

42750-45

11/08/2004

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

NOV 8 2004

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Mr. Morris Gaskins  
Albaugh, Inc.  
PO Box 2127  
Valdosta, GA 31604-2127

Dear Mr. Gaskins:

Subject: Atrazine 4F  
EPA Registration Number 42750-45  
Resubmission dated October 25, 2004  
Amended label per Atrazine MOA


The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act as amended is acceptable, provided you make the following changes before you release the product for shipment.

1) On pages 15 and 16, in the section Chemical Fallow- the rates of 5 pints/A of this product is above the maximum allowable rate of 2.25 pounds active ingredient per acre. Change to 4.5 pints/A everywhere this rate occurs.

Please note that in the section SOD PRODUCTION (in states other than Florida), you currently have more restrictive use directions than what is in the IRED for Atrazine. If these additional restrictions were intended, please disregard this comment. However, if these restrictions were not intended, please submit an amendment incorporating any requested changes to this section. If you have any questions, please contact Hope Johnson at 703-305-5410.

Submit one (1) copy of final printed labeling incorporating the above changes before you release the products for shipment. Amended labeling will supercede all previously accepted ones. A stamped copy of labeling is enclosed for your records.

Sincerely,

  
James A. Tompkins  
Product Manager 25  
Herbicide Branch  
Registration Division (7505C)

Editor's Note: Draft label for Atrazine MOA in response to Agency comment letter of Oct 18, 2004

RESTRICTED USE PESTICIDE  
(GROUND AND SURFACE WATER CONCERNS)  
Due to ground and surface water concerns. For retail sale to and use only by certified applicators or persons under their direct supervision and only for those uses covered by the certified applicator's certification.

ALBAUGH  
ATRAZINE 4F

For season-long weed control in chemical fallow, conifers, corn, fallowland, guava, macadamia nuts, sorghum, sugarcane and turf.

ACTIVE INGREDIENTS:	
Atrazine (2-chloro-4-ethylamino-6-isopropylamino-s-triazine).....	40.8%
Related compounds .....	2.2%
OTHER INGREDIENTS: .....	57.0%
TOTAL	100.0%

Atrazine 4F contains 4 lbs. active ingredient per gallon.

EPA Reg. No. 42750-45

EPA Est. No. 42750-MO-1

Shake well before using. Use entire contents at one time.

KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE ADDITIONAL PRECAUTIONARY STATEMENTS AND DIRECTIONS FOR USE INSIDE BOOKLET

FIRST AID

IF SWALLOWED:	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
IF INHALED:	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
IF ON SKIN OR CLOTHING:	<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 for treatment advice.</li> </ul>
IF IN EYES:	<ul style="list-style-type: none"> <li>• Hold eye 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 eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>

HOT LINE NUMBER - Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.

NOTE TO PHYSICIAN - There is no specific antidote for Atrazine. If this product is ingested, induce emesis or lavage stomach. The use of an aqueous slurry of activated charcoal may be considered.

FOR CHEMICAL SPILL, LEAK, FIRE, OR EXPOSURE, CALL CHEMTREC (800) 424-9300

Manufactured For:  
Albaugh, Inc.  
Ankeny, Iowa 50021

ACCEPTED  
with COMMENTS  
in EPA Letter Dated

NOV 8 2004

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

42750-45

NET CONTENTS  
\_\_\_\_ Gals.  
\_\_\_\_ Liters  
Product of Argentina

PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
CAUTION

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

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are butyl rubber, natural rubber, neoprene, nitrile rubber or viton. If you want more options, follow the instructions for category A on an EPA chemical resistance category selection chart.

Applicators using spray equipment mounted on their backs must wear:

- Coveralls over long-sleeved shirt and long pants,
- Chemical resistant footwear plus socks, and
- Chemical-resistant gloves, such as butyl rubber >14 mils, natural rubber >14 mils, neoprene >14 mils, nitrile rubber >14mils, or viton >14 mils.

Mixers, loaders, applicators, flaggers and other handlers must wear:

- Long sleeved shirt and long pants
- Chemical-resistant gloves, such as butyl rubber >14 mils, natural rubber >14 mils, neoprene >14 mils., nitrile rubber >14mils, or viton >14 mils.
- Shoes plus socks
- Chemical-resistant apron when mixing/loading, cleaning up spills, cleaning equipment, or otherwise exposed to the concentrate

See engineering controls for additional requirements.

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

ENGINEERING CONTROL STATEMENTS

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

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

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

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

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 107.240(d) (4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

### USER SAFETY RECOMMENDATIONS

Users should:

1. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
3. Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### ENVIRONMENTAL HAZARDS

Atrazine can travel (seep or leach) through soil and can enter 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 must not be mixed or loaded within 50 ft. of intermittent streams and rivers, natural or impounded lakes and reservoirs. This product must not be applied aerially or by ground within 66 ft. of the points where surface water runoff enters perennial or intermittent streams and rivers or within 200 ft. around natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66 ft. buffer or setback from runoff entry points must be planted to crop, seeded with grass or other suitable crop.

This product must not be mixed/loaded, or used within 50 ft. of all wells including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 ft. of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spill or equipment leaks, container or equipment rinse or wash-water, and rain-water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad.

A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above-specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading sites.

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

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

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

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

DIRECTIONS FOR USE AND CONDITIONS OF SALE AND WARRANTY

IMPORTANT: Read the entire Directions of Use and the Conditions of Sale and Warranty before using this product. If terms are not acceptable, return the unopened product container at once.

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.

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

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Shoes plus socks
- Chemical resistant gloves, such as any waterproof material.

NON-AGRICULTURAL USE REQUIREMENTS

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

Do not enter treated areas without protective clothing until sprays have dried.

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.

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

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

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

GENERAL INFORMATION

This herbicide controls many 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 atrazines. If only resistant biotypes are expected to be present, use a registered non-triazine herbicide. Consult your state Agricultural Extension Service for specific recommendations.

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

This product is nonflammable.

Avoid using near adjacent desirable plants or in greenhouses, or injury may occur. To avoid spray drift, do not apply under windy conditions. Avoid spray overlap as crop injury may result.

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

Note: ALBAUGH, INC. does not recommend applications in combination with other herbicides or oils, except as specifically described on this label or in literature published by ALBAUGH, INC.

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

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

**Aerial application:** Use aerial application only where broadcast applications are specified. Apply in a minimum of 1 quart of water for each qt. of this product applied per acre. For postemergence treatments on corn and sorghum, apply the recommended rate in a minimum of 2 gallons of water/A. 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, 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 gal. 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 1/4 tsp. or 1.2 milliliters of a compatibility agent approved for this use such as Complex ® or Latron AG-44 ® (1/4 tsp. is equivalent to 2 pts. per 100 gals. 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 appropriate 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 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 incompatible, test the following methods of improving compatibility: (A) slurry the dry herbicide(s) in water before addition, or (B) add 1/2 of the compatibility agent to the fertilizer and the other 1/2 to the emulsifiable concentrate or flowable herbicide before addition to the mixture. If incompatibility is still observed, do not use mixture.

**Applications 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 damage 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. A petroleum-derived oil containing at least 1% suitable emulsifier.

Note: In the event of a compatibility problem when mixing oil with this product and water, a compatibility agent such as Compex ® or Latron AG-44® 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 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 the container 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 the tank as completely as possible before refilling to prevent a buildup of oil or emulsifiable concentrate. 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 a strong detergent solution or solvent. (11) Clean sprayer thoroughly immediately after use by flushing the system with water containing a detergent.

## AERIAL SPRAY DRIFT MANAGEMENT

### Spray Drift Management

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory.

### Aerial Drift Reduction Advisory

[This section is advisory in nature and does not supersede the mandatory label requirements.]

### Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (See Wind, Temperature and Humidity, and Temperature Inversions).

### Controlling Droplet Size

- Volume – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles – Use the minimum number of nozzles that provide uniform coverage.



- Nozzle Orientation – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

#### Boom Length

For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

#### Application Height

Applications should not be made at a height greater than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

#### Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.)

#### Wind

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

#### Temperature and Humidity

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

#### Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

#### Sensitive Areas

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

**ROTATIONAL CROPS:** (1) Do not rotate any crop except corn or sorghum until the following year, or injury may occur. (2) If applied after June 10, do not rotate with crops other than corn or sorghum the next year, or crop injury may occur. (3) In the High Plains and Intermountain areas of the West where rainfall is sparse and erratic or where irrigation is required, use only when corn or sorghum is to follow corn or sorghum or when a crop of untreated corn or sorghum is to precede other rotational crops. (4) In eastern parts of the Dakotas, KS, western MN, and NE, do not rotate to soybeans if the rate applied to corn or sorghum was more than 4 pts./A or equivalent band application rate, or soybean injury may occur. (5) Injury may occur to soybeans planted the year following application on soils having a calcareous

surface layer. (6) Do not plant sugar beets, tobacco, vegetables (including dry beans), spring-seeded small grains, or small-seeded legumes and grasses the year following application, or injury may occur.

Atrazine 4F Applied Alone - Corn or Grain Sorghum\*

Preplant Surface-Applied, Preplant Incorporated, or Preemergence (or Postemergence at 4 pts./A with Oil)

**Broadleaf and Grass Weeds Controlled**

barnyardgrass (watergrass)***	cocklebur**	nightshade	mustards
giant foxtail**	groundcherry	pigweed	wild oats
green foxtail***	jimsonweed	purslane	yellow foxtail***
large (hairy) crabgrass**	kochia	ragweed	annual morningglory
velvetleaf (buttonweed)***	lambsquarters	sicklepod**	witchgrass ( <i>Panicum capillare</i> )***

Postemergence with Emulsifiable Oil or Oil Concentrate in Water (2 + 2.4 pts./A)

**Broadleaf Weeds Controlled**

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

\*Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or higher set-backs) which are different from label, the more restrictive/protective requirements must be followed. 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.

\*\* Indicates 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 4F shown in Table 1 up to 30 days prior to planting. On coarse-textured soils, do not apply more than two weeks prior to planting.

If weeds are present at the time of treatment, apply in 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 the spring after plowing at the rate indicated 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 prior to weed emergence at the rate in Table 1.

**Postemergence (Broadleaf and Grass Control):** Apply before weeds exceed 1.5 in. in height and before corn exceeds 12 in. in height at rate in Table 1.

Table 1 - Broadleaf and Grass Weed Control on Corn\*

Maximum broadcast application rates for corn must be as follows:

If no atrazine was applied prior to corn emergence, apply a maximum of 4 pints (2 lb ai) per acre broadcast. If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 5 pints (2.5 lb ai) per acre per calendar year.

Apply a maximum of 4 pints (2 lbs ai) per acre as a single preemergence application on soils that are not highly erodible as defined by the Natural Resource Conservation Service or on highly erodible soils if at least 30% of the soil is covered with plant residues.

Apply a maximum of 3.2 pints (1.6 lbs ai) as a single preemergence application on highly erodible soils if <30% of the surface is covered with plant residues; or 4 pints (2 lbs ai) if only applied postemergence.

\*Broadleaf control (eastern CO, western KS, western NE, NM, OK Panhandle, west TX, and eastern WY): On sand, loamy sand, sandy loam, mild to strong alkaline soil, and all recently leveled soils, apply no more than 2.3 pts./A, either preplant surface, preplant incorporated, or preemergence. On other soil 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 set-backs) which are different from the label, the more restrictive/protective requirements must be followed. 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	1/2 - 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 no more than 20%, suitable emulsifier or surfactant blend. Petroleum-derived oils should contain at least 1% suitable emulsifier.

Broadleaf and Grass Control: For postemergence control of those weeds listed under Preplant Incorporated and Preemergence, broadcast 4 pts./A 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 2.4 pts./A plus emulsifiable oil or oil concentrate before pigweed and lambsquarters reach 6 inches in height and before all other weeds reach 4 inches in height. A cultivation may be necessary if all weeds are not controlled or if weeds regrow.

Use Precautions: For Applications with Emulsifiable Oil or Oil Concentrate in Water: (1) Inbred lines or any breeding stock may be severely injured by applications with emulsifiable oil or oil concentrate. (2) Adding other insecticides, herbicides, liquid fertilizers, or other materials is not recommended, because they may cause compatibility problems or crop injury. (3) Store and handle emulsifiable oil and oil concentrate carefully. Oil contaminated with even a small amount of water may not emulsify properly when added to the tank. To avoid crop injury, (4) Do not apply when crop is under stress from prolonged cold, wet weather, poor fertility, or other factors, or when crop is wet and succulent from recent rainfall. (5) Do not exceed 2.5 lbs. active ingredient (or 5 pts. of this product) per acre per calendar year. (6) Postemergence applications to corn must be made before corn exceeds 12 inches in height. (7) Pre-Harvest Interval (PHI) for field corn forage is 60 days. (8) Pre-Harvest Interval (PHI) for sweet corn forage use is 45 days.

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### 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
Ramrod® (propachlor)	Roundup
Lasso® or Lasso EC (alachlor)	Sutan +®

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 in a particular tank mix.

Note: When the labels of the above herbicides refer to Atrazine 80W, use equivalent rates of Atrazine 4F. One pound of 80W equals 1.6 pints of 4L.

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

In addition to the weeds listed under Atrazine 4F Applied Alone - Corn or 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 4F and Princep shown in Table 2 up to 30 days prior to planting. Applications made less than 30 days prior to planting may be as either a split or single treatment. On coarse-textured soils, do not apply more than two weeks prior to planting. Refer to the Atrazine 4F Alone - Preplant Surface-Applied section of the corn label for additional details.

If weeds are present at the 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

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

\*For control of most weeds.

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

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

Princep 80W, Princep 4L, or Princep Caliber 90 plus Roundup: Use as a 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 the 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 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 2-4 pts. of this product plus 1.25-2.5 lbs. of Princep 80W (or 2-4 pts. of Princep 4L, or 1.1-2.2 lbs. of 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 the appropriate rates to utilize in this tank mixture. Apply before, during, or after planting, but before the 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 the label for this product, Princep, and Gramoxone Extra.

Application Precautions for all Applications to Corn: (1) Do not apply more than 2.5 lbs./A active ingredient (5 pts./A of this product) per calendar year and do not apply more than 2.0 pounds active ingredient (4 pts./A of this product) per single application. (2) For best control of velvetleaf and cocklebur, the application rate cannot be less than 2 lbs./A of active ingredients, either alone or in tank mix combinations but must not exceed the maximum single application rate of 2.0 lbs. active ingredient, or the maximum total pounds of atrazine applied of 2.5 pounds active ingredient per year. (3) Following harvest, plow (moldboard or disk-plow) and thoroughly till the soil in the fall or spring to minimize possible injury to spring-seeded rotational crops, regardless of the 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 2/3 the recommended rate of Atrazine 4F shown in Table 3 for the soil texture as a split treatment 30 - 45 days prior to planting and the remainder at planting. Applications made less than 30

days prior to planting may be as either a split or single treatment. Under dry conditions, irrigation after application is recommended to move Atrazine 4F 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 the 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 the 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>

Maximum broadcast application rates for sorghum must be as follows:

If no atrazine was applied prior to sorghum emergence, apply a maximum of 4 pints (2 lb ai) per acre broadcast. If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 5 pints (2.5 lb ai) per acre per calendar year.

Apply a maximum of 4 pints (2 lbs ai) per acre as a single preemergence application on soils that are not highly erodible as defined by the Natural Resource Conservation Service or on highly erodible soils if at least 30% of the soil is covered with plant residues.

Apply a maximum of 3.2 pints (1.6 lbs ai) as a single preemergence application on highly erodible soils if <30% of the surface is covered with plant residues; or 4 pints (2 lbs ai) if only applied postemergence.

<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 higher set-backs) which are different from the label, the more restrictive/protective requirements must be followed. 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.

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 the 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, broadcast 1.6-2.4 pts./A after bed preparation, during or after planting, but before sorghum and weeds emerge and before the first furrow irrigation. Follow with several regular irrigations, making sure to thoroughly wet all soil.

Application 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. Application 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 weed control with emulsifiable oil or oil concentrate in water: Broadcast 2.4 pts./A for control of many broadleaf weeds. Application should be made 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 other desert regions of AZ and CA, apply when sorghum is 6-12 inches in height, but before it reaches boot stage. In all other areas, apply after sorghum reaches 3-leaf stage but before it exceeds 12 inches in height. Add 1 gal. of emulsifiable oil/A for ground applications 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 4F Applied Alone - Corn or Grain Sorghum - Postemergence with Emulsifiable Oil or Oil Concentrate in Water.

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

Postemergence broadleaf weed control with surfactant (CO, western KS, NM, OK, TX, and desert regions of AZ and CA only): Broadcast 2.4 pts./A plus 0.75 to 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.

Application 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 soils may result in crop injury. (3) Following harvest, plow (moldboard or disk-plow) and thoroughly till the 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 at-planting systemic insecticide applied in-furrow are used. (5) Do not apply more than 2.5 lbs. active ingredient (5 pts. of this product) per acre per calendar year. (6) For all soil applications prior to crop emergence (except for pre-emergence use on bedded sorghum in AZ and CA), do not apply to coarse-textured soils, i.e., sand, loamy sand, 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: Pre-Harvest Interval (PHI) for sorghum forage uses after preemergent application is 60 days. (9) Pre-Harvest Interval for sorghum forage uses after postemergent application is 45 days. Post emergence application to sorghum must be made before crop reaches 12 inches in height.

#### Tank Mixtures For Grain Sorghum

Dual 8E: Use as a tank mixture with Dual 8E for control of those weeds listed on the Dual 8E 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 postemergence control of winter weeds only, such as henbit, seedling dock, and annual thistle on fall bedded land in the Gulf Coast and Blacklands of Texas. Apply 0.8-1 qt./A postemergence to the weeds in November or December to land that will be planted to corn, grain sorghum, or forage sorghum the following spring. For best results, add a suitable surfactant, such as X-77, 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 4F 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 5 pts./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 application of Atrazine 4F. 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 4F Applied Alone - Corn or Grain Sorghum - Preplant Surface-Applied, Preplant Incorporated, or Preemergence.

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

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

Wheat-Corn-Fallow (CO, KS, ND, NE, SD, and WY): This product controls cheatgrass (downy brome, chess), kochia, mustards, pigweed, Russian thistle, wild lettuce, wild sunflower, and volunteer wheat during the period after wheat harvest. Weed control may extend into the 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. a.i./A of Atrazine 4F for any application. Do not make more than one application per cycle.

For soils with a pH less than 7.5 in ND and SD, apply 1-2 lbs. a.i./A for any application. Do not make more than one application per cycle. Use the higher rate on fine-textured soils and where heavy weed infestations are expected. In the event grasses are present in the following spring, use a grass herbicide registered for use on corn.

For all other locations, do not apply more than 2.25 pounds active ingredient per acre for any application. Do not apply more than one application per cycle.

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, ND, NE, SD and WY): For preemergence control of cheatgrass (downy brome, chess), common lambsquarters, field pennycress, kochia, mustard, Russian thistle, wild lettuce, and suppression of volunteer wheat during fallow period of a wheat-fallow-wheat rotation, broadcast 1-2 pts./A on all soils except those listed under "Use Precautions." For control of pigweed and wild sunflower, use the higher rate. Apply to stubble ground. Treat only once during the same fallow period.

#### TANK MIXTURES FOR CHEMICAL FALLOW

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

Cyclone/Gramoxone Extra: If weeds are present at application, a tank mix with Cyclone/Gramoxone Extra may be used. Broadcast 5 pts. of Atrazine 4F plus a suitable amount of Cyclone/Gramoxone Extra in 20-60 gals. of water/A by ground equipment. Add 0.5-1 pt. of a nonionic surfactant, such as SPRAYFUSE 90, per 100 gals. of spray mixture. Add Atrazine 4F to the spray tank first and thoroughly mix with water. Then add Cyclone/Gramoxone Extra followed by surfactant. Use the higher rate of Cyclone/Gramoxone Extra specified on label if weeds are 4-6 inches tall. This mixture will not control weeds taller than 5



inches. Apply to stubble ground. Treat only once during the same fallow period. Refer to label for Gramoxone Extra/Cyclone label for further directions, precautions, and limitations.

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

Cyclone/Gramoxone Extra: If weeds are present at application, a tank mix with Cyclone/Gramoxone Extra may be used. Broadcast 1-2 pts. of Atrazine 4F plus a suitable amount of Cyclone/Gramoxone Extra in 20-60 gals. of water/A by ground equipment. Add 0.5 to 1 pt. of a nonionic surfactant, such as SPRAYFUSE 90, per 100 gals. of spray mixture. Add Atrazine 4F to the spray tank first and thoroughly mix with water. Then add Cyclone/Gramoxone Extra followed by surfactant. Use the higher rate of Cyclone/Gramoxone Extra specified on label if weeds are 4-6 inches tall. This mixture will not control weeds taller than 5 inches. Apply to stubble ground. Treat only once during the same fallow period. Refer to label for Cyclone/Gramoxone Extra 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 Cyclone/Gramoxone Extra, plant at least 2 inches deep and 12 months or more after application.

Landmaster II (CO, IA, KS, MO, NE, OK, OR, SD, and WA)

If weeds are present at application, a tank mix with Landmaster II may be used. Apply 40 ounces of Landmaster II plus 2 pts. or less of Atrazine 4F/A. Use 54 ounces of Landmaster II plus 4 pts. or less of Atrazine 4F/A. Use 64 ounces of Landmaster II plus 5 pts. or less of Atrazine 4F/A for hard to control grass species. Barnyard grass will be suppressed at 64 ounces of Landmaster II per acre and controlled at 86 ounces per acre. The addition of ammonium sulfate is recommended to increase the performance of Landmaster II and Atrazine 4F. In Oregon and Washington, do not exceed 2 pts. of Atrazine 4F per acre. For ground applications, apply in 3 to 10 gallons of water/A. For aerial applications, apply in 3 to 5 gallons of water/A. Refer to label for Landmaster II for further directions, precautions, and limitations.

Roundup RT (CO, ID, KS\*, MN\*, MT, NE\*, ND, OK\*, SD, UT, WA\*, and WY)

If weeds are present at application, a tank mix with Roundup RT may be used. Apply 12 ounces of Roundup RT plus 2 pts. or less of Atrazine 4F/A or 16 ounces of Roundup RT plus 4 pts. or less of Atrazine 4F/A or 20 ounces of Roundup RT plus 2 to 5 pts. of Atrazine 4F/A plus 0.5 to 1 percent nonionic surfactant such as SPRAYFUSE 90 by total spray volume. In Oregon and Washington, do not exceed 2 pts. of Atrazine 4F/A. Barnyard grass will be suppressed at the 20 ounces per acre rate and will require up to 26 ounces per acre for control. The addition of ammonium sulfate is recommended to increase the performance of Roundup RT and Atrazine 4F plus a nonionic surfactant such as SPRAYFUSE 90 in a tank mix. For ground applications, apply in 3 to 10 gallons of water/A. For aerial applications, apply in 3 to 5 gallons of water/A. Refer to label for Roundup RT for further directions, precautions, and limitations. \*Roundup RT can only be used in certain counties in Kansas, Minnesota, Nebraska, Oregon, and Washington. Check the Roundup RT label on those county restrictions.

Landmaster BW: (All states except: AL, FL, TN, HI, AK, SC, ME, NH, VT, OH, CA, GA, and MD)

If weeds are present at application, a tank mix with Landmaster BW may be used. Apply 40 ounces of Landmaster BW plus 2 pts. or less of Atrazine 4F/A. Use 54 ounces of Landmaster BW plus 4 pts. or less of Atrazine 4F/A. Use 64 ounces of Landmaster BW plus 5 pts. or less of Atrazine 4F/A. The addition of ammonium sulfate is recommended to increase the performance of Landmaster BW and Atrazine 4F. In Oregon and Washington, do not exceed 2 pts. of Atrazine 4F per acre. For ground applications, apply in 3 to 10 gallons of water per acre. For aerial applications, apply in 3 to 5 gallons of water per acre. Refer to label for Landmaster BW for further directions, precautions, and limitations.

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

Note: Do not graze treated areas within 6 months after application, or illegal residues may result.

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

## ROADSIDES

To control certain annual weeds in established perennial grasses along roadsides in CO, KS, MT, NE, ND, SD and WY, including cheatgrass (downy brome, chess) common (annual) broomweed, little barley, medusahead, sagewort, and tumble mustard, broadcast 2 pts./A (1.0 lb ai) in a minimum of 10 gals. 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, bluegrama, bromegrass, buffalograss, crested wheatgrass, Indiagrass, little 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.

Do not apply more than 2 pts./A (1.0 lb ai) for any application.

Do not apply more than 1 application per year.

**Note:** To avoid illegal residues, (1) Do not cut or feed roadside grass hay. (2) Do not allow livestock to graze in treated areas.

## SUGARCANE

### General Use Directions for All States

For control of many broadleaf and grass weeds, including amaranths, crabgrass, fireweed, flora's paintbrush, foxtails, junglerice and wiregrass, broadcast 4-8 pts./A of Atrazine 4F 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 4F are used alone, apply in a minimum of 1 qt. of water for each 1 qt. of Atrazine 4F 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 speeds do not exceed 10 m.p.h. To assure that spray will not adversely affect adjacent sensitive nontarget plants, apply Atrazine 4F alone by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

**Use Precautions for All States and Uses:** (1) Injury to sugarcane may occur when under moisture stress, when soil is of low absorptive capacity, or when land is first cropped to sugarcane. (2) Do not apply after close-in. (3) Do not apply more than 8 pints (4 lbs ai) per acre for any application. (4) Do not apply more than 20 pts/A (10 lbs ai) to any one crop of sugarcane, or crop injury may result.

For specific weed problems the following may be used. Other rate and application timings may be used for other weed spectrums and cultural practices, provided they are within the above "General Use Directions for All States" and are consistent with the "Use Precautions for All States and Uses."

Florida

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

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

1. Apply 8 pts./A preemergence. Follow with one or two applications, as needed, postemergence to sugarcane and weeds, at 4 pts./A. Treat before weeds exceed 1.5 inches in height.
2. Apply 1-3 times, as needed, at 4 pts./A postemergence to sugarcane and weeds. Treat before weeds exceed 1.5 inches in height.

Louisiana

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

Use Precautions: To avoid crop injury, (1) Do not apply more than 20 pints./A to any one crop of sugarcane. (2) If making 4 pts./A application during the summer fallow period, do not exceed 16 pints./A during the remainder of the growing season, or illegal residues may result.

Texas

Use Atrazine 4F for control of barnyardgrass, pigweed, purslane, and sunflower, in plant or ratoon sugarcane.

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

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

TURFGRASS FOR SOD (Florida Only)

St. Augustinegrass, Centipedegrass, and Zoysiagrass: Broadcast 4-8 pts./A according to soil texture to control those weeds listed under Atrazine 4F Applied Alone - Corn or Grain Sorghum - Preplant Surface-Applied, Preplant Incorporated, or Preemergence.

Muck or peat	8 pts.	Old beds:	Within 2 days after lifting sod.
		New beds:	3-4 days after sprigging or plugging.
Sandy soil	4 pts.	Old beds:	Within 2 days after lifting sod.
		New beds:	7-10 days after sprigging or plugging.

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

Use Precautions: To avoid crop injury, (1) Do not apply within 30 days prior to cutting or lifting. (2) Do not apply in combination with surfactants or other spray additives. (3) Use only on turfgrass reasonably free of infestations of insects, nematodes and diseases. (4) On newly sprigged turfgrass, temporary slowing of growth may follow application. (5) For muck or peat soil do not apply more than 8 pints (4 lbs ai) per acre for any application. Do not apply more than 12 pints (6 lbs ai) per acre per year. (6) For sandy soils do not apply more than 4 pints (2 lbs ai) per acre for any application. Do not apply more than 6 pints (3 lbs ai) per acre per year.

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## SOD PRODUCTION (in states other than Florida\*)

\*For use on turfgrass for sod in Florida, see "TURFGRASS FOR SOD (Florida Only)" in above section.

Bermudagrass, Centipedegrass, St. Augustinegrass and Zoysiagrass: Apply Atrazine 4L after October 1 before emergence of winter annual weeds for control of annual bluegrass, burclover, carpet burweed, chickweed, corn speedwell, henbit, hop clover and spurweed. Atrazine 4L will control annual bluegrass even if it is emerged at the time of treatment. For control of summer annual weeds listed in the Atrazine 4L Applied Alone – Corn or Grain Sorghum – Preplant Surface-Applied, Preplant Incorporated, or Preemergence section of this label, also apply Atrazine 4L in late winter before the weeds emerge. Apply in a minimum of 15 gallons of water per acre or 1 gallon per 1,000 sq. feet.

Where annual bluegrass is the major weed, use 2 pints/A (22 ml or 0.75 fl. oz. per 1,000 sq. ft.). Use 4 pints/A (44 ml or 1.5 fl. oz. per 1,000 sq. ft.) for control of the other weeds named above. Do not exceed 2 pints/A per treatment on newly sprigged turfgrass or on hybrid bermudagrass such as Tiflawn, Tifway, and Ormond.

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

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 infestations of insects, nematodes and diseases. (4) On newly sprigged turfgrass, temporary slowing of growth may follow applications. (5) For muck or peat soil do not apply more than 8 pints (4 lbs ai) per acre for any application. Do not apply more than 12 pints (6 lbs ai) per acre per year. (6) For sandy soils do not apply more than 4 pints (2 lbs ai) per acre for any application. Do not apply more than 6 pints (3 lbs ai) per acre per year.

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

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

Bermudagrass, Centipedegrass, St. Augustinegrass and Zoysiagrass: Apply 1 – 2 pints/A of Atrazine 4L after October 1 before emergence of winter annual weeds for control of annual bluegrass, burclover, carpet burweed, chickweed, corn speedwell, henbit, hop clover and spurweed. Atrazine 4L will control annual bluegrass even if it is emerged at the time of treatment. For control of summer annual weeds listed in the Atrazine 4L Applied Alone – Corn or Grain Sorghum – Preplant Surface-Applied, Preplant Incorporated, or Preemergence section of this label, also apply Atrazine 4L in late winter before the weeds emerge. Apply in a minimum of 15 gallons of water per acre or 1 gallon per 1,000 sq. feet.

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 North Carolina, (with the exception of the Virginia Coastal Plains) or west of the high rainfall areas of eastern Oklahoma and eastern Texas. (4) Do not use on muck or alkaline soils. (5) Do not apply over the rooting area of trees or ornamentals not listed on this label. (6) Do not overseed with desirable turfgrass within 4 months before or 6 months after treatment. (7) Do not apply this product to newly seeded bermudagrass until it has overwintered and has a well-developed rhizome system. Do not exceed 4 pints/A of this product within 12 months of seeding bermudagrass. (8) Do not apply more than 2 pints/A (1.0 lb ai) for any application. Do not apply more than 4 pints/A (2.0 lb ai) per acre per year.

## MACADAMIA NUTS

For preemergence control of many broadleaf and grass weeds, including crabgrass, foxtail, wiregrass, Flora's paintbrush, spanish needles, and fireweed, broadcast 4-8 pts./A before harvest and before weeds

emerge. Repeat as necessary. Do not spray when nuts are on ground during harvest period. Do not apply by air.

Notes: (1) Do not apply more than 8 pints (4 lbs ai) per acre for any application. (2) Do not apply more than 16 pints (8 lbs ai) per acre per year.

#### GUAVA

Use only on established plantings which are at least 18 months old. Apply as a directed spray at 4-8 pts./A of Atrazine 4F 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, spanish needles 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 month intervals. (3) Do not apply more than 16 pts. (8 lbs ai) of Atrazine 4F per year. (4) Do not apply more than 8 pints (4 lbs ai) per acre for any application.

#### CONIFERS

For control of annual broadleaf and grass weeds prior to transplanting, after transplanting or in established conifers [including Douglas fir, grand fir, noble fir, white fir, Austrian pine, bishop pine, Jeffrey pine, knobcone pine, loblolly pine, lodgepole pine (Shore pine), monterey pine, ponderosa pine, Scotch pine, slash pine, blue spruce and Sitka spruce]: Broadcast 4-8 pts. in a minimum of 5 gals. of water per acre by air or 10 gals. by ground before weeds are 1.5" 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 4F before transplanting. In areas where spring and summer rainfall is inadequate to activate Atrazine 4F, apply during fall prior to spring transplanting.

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

Quackgrass Control: Broadcast 8 pts. 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.

Use Precautions: (1) In areas west of the Rocky Mountains (except the Great Basin), grazing may begin 7 months after a fall application or 3 months after a winter or spring application. (2) To prevent illegal residues, do not graze treated areas of the Great Basin, or areas east of the Rocky Mountains. (3) Temporary injury to trees may occur following use of Atrazine 4F on coarse-textured soil. (4) To avoid crop injury, do not apply to seedbeds. (5) Also apply only once per year. (6) Do not apply more than 8 pints (4 lbs ai) per acre per year. (7) Do not apply more than 4 pounds a.i. per acre for any 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. 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 4F by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

#### STORAGE AND DISPOSAL

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

#### PESTICIDE STORAGE

Groundwater contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material. Do not store this product near fertilizers, seeds, insecticides, or fungicides.

Do not store near heat or open flame. Reclose all partially used containers by thoroughly tightening screw cap. Absorb any spill with a suitable clay absorbent and dispose of as indicated under "Pesticide Disposal." For safety and prevention of unauthorized use, all pesticides should be stored in locked facilities. To prevent accidental misuse, different pesticides should be stored in separate areas with enough distance between to provide clear identification. Opened, partially used pesticides should be stored in original labeled containers when possible. When transfer to another container is necessary because of leakage or damage, carefully mark and identify contents of the new container.

#### PESTICIDE DISPOSAL

Open dumping is prohibited. Wastes resulting from the use of this product are acutely toxic. Improper disposal of unused pesticide, spray mixture, or rinsate is a violation of federal law. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state or local procedures. For guidance in proper disposal methods, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office.

#### CONTAINER DISPOSAL

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

Bulk Tanks: Triple rinse (or equivalent) and wash with appropriate cleaners before reusing.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire or other emergency, call CHEMTREC at 1-800-424-9300.

#### CONDITIONS OF SALE AND WARRANTY

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 ALBAUGH, INC., its Supplemental Distributors, or the Seller. All such risks shall be assumed by the Buyer.

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Warranty, which may be varied only by agreement in writing signed by a duly authorized representative of ALBAUGH, INC.

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