

(Front Panel)

**ACCEPTED**

**DEC - 9 1982**

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under  
EPA Reg. No. 9779-258

RIVERSIDE ATRAZINE 90 DRY FLOWABLE

Atrazine 90 Dry Flowable is a Water Dispersible Granule

For Season-Long Weed Control in Corn and Sorghum

For Weed Control in Certain Other Crops; In Non-Crop Areas; and Industrial Sites

ACTIVE INGREDIENTS	BY WEIGHT:
Atrazine: 2-chloro-4-ethylamino-6-isopropylamino-s-triazine .....	86.5%
Related Compounds .....	3.6%
INERT INGREDIENTS .....	9.9%
	TOTAL 100.0%

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Contact your local poison control center, hospital, or physician. If the patient is unconscious, maintain breathing and heartbeat (cardiopulmonary resuscitation). If the patient is conscious and alert, induce vomiting (syrup of ipecac or stimulate the back of the throat with a finger). NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON!

IF INHALED: Remove victim to fresh air and apply respiration if indicated.

IF ON SKIN: Remove contaminated clothing and wash with soap and water.

IF IN EYES: Flush with plenty of water. Get medical attention if irritation persists.

SEE LEFT PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

EPA Reg. No. 9779-  
EPA Est. No. 9779-

Net Contents:

\_\_\_\_ Gallons  
\_\_\_\_ Liters

Manufactured by:

(Riverside "R")

Riverside Chemical Company  
A Subsidiary of Terra Chemicals International, Inc.  
P. O. Box 1828, Sioux City, Iowa 51102

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PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
CAUTION

Harmful if swallowed, inhaled, or absorbed through skin. Do not breathe dust or spray mist. Avoid contact with eyes, skin or clothing. Remove contaminated clothing and wash before reuse. Wash thoroughly with soap and water after handling.

NOTE TO PHYSICIANS: 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.

ENVIRONMENTAL HAZARDS

Do not apply directly to any body of water. Do not contaminate water by cleaning of equipment or disposal of wastes.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. This product may not be used against any pests not named on the label.

STORAGE AND DISPOSAL

1. PROHIBITIONS: Store in a dry place. Do not contaminate water, food, or feed by storage, disposal, or cleaning of equipment. Open dumping is prohibited.
2. PESTICIDE DISPOSAL: Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to Federal, State, or local procedures under the Resource Conservation and Recovery Act.
3. CONTAINER DISPOSAL: Dispose of bags according to approved Federal, State, or local procedures under the Resource Conservation and Recovery Act.

READ ENTIRE LABEL BEFORE USING THIS PRODUCT

GENERAL INFORMATION

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

Following many years of continuous use of this product and chemically related products, biotypes of some of the weeds listed on this label have been reported which cannot be effectively controlled by this and related herbicides. Where this is known or suspected, we recommend the use of this product in combination with other registered herbicides which are not triazines. Consult with your State Agricultural Extension Service for specific recommendations.

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

This product is noncorrosive to equipment and metal surfaces, nonflammable, and has low electrical conductivity.

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

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

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

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NOTICE: The Directions For Use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application all of which are beyond the control of RIVERSIDE CHEMICAL COMPANY or the Seller. All such risks shall be assumed by the Buyer.

RIVERSIDE CHEMICAL COMPANY warrants that the product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with directions under normal conditions of use, but neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product contrary to label instructions, or under abnormal conditions, or under conditions not foreseeable to RIVERSIDE CHEMICAL COMPANY, and buyer assumes the risk of any such use. RIVERSIDE CHEMICAL COMPANY shall not be responsible for incidental damages, if any, resulting from a breach of warranty.

#### 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 gallons of spray mixture per acre for all preplant, preemergence, and postemergence applications (with or without oil or surfactant) with ground equipment.

Use a pump with capacity to (1) maintain 35-40 psi at nozzles, (2) provide sufficient agitation in tank to keep mixture in suspensions, and (3) to provide a minimum of 20% bypass at all times. Use centrifugal pumps which provide propeller shear action for dispersing and mixing this product. The pump should provide a minimum of 10 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 of to be applied per acre as follows

$\frac{\text{band width in inches}}{\text{row width in inches}}$	X	broadcast rate per acre	=	amount needed per acre of field
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Aerial Application: Use aerial application only where broadcast applications are specified. Apply in a minimum of 1 gal. of water for each 1 lb. of RIVERSIDE ATPAZINE 90 DRY FLOWABLE 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.

Avoid application to humans or 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 or preplant ground application on corn and sorghum. Check the compatibility of this product with liquid fertilizer and/or nitrogen solution as shown below before use. Do not apply in nitrogen solution or complete liquid fertilizer after corn or sorghum emerges, except as noted under Lay-By Treatment for corn, or crop injury may occur.

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To determine the compatibility of RIVERSIDE ATRAZINE 90 DRY FLOWABLE, alone or in tank mixtures, with fluid fertilizer, pour the products into a small container of fluid fertilizer in the proportions shown below. For different spray volume or herbicide rate, make appropriate changes in the ingredients.

For each pound of RIVERSIDE ATRAZINE 90 DRY FLOWABLE or other dry product to be applied per acre, add 1 level teaspoon or 5 milliliters of the product to one pint of fluid fertilizer (assuming a volume of 25 gallons per acre).

For each pint of a liquid or flowable product to be applied per acre, add 0.5 teaspoon or 2.5 milliliters of the product to one pint of fluid fertilizer (assuming a volume of 25 gallons per acre).

After thorough mixing, let stand 5 minutes. If the herbicide/fertilizer combination remains mixed, or can be remixed readily, the mixture is compatible and can be sprayed. If it is not compatible, make a water slurry with the herbicide before adding fertilizer and use the mixture only if this test shows it is compatible.

Application in Water Plus Emulsifiable Oil or Oil Concentrate: Adding emulsifiable oil or oil concentrate, such as Prime Oil or Prime Oil II, to postemergence water-based sprays on 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 a crop oil containing 1-2% suitable emulsifier, or a suitable crop oil concentrate containing not more than 20% emulsifier or surfactant blend. Emulsifiable oil and oil concentrate 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 1/4 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 container into tank. Let it wet and settle into water. (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 it and clean with strong detergent solution or solvent. (11) Clean sprayer thoroughly immediately after use by flushing system with water containing a detergent.

(Booklet to be affixed to Container)

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RIVERSIDE ATRAZINE 90 DRY FLOWABLE - Applied Alone - Corn or Grain Sorghum

**Preplant Incorporated or Preemergence**

**Weeds Controlled:**

Barnyardgrass	cocklebur	nightshade
(watergrass)	groundcherry	pigweed
giant foxtail	Jimsonweed	purslane
green foxtail	kochia	ragweed
large (hairy) crabgrass	lambsquarters	velvetleaf
wild oats	annual morningglory	(buttonweed)
witchgrass	mustards	
(Panicum capillare)		
yellow foxtail		

**Postemergence with Emulsifiable Oil or Oil Concentrate in Water**

**Weeds Controlled:**

annual morningglory	pigweed
cocklebur	ragweed
Jimsonweed	smartweed
lambsquarters	wild buckwheat
mustards	velvetleaf

**CORN**

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

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

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

**TABLE 1: Broadleaf and Grass Weed Control on Corn\***

Soil Texture	Broadcast Rate/A
<b>COARSE</b>	
Sand, loamy sand, sandy loam	2.2 lb.
<b>MEDIUM</b>	
Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with low organic matter	2.6 lb.
<b>FINE</b>	
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 the dark prairie soils of the Corn Belt)	3.3 lb.
Peat, muck, and high organic clay (apply postemergence only)	3.3 lb.

\*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 lb/A either preplant or pre-emergence. On other soils in these areas, apply rate in Table 1 for broadleaf and grass control.

**Lay-by Treatment (Broadleaf and grass control):** Broadcast 1.1-2.2 lb/A in minimum of 10 gal. of water or nitrogen solution, before weeds are 1.5 inches tall and corn is 20-30 inches tall. When using nitrogen solutions, direct spray to lower 3-4 inches of cornstalks to avoid corn foliage injury. Maintain agitation in spray tank during application.

(Booklet to be affixed to Container)

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Post-emergence with Emulsifiable Oil or Oil Concentrate in Water:

Broadleaf and Grass Control: Apply 2.2 lb/A after weed emergence, but before weeds reach 1.5 inches in height. Add 1 gal. of emulsifiable oil/A for ground application and 0.5 gal./A for aerial application. Add 1 qt. of oil concentrate per acre for ground application.

Broadleaf control: Apply 1.3 lb/A for control of many broadleaf weeds, including annual morningglory, cocklebur, lambsquarters, mustard, pigweed, ragweed, smartweed, and wild buckwheat. Add 1 gal. of emulsifiable oil per acre for ground application. Apply 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) 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, as crop injury may occur. (2) Inbred lines or any breeding stock may be severely injured by applications with emulsifiable oil or oil concentrate. (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 and oil concentrate 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 per season except as recommended for control of yellow nutsedge and Canada thistle.

Problem Weeds:

Yellow nutsedge and Canada thistle: This product will control yellow nutsedge (*Cyperus esculentus*) and Canada thistle (*Cirsium arvense*) when applied according to directions. For best results, apply each year until yellow nutsedge or Canada thistle is eliminated or reaches a level of infestation where neither weed is a problem. If yellow nutsedge or Canada thistle regrow following last application, cultivate once.

Six alternative methods of use for control of yellow nutsedge and Canada thistle are listed below in order of preference. If other weed species, including annual grasses, are also expected, use alternative 2,3,5, or 6.

1. Apply 2.2 lb. plus 1 gal. of emulsifiable oil or 1 qt. of oil concentrate per acre after crop and yellow nutsedge or Canada thistle emerge, but before yellow nutsedge reaches a height of 3 inches or Canada thistle reaches a height of 6 inches. Repeat application before lay-by (20-30 inches), 10-20 days after first application.
2. Apply 2.2 lb. per acre preplant. Follow with an application of 2.2 lb. plus 1 gal. of emulsifiable oil or 1 qt. of oil concentrate per acre after corn and weeds emerge, but before yellow nutsedge reaches a height of 3 inches (yellow nutsedge control only).
3. Apply 2.2 lb. per acre during or shortly after planting, but before crop or weed emergence. Follow with an application of 2.2 lb. plus 1 gal. of emulsifiable oil or 1 qt. of oil concentrate per acre after corn and weeds emerge, but before yellow nutsedge reaches a height of 3 inches or Canada thistle reaches a height of 6 inches.
4. Apply 4.4 lb. plus 1 gal. of emulsifiable oil or 1 qt. of oil concentrate per acre after crop emerges, but before lay-by (20-30 inches) and after yellow nutsedge and Canada thistle emerge, but before yellow nutsedge is 3 inches tall or Canada thistle is 6 inches tall.
5. Apply 4.4 lb. per acre preplant (yellow nutsedge control only).
6. Apply 4.4 lb. per acre during or shortly after planting, but before crop or weed emergence (yellow nutsedge control only).

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Note: Do not use alternative 1,2,3, or 4 when corn is wet or under stress. See "Precautions for Applications with Emulsifiable Oil or Oil Concentrate in Water" for additional directions.

Quackgrass Control on Land Going into Corn Production:

Split Application: Broadcast 2.2 lb/A in fall or spring. Plow 1-3 weeks later. Apply a second application at 2.2 lb/A in spring before, during, or after planting, but before weeds are 1.5 inches high. This split application will control quackgrass and most annual broadleaf and grass weeds.

Single Application: Broadcast 3.3-4.4 lb/A in fall or spring. Plow 1-3 weeks later.

#### TANK MIXTURES FOR CORN

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

Dual <sup>®</sup> (metolachlor)	Lasso <sup>®</sup> or Lasso EC (alachlor)
Dual + ORTHO Paraquat CL (paraquat)	Lasso or Lasso EC + Roundup
Dual + Roundup <sup>®</sup> (glyphosate)	Lasso or Lasso EC + Paraquat CL
Dual + Princep <sup>®</sup>	ORTHO Paraquat CL
Dual + Princep + ORTHO Paraquat CL	Princep
Dual + Princep + Roundup	Princep + ORTHO Paraquat CL
Buxton <sup>®</sup> or Ramrod <sup>®</sup> (propachlor)	Princep + Roundup
Bladex <sup>®</sup>	Sutan <sup>®</sup>

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

Note: When labels of the above herbicides refer to atrazine 80W or atrazine 4L, use equivalent rates of RIVERSIDE ATRAZINE 90 DRY FLOWABLE. One lb. of 80W equals .89 lb. of 90 dry flowable. One quart of 4L equals 1.1 lb. of 90 dry flowable.

Princep<sup>®</sup> 80W or Princep 4L: Use as tank mixture for control of many annual weeds, including carpetweed, crabgrass, fall panicum, foxtail, lambsquarters, morningglory, pigweed, ragweed, and velvetleaf. Apply before planting, at planting, or after planting, but before crop and weeds emerge, at rates in Table 2. Use 1:1 ratio for control of above weeds. Use 1:2 ratio for expected heavy infestations of crabgrass and fall panicum. Apply in a minimum of 20 gal. of water per acre. Cultivate shallowly if weeds appear.

Preplant: Apply in spring during or after final seedbed preparation. If soil is tilled or worked after application, avoid deep incorporation. For best results, apply within two weeks before 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 and Princep 4L label for further directions, limitations, and precautions.



(Booklet to be affixed to Container)

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TABLE 2: Tank Mixtures with Princep on Corn

Soil Texture	BROADCAST RATE PER ACRE			
	1:1 Ratio*		1:2 Ratio**	
	This Product	Princep 4L or Princep 80W	This Product	Princep 4L or Princep 80W
Sand, loamy sand, sandy loam	1.1 lb.	2 pt. or 1.25 lb.	0.73 lb.	2.67 pt. or 1.67 lb.
Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay or silty clay with low organic matter	1.3 lb.	2.4 pt. or 1.5 lb.	0.88 lb.	3.2 pt. or 2 lb.
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 lb.	3 pt. or 1.8 lb.	1.07 lb.	3.85 pt. or 2.4 lb.

\*For control of above weeds

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

Paraquat CL: For control of existing vegetation and residual control where corn will be planted directly into a cover crop, established sod, or in previous crop residues, apply 2.2-3.3 lb. of this product and 1-2 pt. of Paraquat CL in 20-30 gal. of water per acre. Add 8 fl. oz. of a nonionic surfactant per 100 gal. of spray mixture. Add this product to spray tank, thoroughly mix with water, then add Paraquat CL and surfactant.

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

Princep 80W plus Paraquat CL: Use as tank mixture with Princep 80W and Paraquat CL for kill of existing vegetation and 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 80W to water in spray tank, agitating until thoroughly mixed. Then add Paraquat CL and a nonionic surfactant, such as X-77. Continue agitation during application. Apply 1.1-2.2 lb. of this product plus 1.25-2.5 lb. Princep 80W plus 1-2 pt. Paraquat CL in 20-60 gal. of water per sprayed acre before, during, or after planting, but before corn crop emerges. Add 8 fl. oz. of a nonionic surfactant such as X-77, per 100 gal. diluted spray. Use low rates of this product and of Princep 80W on coarse soil, and higher rates on fine-textured soil. Use the 2 pt. rate of Paraquat CL 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 80W and Paraquat CL.

Precautions for All Applications to Corn: (1) Do not apply more than 4.4 lb./A of this product per year. (2) Following harvest, plow (moldboard or disk-plow) and thoroughly till soil in fall or spring to minimize possible injury to rotational spring-seeded 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.

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Rotational Crops: (1) Do not rotate to any crop except corn or sorghum until the following year, as injury may occur. (2) If applied after June 10, do not rotate with crops other than corn or sorghum the next year, as crop injury may occur. (3) If used at a rate higher than 3.3 lb. per acre or equivalent band application rate, a crop of untreated corn or sorghum should precede the next rotational crop. (4) 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. (5) 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 lb. per acre or equivalent band application rate, as soybean injury may occur. (6) Injury may occur to soybeans planted in north-central and northwest IA, south-central and southwest MN, northeast NE, southeast SD, and other areas the year following application on soils having a calcareous surface layer. (7) Do not plant sugarbeets, tobacco, vegetables (including dry beans), spring-seeded small grains, or small-seeded legumes and grasses the year following application as injury may occur.

SORGHUM AND SORGHUM-SUDAN HYBRIDS (Grain and Forage Types)

Apply before planting, at planting, or after planting, as indicated in the directions below. See Corn section for weeds controlled.

Preplant (Broadleaf and grass control): Apply in spring after plowing at rate 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 before planting.

Preemergence (Broadleaf and grass control): Apply during or shortly after planting before weed or crop emergence at rate in Table 3.

TABLE 3

Preplant and Preemergence Broadleaf and Grass Weed Control in Sorghum\*

Soil Texture	Organic Matter	Broadcast Rate Per Acre
COARSE Sand, loamy sand, sandy loam	Any Level	DO NOT USE (except for preemergence use on bedded sorghum in AZ and CA)
MEDIUM AND FINE Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay, silty clay, clay	Under 1%	
	1-1.5%	1.7-2.2 lb.
	Over 1.5%	2.2-2.6 lb.

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

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

Preemergence Broadleaf Weed Control in Furrow Irrigated Bedded Sorghum (AZ and CA only): For preemergence control of many broadleaf weeds, including groundcherry, lambsquarters, morningglory, mustard, pigweed, and purslane, apply 0.9-1.3 lb. 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.

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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 on alkali soils or where cuts, fills, or erosion have exposed calcareous or alkali subsoils may cause crop injury. In case of crop failure, do not replant sorghum for 8 months following application. Corn may be planted immediately.

Postemergence (Broadleaf and grass control): Apply at rate in Table 4 before weeds exceed 1.5 inches in height. Apply up to "close-in".

TABLE 4: Postemergence Broadleaf and Grass Weed Control in Sorghum

Soil Texture	Minimum Sorghum Height at Treatment	Broadcast Rate Per Acre
Sand or loamy sand	DO NOT USE	
Sandy loam	See Directions For Postemergence Broadleaf Weed Control.	
Silt loam to sandy clay loam	Completely Emerged	2.2-2.6 lb.
Olton and Pullman clay soil	6 inches	2.2-2.6 lb.
Silty clay loam and finer textured soil	Completely Emerged	3.3 lb.

Postemergence Broadleaf Weed Control with Emulsifiable Oil or Oil Concentrate in Water: Apply 1.3 lb. per acre for control of many broadleaf weeds, including annual morningglory, cocklebur, lambsquarters, mustard, pigweed, ragweed, smartweed, and wild buckwheat. Apply before pigweed and lambsquarters reach 6 inches in height and before all other weeds reach 4 inches in height. In CO, western KS, NM, OK, TX, and desert regions of AZ and CA, apply when sorghum is 6-10 inches in height, but before it reaches boot stage. In all other areas, apply after sorghum reaches the 3-leaf stage. Add 1 gal. of emulsifiable oil per acre for ground application and 0.5 gal. per acre for aerial application. Add 1 qt. of oil concentrate per acre for ground application. 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: 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): Apply 1.3 lb. plus 0.75-1.5 pt. 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 or preemergence, and an at-planting systemic insecticide applied in-furrow are used. //

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Note: Do not graze or feed forage from treated areas for 21 days following application.

Rotational Crops: See "Rotational Crops" in Corn section

#### TANK MIXTURES FOR GRAIN SORGHUM

Igran<sup>®</sup> 80W: Use as tank mixture for control of certain broadleaf and grass weeds in grain sorghum. Refer to Igran 80W label for all directions, weeds controlled, precautions, and limitations.

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 Concep<sup>®</sup>-treated sorghum seed. Refer to the Dual 8E label for all directions, precautions, and limitations.

#### RIVERSIDE ATRAZINE 90 DRY FLOWABLE 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 lb/A to wheat stubble immediately following wheat harvest. If weeds are present at application, remove them with a sweep plow or other suitable implement after application, or use an approved contact herbicide before or after the application of RIVERSIDE ATRAZINE 90 DRY FLOWABLE. 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 RIVERSIDE ATRAZINE 90 DRY FLOWABLE APPLIED ALONE-Corn or Grain Sorghum - Preplant Incorporated or Preemergence.

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

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

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

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 rotations, broadcast 0.5-1.1 lb/A 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):

Igran 80W: Use a tank mixture for control of certain broadleaf and grass weeds in wheat-sorghum-fallow or wheat-corn-fallow rotations. Refer to Igran 80W label for directions, weeds controlled, precautions, and limitations.

(Booklet to be affixed to Container)

9719-353

Paraquat CL: If weeds are present at application, a tank mix with Paraquat CL may be used. Broadcast 3.3 lb. of this product plus 1-2 pt. of Paraquat CL in 20-60 gal. of water per acre by ground equipment. Add 0.5-1 pt. of a nonionic surfactant, such as X-77, per 100 gal. of spray mixture. Add the atrazine to the spray tank first and thoroughly mix with water. Then add Paraquat CL, followed by surfactant. Use the 2 pt. rate of Paraquat CL 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 Paraquat CL label for further directions, precautions, and limitations.

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

Igran 80W: Use as tank mixture for control of certain broadleaf and grass weeds in wheat-fallow-wheat rotations. Refer to Igran 80W label for directions, weeds controlled, precautions, and limitations.

Paraquat CL: If weeds are present at application, a tank mix with Paraquat CL may be used. Broadcast 0.5-1.1 lb. of this product plus 1-2 pt. of Paraquat CL in 20-60 gal. of water per acre by ground equipment. Add 0.5-1 pt. of a nonionic surfactant, such as X-77, per 100 gal. of spray mixture. Add the atrazine to spray tank first and thoroughly mix with water. Then add Paraquat CL, followed by surfactant. Use the 2 pt. rate of Paraquat CL 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 Paraquat CL 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 Paraquat CL, plant at least 2 inches deep and 12 months or more after application.

Precautions: (1) Do not use on sand soil. (2) Do not treat eroded hillsides, caliche and rocky outcroppings, or exposed calcareous subsoil. (3) Do not treat soils 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.

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 RIVERSIDE ATRAZINE 90 DRY FLOWABLE alone by aircraft at a minimum upwind distance of 400 ft. from sensitive plants, or apply RIVERSIDE ATRAZINE 90 DRY FLOWABLE plus Igran 80W at a minimum upwind distance of 500 ft. from sensitive plants. When applying RIVERSIDE ATRAZINE 90 DRY FLOWABLE plus Igran 80W by aircraft, use a minimum of 5 gal. of water per acre.

#### PROSO MILLET

For preplant or preemergence control of foxtails, kochia, common lambsquarters, redroot pigweed, Russian thistle, slimleaf lambsquarters and spotted spurge, apply 0.5-1.1 lb. per acre on soils with less than 2% organic matter, or apply 1.1-2.2 lb. per acre on soils with 2% or higher organic matter.

Precaution: Make only one application per year.

(Booklet to be affixed to Container)

9779-253

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

#### RANGELAND

To control certain weeds, including cheatgrass (downy brome, chess), common (annual) broomweed, little barley, medusahead, sagewort, and tumble mustard. Use lower rate where cheatgrass is major problem weed: Use higher rate for other weeds.

Aerial Application: In order to assure that spray will be controllable with 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 RIVERSIDE ATRAZINE 90 DRY FLOWABLE by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

Establishment of Perennial Range Grasses in West (CA, ID, NV, OR, UT, WA): Broadcast 0.9-1.1 lb. per acre in fall after rains begin but before ground freezes. Perennial range grass may be seeded when rain begins the next fall following treatment. Plant in deep furrows such as those made by a deep furrow rangeland drill. Treated areas may be grazed 7 months after seeding. However, to provide sufficient time for establishment of desirable range grasses, treated areas should not be grazed until the fall following seeding.

Renovation of Existing Stands of Perennial Range Grasses:

Central Great Plains (CO, KS, MT, NE, ND, SD, WY): Broadcast 0.5-1.1 lb. per acre in fall before ground freezes.

Southern Great Plains (OK, TX): Broadcast 1.2 lb. per acre in spring before April 30.

West (CA, ID, NV, OR, UT, WA): Do not graze area to be treated for 6 months prior to application. Broadcast 0.5-0.8 lb. per acre by ground equipment in fall before ground freezes.

Bluegrass and intermediate wheatgrass may be injured by this product at recommended rates.

Note: Do not cut or feed range grass hay. Do not graze treated areas within 7 months following fall application or 3 months following spring application. Apply only once per year.

Warm Season Perennial Range Grasses - Midwest

Switchgrass and Big Bluestem: For control of those weeds listed under RIVERSIDE ATRAZINE 90 DRY FLOWABLE Applied Alone - Corn or Grain Sorghum - Preplant Incorporated or Preemergence.

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

New seeding: Broadcast 2.2 lb. per acre after planting but before weeds emerge. 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. Clip weeds that escape in July or August. Avoid clipping switchgrass or big bluestem seedlings.

Established Stands: Broadcast 2.2 lbs. per acre in April or early May, before weed emerges.

(Booklet to be affixed to Container)

9774-253

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

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

PERENNIAL RYEGRASS GROWN FOR SEED (Pacific Northwest Only)

For control of annual ryegrass and rattail fescue, broadcast 1.33 lb. per acre after first fall rain.

Precautions: (1) Apply only to perennial ryegrass from which seed crop has been harvested. (2) Do not apply to ryegrass more than 2 years in succession.

Note: Do not graze treated land within 10 days after application. Do not plant treated land to other crops for 16 months.

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 lb. per acre of RIVERSIDE ATRAZINE 90 DRY FLOWABLE at time of planting or ratooning, but before sugarcane emerges. Broadcast aerially in a minimum of 5 gal. of spray per acre, or broadcast or band by ground equipment in a minimum of 20 gal. 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 RIVERSIDE ATRAZINE 90 DRY FLOWABLE 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 RIVERSIDE ATRAZINE 90 DRY FLOWABLE 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 lb. per acre in at least 40 gal. of water as a directed spray by ground equipment prior to "close-in". Add 4 qt. of surfactant for each 100 gal. 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 lb./A preemergence. Follow with one or two applications, as needed, post-emergence to sugarcane and weeds, at 2.2 lb./A. Treat before weeds exceed 1.5 inches in height.
2. Apply 1-3 times, as needed, at 2.2 lb./A postemergence to sugarcane and weeds. Treat before weeds exceed 1.5 inches in height.

Texas

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

(Booklet to be affixed to Container)

5779-253

Apply 4.4 lb/A of RIVERSIDE ATRAZINE 90 DRY FLOWABLE preemergence. Follow with one or two applications, as needed, at 3.3 lb/A postemergence to sugarcane and weeds.

For best results when weeds are emerged, add a nonionic surfactant at a concentration of 2 qt/100 gal. 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 lb/A to any one crop of sugarcane.

#### TURF GRASSES FOR SOD

St. Augustinegrass, Centipedegrass, and Zoysia Grass

Broadcast 2.2-4.4 lb. per acre according to soil texture to control those weeds listed under RIVERSIDE ATRAZINE 90 DRY FLOWABLE Applied Alone - Corn or Grain Sorghum - 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 lbs. per acre on muck or peat, or 1.1 lb. per acre on sandy soil.

Precautions: (1) Do not apply within 30 days prior to cutting or lifting. (2) Do not apply in combination with surfactants or other spray additives, or injury may occur. (3) Do not use north of NC.

#### MACADAMIA NUTS

For preemergence control of many broadleaf and grass weeds, including crabgrass, fox-tail, wiregrass, Flora's paintbrush, spanishneedles, and fireweed, broadcast 2.2-4.4 lb. 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 by air.

#### 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 lb. in a minimum of 5 gal. of water per acre by air or 20-40 gal. 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 before transplanting. In areas where spring and summer rainfall is inadequate to activate atrazine, apply during all prior to spring transplanting.

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



(Booklet to be affixed to Container)

4779-253

Quackgrass Control: Broadcast 4.4 lb. in a minimum of 5 gal. of water per acre by air or 20-40 gal. by ground between fall and early spring while trees are dormant and before quackgrass is more than 1.5 inches tall.

Note: Temporary injury to trees may occur following the use of atrazine on coarse-textured soil.

Precautions: (1) Do not graze treated areas. (2) Do not apply to seedbeds. (3) 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 RIVERSIDE ATRAZINE 90 DRY FLOWABLE by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

#### NONSELECTIVE WEED CONTROL ON NONCROP LAND

This product provides long-term weed control on industrial sites, highway medians and shoulders, railroad rights-of-way, lumberyards, petroleum tank farms, and in noncrop areas on farms such as around buildings, equipment and fuel storage areas, along fences, and lanes. Do not use near adjacent desirable plants or in greenhouses, or injury may occur.

Apply before or soon after weeds begin growth. Make postemergence applications when weeds are young and actively growing. Use the higher rates on fine clay and muck soils. Use sufficient water to assure thorough coverage. Use at least 1 gal. of water for each pound of product; use more if practical.

Note: Do not allow livestock to graze treated areas.

Annual broadleaf and grass weeds (including barnyardgrass, cheatgrass, crabgrass, lambsquarters, foxtail, ragweed, puncturevine, and turkey mullein): Broadcast 5.3-11.1 lb. per acre.

Hard-to-kill annual and many perennial broadleaf and grass weeds (including bluegrass, burdock, Canada thistle, dogfennel, orchardgrass, plantain, quackgrass, purpletop, redtop, and smooth brome): Broadcast 11.1-22.2 lb. per acre.

Hard-to-kill biennial and perennial weeds (including bull thistle and sowthistle): Broadcast 11.2 - 44.4 lb. per acre.

For longer residual control in regions of high rainfall and a long growing season, broadcast 22.2-44.4 lb. per acre.

For small areas, 4 oz. per 1,000 sq. ft. is equivalent to 11.1 lb.

Bexton<sup>®</sup> trademark of Dow Chemical Company for propachlor

Caliber<sup>®</sup> trademark of CIBA-GEIGY

Concep<sup>®</sup> trademark of CIBA-GEIGY

Dual<sup>®</sup> trademark of CIBA-GEIGY for metolachlor - U.S. Patent No. 3,937,730

Igran<sup>®</sup> trademark of CIBA-GEIGY for terbutryn - U.S. Patent No. 3,634,062

Lasso<sup>®</sup> trademark of Monsanto Company for alachlor

Princep<sup>®</sup> trademark of CIBA-GEIGY for simazine

Ramrod<sup>®</sup> trademark of Monsanto Company for propachlor

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