

AAtrex 4LC

Herbicide

For use by commercial applicators

For season-long weed control in corn and sorghum

For weed control in certain other crops: in noncrop areas; and industrial sites

Active Ingredients:

Atrazine: 2-chloro-4-ethylamino-6-isopropylamino-s-triazine..... 40.8%
Related compounds..... 2.2%

Inert Ingredients: 57.0%

Total: 100.0%

AAtrex 4LC contains 4 lbs. active ingredients per gallon.

Keep Out of Reach of Children.

Caution

See additional precautionary statements inside booklet.

EPA Reg. No. 100-535

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CIBA-GEIGY

DIRECTIONS FOR USE AND CONDITIONS OF SALE AND WARRANTY

IMPORTANT: Read the entire Directions for Use and the Conditions of Sale and Warranty before using this product.

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 CIBA-GEIGY or the Seller. As such risks shall be assumed by the Buyer.

CIBA-GEIGY warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use, subject to the inherent risks referred to above. CIBA-GEIGY makes no other express or implied warranty of Fitness or Merchantability or any other express or implied warranty. In no case shall CIBA-GEIGY or the Seller be liable for consequential, special, or indirect damages resulting from the use or handling of this product. CIBA-GEIGY and the Seller offer this product, and the Buyer and user accept it, subject to the foregoing Conditions of Sale and Warranty, which may be varied only by agreement in writing signed by a duly authorized representative of CIBA-GEIGY.

Directions for Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

FAILURE TO FOLLOW ALL PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.

General Information

This herbicide controls many annual broadleaf and grass weeds in corn, sorghum, sugarcane, pineapple, 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.

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.

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: CIBA-GEIGY does not recommend applications in combination with other herbicides or oils, except as specifically described on the label or in literature published by CIBA-GEIGY.

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 gal of spray mixture/A 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 suspension, and (3) to provide a minimum of 20% bypass at all times. Use centrifugal pumps which provide proper shear action for dispersing and mixing this product. The pump should provide a minimum of 10 gal/minute/100 gal tank size circulated through a correctly positioned sparger tube or jets.

Use screens to protect the pump and to prevent nozzles from clogging. Screens placed on the suction side of the pump should be 16-mesh or coarser. Do not place a screen in the recirculation line. Use 50-mesh or coarser screens between the pump and boom, and where required, at the nozzles. Check nozzle manufacturer's recommendations.

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

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

Aerial application: Use aerial application only where broadcast applications are specified. Apply in a minimum of 1 qt of water for each quart of AAtrex 4LC applied per acre. For postemergence treatments on corn and sorghum, apply recommended rate in a minimum of 2 gal 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 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.

To determine the compatibility of AAtrex 4LC 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 pint of AAtrex 4LC or other 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 gal/A).

For each pound of a 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 gal/A).

After thorough mixing, let stand for 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 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 1/2 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 ruffling or roring action on the liquid surface. (5) Pour product directly from container into tank. (6) Continue filling tank until 90% full. Increase agitation if necessary to maintain surface action. (7) Add emulsifiable oil or 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.

Center pivot sprinkler application:

Preemergence or postemergence: Apply AAtrex 4LC alone or in tank mixtures with other herbicides on this label which are registered for center pivot application with irrigation water. Apply either after planting before crop and weeds emerge or after crop emergence but before lay-by (20-30 inches) and before weeds exceed 1.5 inches in height. Apply at rates recommended on this label. Prepare mixture with a minimum of 1 part water to 1 part product. Injecting a larger volume of a more dilute slurry per hour will assure more accurate calibration of metering equipment. Maintain sufficient agitation to keep herbicide in suspension. Meter slurry into irrigation water during entire period. Apply 1/2 inch of water. Use the lower water volume on coarser textured soils; the higher volume on finer textured soils. More than 1/2 inch of water may reduce weed control by moving herbicide below the effective zone in the soil. Inject dilute slurry into system through a positive displacement pump.

Refer to supplemental literature published by CIBA-GEIGY for more information on calibration.

Precautions: (1) Apply only through irrigation systems containing anti-siphon and check valves to prevent contamination of well during shutdown and overflow of solution tank. (2) Inject ahead of any right angle turn in the main line to insure adequate mixing. (3) Chemical injection pumps and water pumps must have interlocking controls to insure simultaneous shutoff. (4) Application when drift may occur from windy conditions when system joints and connections are leaking or when nozzles are not providing uniform distribution may cause crop injury. (5) Where sprinkler distribution patterns do not overlap sufficiently, unacceptable weed control may result. Where sprinkler distribution patterns overlap excessively, crop injury may result.

AAtrex 4LC Applied Alone—Corn or Grain Sorghum

Preplant Incorporated or Preemergence

Weeds Controlled

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

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
COARSE Sand, loamy sand, sandy loam	4 pt
MEDIUM Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay or silty clay with low organic matter	4.75 pt
FINE 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)	5 pt
Peat, muck, and high organic clay (apply postemergence only)	6 pt

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

Lay-by treatment (Broadleaf and grass control): Broadcast 2-4 pt/A before weeds are 1.5 inches tall and corn is 20-30 inches tall. When using nitrogen solutions, direct the spray to lower 3-4 inches of corn stalks to avoid corn lodging injury.

Postemergence with emulsifiable oil or oil concentrate in water: Add 1 gal of emulsifiable oil A for ground application or 0.5 gal A for aerial application, or add 1 qt of oil concentrate A for ground application.

Broadleaf and grass control: Broadcast 4 pt A plus emulsifiable oil or oil concentrate after weed emergence, but before weeds reach 1.5 inches in height.

Broadleaf control: Broadcast 2.4 pt 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.

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 or 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, quackgrass, 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 an economic problem. If yellow nutsedge or Canada thistle regrow following last application, cultivate once.

Four alternative methods of use for control of yellow nutsedge and Canada thistle are listed below in order of preference. If other weed species, such as annual grasses, are also expected, use alternative 2 or 4.

1. Broadcast 4 pt A plus 1 gal of emulsifiable oil or 1 qt of oil concentrate. Apply 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 the first application.
2. Broadcast 4 pt A preplant for control of yellow nutsedge or broadcast 4 pt A during or shortly after planting, but prior to crop or weed emergence for control of Canada thistle. Follow with an application of 4 pt A plus 1 gal of emulsifiable oil or 1 qt of oil concentrate after corn and weeds emerge, but before yellow nutsedge or Canada thistle reaches a height of 6 inches.
3. Broadcast 8 pt A plus 1 gal of emulsifiable oil or 1 qt of oil concentrate after crop emerges, but prior to lay by (20-30 inches). Apply after yellow nutsedge and Canada thistle emerge, but before yellow nutsedge is 3 inches tall or Canada thistle is 6 inches tall.
4. Broadcast 8 pt A before, during, or shortly after planting, but before crop or weed emergence (yellow nutsedge control only).

Note: Do not use emulsifiable oil or oil concentrate when corn is wet or under stress, especially when using 8 pt A of this product. See Precautions for applications with emulsifiable oil or oil concentrate in water for additional directions.

Quackgrass control on land going into corn production:

Spot application: Broadcast 4 pt A in fall or spring. Follow 1-3 weeks later. Apply a second application at 4 pt A in spring before, during, or after planting, but before weeds are 1.5 inches high. This spot application will control quackgrass and most annual broadleaf and grass weeds.

Single application: Broadcast 6-8 pt A in fall or spring. Follow 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 [®] (metolachlor)	Lasso [®] or Lasso EC (alachlor)
Dual + paraquat	Lasso or Lasso EC + Roundup
Dual + Roundup [®] (glyphosate)	Lasso or Lasso EC + paraquat
Dual + Princep [®]	Paraquat
Dual + Princep + paraquat	Princep
Dual + Princep + Roundup	Princep + paraquat
Bexton [®] or Ramrod (propachlor)	Princep + Roundup
	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 AAtrex 4LC. One lb of 80W equals 1.6 pt of 4LC.

Princep 80W, Princep 4L (4LC), or Princep Caliber[®] 90

In addition to the weeds listed under **AAtrex 4LC Applied Alone — Corn and Grain Sorghum — Preplant 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: 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 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 (4LC) 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 [†]	This product	Princep 80W [†]
Sand, loamy sand, sandy loam	2 pt	1.25 lb	1.33 pt	1.67 lb
Loam, silt loam, silt clay loam, sandy clay loam, silty clay loam, sandy clay or silty clay with low organic matter	2.4 pt	1.5 lb	1.6 pt	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)	3 pt	1.8 lb	1.92 pt	2.4 lb

^{*}For control of most weeds.

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

[†]When using Princep Caliber 90 or Princep 4L (4LC), use equivalent rates. One lb of Princep 80W equals 0.9 lb of Princep Caliber 90 or 1.6 pt of Princep 4L (4LC).

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

Princep 80W, Princep 4L (4LC), or Princep Caliber 90 plus Paraquat: Use as tank mixture with Princep and paraquat to kill existing vegetation and for residual weed control where corn will be planted directly into a cover crop, established sod, or in previous crop residues. Add this product and Princep to water in spray tank, agitating until thoroughly mixed. Then add paraquat and a nonionic surfactant, such as X-77*. Continue agitation during application. Broadcast 2-4 pt of this product plus 1.25-2.5 lb Princep 80W (or 2-4 pt Princep 4L (4LC)) or 1-1.2-2 lb Princep Caliber 90 plus 1-2 pt paraquat in 20-60 gal of water per sprayed acre. Apply before, during, or after planting, but before corn emerges. Add 0.5 pt of a nonionic surfactant, such as X-77, per 100 gal of spray mixture. Use the 2 pt rate of paraquat if existing vegetation is 4-6 inches tall. This mixture will not control weeds taller than 6 inches.

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

Precautions for all applications to corn: (1) Do not apply more than 8 pt 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 spring-seeded rotational crops, regardless of rate used.

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

Rotational crops: (1) Do not rotate to any crop except corn or sorghum until the following year, or injury may occur. (2) If applied after June 10, do not rotate with crops other than corn or sorghum the next year, or crop injury may occur. (3) If the broadcast rate, or equivalent band application rate, exceeds 6 pt A of AATrex 4LC, or 6 pt A of AATrex 4LC plus Princep 4L (or equivalent of another Princep formulation), 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 4 pt A or equivalent band application rate, or soybean injury may occur. (6) Injury may occur to soybeans planted the year following application on soils having a calcareous surface layer. (7) Do not plant sugar beets, tobacco, vegetables (including dry beans), spring-seeded small grains, or small-seeded legumes and grasses the year following application; injury may occur.

Sorghum and Sorghum-sudan Hybrids (Grain and Forage Types)

Preplant (Broadleaf and grass control): Broadcast 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 prior to planting.

Preemergence (Broadleaf and grass control): Apply during or shortly after planting, but prior to 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 A
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, silty clay loam, sandy clay loam, silty clay loam, sandy clay, silty clay, clay	less than 1%	3-2.4 pt
	1-1.5%	3-2.4 pt
	more than 1.5%	4-4.75 pt

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

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 pt 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.

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 A
Sand or loamy sand		DO NOT USE
Sandy loam		See directions for postemergence broadleaf weed control
Silt loam to sandy clay loam	Completely emerged	4-4.75 pt
Clay and Pullman clay soil	6 inches	4-4.75 pt
Silty clay loam and finer textured soil	Completely emerged	6 pt

Postemergence broadleaf weed control with emulsifiable oil or oil concentrate in water: Broadcast 2.4 pt A for control of many broadleaf weeds. Apply before pigweed and lambsquarters reach 6 inches in height and before all other weeds reach 4 inches in height. In CO, western KS, NM, OK, TX, and desert regions of AZ and CA, apply when sorghum is 6-10 inches in height, but before it reaches boot stage. In all other areas, apply after sorghum reaches the 3-leaf stage. Add 1 gal of emulsifiable oil A for ground application and 0.5 gal A for aerial application, or add 1 qt A of oil concentrate for ground application. A cultivation may be necessary if all weeds are not controlled or if weeds regrow.

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

Precautions for applications with emulsifiable oil or oil concentrate in water: See Precautions for applications with emulsifiable oil or oil concentrate in water, in Corn section.

Postemergence broadleaf weed control with surfactant (CO, western KS, NM, OK, TX, and desert regions of AZ and CA only): Broadcast 2.4 pt A 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 furrows, 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.

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 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[®]-treated sorghum seed. Refer to the Dual 8E label for all directions, precautions, and limitations.

AAtrex 4LC 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 6 pt 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 AAtrex. 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 AAtrex 4LC 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, mustard, 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 pre-emergence 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 pt 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 as 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.

Paraquat: If weeds are present at application, a tank mix with paraquat may be used. Broadcast 6 pts of AAtrex 4LC plus 1-2 pt of paraquat in 20-60 gal of water A by ground equipment. Add 0.5-1 pt of a nonionic surfactant, such as X-77, per 100 gal of spray mixture. Add AAtrex to spray tank first and thoroughly mix with water. Then add paraquat followed by surfactant. Use the 2 pt rate of paraquat 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 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: If weeds are present at application, a tank mix with paraquat may be used. Broadcast 1-2 pt of AAtrex 4LC plus 1-2 pt of paraquat in 20-60 gal of water A by ground equipment. Add 0.5-1 pt of a nonionic surfactant, such as X-77, per 100 gal of spray mixture. Add AAtrex to spray tank first and thoroughly mix with water. Then add paraquat followed by surfactant. Use the 2 pt rate of paraquat 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 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, 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 AAtrex 4LC alone by aircraft at a minimum upwind distance of 400 ft from sensitive plants, or apply AAtrex 4LC + Igran 80W at a minimum upwind distance of 500 ft from sensitive plants. When applying AAtrex 4LC + 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 1-2 pt A on soils with less than 2% organic matter, or apply 2-4 pt A on soils with 2% or higher organic matter.

Precaution: Make only one application per year.

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 tumbler 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 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 AAtrex 4LC 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 1.6-2 pt A in fall after rains begin but before ground freezes. Perennial range grasses 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 12 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 1-2 pt A in fall before ground freezes.

Southern Great Plains (OK, TX): Broadcast 2 pt A 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 1-1.5 pt A 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 **AAtrex 4LC 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 4 pt A 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 4 pt A in April or early May, before weed emergence.

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 2-4 pt A 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.

Established Orchardgrass Grown for Seed (Pacific Northwest Only)

AAtrex aids in control of annual ryegrass, rattail fescue, and volunteer orchardgrass. Broadcast 4 pt A of AAtrex 4LC in at least 15 gal of water to feed which has been burned after first fall rain.

Precautions: (1) Apply only to orchardgrass from which seed crop has been harvested. (2) Do not apply to orchardgrass more than two years in succession. (3) Some yellowing or crop stunting may occur.

Note: Do not graze treated land within 6 months of application. Do not plant treated land to other crops for 16 months.

Sugarcane

For control of many broadleaf and grass weeds, including amaranths, crabgrass, freweed, Florida pantbrush, foxtail, quince, and wiregrass, broadcast 4-8 pt A of AAtrex 4LC at time of planting or ratooning but before sugarcane emerges. Broadcast aerially, 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 interine after emergence as directed sprays. Repeat treatments, where needed, may be applied broadcast, band, or interine 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 AAtrex are used, a one-time application of 1 qt of water for each 1 qt of AAtrex 4LC 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 AAtrex 4LC alone by aircraft at a minimum upwind distance of 400 ft from sensitive plants.

Florida

For control of emerged pennyroyal weed, apply 0.8-1.2 pt A 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, pennyroyal (artillery) weed, and spiny amaranth, use one of the following methods at planting or ratooning.

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

Texas

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

Apply 8 pt A of AAtrex 4LC preemergence. Follow with one or two applications, as needed, at 6 pt 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 soils of low adsorptive capacity, or when land is first cropped to sugarcane. (2) Do not apply after close-in. (3) Do not apply more than 20 pt A to any one crop of sugarcane.

Turf Grasses for Sod

St. Augustinegrass, Centipedegrass, and Zoysia Grass

Broadcast 4-8 pt A according to soil texture to control those weeds listed under **AAtrex 4LC Applied Alone — Corn or Grain Sorghum — Preplant Incorporated or Preemergence.**

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

If weeds regrow, apply an additional 4 pt A on muck or peat, or 2 pt A 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, foxtail, wiregrass, Florida pantbrush, spanishneedles, and freweed, broadcast 4-8 pt 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.

Pineapple

For control of purslane, spanishneedles, annual grasses, annual bindweed, ageratum, amaranth, rattail, Florida pantbrush, freweed, spurge, indigo, and papaya, apply up to 12.8 pt A as a blanket spray immediately after planting or following harvest. Make additional blanket or interspace applications of up to 3.2 pt A at 1-2 month intervals, as needed, prior to differentiation. Apply in 20-40 gal of water/A to assure thorough coverage.

Precautions: (1) Do not apply more than 0.1 pt (7.5 gal) A per cycle. (2) Repeated monthly applications to past forage may slow plant growth and delay fruiting.

Note: Do not apply within 45 days of fruit harvest or forage harvest if forage is to be fed to livestock.

Guava

Use only on established plantings which are at least 18 months old. Apply as a directed spray at 4.8 qt A of AAtrex 4LC in 20-30 gal of spray mix preemergence or early postemergence to weeds. When applying postemergence, the use of a surfactant and greater spray volume (8-10 gal of spray mix per acre) may enhance weed control. Do not apply more frequently than at 4 month intervals. Do not apply more than 16 pt of AAtrex 4LC per year. Controls many annual broadleaf and grass weeds including freeweed, purslane, scarlet pepper, spanish needles, and sowthistle.

Do not allow spray to contact foliage or fruit.

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 pt in a minimum of 5 gal of water per acre by air or 10 gal by ground before weeds are 1.5 inches tall. Apply to established trees between fall and early spring when trees are dormant. For new transplants, apply during or soon after transplanting. For applications prior to transplanting, allow sufficient precipitation to activate AAtrex before transplanting. In areas where spring and summer rainfall is inadequate to activate AAtrex, apply during fall prior to spring transplanting.

For the list of weeds controlled, see **AAtrex 4LC Applied Alone — Corn or Grain Sorghum — Preplant Incorporated or Preemergence**.

Quackgrass control: Broadcast 8 pt in a minimum of 10 gal of water per acre by air or 10 gal by ground between fall and early spring when trees are dormant and before quackgrass is more than 10 inches tall.

Note: Temporary injury to trees may occur following the use of AAtrex on coarse textured soils.

Precautions: (1) Do not graze treated area. (2) Do not apply to seed beds. (3) Apply only once per year.

Aerial application: In order to assure that spray will be controlled within the target area when used, according to label directions, make applications at a maximum height of 10 ft above vegetation, using low drift nozzles at a maximum pressure of 40 psi, and restrict application to periods when wind speed does not exceed 10 mph. To assure that spray will not adversely affect adjacent sensitive non-target plants, apply AAtrex 4LC at a rate of 4.8 pt in a minimum spray distance of 400 ft from sensitive plants.

Nonselective Weed Control on Noncrop Land

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

Apply before or soon after weeds begin to grow. Make postemergence applications when weeds are young and before flowering. Use the higher rates on fine leaf and low growing weeds. Use sufficient water to assure thorough coverage. The use of 1 qt of water for each gal of product use more than 1 qt.

Note: Do not allow livestock to graze treated areas.

Annual broadleaf and grass weeds including barnyardgrass, cerealgrass, crabgrass, lambsquarters, foxtail, ragweed, bunchgrass, and turkey mulch. Broadcast 4.8-10 qt A.

Hard-to-kill annual and many perennial broadleaf and grass weeds (including bluegrass, burdock, Canada thistle, dogfennel, orchardgrass, plantain, quackgrass, purple top, redtop, and smooth brome). Broadcast 10-20 qt A.

Hard-to-kill biennial and perennial weeds including bull thistle and sowthistle. Broadcast 20-45 qt A.

For longer residual control in regions of high rainfall and a long growing season, broadcast 20-40 qt A.

For small areas, 0.28 qt per 1,000 sq ft is equivalent to 10 qt A.

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Thoroughly clean container before reuse. Pesticide spray mixture or rinsate that cannot be used according to label instructions must be disposed of according to applicable federal, state, or local procedures. Triple rinse (or equivalent) and offer for recycling or reconditioning, or dispose of in a sanitary landfill or by other approved state and local procedures.

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.

First Aid: If swallowed, contact your local poison control center, hospital, or physician. If the patient is unconscious, maintain breathing and heart beat (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.

In case of skin contact, remove contaminated clothing and wash with soap and water. In case of contact with eyes, flush with plenty of water. Get medical attention if irritation persists.

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.

Environmental Hazards

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

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Boston is a trademark of Dow Chemical Company for butachlor.

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Dual is a trademark of CIBA-GEIGY for metolachlor. U.S. Patent No. 3,937,730.

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