

100-716

JAN 24 1990

NOTICE OF PESTICIDE:  REGISTRATION  
 REREGISTRATION

(Under the Federal Insecticide, Fungicide,  
and Rodenticide Act, as amended)

TERM OF ISSUANCE

Conditional

NAME OF PESTICIDE PRODUCT

Yield...

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

... Corporation  
...  
...  
... 2741

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NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A) provided that you:

1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data.
2. Make the labeling changes listed below before you release the product for shipment:
  - a. Add the phrase "EPA Registration No. 100-716."
  - b. Under the Statement of Practical Treatment subheading "If Inhaled," add "Get medical attention."
3. Submit one (1) copy of your final printed labeling before you release the product for shipment.

ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL

DATE

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If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Joanne I. Miller  
Acting Product Manager (23)  
Fungicide-Herbicide Branch  
Registration Division (H7505C)

Enclosure

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Restricted Use Pesticide

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. See Precautionary Statements for reasons this product is classified Restricted Use.

(Front Cover of Removable Booklet)

Cycle®

Herbicide

For weed control in field and silage corn and grain sorghum

Active Ingredient:

Metolachlor: 2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl) acetamide .....	22.0%
Cyanazine: 2[[4-chloro-6-(ethylamino)-s-triazin-2-yl]amino]-2-methylpropionitrile .....	22.0%
Inert Ingredients:	56.0%
Total:	100.0%

2 1/2 Gallons  
U.S. Standard Measure

Keep Out of Reach of Children.

CAUTION

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-  
EPA Est. 100-LA-1

Cycle® trademark of CIBA-GEIGY Corporation

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Agricultural Division  
CIBA-GEIGY Corporation  
Greensboro, North Carolina 27419

CIBA-GEIGY

CGA

(LABELS-C.1 - CYCLE/F1)

ACCEPTED  
with COMMENTS  
in EPA Letter Dated  
*Jan. 24, 1990*  
Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as a restricted use pesticide  
registered under EPA Reg. No.  
100-716

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. If terms are not acceptable, return the unopened product container at once.

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. All 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 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 in such a manner as to directly or through drift expose workers or other persons except those knowingly involved in the application. The area being treated must be vacated by unprotected persons.

Reentry Statement

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

Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. Oral warnings must inform workers of areas or fields that may not be entered without specific protective clothing until sprays have dried, and appropriate actions to take in case of accidental exposure, as described under Precautionary Statements on this label. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information: "CAUTION. Area treated with Cycle on (date of application). Do not enter without appropriate protective clothing until sprays have dried. In case of accidental exposure, flush eyes or skin with plenty of water. Call a physician if irritation persists. Remove and wash contaminated clothing before reuse."

To avoid spray drift, do not apply under windy conditions. Avoid spray overlap, because crop injury may result.

Protective Clothing Requirements

Use of protective clothing and equipment and following the precautions below can reduce risk associated with mixing, loading and applying this product.

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When mixing and loading this product, wear a face shield. When applying the product, wear long trousers and long-sleeved clothing. Wear chemical resistant gloves extending above the wrist, a chemical resistant apron, long trousers and long-sleeved clothing when mixing or loading or when adjusting, repairing, or cleaning equipment. Protective gloves must be washed with soap and water after use and before removing from the hands. Remove contaminated clothing and wash before reuse. Contaminated clothing should be laundered separately from household laundry to prevent cross-contamination of other laundry. Heavily contaminated or drenched clothing and protective clothing must be discarded or destroyed in accordance with state and local regulations.

A. General Information

Cycle is a selective herbicide which will control most annual grasses and certain broadleaf weeds in corn and grain sorghum. Cycle can be mixed with water or fertilizer and applied as a preplant surface-applied, preplant incorporated, or preemergence treatment.

Where directions specify a Cycle tank mixture with an AAtrex® or Princep® formulation, other brands of atrazine or simazine may be used. Follow the practices, recommendations, and limitations on the respective product labels. For reduced tillage or no-till practices, Gramoxone® Super/Extra or Roundup® may be mixed with Cycle and Cycle tank mixtures. For some specific no-till practices, 2,4-D amine and/or Banvel® may be added.

Observe all precautions and limitations on the labels of each product used in tank mixtures. Tank mixtures are permitted only in those states where the tank mix partner is registered.

If Cycle is incorporated, any supplemental tillage before planting must not exceed the depth of incorporation.

Dry weather following a preemergence application of Cycle alone or a tank mixture may reduce effectiveness. Cultivate if weeds appear.

When reference is made to weeds partially controlled, partial control can either mean erratic control from good to poor, or consistent control at a level below that generally considered acceptable for commercial weed control.

Following many years of continuous use of cyanazine (one of the ingredients in Cycle), and products chemically related to cyanazine, biotypes of some of the weeds listed on this label which are controlled by the cyanazine component have been reported to develop resistance to this and chemically related herbicides. Where this is known or suspected and weeds controlled by this

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product are expected to be present along with resistant biotypes, we recommend the use of Cycle in combination or in sequence with registered herbicides which do not contain triazines. Consult with your State Agricultural Extension Service for specific recommendations.

Precaution: 1) Injury may occur following the use of Cycle under abnormally high soil moisture conditions during early development of the crop. 2) Do not apply Cycle postemergence over-the-top of corn or grain sorghum, since injury may occur.

1. Soil Textures and Herbicide Rates

Where rates are based on coarse-, medium-, or fine-textured soils, it is understood that soil textural classes are generally categorized as follows:

<u>Coarse</u>	<u>Medium</u>	<u>Fine</u>
Sand	Loam	Silty clay loam
Loamy sand	Silt	Sandy clay loam
Sandy loam	Silt loam	Silty clay
		Sandy clay
		Clay loam
		Clay

Within rate ranges in the rate tables and elsewhere on this label, use the lower rate on soils relatively coarse-textured or low in organic matter; use the higher rate on soils relatively fine-textured or high in organic matter.

Note: Cycle, alone or in tank mixture, may be applied preemergence following preplant surface or preplant incorporated application of other herbicides. When applying Cycle following a preplant treatment that contains metolachlor or cyanazine, do not exceed the maximum labeled rate for these herbicides on corn or grain sorghum.

Thoroughly clean sprayer prior to use. Do not use a sprayer contaminated with any other materials, or crop damage or sprayer clogging may result.

2. Mixing Instructions

Cycle Alone: Mix Cycle with water or fluid fertilizer. Fill the spray tank one-half to three-fourths full with water or fluid fertilizer, add the proper amount of Cycle, and then add the rest of the water or fluid fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform suspension.

Tank Mixtures: Fill the spray tank one-fourth full with water, and start agitation. Note: When one or more tank mix partners

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are used with Cycle, allow each to fully disperse before adding the next product. Add AAtrex, Banvel®, 2,4-D amine, or Princep and allow it to become dispersed, add Cycle, add Gramoxone Super/Extra or Roundup if these products are being used, and then add the remainder of the water.

For tank mixtures with AAtrex or Princep, fluid fertilizers may replace all or part of the water as the carrier. For tank mixtures with other herbicides, see additional mixing instructions on their respective labels. For each mixture check compatibility with fluid fertilizer, as described below, before mixing in spray tank. For all tank mixtures, agitate during mixing and application to maintain a uniform suspension.

Note: Do not mix Gramoxone Super/Extra with suspension-type fluid fertilizers.

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 since 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 gals. 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 Compex® or Unite® (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:  

<u>Dry herbicides:</u>	For each pound to be applied per acre, add 1.5 level teaspoons to each jar.
<u>Liquid herbicides:</u>	For each pint to be applied per acre, add 0.5 teaspoon or 2.5 milliliters to each jar.
4. After adding all ingredients, put lids on and tighten, and invert each jar ten times to mix. Let the mixtures stand 15 minutes and then look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of

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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 the mixture.

### 3. Application Procedures

#### Application Timing

Cycle alone or in tank mixtures with other labeled herbicides may be applied for weed control in corn and grain sorghum. Refer to the appropriate crop section of the label to determine if application timings listed below are recommended.

- (1) Preplant Surface Applied: For reduced-tillage or no-tillage systems only, Cycle alone or Cycle plus AAtrex or Princep, may be applied before planting as specified in the corn or grain sorghum section of the label. Use only split applications for treatments made more than 30 days before planting, with 2/3 the recommended broadcast rate for the crop and soil texture applied initially and the remaining 1/3 at planting. Treatments fewer than 30 days before planting may be made either as a split or a single application. If weeds are present at the time of treatment, apply in a tank mixture with a contact herbicide (for example, Gramoxone Super/Extra or Roundup). Observe directions for use, precautions, and restrictions on the label of the contact herbicide. 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.
- (2) Preplant Incorporated: Apply Cycle or Cycle plus AAtrex or Princep to the soil and incorporate into the top 2 inches of soil within 14 days before planting. Use a finishing disk, harrow, rolling cultivator, or similar implement capable of providing uniform 2 inch incorporation. Use a preplant incorporated application if furrow irrigation is used or if a period of dry weather after application is expected. If the crop will be planted on beds, apply and incorporate Cycle or Cycle tank mixtures after bed formation unless specified otherwise.
- (3) Preemergence: Apply Cycle or Cycle mixtures, including AAtrex and Princep, during planting (behind the planter) or after planting, but before weeds or crops emerge.

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Ground Application: Apply Cycle alone or in tank mixtures by ground equipment in a minimum of 10 gals. of spray mixture per acre unless otherwise specified.

Use sprayers that provide accurate and uniform application. For Cycle tank mixtures with wettable powder or dry flowable formulations, screens and strainers should be no finer than 50-mesh. Rinse sprayer thoroughly with clean water immediately after use.

Calculate the amount of herbicide needed for band treatment by the formula:

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

Avoid application to humans or animals. 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.

Notes: (1) Do not apply this product through any type of irrigation system. (2) Do not apply by aerial equipment.

#### 4. Dry Bulk Granular Fertilizers

Many dry bulk granular fertilizers may be impregnated or coated with Cycle alone or with selected Cycle tank mixtures which are (1) registered for preplant incorporated or preplant-surface application; (2) which are used to control weeds in corn; and (3) are not prohibited from use on dry bulk granular fertilizers.

When applying Cycle or Cycle mixtures with dry bulk granular fertilizers, follow all directions for use and precautions on the respective product labels including rates per acre, soil texture, application methods (including timing of application), and rotational crops.

All individual state regulations relating to dry bulk granular fertilizer blending, registration, labeling, and application are the responsibility of the individual and/or company selling the herbicide/fertilizer mixture.

Prepare the granular herbicide/fertilizer mixtures by using any closed drum, belt, ribbon, or other commonly used dry bulk fertilizer blender. Nozzles used to spray Cycle and Cycle mixtures onto the fertilizer must be placed to provide uniform spray coverage.

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If the herbicide/fertilizer mix is too wet, add a highly absorptive material in the blend. The fertilizer with the absorptive material should be blended together thoroughly first. Then, the herbicide should be sprayed onto the mixture and blended for five minutes to achieve thorough distribution of the herbicide(s). Acceptable absorptive materials are Agsorb® or Celatom MP-79®. Generally, less than 5% by weight of absorptive material will be needed. When the impregnation process is being conducted with on-board impregnation devices on pneumatic applicators, use of absorptive materials is not recommended.

Calculate amounts of Cycle or AAtrex or Princep by the following formula:

$$\frac{2,000 \text{ lbs. of fertilizer per acre}}{\text{pts./acre of liquid or flowable product}} \times \text{pts. of liquid or flowable product per ton of fertilizer} = \text{pts. of liquid or flowable product per ton of fertilizer}$$

$$\frac{2,000 \text{ lbs. of fertilizer per acre}}{\text{lbs./acre of dry product}} \times \text{lbs. of dry product per ton of fertilizer} = \text{lbs. of dry product per ton of fertilizer}$$

Precautions: To avoid potential for explosion, (1) Do not impregnate Cycle mixtures on ammonium nitrate, potassium nitrate or sodium nitrate either alone or in blends with other fertilizers. (2) Do not combine Cycle or Cycle mixtures plus any other herbicide with single superphosphate (0-20-0) or treble superphosphate (0-46-0) because inactivation of the herbicide can occur. (3) Do not use Cycle or Cycle mixtures on straight limestone, since absorption will not be achieved. Fertilizer blends containing limestone can be impregnated.

Application

Apply 200-450 pounds of the herbicide/fertilizer mixture per acre. For best results, use properly-calibrated equipment and apply the mixture immediately after blending. Uniform application of the herbicide/fertilizer mixture is essential to prevent possible crop injury. Non-uniform application may also result in unsatisfactory weed control. In areas where conventional tillage is practiced, a shallow incorporation of the mixture into the soil may improve weed control. On fine- or medium-textured soils in areas where soil incorporation is not planned apply the mixture 14 days before planting to allow moisture to move the herbicide/fertilizer mixture into the soil. When AAtrex or Princep is added to the mixture, apply approximately 30 days before planting.

Precaution: To avoid crop injury, do not use the herbicide/fertilizer mixture on crops which are bedded.

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Cycle Applied Alone

1. Weeds Controlled

barnyardgrass (watergrass)	southwestern cupgrass
crabgrass	witchgrass
crowfootgrass	yellow foxtail
fall panicum	<u>yellow nutsedge</u>
foxtail millet	black nightshade
giant foxtail	carpetweed
goosegrass	common ragweed
green foxtail	Florida pusley
prairie cupgrass	galinsoga
red rice	lambsquarters
signalgrass	pigweed
(Brachiaria)	Pennsylvania smartweed
	prickly sida
	sunflower

Weeds Partially Controlled\*: sandbur, seedling johnsongrass, shattercane, Texas panicum, volunteer sorghum, wild proso millet.

\*See General Information section. Control of these weeds can be erratic due partly to variable weather conditions.

2. Rotational Crops: Cycle: (1) If crop treated with Cycle alone is lost, corn or Concep-treated grain sorghum may be replanted immediately. Do not make a second broadcast application of Cycle. If the original application was banded and the second crop is planted in the untreated row middles, a second banded treatment may be applied. (2) Barley, oats, rye, or wheat may be planted 4 1/2 months following treatment; alfalfa may be planted 4 months following application. (3) Any crop on this label in addition to cotton, peanuts, pod crops, potatoes, safflowers, soybeans, root crops, barley, buckwheat, milo, oats, rice, rye, or wheat may be planted in the spring following treatment. Clover may be seeded 9 months following application. All other rotational crops may be planted 18 months after application. (4) Cycle Tank Mixtures: For Rotational Crops restrictions for Cycle used in tank mixtures, refer to the statements/restrictions above for Cycle and to the respective product labels of any mixing partner(s) for additional statements/restrictions.

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### Corn - Cycle Alone

Apply Cycle either preplant surface, preplant incorporated, or preemergence using the appropriate rate from Table 1 below.

Preplant Surface Applied: Refer to instructions for use of Cycle alone under Application Procedures. Use on medium- and fine-textured soils with minimum-tillage or no-tillage systems in CO, IL, IN, IA, KS, KY, MN, MO, MT, NE, ND, SD, TN, WI, and WY. Broadcast the recommended rate of Cycle for soil texture and percent organic matter indicated in Table 1. In no-till corn where heavy crop residue exists, the rates in Table 1 should be increased by 15%. Under dry conditions, irrigation after application is recommended to move Cycle into the soil. Do not apply to coarse-textured soils.

On medium- and fine-textured soils with minimum- or no-tillage systems in DE, MD, MI, NY, OH, PA, VA, and WV, preplant surface applications may be applied following the directions for use above. If the amount of rainfall results in unsatisfactory length of weed control following the earlier Cycle treatment, a postemergence application of an appropriately labeled broadleaf and/or grass weed herbicide may be used, i.e., AAtrex, Bicep<sup>®</sup>, 2,4-D, Banvel, Basagran<sup>®</sup> or bromoxynil (Brominal<sup>®</sup> or Bucril<sup>®</sup>).

Notes: (1) If the postemergence treatment includes metolachlor, do not exceed the maximum labeled rate for metolachlor on corn based on soil texture. (2) Observe all directions for use, precautions and limitations on the label of the postemergent herbicide.

Preplant Incorporated or Preemergence: Follow instructions for use of Cycle alone under Application Procedures. Use rates of Cycle for soil textures and organic matter levels indicated in Table 1.

Notes: (1) Do not apply more than the labeled application rate for a given soil texture per year either as a single or split treatment or illegal residues may result. (2) In the event of escape of annual broadleaf weeds following preplant surface, preplant incorporated, or preemergence treatment with Cycle, follow with a postemergence application of an appropriately labeled broadleaf and/or grass weed herbicide, i.e., AAtrex, Basagran, Bicep, Brominal, Bucril, Banvel or 2,4-D. (3) If the postemergence treatment includes metolachlor, do not exceed the maximum labeled rate for metolachlor on corn based on soil texture.

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Corn - Cycle Combinations

In any tank mixture for corn except Cycle + AAtrex + 2,4-D or Cycle + AAtrex + 2,4-D + Banvel, Cycle may be mixed with water or fluid fertilizer.

1. Tank Mixture with AAtrex or Princep

In addition to the weeds controlled by Cycle alone, Cycle plus AAtrex or Princep, applied preplant surface, preplant incorporated or preemergence, also controls such additional weeds as follows: cocklebur, common purslane, hairy nightshade, and velvetleaf.

Preplant Surface Applied: Follow instructions for use of Cycle alone under Application Procedures and under application instructions for Cycle Alone on corn. Apply Cycle + AAtrex or Princep in CO, IL, IN, IA, KS, KY, MN, MO, MT, NE, ND, SD, TN, WI, and WY at rates indicated in Table 2. Apply the tank mixtures as a split or single treatment in the states above using the procedure indicated in the Corn - Cycle Alone Preplant Surface Applied section of the label.

Preplant Incorporated or Preemergence: Follow instructions for use of Cycle alone under Application Procedures. Apply the rates of Cycle + AAtrex or Princep indicated in Table 2.

Note: Do not apply more than the labeled rate for a given soil texture per year either as a split or single treatment, or illegal residues may result.

**Table 2. Cycle + AAtrex or Princep, Preplant Surface, Preplant Incorporated or Preemergence - Field and Silage Corn Only**

Soil Texture	Broadcast Rates Per Acre			
	Percent Organic Matter in Soil			
	Less than 1%	1-2.5%	2.5-4%	
	Qts. Cycle + Lbs. AAtrex** Nine-O® or Princep Caliber 90	Qts. Cycle + Lbs. AAtrex Nine-O or Princep Caliber 90	Qts. Cycle + Lbs. AAtrex Nine-O or Princep Caliber 90	Qt Lb Ni or Ca
Coarse Sand, Loamy Sand	DO NOT USE	2.5-3 + .4-1.2	3-3.5 + .6-1.4	
Coarse Sandy Loam	2.5 + .6-1.2*	2.5-3 + .8-1.4	3-3.5 + 1-2	
Medium	3.0 + .8-1.4	3-3.5 + .8-2	3.5-4 + 1-2	
Fine	3.0 + .8-1.7	3.5-4 + 1-2	4-4.5 + 1-2.2	
Muck or Peat Soils (soils with more than 20% organic matter)	<div style="border: 1px solid black; padding: 5px; display: inline-block;"><b>BEST AVAILABLE COPY</b></div> <span style="margin-left: 200px;">DO NOT USE</span>			

\*Use the higher rates of AAtrex or Princep when heavy infestations of broadleaf weeds are expected.

\*\*When using AAtrex 4L (or Princep 4L), or AAtrex 80W (or Princep 80W), use equal parts of AAtrex and Princep. One lb. of Nine-O or Caliber 90 equals 1.8 pts. of 4L or 1.1 lbs. 80W. Use higher rates of AAtrex when heavy infestations of crabgrass or fall panicum are expected.



Princep. When used as directed, the Gramoxone Super/Extra controls most emerged annual weeds and suppresses many perennial weeds. Roundup combinations will control emerged annual and perennial weeds when applied as directed on the Roundup label. The Cycle + AAtrex or Princep provides preemergence control of the weeds listed on this label under the Corn - Cycle Combinations - Tank Mixtures with AAtrex or Princep section.

Application: Apply before, during, or after planting, but before the corn emerges, at the rates specified in Table 2. Add Gramoxone Super/Extra or Roundup at the following broadcast rates:

Gramoxone Super: 1.5-2.5 pts./A plus 8 fl. oz. of X-77® Spreader per 100 gals. of spray mixture. Use the lower rate for control of annual weeds less than 4 inches tall and the higher rate for weeds 4-6 inches tall. This treatment will not consistently control weeds taller than 6 inches.

Notes: (1) Do not apply a combination of Gramoxone Super/Extra and suspension-type liquid fertilizer because the activity of Gramoxone Super/Extra will be reduced. (2) If applying Gramoxone Extra, refer to its label for recommended rates depending upon weed height.

Roundup: 1.5 qts./A for existing annual weeds, or 2-4 qts. per acre for existing perennial weeds. See the Roundup label for weeds controlled and recommended rates for specific weeds.

Apply in 20-60 gals. of water or fluid fertilizer per acre with ground equipment.

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3. Tank Mixture with AAtrex or AAtrex plus 2,4-D or AAtrex plus 2,4-D plus Banvel for Minimum-Tillage or No-Tillage Systems

In minimum-tillage or no-tillage systems where corn is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, Cycle applied in combination with AAtrex will kill most emerged small annual weeds. Apply Cycle + AAtrex before, during, or after planting, but before corn emerges according to the rates in Table 2. Where heavy crop residues exist, add 0.8-1.6 pts./A of an appropriately labeled 3.8 lbs. ai/gal. 2,4-D amine (such as Weedar 64, Weedar 64A, DMA-4 Herbicide, or Formula 40) to the spray tank last and apply in a minimum of 25 gals. of carrier/A.

As carriers, nitrogen solutions and complete liquid fertilizers, applied before corn emergence, enhance burndown of existing weeds, and therefore are recommended instead of water. Add X-77 surfactant at 1.0-2.0 qts/100 gals. of diluted spray, or another appropriate surfactant at its recommended rate. Apply before weeds exceed 3 inches in height. If alfalfa is present, add Banvel to the spray mixture at 0.33-0.5 pt./A and apply before alfalfa exceeds 6 inches in height.

Note: When applying Cycle with AAtrex + 2,4-D or with AAtrex + 2,4-D + Banvel, do not apply in fluid fertilizer.

For fields with existing sod grasses (e.g., bromegrass, orchard-grass, rye or timothy), when existing weeds exceed 3 inches in height or when very dry conditions exist, add Gramoxone Super at the rate of 2.5 pts./A in place of or in addition to 2,4-D as indicated above. If applying Gramoxone Extra, refer to its label for the recommended rate based on weed height. Do not apply Gramoxone Super/Extra in suspension-type liquid fertilizer. Observe all directions for use, precautions and limitations on the respective product labels when applying these products in tank mix combination.

Grain Sorghum (Seed Treated with Concep®) - Cycle Alone

Apply Cycle either preplant surface, preplant incorporated, or preemergence in water or fluid fertilizer to grain sorghum using the appropriate rate specified below. Apply Cycle to sorghum only when the sorghum seed has been properly treated by the seed company with Concep.

Note: Do not use Cycle on forage sorghum.

Preplant Surface-Applied: Refer to instructions for use of Cycle under Application Procedures. For minimum-tillage or no-tillage systems only, Cycle may be applied up to 45 days before planting in CO, IL, IA, KS, MO, NE and SD. Use only split applications for treatments made more than 15 days before planting, with 2/3 of the broadcast rate applied initially and

the remaining 1/3 ac planting. Apply the rate of Cycle indicated in Table 3. In no-till corn where heavy crop residue exists, the rates in Table 3 should be increased by 15%. Under dry conditions, irrigation after application is recommended to move Cycle into the soil.

Preplant Incorporated or Preemergence: Refer to instructions for use of Cycle under Application Procedures. Apply the rates of Cycle indicated in Table 3.

Precautions: (1) If sorghum seed is not properly treated with Concep, Cycle may severely injure the crop. (2) Under high soil moisture conditions prior to sorghum emergence, injury may occur following the use of Cycle. The crop will normally outgrow this effect. (3) Do not use Cycle on sorghum grown under dry mulch tillage or injury may occur. (4) Do not make more than one preemergence application or preplant incorporated application per year, or illegal residues may result.

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Table 3: Cycle Alone - Preplant Surface\*, Preplant Incorporated  
or Preemergence - Grain Sorghum

Soil Texture	Broadcast Rates Per Acre			
	Percent Organic Matter in Soil			
	Less than 1%	1-2.5%	2.5-4%	Over 4%
COARSE Sand, loamy sand	DO NOT USE	2.5-3 qts.	3-3.5 qts.	3.5 qts.
COARSE Sandy loam	2.5 qts.	2.5-3 qts.	3-3.5 qts.	3.5 qts.
MEDIUM	3 qts.	3-3.5 qts.	3-3.75 qts.	4.0 qts.
FINE	3 qts.	3-3.75 qts.	3.5-4 qts.	4.5 qts.
Muck or peat soils (soils with more than 20% organic matter)	DO NOT USE			

\*In no-till corn where heavy residue exists, increase the rates in Table 3 by 15%.

Grain Sorghum (Seed Treated with Concep) - Cycle Combinations

Cycle in tank mixture with AAtrex may be applied in water or fluid fertilizer. Apply Cycle alone or in tank mixture only when the sorghum seed has been properly treated by the seed company with Concep.

Note: Do not use Cycle on forage sorghum.

Precautions: (1) Applications of Cycle + AAtrex on highly alkaline soils or on eroded areas where calcareous subsoils are exposed may cause sorghum injury. (2) If sorghum seed is not properly treated with Concep, Cycle + AAtrex may severely injure the crop. (3) Under high soil moisture conditions before sorghum emergence, injury may occur following the use of Cycle + AAtrex. The crop will normally outgrow this effect. (4) Do not use Cycle + AAtrex on sorghum grown under dry mulch tillage or injury may occur. (5) Do not exceed the recommended rate of Cycle + AAtrex for soil texture and organic matter, or illegal residues may result.

1. Tank Mixture with AAtrex

In addition to weeds controlled by Cycle alone, Cycle + AAtrex applied preplant surface, preplant incorporated, or preemergence enhances the control of such weeds as: cocklebur, common purslane, hairy nightshade, lambsquarters, morningglory, ragweed, smartweed, and velvetleaf.

Preplant Surface-Applied: Refer to instructions for use of Cycle under Application Procedures. For minimum-tillage or no-tillage systems only, Cycle + AAtrex may be applied up to 45 days before planting in IL, IA, eastern KS, MO, NE and SD. Use only split applications for treatments made more than 15 days before planting, with 2/3 of the broadcast rate applied initially and the remaining 1/3 at planting. Apply the rates of Cycle + AAtrex indicated in Table 4.

Precautions: To avoid crop injury, (1) Do not use on coarse soils, and (2) Do not use on medium soils with less than 1.5% organic matter.

Preplant Incorporated or Preemergence: Refer to instructions for use of Cycle under Application Procedures. Apply the rates of Cycle + AAtrex indicated in Table 4.

Precautions: (1) To avoid crop injury, do not use on coarse soils. (2) Do not use on medium soils with less than 1.5% organic matter.

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**Rotational Crops:** When atrazine (AAtrex) is applied in tank mix combination with Cycle, follow the crop rotation restrictions on the atrazine (AAtrex) label.

**Table 4: Cycle + AAtrex Nine-0\* - Preplant Surface, Preplant Incorporated or Freemergence - Grain Sorghum**

Soil Texture	Broadcast Rates Per Acre			
	Percent Organic Matter in Soil			
	Less than 1%	1-2.5%	2.5-4%	Over 4%
	Qts. Cycle + Lbs. AAtrex Nine-0	Qts. Cycle + Lbs. AAtrex Nine-0	Qts. Cycle + Lbs. AAtrex Nine-0	Qts. Cycle + Lbs. AAtrex Nine-0
COARSE Sand, loamy sand	DO NOT USE	2-2.5 .4-1.2	2.5-3 .6-1.4	3 .8-2
	2 .6-1.2	2-2.5 .8-1.4	2.5-3 1-2	3 1.2-2.2
MEDIUM	2.5 .8-1.4	2.5-3 .8-2	2.5-3.25 1-2	3.25 1.2-2.2
	2.5 .8-1.7	2.5-3.25 1-2	3-3.5 1-2.2	3.75 1.2-2.4
Muck or peat soils (soils with more than 20% organic matter)	DO NOT USE			

\*When using AAtrex 80W or AAtrex 4L, use equivalent rates. One lb. of AAtrex Nine-0 equals 1.1 lbs. of AAtrex 80W or 1.8 pts. of AAtrex 4L.

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2. Tank Mixture of Cycle + AAtrex with Gramoxone Super/Extra or Roundup for Minimum-Tillage or No-Tillage Systems

In minimum-tillage or no-tillage systems where sorghum (seed treated with Concep) is planted directly into a cover crop, stale seedbed, established sod or previous crop residues, the contact herbicides Gramoxone Super/Extra or Roundup may be tank mixed with Cycle or Cycle + AAtrex. When used as directed, the Gramoxone Super/Extra controls most emerged annual weeds and suppresses many perennial weeds. Roundup combinations will control emerged annual and perennial weeds when applied as directed on the Roundup label. The Cycle or Cycle + AAtrex provides preemergence control of weeds listed on this label under the Grain Sorghum - Cycle Combinations - Tank Mixtures with AAtrex section.

Application: Apply before, during or after planting but before sorghum emerges, at the rates specified in Tables 3 or 4. Add Gramoxone Super/Extra or Roundup at the following broadcast rates:

Gramoxone Super: 1.5-2.5 pts. per acre plus 8 fl. oz. of X-77 Spreader per 100 gals. of spray mixture. Use the lower rate for control of annual weeds less than 4 inches tall and the higher rate for weeds 4-6 inches tall. This treatment will not consistently control weeds taller than 6 inches.

Notes: (1) Do not apply Gramoxone Super/Extra in suspension-type liquid fertilizer. (2) If applying Gramoxone Extra, refer to its label for recommended rates depending on weed height.

Roundup: 1.5 qts. per acre for control of existing annual weeds, or 2.4 qts. per acre for existing perennial weeds. See the Roundup label for weeds controlled and recommended rates for specific weeds.

Apply in a minimum of 20 gals. of water per acre with conventional spray equipment.

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Storage and Disposal

Pesticide Disposal - Do not contaminate water, food, or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal - Do not reuse empty container. Triple rinse (or equivalent), puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. Keep out of smoke from burning containers.

For minor spills, leaks, etc., follow all precautions and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup and disposal of wastes. In the event of a major spill, fire, or other emergency, call 1-800-888-8372.

Precautionary Statements

Hazards to Humans or Domestic Animals

CAUTION

This product may be hazardous to your health.

This product is classified "Restricted Use" because one of the active ingredients, cyanazine, at doses which caused severe maternal illness in laboratory animals, caused birth defects.

Keep out of reach of domestic animals, particularly cattle. Consumption of this product, spray solutions or water contaminated with this product can result in serious illness or possible death of bovines.

Harmful if swallowed, absorbed through skin, or inhaled. Causes eye irritation. Avoid breathing vapor or spray mist and contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Statement of Practical Treatment

If swallowed: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

Continued

USE PRECAUTIONS



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If in eyes: Flush eyes with plenty of water. Call a physician if irritation persists.

If on skin: Wash with plenty of soap and water. Get medical attention.

If inhaled: Remove victim to fresh air.

Note to Physician: There is no specific antidote. If swallowed, induce emesis or lavage stomach. The use of an aqueous slurry of activated charcoal should be considered.

Environmental Hazards

Do not apply directly to water or wetlands (swamps, bogs, marshes or potholes). Do not contaminate water when disposing or equipment wash waters.

Groundwater and Surface Water Advisory

Cycle contains the active ingredients metolachlor and cyanazine.

Metolachlor has been identified in limited sampling of ground water and there is the possibility that it may leach through the soil to ground water, especially where soils are coarse and ground water is near the surface. Following application and during rainfall events that cause runoff, metolachlor may reach surface water bodies including streams, rivers and reservoirs.

Care must be taken when using this product to prevent back siphoning into wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.

Check valves or antisiphoning devices must be used on all mixing and/or irrigation equipment.

Cyanazine is a pesticide which can move, seep, or travel through soil and can contaminate ground water which may be used as drinking water. Cyanazine has been found in ground water as a result of agricultural use. Users are advised not to apply this product where the water table (ground water) is close to the surface and where the soils are very permeable (i.e., well-drained soils such as loamy sands). Your local agricultural agencies can provide further information on the type of soil in your area and the location of ground water.

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