not be mixed/loaded or used within 50 feet of all wells including abandoned wells, drainage wells, and sink holes. This product may not be mixed or loaded within 50 feet of intermittent streams and rivers, natural or impounded lakes and reservoirs. This product may not be applied aerially or by ground within 66 feet of the points where field

surface water runoff enters perennial or intermittent streams and rivers or within 200 feet around natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 56-foot buffer or setback from runoff entry points must be planted to crop or seeded with grass or other suitable crop.

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 washwaters.

**CHEMIGATION PROHIBITION**

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

**DIRECTIONS FOR USE**

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

**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR, Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard. Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours. 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 made of any waterproof material  
Shoes plus socks  
Protective eyewear

**STORAGE AND DISPOSAL**

**Storage:** Store in a dry place. Do not contaminate water, food, or feed by storage, disposal or cleaning of equipment.  
**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:** Completely empty bag into application equipment. Dispose of empty bag in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**GENERAL INFORMATION**

ATRAZINE 90DF will control most annual broadleaf and grass weeds in corn, sorghum, sugarcane, and certain other crops specified on this label. 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 ATRAZINE 90DF acts mainly through root absorption, its effectiveness depends on moisture to move it into root zone. Should weeds develop, a shallow cultivation or rotary hoeing will generally result in better weed control.

ATRAZINE 90DF is non-corrosive to equipment and metal surfaces, nonflammable, and has low electrical conductivity. Care should be taken to avoid using this product near adjacent desirable plants or in greenhouses, or injury might occur. To avoid spray drift, do not apply under windy conditions. Avoid spray overlap, as crop injury may result. In each case where a range of rates is given, the lower rate should be used on coarse-textured soil and soil low in organic matter; the higher rate should be used on fine-textured soil and soil high in organic matter.

**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 per acre for all preplant incorporated, preplant surface, preemergence, and postemergence applications (with or without oil or surfactant) with ground equipment.

Use a pump with capacity to maintain 34-40 psi at nozzles, provide sufficient agitation in tank to keep mixture in suspension, and 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 gallons per minute per 100 gallons tank size circulated through a correctly positioned sparger tube or jets.

Use screens to protect the pump and to prevent nozzles from clogging. Screens placed on the suction side of the pump should be 16-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.

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

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

**Aerial Application:** Use aerial application only where broadcast applications are specified. Apply in a minimum of 1 gallon of water for each 1 pound of ATRAZINE 90DF applied per acre. For postemergence treatments on corn and sorghum, apply recommended rate in a minimum of 2 gallons of water per acre. Avoid applications under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.

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Avoid application to humans and animals. Flagmen and loaders should avoid inhalation of spray mist and prolonged contact with skin, and should wash thoroughly before eating and at the end of each day's operation.

**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 or crop injury may occur.

**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 fertilizers 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 gallons per acre. For other spray volumes, make appropriate changes in the ingredients.

**Check compatibility using this procedure:**

1. Add 1 pint of fertilizer to each of 2 one-quart jars with tight lids.
2. To one of the jars, add ¼ tsp. of 1.2 milliliters of a compatibility agent approved for this such as Compex® or Unite® (¼ tsp. is equivalent to 2 pts. per 100 gallons spray). Shake or stir gently to mix.
3. To both jars, add the appropriate amount of herbicide(s). If more than one herbicide is used, add them separately with dry herbicides first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix. The amount of herbicides for this test follows:  
 Dry herbicides: For each pound to be applied per acre, add 1.5 level teaspoons to each jar.  
 Liquid herbicides: For each pint to be applied per acre, add 0.5 teaspoon or 2.5 milliliters to each jar.
4. After adding all ingredients, put lids on and tighten, and invert each jar ten times to mix. Let the mixtures stand 15 minutes and then look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility.

Determine if the compatibility agent is needed in the spray mixture by comparing the two jars. If either mixture separates, but can be remixed readily, the mixture can be sprayed as long as good agitation is used. If the mixtures are compatible, test the following methods of improving compatibility: (A) slurry the dry herbicide(s) in water before addition, or (B) add half of the compatibility agent to the fertilizer and the other half to the emulsifiable concentrate or flowable herbicide before addition to the mixture. If incompatibility is still observed, do not use the mixture.

**Application in water plus emulsifiable oil or oil concentrate:** Adding emulsifiable oil (petroleum-derived, petroleum-derived oil concentrate, or single or mixed crop-derived oil concentrate) to postemergence water-based sprays in corn and sorghum may improve weed control. However, under certain conditions, the use of either type of oil may seriously injure the crop.

To minimize this possibility, observe the following directions:  
Use one of the following properly emulsified:

1. A suitable oil concentrate containing at least 1%, but not more than 20% suitable emulsifier or surfactant blend.
2. Petroleum-derived oil containing at least 1% suitable emulsifier.

Note: In the event of a compatibility problem when mixing oil with ATRAZINE 90DF and water, a compatibility agent such as Compex® or Unite® should be used. Any of the above oils contaminated with water or other materials can cause compatibility problems and/or crop injury.

**Mixing procedures-all uses:**

- (1) Be sure sprayer is clean and not contaminated with any other materials, or crop injury or sprayer clogging may result.
- (2) Fill tank ¼ full with clean water, nitrogen solution, or complete liquid fertilizer.
- (3) Start agitation.
- (4) Be certain that the agitation system is working properly and creates a rippling or rolling action on the liquid surface.
- (5) Pour product directly from bag into tank.
- (6) Continue filling tank until 90% full. Increase agitation if necessary to maintain surface action.
- (7) Add emulsifiable oil, oil concentrate, or tank mix herbicide(s) after this product is thoroughly suspended.
- (8) Finish filling tank.
- (9) Empty tank as completely as possible before refilling to prevent buildup of oil or emulsifiable concentrate residue. Maintain agitation to avoid separation of materials.
- (10) If an oil or emulsifiable concentrate film starts to build up in tank, drain and clean with strong detergent solution or solvent.
- (11) Clean sprayer thoroughly immediately after use by flushing system with water containing a detergent.

**Rotational crops-all uses:**

- (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 2.2 pounds per acre 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 90DF APPLIED ALONE - CORN OR GRAIN SORGHUM\***

**Preplant Surface-Applied, Preplant Incorporated, or Preemergence (or Postemergence at 2.2 Pounds Per Acre with Oil)**

Broadleaf and Grass Weeds Controlled

- annual morningglory
- barnyard grass\*\*\* (watergrass)
- cocklebur\*\*
- giant foxtail\*\*
- green foxtail\*\*\*

- groundcherry
- jimsonweed
- kochia
- lambsquarters
- large (hairy) crabgrass\*\*
- mustards (buttonweed)\* \*
- nightshade
- pigweed
- purslane
- ragweed
- sicklepod\*\*
- velvetleaf (panicum capillare)\*\*\*
- wild oats
- witchgrass
- yellow foxtail\*\*\*

**Postemergence with Emulsifiable Oil or Oil Concentrate in Water (1.3 Pounds Per Acre)**

Broadleaf Weeds Controlled

- annual morningglory
- cocklebur
- jimsonweed
- lambsquarters
- mustards
- pigweed
- ragweed
- smartweed
- velvetleaf\*\*
- wild buckwheat

\*Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or higher setbacks) 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 the recommended rate of ATRAZINE 90DF shown in Table 1 up to 45 days prior to planting. On coarse-textured soils, do not apply more than two weeks prior to planting. If an unsatisfactory length of weed control results from adverse environmental conditions following early treatment, a follow-up application of an appropriately labeled herbicide may be used. If the follow-up treatment includes atrazine, do not exceed the labeled rate for corn indicated in Table 1.

If weeds are present at the time of treatment, apply in tank mix combination with a contact herbicide, (for example, Gramoxone® Extra or Roundup®). Observe directions for 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 SCS)**

If conservation tillage is practiced, leaving at least 30% of the soil covered with plant residues at planting, apply a maximum of 2.2 pounds per acre as a broadcast spray.

If the soil coverage with plant residue is less than 30% at planting, a maximum of 1.8 pounds per acre may be applied.

**On Soils Not Highly Erodible**

Apply 2.2 pounds per acre as a broadcast spray.

**FOR POSTEMERGENCE APPLICATION**

If no atrazine was applied prior to corn emergence, apply a maximum of 2.2 pounds 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 (2.8 pounds of this product) per acre per calendar year.

\*Broadleaf control (eastern CO, western KS, western NE, NM, OK Pan Handle, 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 1.3 pounds per acre either preplant surface, preplant incorporated, or preemergence. On other soils in these areas, apply rate in Table 1 for broadleaf and grass control.

Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or higher setbacks) 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.

**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	½ - 1 qt./A
Petroleum-derived oil	1 gal./A	2 qts./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 2.2 pounds per acre plus emulsifiable oil or oil concentrate after weed emergence, but before weeds reach 1.5 inches in height and before corn exceeds 12 inches in height.

**Broadleaf control:** For postemergence control of those weeds listed under Postemergence with emulsifiable oil or oil concentrate in water, broadcast 1.3 pounds per acre 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.

**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 2.8 lbs. of this product) per acre per calendar year.
- (6) Postemergence applications to corn must be made before corn exceeds 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 Extra	Lasso or Lasso EC +
Gramoxone Extra	Dual + Roundup (glyphosate)
Gramoxone Extra	Dual + Princep® Princep
Dual + Princep + Gramoxone Extra	Princep + Gramoxone Extra
Dual + Princep + Roundup	Princep + Roundup
Bexton® or Ramrod® (propachlor)	Roundup
Lasso® or Lasso EC (alachlor)	Sencor DF
	Sutan+®

Use tank mix direction appearing on the labels of the above herbicides when tank mixing with this product. Observe all 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 90DF. One lb. of 80W equals 0.9 pounds of 90DF. Princep 80W, Princep 4L, or Princep Caliber® 90 In addition to the weeds listed under ATRAZINE 90DF 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 the recommended rate of ATRAZINE 90DF and Princep shown in Table 2 up to 45 days prior to planting. Applications made less than 30 days prior to planting may be as either a split or single treatment. Refer to the ATRAZINE 90DF ALONE section for information if weeds should develop following early treatment. On coarse-textured soils, do not apply more than two weeds prior to planting. Refer to the ATRAZINE 90DF 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 Extra or Roundup). Observe directions for 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 precautions.

**Table 2: Tank Mixtures with Princep on Corn**  
Broadcast Rate/A

Soil Texture	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	1.1 lbs.	1.25 lbs.	0.73 lbs.	1.67 lbs.
Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with low organic matter	1.3 lbs.	1.5 lbs.	0.88 lbs.	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)	1.6 lbs.	1.8 lbs.	1.07 lbs.	2.4 lbs.

\*For control of most weeds

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



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<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. 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, precautions, and limitations.

Princep 80W, Princep 4L or Princep Caliber 90 plus Gramoxone Extra: Use as tank mixture with Princep and Gramoxone Extra 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 Extra and a nonionic surfactant, such as X-77®. Continue agitation during application. Broadcast 1.1-2.2 lbs. of this product plus 1.25-2.5 lbs. Princep 80W [or 2-4 pts. Princep 4L, or 1.1-2.2 lbs. Princep Caliber 90] plus a suitable amount of Gramoxone Extra in 20-60 gals. of water per sprayed acre. Refer to the Gramoxone Extra label for appropriate rates to utilize in this tank mixture. Apply before, during, or after planting, but before corn emerges. Add 0.5 pt. of a nonionic surfactant, such as X-77, per 100 gals. of spray mixture. Use the higher rate of Gramoxone Extra specified on the label if existing vegetation is 4-6 inches tall. This mixture will not control weeds taller than 6 inches.

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

**Precautions for all applications to corn:**

- (1) To avoid crop injury and illegal residues, do not apply more than 2.8 pounds per acre of this product per year.
- (2) For best control of velvetleaf and cocklebur, the application rate cannot be less than 2 pounds per acre active ingredient, either alone or in tank mix combinations.
- (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.

**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.

**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 the recommended rate of ATRAZINE 90DF shown in Table 3 up to 45 days prior to planting. If an unsatisfactory length of weed control results from adverse environmental conditions following early treatment, a follow-up application of an appropriately labeled herbicide may be used. If the follow-up treatment includes atrazine, do not exceed the labeled rate for corn in Table 1.

Under dry conditions, irrigation after application is recommended to move ATRAZINE 90DF into the soil.

If weeds are present at time of treatment, apply in a tank mix combination with a contact herbicide (for example, Gramoxone Extra or

Roundup). Observe directions for 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 or At-Planting (Broadleaf and grass control):** Apply during or shortly after planting, but prior to weed or crop emergence at rate shown in Table 3.

**Postemergence (Broadleaf and grass control):** Apply at rate shown in Table 3 before weeds exceed 1.5 inches in height and before sorghum exceeds 12 inches in height.

**Table 3: Broadleaf and Grass Weed control in Sorghum<sup>1,2</sup>**

**FOR ALL SOIL APPLICATIONS PRIOR TO CROP EMERGENCE On Highly Erodible Soils (as defined by SCS)**

If conservation tillage is practiced, leaving at least 30% of the soil covered with plant residues at planting, apply a maximum of 2.2 pounds per acre as a broadcast spray. If the soil coverage with plant residue is less than 30% at planting, a maximum of 1.8 pounds per acre may be applied.

**On Soils Not Highly Erodible**

Apply 2.2 pounds per acre as a broadcast spray.

**FOR POSTEMERGENCE APPLICATION**

If no atrazine was applied prior to sorghum emergence, apply a maximum of 2.2 pounds 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 (2.8 pounds of this product) per acre per calendar year.

<sup>1</sup>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.

<sup>2</sup>Where there are state/local requirements regarding atrazine, use (including lower maximum rates and/or greater setbacks) which are different from the label, the more restrictive/protective requirements must be followed. Certain states may have established rate limitations within specific geographic areas. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.

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 2.5 pounds active ingredient per acre per calendar year.

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**Preemergence broadleaf weed control in furrow irrigated bedded sorghum (AZ and CA only):** For preemergence control of many broadleaf weeds, broadcast 0.9-1.3 pounds per acre 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.

**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 weed control with emulsifiable oil or oil concentrate in water:** Broadcast 1.3 pounds per acre 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 6-12 inches in height, but before it reaches boot stage. 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 90DF Applied Alone - Corn or Grain Sorghum - Postemergence with Emulsifiable Oil or Oil Concentrate in Water.

**Precautions for applications with emulsifiable oil or oil concentrate in water:** See "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 1.3 pounds per acre 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.

**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.
- (5) Do not apply more than 2.5 pounds active ingredient (2.8 pounds of this product) per acre per calendar year.
- (6) 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.

- (7) For postemergence applications, do not apply to sand or loamy sand, or injury may occur.

**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, 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 0.9-1.1 pounds per acre 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 X-77, 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 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 or illegal residues may result.

**ATRAZINE 90DF 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 3.3 pounds per acre 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 90DF. 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.

For the list of weeds controlled, see ATRAZINE 90DF Applied Alone - Corn or Grain Sorghum-Preplant Surface-Applied, Preplant Incorporated, or Preemergence.

**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, NE, ND, 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 pH greater than 7.5, do not exceed 1.5 lbs. ai/A. For soils with a pH less than 7.5 in ND and SD, apply 1-2 lbs. ai/A. Use the higher rate on fine-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 the following spring use a grass herbicide registered for use on corn.

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

**Wheat-Fallow-Wheat (CO, KS, MT, NE, ND, SD, and WY):** For 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 0.5-1.1 pounds per acre on all soils except those listed under Precautions. For control of pigweed and wild sunflower, use the higher rate. Apply to stubble ground. Treat only once during same fallow period.

**TANK MIXTURES FOR CHEMICAL FALLOW**

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

**Gramoxone Extra:** If weeds are present at application, a tank mix with Gramoxone Extra may be used. Broadcast 3.3 pounds per acre of ATRAZINE 90DF plus a suitable amount of Gramoxone Extra in 20-60 gals. of water/A by ground equipment. Refer to the Gramoxone Extra label for the appropriate rates to utilize in this tank mixture. Add 0.5-1 pt. of a nonionic surfactant, such as X-77 per 100 gals. of spray mixture. Add ATRAZINE 90DF to spray tank first and thoroughly mix with water. Then add Gramoxone Extra, followed by surfactant. Use the higher rate of Gramoxone Extra specified on the label 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 Extra label for further directions, precautions, and limitations.

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

**Gramoxone Extra:** If weeds are present at application, a tank mix with Gramoxone Extra may be used. Broadcast 0.5-1.1 pounds of ATRAZINE 90DF plus a suitable amount of Gramoxone Extra in 20-60 gals. of water A by ground equipment. Add 0.5-1 pts. of a nonionic surfactant, such as X-77, per 100 gals. of spray mixture. Add ATRAZINE 90DF to spray tank first and thoroughly mix with water. Then add Gramoxone Extra, followed by surfactant. Use the higher rate of Gramoxone Extra specified on the label 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 Extra label for further directions, 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 Extra, plant at least 2 inches deep and 12 months or more after application.

**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 nontarget plants, apply ATRAZINE 90DF 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 1.1 pounds per acre 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.

**CONSERVATION RESERVE PROGRAM (CRP) (NE, OK, OR, and 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, marestail, pigweed, prickly lettuce, smooth brome, and sunflower, refer to the directions, notes, and 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 2.2 lbs./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 1.1-2.2 lbs./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 0.6-1.1 lbs./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 nontarget 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.

**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 2.2-4.4 pounds per acre of ATRAZINE 90DF 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 rate of herbicide suggested for any one crop of sugarcane.

**Note:** Where high rates of ATRAZINE 90DF are used alone, apply in a minimum of 1 gal. of water for each 1 lb. of product applied per acre.

**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 nontarget plants, apply ATRAZINE 90DF alone by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

**Florida**

For control of emerged pellitory weed: Apply 0.4-0.6 pounds per acre 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 4.4 pounds per acre preemergence. Follow with one or two applications, as needed, postemergence to sugarcane and weeds, at 2.2 pounds per acre. Treat before weeds exceed 1.5 inches in height.
2. Apply 1-3 times, as needed, at 2.2 pounds per acre 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 2.2 pounds per acre to weed-free beds immediately after bed formation. Follow normal weed control after planting.

**Precautions:**

**To avoid crop injury:**

- (1) Do not apply more than 11 pounds per acre to any one crop of sugarcane.
- (2) If making 2.2 pounds per acre application during summer fallow period, do not exceed 8.8 pounds per acre during the remainder of the growing season, or illegal residues may result.

**Texas**

Use ATRAZINE 90DF for control of barnyardgrass, pigweed purslane, and sunflower in plant or ratoon sugarcane.

Apply 4.4 pounds per acre of ATRAZINE 90DF preemergence. Follow with one or two applications, as needed, at 3.3 pounds per acre postemergence to sugarcane and weeds.

For best results when weeds are emerged, add a nonionic surfactant at a concentration of 2 qts./100 gals. to the spray and apply before weeds exceed 1.5 inches in height.

**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 11 pounds per acre to any one crop of sugarcane, or crop injury may result.

**TURFGRASSES FOR SOD (FLORIDA ONLY)**

St. Augustinegrass, Centipedegrass, and Zoysia Grass  
Broadcast 2.2-4.4 pounds per acre according to soil texture to control those weeds listed under ATRAZINE 90DF Applied Alone - Corn or Grain Sorghum - Preplant Surface-Applied, or Preplant Incorporated, or Preemergence.

Muck or peat

4.4 lbs.

Old beds: Within 2 days after lifting sod  
 New beds: 3-4 days after sprigging or plugging  
 Sandy soil 2.2 lbs.  
 Old beds: Within 2 days after lifting sod  
 New beds: 7-10 days after sprigging or plugging

If weeds regrow, apply an additional 2.2 pounds per acre on muck or peat, or 1.1 pounds per acre on sandy soil.

**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.

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

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

Bermudagrass, Centipedegrass, St. Augustinegrass, and Zoysia Grass  
 Apply ATRAZINE 90DF 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 90DF will control annual bluegrass even if it is emerged at time of treatment. For control of summer annual weeds listed in the preemergence portion of the ATRAZINE 90DF Applied Alone-Corn or Grain Sorghum section of the label, also apply ATRAZINE 90DF 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 1.1 pounds per acre (0.4 fluid ounces per 1,000 sq. ft.). Use 2.2 pounds per acre (0.8 fluid ounces per 1,000 sq. ft.) for control of the other weeds named above. Do not exceed 1.1 pounds per acre per treatment on newly sprigged turfgrass or on hybrid bermudagrass such as Tiflawn, Tifway, and Ormond.

For continued summer annual weed control, apply another 1.1 pounds per acre 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.

**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 2.2 pounds per acre within 12 months of seeding bermudagrass.

**Note:** Do not graze or feed turf clippings to animals, or illegal residues may result.

**MACADAMIA NUTS**

For preemergence control of many broadleaf and grass weeds, including crabgrass, foxtail, siregrass, Flora's paintbrush, spanishneedles, and fireweed, broadcast 2.2-4.4 pounds per acre before harvest and before weeds emerge. Repeat as necessary. Do not spray when nuts are on ground during harvest period. Do not apply air.

**GUAVA**

Use only on established plantings which are at least 18 months old. Apply as a directed spray at 2.2-4.4 pounds per acre 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:**

**To avoid illegal residues:**

- (1) Do not allow spray to contact foliage or fruit.
- (2) Do not apply more frequently than at 4 months intervals.
- (3) Do not apply more than 8.8 pounds of ATRAZINE 90DF 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 2.2-4.4 pounds in a minimum of 5 gals. of water per acre by air or 10 gals. 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 90DF before transplanting. In areas where spring and summer rainfall is inadequate to activate ATRAZINE 90DF, apply during fall prior to spring transplanting.

For the list of weeds controlled, see ATRAZINE 90DF Applied Alone-Corn or Grain Sorghum-Preplant Surface-Applied, Preplant Incorporated, or Preemergence.

Quackgrass control: Broadcast 4.4 pounds in a minimum of 5 gals. of water per acre by air or 10 gals. by ground between fall and early spring while trees are dormant and before quackgrass is more than 1.5 inches tall.

**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 90DF on coarse-textured soil.
- (4) To avoid crop injury, do not apply to seedbeds.

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(5) 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 ATRAZINE 90DF by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

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

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**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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Unite® trademark of Hopkins Agricultural Chemical Company

X-77® trademark of Chevron Chemical Company

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**SUPPLEMENTAL LABELING**

**ATRAZINE 90DF  
EPA REG. NO. 5905-522**

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

**TILE-TERRACED FIELDS CONTAINING STANDPIPES**

To ensure protection of surface water from runoff through standpipes and tile outlets in terraced fields, one of the following options may be used:

1. Do not apply this product within 66 feet of standpipes in tile-outletted terraced fields.
2. Apply this product to the entire tile-outletted terraced field and immediately incorporate it to a depth of 2 - 3 inches in the entire tile-outletted terraced field.
3. Apply this product to the entire tile-outletted terraced field under a no-till practice only when high crop residue management practices are used. High crop residue management practice 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 BY  
HELENA CHEMICAL COMPANY  
225 SCHILLING BOULEVARD, SUITE 300  
COLLIERVILLE TENNESSEE 38017**