

Lariat®  
Flowable Herbicide  
by Monsanto

Selective herbicide for preemergence weed control in corn (all types), and grain sorghum (milo).

RESTRICTED USE PESTICIDE

due to oncogenicity of alachlor and groundwater concerns associated with atrazine. 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.

The use of this product may be hazardous to your health. This product contains alachlor, which has been determined to cause tumors in laboratory animals.

Users must read and follow all precautionary statements and instructions for use in order to minimize potential for atrazine to reach groundwater.

In case of an emergency involving this product or for user safety information on this product, call collect, day or night (314) 694-4000.

SHAKE WELL BEFORE USING

Complete Directions For Use

®Lariat is a registered trademark of Monsanto Company.

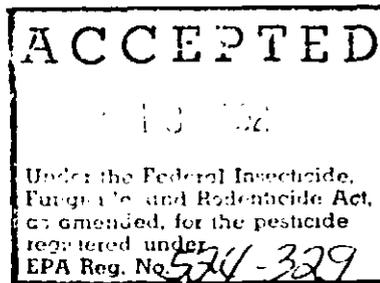
EPA Reg. No. 524-329-AA

1990-1 1992-1

843.89-000.42/53

843.89-000.47/53

©MONSANTO COMPANY 1990 1992



Read the entire label before using this product.

Use only according to label instructions.

Read "'LIMIT OF WARRANTY AND LIABILITY'" before buying or using. If terms are not acceptable, return at once unopened.

REFORMULATION IS PROHIBITED.

**LIMIT OF WARRANTY AND LIABILITY**

This Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth in the Complete Directions for Use label booklet (''Directions'') when used in accordance with those Directions under the conditions described therein. NO OTHER EXPRESS WARRANTY OR IMPLIED WARRANTY OF FITNESS FOR PARTICULAR PURPOSE OF MERCHANTABILITY IS MADE. This warranty is also subject to the conditions and limitations stated herein.

Buyer and all users shall promptly notify this Company of any claims whether based in contract, negligence, strict liability, other tort or otherwise.

Buyer and all users are responsible for all loss or damage from use or handling which results from conditions beyond the control of this Company, including, but not limited to, incompatibility with products other than those set forth in the Directions, unusual weather, weather conditions which are outside the range considered normal at the application site and for the time period when the product is applied, as well as weather conditions which are outside the application ranges set forth in the Directions, application in any manner not explicitly set forth in the Directions, moisture conditions outside the moisture range specified in the Directions, or the presence of products other than those set forth in the Directions in or on the soil, crop or treated vegetation.

THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE LIMIT OF THE LIABILITY OF THIS COMPANY OR ANY OTHER SELLER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT (INCLUDING CLAIMS BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE) SHALL BE THE PURCHASE PRICE PAID BY THE USER OR BUYER FOR THE QUANTITY OF THIS PRODUCT INVOLVED, OR, AT THE ELECTION OF THIS COMPANY OR ANY OTHER SELLER. THE REPLACEMENT OF SUCH QUANTITY OR, IF NOT ACQUIRED BY PURCHASE, REPLACEMENT OF SUCH QUANTITY. IN NO EVENT SHALL THIS COMPANY OR ANY OTHER SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES.

Buyer and all users are deemed to have accepted the terms of this LIMIT OF WARRANTY AND LIABILITY which may not be varied by any

verbal or written agreement.

PRECAUTIONARY STATEMENTS

Hazards to  
Humans and Domestic Animals

Keep out of reach of children.

**WARNING!**

HARMFUL IF SWALLOWED. CAUSES EYE AND SKIN IRRITATION.  
MAY CAUSE RESPIRATORY TRACT IRRITATION.  
MAY CAUSE ALLERGIC SKIN REACTION.

Do not get in eyes, on skin or on clothing.

Avoid breathing vapor or spray mist.

Wear goggles or face shield, chemical-resistant rubber gloves, long trousers, long-sleeved shirt or jacket of tightly woven material or equivalent along with boots (waterproofed) high enough to cover ankles when transferring and mixing/loading, and when adjusting, repairing or cleaning equipment. Wear rubber boots ~~(waterproofed)~~ when pouring from open containers or when reentry is made into fields following application and when the field is still wet. Clothing which comes in contact with this product must be washed before reuse. Clothing or other materials which become drenched with the concentrated pesticide must be disposed of in a sanitary landfill, by incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Wash thoroughly with soap and water after handling.

FIRST AID: IF IN EYES, immediately flush with plenty of water for at least 15 minutes. Get medical attention.

IF ON SKIN, immediately flush with plenty of water while removing contaminated clothing. As soon as soap is available, wash skin thoroughly with soap and water. Wash clothing before reuse. Sensitized persons should avoid further contact and reuse of contaminated clothing. Get medical attention.

IF SWALLOWED, do NOT induce vomiting. Give large quantities of water. Get medical attention. NEVER GIVE ANYTHING BY

MOUTH TO AN UNCONSCIOUS PERSON.

IF INHALED, remove individual to fresh air. Get medical attention if breathing difficulty develops.

In case of an emergency involving this product, Call Collect, day or night, (314) 694-4000.

Environmental Hazards

Alachlor and atrazine have been identified in limited groundwater sampling and there is the possibility that they can leach through the soil to groundwater, especially where soils are coarse and groundwater is near the surface. Users are advised not to apply this product to sand and loamy sand soils where the water table (groundwater) is near the surface and where these soils are permeable (well drained).

Groundwater contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material.

This product may not be mixed/loaded or used within 50 feet of all wells including abandoned wells, drainage wells and sink holes.

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 equipment. Disposal of excess pesticide, spray mixtures or rinsate should be according to label use instructions or according to the state pesticide or environmental control agency or the hazardous waste representative at the nearest EPA regional office.

Following application, and during rainfall events that cause runoff, atrazine may reach surface water bodies including streams, rivers and reservoirs.

This product is toxic to fish. ~~Do not apply directly to water or wetlands.~~ 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 where runoff is likely to occur. Do not apply when weather conditions are likely to cause drift from treated areas. Runoff and drift from treated areas may be hazardous to aquatic organisms. Do not contaminate water when disposing of equipment washwaters.

Physical or Chemical Hazards

COMBUSTIBLE.

Do not use or store near heat or flame.

Use only with adequate ventilation.

In case of:

FIRE, use water spray, foam, dry chemical or CO<sub>2</sub>.

SPILL or LEAK, soak up, remove and keep away from humans and domestic animals.

ACTIVE INGREDIENTS:\*

Alachlor, (2-chloro-2'6'-diethyl-N-(methoxymethyl) acetanilide)..... 27.2%

Atrazine, (2-chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine)..... 15.5%

Related atrazine compounds..... 0.8%

INERT INGREDIENTS: ..... 56.5%  
100.0%

Contains petroleum distillates.

\*Contains 300 grams/litre or 2.5 pounds/gallon of alachlor and 180 grams/litre or 1.5 pounds/gallon of atrazine and related compounds.

DIRECTIONS FOR USE

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

Storage and Disposal

Do not contaminate water, foodstuffs, feed or seed by storage or disposal.

STORAGE:

STORE ABOVE 40°F.

Below 32°F this product may freeze. If frozen, place in a warm room and roll and/or shake the container: frequently to redissolve before using. For bulk containers, see the container label for alternate storage information.

DISPOSAL:

Wastes of this pesticide may cause eye and skin irritation and may be dangerous. Improper disposal of excess pesticide, spray mixtures, or rinsate is a violation of Federal law. If these wastes cannot be disposed of according to label use instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

(See the individual container label for disposal information).

#### GENERAL INFORMATION

This product is recommended for the control of many annual grasses and broadleaf weeds. ~~Except for minimum and conservation tillage systems, the~~ The seed bed should be fine, firm and free of clods ~~and trash~~ when tillage is performed.

Performance is improved when moisture occurs within one week after application. The amount required depends primarily upon the amount of soil moisture in the weed germination zone at the time of application, soil type and organic matter content, but 1/3 to 3/4 inch is generally sufficient for performance of this product. High intensity or excessive rainfall, or excessive irrigation, after application may reduce control.

Read and carefully observe the cautionary statements and all other information appearing on this label and on the labels of Bladex<sup>TM</sup>, Extrazine<sup>TM</sup> II, Gramoxone<sup>TM</sup> Extra, Princep<sup>TM</sup>, Prowl<sup>TM</sup> and Roundup<sup>®</sup> and 2,4-D herbicides before using in combination with this product.

Use of this product in any manner not consistent with this label may result in injury to persons, animals or crops, or other unintended consequences. Keep container closed to prevent spills and contamination.

Do not apply when conditions favor drift.

Flush sprayer with clean water after use.

~~Do not graze treated area or feed treated forage to livestock for 21 days following application.~~

NOTE: Use this product for weed control in corn and grain sorghum (milo) only. ~~PLANT ONLY~~ CORN, PEANUTS, SORGHUM (MILO) OR SOYBEANS CAN BE PLANTED THE YEAR FOLLOWING THE USE OF THIS MIXTURE. IF SOYBEANS OR OTHER NONLABELED CROPS ARE ~~TO BE~~ PLANTED, THE FOLLOWING YEAR, THERE IS A THE POSSIBILITY OF

CROP INJURY DUE TO CARRYOVER OF ATRAZINE. Do not plant soybeans in areas where furrow irrigation is practiced.

®Roundup is a registered trademark of Monsanto Company.

™Bladex ~~is a trademark~~ and ™Extrazine are trademarks of E.I. du Pont de Nemours and Company.

™Gramoxone is a trademark of ICI Americas Inc.

™Princep is a trademark of Ciba Geigy Corporation.

™Prowl is a trademark of American Cyanamid Corporation.

**SOIL TEXTURE**

Applicators should evaluate soil and weed conditions carefully to assure that they choose the lowest effective label rate.

The recommended use rates of this product and the other herbicides labeled for use in tank mixtures with this product generally vary with soil texture. Unless soil texture is specifically named, rate tables throughout this label refer to only three soil textural groups: coarse, medium and fine. The following is a complete listing of soil textures included in each of these three soil textural groups:

SOIL TEXTURAL GROUP	SOIL TEXTURE
COARSE:	sand, loamy sand, sandy loam
MEDIUM:	loam, silt loam, silt, sandy clay loam
FINE:	silty clay loam, clay loam, sandy clay, silty clay, clay

Refer to the above table to determine the corresponding soil textural group for the soil to be treated.

**MIXING, SPRAYING AND HANDLING INSTRUCTIONS**

**NOTE**

The use of a mechanical transfer system is required to be used by all mixer/loaders and/or applicators who treat 300 acres or more annually.

Direct contact or exposure to this product or spray mixtures of

this product should be minimized. The following instructions for transfer, mixing, cleaning or repairing equipment should be followed in order to minimize this exposure. Review the protective clothing requirements as listed in the Precautionary Statements section of this label (front panel) and do not use this product until you have the necessary protective clothing.

### 2.5 Gallon Containers

Open pouring from these containers can result in exposure from splashing or spilling. Special care in lifting and pouring are strongly recommended.

### Bulk Containers

Open pouring from these containers can result in exposure from splashing or spilling and is not recommended. This product should be transferred from these containers to the mix or spray tank using pumps or transfer probes. The probe or pump should not be removed from the container or disconnected until the container is emptied and rinsed. Use the pump or probe system to rinse the empty container and transfer the rinsate directly to the mix or spray tank.

### Equipment Cleaning & Repair

Cleaning and repair of transfer systems and application equipment is a source of exposure to this product. Care should be taken to minimize exposure during cleaning and repair of transfer systems and application equipment. Whenever possible, these systems or equipment should be rinsed before being cleaned or repaired. When repairs must be made during transfer or application, the equipment should be shut down, and special care taken to avoid contact with the pesticide.

Always predetermine the compatibility of this product with water carrier or sprayable fluid fertilizer or other labeled herbicides by mixing small proportional quantities in advance.

Mix this product with appropriate carrier as follows:

1. Place a 20 to 35 mesh screen or wetting basket over filling port.
2. Through the screen, fill the sprayer tank one-half full with the carrier.
3. If a compatibility agent is necessary to improve mixing or to prevent the formation of undesirable and unsprayable gels or precipitates, while agitating add it to the carrier already in the tank.

Use only compatibility agents, cleared by the Federal Food and Drug Administration for this use. Follow the directions for use of the compatibility agent label. Check for adequate agitation.

- 4. Premix one part of this product with one part water. Add diluted mixture SLOWLY through the screen into the tank. When necessary, this product may be diluted with a fertilizer carrier instead of water, after compatibility has been confirmed.
- 5. With minimum tillage systems, add the required amounts of Roundup or Gramoxone Extra near the end of the filling process.
- 6. Complete filling the sprayer tank with carrier. Remove hose from tank immediately to avoid siphoning back into the carrier source. Maintain good agitation at all times until the contents of the tank are sprayed. NOTE: If spray mixture is allowed to settle at any time, thorough agitation is required to resuspend the mixture before spraying is resumed.

Keep by-pass line on or near the bottom of tank to minimize foaming. Screen size in nozzle or line strainers should be ~~no finer than~~ 50 mesh. Carefully select the correct nozzle to avoid spraying a fine mist. For best results, use flat fan or flood jet nozzles. Check for even distribution of spray droplets. To reduce loss of the chemical due to drift of a fine mist, apply at pressures from 20 to 40 psi.

**STANDARD SPRAYABLE FLUID  
FERTILIZER COMPATIBILITY TEST**

Herbicides may not always mix evenly throughout a sprayable fluid fertilizer or the components may separate too quickly to make their combined use of practical value. This may be due to certain characteristics of the different fluid fertilizers. A simple test using small quantities of the components is suggested to provide compatibility potential.

The test follows:

**A. Materials Required For A Compatibility Test**

- 1. Two one-quart jars with lid or stopper (marked ''with'' and ''without'').
- 2. TEAspoons (for a more exacting test, a five to ten milliliter (ml.) pipette or graduated cylinder is desirable.
- 3. A minimum of one quart of the sprayable fluid fertilizer to

be tested.

- 4. The herbicide(s) to be mixed.
- 5. A compatibility agent (the purpose of the adjuvant is to help keep the fertilizer and herbicide(s) in suspension, if this assistance is needed).

**B. Procedure**

- 1. Add one pint of the sprayable fluid fertilizer that will be used or other herbicide carrier to each jar marked 'with' and 'without'.

Add One Pint Liquid Fertilizer  
To Two Quart Jars

WITH

WITHOUT

- 2. To the jar marked 'with', add 1/4 TEASpoon or 1.2 milliliters of a suitable compatibility agent; shake gently for five to ten seconds to mix. (1/4 TEASpoon is the equivalent of two pints per 100 gallons of liquid fertilizer.)

To Jar Marked 'With'  
Add Compatibility Agent  
And Shake to Mix

WITH

WITHOUT

- 3. To each jar add the appropriate amount of herbicide(s) listed in the following table. If more than one is used, add them separately with the wettable powders added first, flowables second and liquid last. Shake gently five to ten seconds after each addition.

Add Herbicide(s) To Both Jars  
And Shake to Mix

WITH

WITHOUT

11 of 10

Amount to Be  
Added Per Pint of  
Sprayable Fluid Fertilizer  
(Assuming Volume is 25 gal/A)

HERBICIDE	RATE/A	Level TEASpoons	Milliliters
This Product	3qts =	2.9	or 14.2
	3.5 qts =	3.4	or 16.6
	4 qts =	3.8	or 19
	4.5 qts =	4.3	or 21.4
	5 qts =	4.8	or 23.8

This compatibility test is designed for 25 gallons of spray per acre. For changes in spray volume or herbicide rate, make appropriate changes in the ingredients of the test. Regardless of spray volume, the amount of compatibility agent should be equal to two or three pints (two pints =  $\frac{1}{4}$  TEASpoon or 1.2 milliliters, three pints =  $\frac{3}{8}$  TEASpoon or 1.8 milliliters per pint of sprayable fluid fertilizer) per 100 gallons of liquid fertilizer.

**C. Observations and Decisions**

1. If the herbicide(s) and the sprayable fluid fertilizer are compatible.
2. If a compatibility agent is necessary.

Five minutes after the final addition and mixing, observe both jars for the formation of large flakes, sludge, gels or other precipitates. Observe if the herbicide(s) cannot be physically mixed with the liquid fertilizer but remains as small oily particles in the solution.

If incompatibility in any form described above occurs in the jar "with" the compatibility agent added, the liquid fertilizer and herbicide(s) should not be used together in the same spray tank.

If incompatibility as described above occurs in the jar "without" the adjuvant but not in the jar "with" adjuvant, the use of a compatibility adjuvant is recommended.

Both jars should be allowed to stand and be observed periodically for one-half hour. If the separate layers of liquid fertilizer and additives can be resuspended by shaking, commercial application is possible. Wettable powders will either settle to the bottom of the tank or jar, or float to the top, depending upon the density of the fertilizers.

If the herbicide(s) is compatible with fluid fertilizer in the foregoing test without using a compatibility agent, fluid fertilizer may be used for the premixing. If it is not compatible, the herbicide(s) should be premixed with water before adding to the spray tank.

**APPLICATION INFORMATION  
APPLICATION SYSTEMS**

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

**Aerial - Fixed wing; helicopter.**

Apply the recommended rates of this product or approved tank mixtures in 3 to 10 gallons of water per acre. AVOID DRIFT. DO NOT APPLY DURING INVERSION CONDITIONS, WHEN WINDS ARE GUSTY, OR UNDER ANY OTHER CONDITION WHICH WILL ALLOW DRIFT. Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle configurations which dispense spray or fine spray droplets. Do not angle nozzles forward into the airstream and do not increase spray volume by increasing nozzle pressure. Ensure uniform application. To avoid streaked, uneven or overlapped application, use mechanical marking systems only; HUMAN FLAGGERS PROHIBITED!

**Ground Broadcast Treatment** - Apply the recommended rates of this product or approved tank mixtures in 10 or more gallons of water or sprayable fluid fertilizer per acre. Do not apply during periods of gusty winds or winds in excess of 15 MPH.

**Band Treatment** - Apply a broadcast equivalent rate and volume per acre to determine these:

Band Width <u>in inches</u>		Broadcast		Band
Row width	X	RATE	=	RATE
in inches		per acre		per acre

Band Width <u>in inches</u>		Broadcast		Band
Row width	X	VOLUME	=	VOLUME
in inches		per acre		per acre

Mount spray equipment on the planter with nozzles behind press wheel and apply this product at planting time.

**Application with Dry Bulk Fertilizer** - The herbicide-fertilizer impregnation process (In-Plant and On-Board systems) must be completed only by commercial fertilizer or chemical dealerships properly equipped for this procedure. Contact Monsanto Company for additional information regarding recommended equipment and

methods for herbicide-fertilizer impregnation applications.

Dry bulk fertilizer may be impregnated with this product for use on corn and grain sorghum (milo). This product must be applied with 200 or 450 pounds of dry bulk fertilizer per acre and shallowly incorporated within 7 days prior to planting. On medium and fine textured soils in areas where soil incorporation is not planned; i.e., reduced tillage situations or in some conventional till situations, applications can be made up to 30 days before planting to allow moisture to move the herbicide-fertilizer mixture into the soil. On coarse textured soils, applications can be made up to 14 days prior to planting. This herbicide must be applied as recommended in this label for the crop, weed and soil type treated. Refer to the table for broadcast rate per acre in the "Early Preplant, Preplant Incorporated or Preemergence Surface Application" section of this label to determine the recommended broadcast rate per acre for the herbicide treatment to be applied.

The following table provides a reference to determine the amount of LIQUID herbicide to be mixed per ton of dry bulk fertilizer for a range of herbicide recommendations for fertilizer per acre:

Fertilizer Rate (lb./acre)	Acres Covered (per ton)	RECOMMENDED QUARTS LIQUID HERBICIDE/ACRE			
		3 (quarts of herbicide/ton dry bulk fertilizer)	3.5	4	4.5
200	10	30	35	40	45
250	8	24	28	32	36
300	6.7	20	23.3	26.5	30
350	5.7	17.1	20	22.8	25.7
400	5	15	17.5	20	22.5
450	4.5	13.3	15.6	17.8	20

To determine the amount of herbicide needed for rates not included in the preceding table, using the following formula:

$$\frac{\text{Recommended herbicide rate (lb or qt.)/acre} \times 2000}{\text{pounds fertilizer/acre}} = \begin{matrix} \text{Pounds or} \\ \text{quarts of herbi-} \\ \text{cide per ton of} \\ \text{dry bulk} \\ \text{fertilizer} \end{matrix}$$

With the In-Plant system, mix and blend the dry fertilizer and herbicide mixture in a closed rotary-drum-type mixer allowing sufficient time to ensure uniform coverage. Use at least one ton of dry fertilizer per mixing operation. Inject the herbicide into

the drum over a minimum of a 2-minute period and allow at least 2 additional minutes mixing time to ensure uniformity. The nozzle used to spray the herbicide treatment must be placed inside the mixer to provide uniform spray coverage of the tumbling fertilizer.

If the dry fertilizer used has inadequate adsorptive capacity, use a highly adsorptive material such as Agsorb<sup>TM</sup>, MP-79<sup>TM</sup>, Microcel<sup>TM</sup>E, CropStar<sup>TM</sup> or Lasso<sup>®</sup>II, granules can be added to provide a free-flowing mixture. Contact Monsanto Company for specific guidelines with regard to the sequence of addition of the various components and the amount of drying agent to add to the herbicide-fertilizer mixture to insure a free flowing mixture.

The following is a partial list of dry fertilizers which may be impregnated with this product.

Ammonium sulfate	21-0-0
Ammonium phosphate-sulfate	16-20-0
Diammonium phosphate	18-46-0
Potassium chloride	0-0-60
Potassium sulfate	0-0-52
*Urea	46-0-0

\*Some ureas may be phytotoxic when applied on corn. Use only ureas known to be safe to corn.

NOTE: DO NOT impregnate tank mixtures of this product with other herbicides or fertilizers containing ammonium nitrate, potassium nitrate or sodium nitrate.

- <sup>TM</sup>Agsorb is a trademark of Oil Dri Corporation.
- <sup>TM</sup>CropStar<sup>®</sup> is a registered trademark of Monsanto Company.
- <sup>TM</sup>Lasso<sup>®</sup> is a registered trademark of Monsanto Company.
- <sup>TM</sup>Microcel is a trademark of Manville Products Corporation.
- <sup>TM</sup>MP-79 is a trademark of Eagle-Pitcher Industries, Inc.

Spread the herbicide-fertilizer mixture with a properly calibrated dribble, pneumatic (air flow) or spin applicator. Be certain the material is applied uniformly to the soil surface. When using spin spreaders, a 100 percent overlap is recommended to ensure even distribution. Spin applicators should be calibrated to apply one-half the desired rate per acre and application overlapped by doubling back to cover one-half of the previous swath. Dribble spreaders must be calibrated with the herbicide-fertilizer mixture since the flow pattern for the herbicide-coated fertilizer will generally be slower than straight dry fertilizer. Nonuniform spreading of the herbicide-fertilizer mixture may result in unsatisfactory weed control or crop injury.

## APPLICATION TIMING AND METHODS

NOTE: Unless specifically recommended, on one treatment of Lariat may be applied to a labeled crop.

**Early Preplant Surface** - This product and some labeled tank mixtures of this product may be applied to no-till and other conservation tillage systems before weeds emerge and up to 45 days before planting. Split applications can be made 30 to 45 days prior to planting, with 60 percent of the recommended broadcast rate applied initially and the remaining 40 percent applied at planting. Applications made less than 30 days prior to planting can be made either as a split or single application. If weeds are present at the time of application, apply this product in tank mixture with an appropriate contact herbicide. Observe direction for use, precautions and restrictions on the label of the contact herbicide. During the planting operation be careful not to move untreated soil to the surface or move treated soil out of the row, as weed control may be reduced.

**Preplant Incorporation** - This product and many of the labeled tank mixtures may be mixed into the soil using shallow incorporation equipment any time within 7 days prior to planting. Refer to the crop to be treated in the "DIRECTIONS FOR USE" section of this label to determine if preplant incorporation is recommended. Apply the recommended treatment rate to the soil surface as a broadcast application. Precipitation or irrigation is required to bring incorporated herbicide treatments into contact with germinating weed seedlings. The amount of precipitation or irrigation required depends on existing soil moisture, soil type and percent organic matter content, but 1/3 to 3/4 inch is normally adequate. If weeds emerge after treatment, rotary hoe or shallowly cultivate immediately to improve performance.

NOTE: Do not incorporate unless specifically recommended in this label for the crop and herbicide treatment selected. Incorporation of this product and its labeled tank mixtures on coarse soil types may reduce length of weed control due to leaching with rainfall or irrigation. Incorporation is not recommended on coarse soils in the southeastern states.

**1-Pass Incorporation (Surface Blend™)**: Shallowly incorporate (Surface Blend) the treatment into the upper 1 to 2 inches of the soil. Equipment should be operated at manufacturer's designed speed for incorporation to ensure adequate mixing and distribution of the herbicide treatment in the soil. Equipment design including any drag attachments must be adequate to avoid soil ridging which may result in streaked or reduced weed control. Soil conditions, including moisture content and crop residue levels, must be suitable to allow thorough and uniform mixing with the equipment used for 1-pass incorporation.

Contact Monsanto Company for additional information regarding recommended equipment and methods for Surface Blend Application.

<sup>TM</sup>Surface Blend is a trademark of Monsanto Company.

**2-Pass Incorporation:** When 2-pass incorporation is used, shallowly incorporate the herbicide treatment into the upper 1 to 2 inches of the soil with equipment set to work the soil NO DEEPER THAN 4 INCHES. The second pass must be made at an angle to and no deeper than the first pass to ensure proper distribution of the herbicide treatment in the soil.

**Preemergence Surface Application** – This product and all labeled tank mixtures may be applied to the soil surface after planting and prior to either crop or weed emergence, apply within 5 days of last preplant tillage. If weeds emerge after treatment, or if treatment is applied more than 5 days after last preplant tillage, rotary hoe or shallowly cultivate immediately to improve performance. Precipitation or overhead sprinkler irrigation is required after application to move the herbicide treatment into the weed germination zone. The amount of precipitation or overhead sprinkler irrigation required depends on existing soil moisture, soil type and percent organic matter content, but 1/3 to 3/4 inch is normally adequate. Performance is improved when moisture is received within 7 days after application and prior to weed emergence. High intensity or excessive rainfall or excessive irrigation after application may reduce control.

**Postemergence Surface Application** – This product may be applied to labeled crops at the ground cracking stage of the crop or after crop emergence. Refer to the specific treatment and crop intended in the "DIRECTION FOR USE" section of the label to determine if postemergence applications to the crop are recommended and to determine the proper weed and crop growth stage limitations. Precipitation or overhead sprinkler irrigation is required after application to move the herbicide treatment into the weed germination zone to control unemerged weeds. The amount of precipitation or irrigation required depends on existing soil moisture, soil type and percent organic matter content, but 1/3 to 3/4 inch is normally adequate. If weeds emerge after treatment, rotary hoe or shallowly cultivate immediately to improve performance.

#### CULTIVATION INFORMATION

If annual grass or broadleaf weed seedlings emerge, rotary hoe immediately to improve weed control.

If cultivation is necessary because of soil crusting or compaction, tillage should be shallow to minimize dilution of this herbicide.

Except for the above, as long as the grasses and weeds are controlled, delay cultivation as long as possible.

If band application is used, avoid throwing soil during cultivation onto the band before weeds emerge in the band.

**WEEDS CONTROLLED**

Applicators should evaluate soil and weed conditions carefully to assure that ~~they choose~~ the lowest effective labeled rate is chosen.

When applied as directed, this product will CONTROL the following weeds:

This product may not control triazine-resistant weeds as indicated in the tables below.

**ANNUAL GRASSES**

**Barnyardgrass**

*Echinochloa crus-galli*

**Crabgrass**

*Digitaria ischaemum*

*Digitaria sanguinalis*

**Foxtail, giant**

*Setaria faberi*

**Foxtail, green**

*Setaria viridis*

**Foxtail, yellow**

*Setaria lutescens*

**Goosegrass**

*Eleusine indica*

**Panicum, browntop**

*Panicum fasciculatum*

**Panicum, fall**

*Panicum*

*dichotomiflorum*

**Sandbur, Grassbur<sup>1</sup>**

*Cenchrus incertus*

**Signalgrass, broadleaf**

*Brachiaria spp.*

**Sprangletop, red**  
*Leptochloa filiformis*

**Witchgrass**  
*Panicum capillare*

**ANNUAL BROADLEAVES**

**Beggarweed, Florida**  
*Desmodium tortuosum*

**Carpetweed**  
*Mollugo verticillata*

**Cocklebur<sup>3</sup>**  
*Xanthium strumarium*

**Galinsoga**  
*Galinsoga spp.*

**Groundcherry, annual**  
*Physalis spp.*

**Groundcherry, cutleaf**  
*Physalis angulata*

**Jimsonweed**  
*Datura stramonium*

**Kochia**  
*Kochia scoparia*

**Lambsquarters**  
*Chenopodium album*

**Marestail, Horseweed**  
*Conyza canadensis*

**Morningglory, annual<sup>3</sup>**  
*Ipomoea purpurea*

**Mustard**  
*Brassica spp.*

**Nightshade, black**  
*Solanum nigrum*

**Nightshade, hairy**  
*Solanum sarrachoides*

**Pigweed, Carelessweed**  
*Amaranthus spp.*

**Purslane***Portulaca oleracea***Pusley, Florida***Richardia scabra***Ragweed, common***Ambrosia artemisiifolia***Sida, spiny; Teaweed***Sida spinosa***Smartweed***Polygonum**pensylvanicum**Polygonum persicaria***Velvetleaf, Buttonweed<sup>3</sup>***Abutilon theophrasti***Waterhemp***Amaranthus tuberculatos***SEDGE****Nutsedge, yellow<sup>2</sup>***Cyperus esculentus*

- 1 Apply 4 to 5 quarts per acre of this product to control this weed. Preemergence surface applications should be applied to a freshly prepared seedbed. Rotary hoe or initiate overhead irrigation (0.33 to 0.55 inch) within 24 hours of application for best control.
- 2 Apply 5 quarts per acre of this product on medium and fine textured soils and preplant incorporate only for control of this weed. When applied preemergence to coarse textured soils with less than 3 per cent organic matter at rates of 4 to 5 quarts per acre, this product will provide reduced competition from this weed.
- 3 Apply 4 to 5 quarts per acre of this product to control these weeds. Use the higher rate in areas of heavy weed infestation, coarse textured soils or medium and fine textured soils with organic matter content greater than 3 per cent.

When applied preplant incorporated or immediately after planting and within 5 days of last tillage at a rate of 4 to 5 quarts per acre, this product will reduce competition from the following HARD-TO-CONTROL weeds:

**ANNUAL GRASSES**

**Johnsongrass, seedling**  
*Sorghum halepense*

**Rice, red**  
*Oryza sativa*

**Shattercane, wild cane**  
*Sorghum bicolor*

**Sorghum, Volunteer**  
*Sorghum bicolor*

**ANNUAL BROADLEAVES**

**Sicklepod**  
*Cassia obtusifolia*

For hard-to-control weeds, additional amounts of Lasso and/or atrazine may be added to the recommended treatment rates for this product to provide improved control. For more consistent control of common cocklebur, annual morningglory or velvetleaf, additional atrazine may be applied so the total atrazine rate is at least 1.5 quarts per acre on medium soil with less than 3 per cent organic matter and 1.5 to 2 quarts on medium and fine soils with 3 per cent or greater organic matter content. The following table shows the amounts of Lasso and/or atrazine that can be added to specific treatment rates of this product.

NOTE: The maximum application rate of atrazine for corn and sorghum is 3 pounds a.i. per acre per calendar year. The maximum application rate of alachlor is 6 pounds a.i. per acre per calendar year for corn and 4 pounds a.i. per acre per calendar year for grain sorghum (milo).

RECOMMENDED RATE (QUARTS)	ADDITIONAL PRODUCT (QUARTS)	
	Lasso®	atrazine (maximum)
2.5	1.25 to 2.25	1.1
3	1 to 2	0.9
3.5	0.75 to 1.75	0.7
4	0.5 to 1.5	0.5

**CORN  
(All Types)**

Do not make more than two applications per year or exceed a total of 8 quarts of Lariat per acre per year.

Do not graze treated area or feed treated forage to livestock for 21 days following application.

**LARIAT®**

Apply this product in water or sprayable fluid fertilizer solutions for control of yellow nutsedge and the annual grasses and broadleaf weeds listed in the 'WEEDS CONTROLLED' section of this label.

**APPROVED APPLICATION SYSTEMS**

- Ground - Broadcast boom; banded
- Aerial - Fixed wing; helicopter
- Dry Bulk Fertilizer Impregnation

Reference: The 'APPLICATION SYSTEMS' section of this label provides detailed information on the application of this product using the system selected.

**APPROVED APPLICATION METHODS**

**Preplant Incorporated** - Apply this product within 7 days prior to planting and shallowly incorporate or surface blend into the upper 1 to 2 inches of soil. See the following table for recommended broadcast rate per acre for preplant incorporated applications.

**Preemergence Surface** - Apply this product after planting, before crop and weed emergence and within 5 days after last preplant tillage operation. See the following table for recommended broadcast rate per acre for preemergence surface applications.

**Postemergence Surface** - Apply this product after crop emergence until weeds reach the 2-leaf stage and the crop is no more than 6 inches tall. Application made beyond the 2-leaf stage will not provide satisfactory weed control. Some leaf burn may occasionally occur when applied early postemergence to corn, but subsequent growth and yield should not be affected. See the following table for recommended broadcast rates per acre for postemergence surface applications.

~~DO NOT apply in sprayable fluid fertilizer after crop emergence~~

~~since crop injury may result.~~

Postemergence applications with sprayable fluid fertilizer are not recommended because severe crop injury may occur.

Reference: The 'APPLICATION TIMING AND METHOD' section of this label provides detailed information and procedures for the application timing and method selected.

**Preplant Incorporated, Preemergence Surface and Postemergence Surface Application Rates**

SOIL TEXTURAL GROUP*	BROADCAST RATE PER ACRE (QUARTS)	
	Less than 3% organic matter	3% or more organic matter
Coarse	2.5	3
Medium	3	3.75
Fine	3.75	3.75 to 4.5

Use 4 to 5 quarts of this product per acre in areas of heavy weed infestations. For specific rate recommendations on cocklebur, annual morningglory, velvetleaf, yellow nutsedge and other hard-to-control weeds see the 'WEEDS CONTROLLED' section of this label.

\* Refer to the 'SOIL TEXTURE' section of this label to determine the corresponding textural group for the soil to be treated.

NOTE: When applied under sprinkler irrigation systems on coarse soils, use a minimum of 3 quarts of this product per acre.

**LARIAT® plus BLADEX™  
(TANK MIXTURE)**

Apply this tank mixture in water or sprayable fluid fertilizer solutions for control of yellow nutsedge and the annual grasses and broadleaf weeds listed in the 'WEEDS CONTROLLED' section of this label.

**APPROVED APPLICATION SYSTEMS**

- Ground - Broadcast boom; banded
- ~~Aerial - Fixed wing; helicopter~~
- Dry Bulk Fertilizer Impregnation

Reference: The 'APPLICATION SYSTEMS' section of this label provides detailed information on the application

of this tank mixture using the system selected.

APPROVED APPLICATION METHODS

**Preplant Incorporated** - Apply this tank mixture within 7 days prior to planting and shallowly incorporate or Surface Blend into the upper 1 to 2 inches of soil. See the following table for recommended broadcast rates per acre for preplant incorporated applications.

**Preemergence Surface** - Apply this tank mixture after planting, before crop and weed emergence and within 5 days after last preplant tillage operation. See the following table for recommended broadcast rates per acres for preemergence surface applications.

Reference: The 'APPLICATION TIMING AND METHODS' section of this label provides detailed information and procedures for the application timing and method selected.

**Preplant Incorporated and Preemergence Surface Application Rates**

SOIL TEXTURAL GROUP*	BROADCAST RATE PER ACRE (QUARTS)			
	Less than 3% organic matter		3% or more organic matter	
	Lariat® + 4L**	Bladex 4L**	Lariat +	Bladex 4L**
Coarse**	2.5	0.5 to 1	3	1 to 1.25
Medium	3	1 to 1.25	3.75	1 to 2
Fine	3.75	1 to 1.5	3.75 to 4.5	1 to 2

\* Refer to the 'SOIL TEXTURE' section of this label to determine corresponding textural group for the soil to be treated.

\*\* Use rates listed in this label when using Bladex 4L. Use equivalent rates when using Bladex 80W. One quart of Bladex 4L equals 1.25 pounds of Bladex 80W.

\*\*\* Do not use this mixture on sand or loamy sand soils with less than 2% organic matter.

NOTE: To control yellow nutsedge, apply 5 quarts of this product per acre on medium and fine textural soils and preplant incorporate only.

**LARIAT® plus PROWL™  
(TANK MIXTURE)**

Apply this tank mixture in water or sprayable fluid fertilizer solutions for control of triazine-resistant lambsquarter and pigweed in addition to yellow nutsedge, and the annual grasses and broadleaf weeds listed in the "WEEDS CONTROLLED" section of this label.

APPROVED APPLICATION SYSTEMS

- Ground - Broadcast boom; banded
- Aerial - Fixed wing; helicopter

Reference: The "APPLICATION SYSTEMS" section of this label provides information on the application of this tank mixture using the system selected.

APPROVED APPLICATION METHOD

**Preemergence Surface** - Apply this tank mixture after planting, before crop and weed emergence and within 5 days after last preplant tillage operation. See the following table for recommended broadcast rates per acre for preemergence surface applications.

DO NOT preplant incorporate this tank mixture as serious crop injury can result.

Reference: The "APPLICATION TIMING AND METHODS" section of this label provides detailed information and procedures for the application timing and method selected.

**Preemergence Surface Application Rates**

SOIL TEXTURAL GROUP*	BROADCAST RATE PER ACRE (QUARTS)			
	Less than 3% organic matter		3% or more organic matter	
	Lariat® + Prowl		Lariat +	Prowl
Coarse	2.5	0.75	3	0.75 to 1
Medium	3	0.75 to 1	3.75	1
Fine	3.75	1	3.75 to 4.5	1

\* Refer to the "SOIL TEXTURE" section of this label to determine the corresponding textural group for the soil to be treated.

NOTE: Use 4 to 5 quarts of this product per acre in areas of heavy weed infestations.

LARIAT<sup>®</sup> plus LINURON  
(TANK MIXTURE)

FOR USE ONLY IN ~~DELAWARE, MARYLAND, NEW JERSEY, NEW YORK,  
PENNSYLVANIA, VIRGINIA AND WEST VIRGINIA.~~ EAST OF THE ROCKY  
MOUNTAINS.

Apply this tank mixture in water or sprayable fluid fertilizer solutions for control of triazine-resistant lambsquarter and pigweed in addition to yellow nutsedge and the annual grasses and broadleaf weeds listed in the 'WEEDS CONTROLLED' section of this label.

APPROVED APPLICATION SYSTEMS

Ground - Broadcast boom; banded

Reference: The 'APPLICATION SYSTEMS' section of this label provides information on the application of this tank mixture using the system selected.

APPROVED APPLICATION METHOD

**Preemergence Surface** - Apply this tank mixture after planting, before crop and weed emergence and within 5 days after last preplant tillage operation. See the following table for recommended broadcast rates per acre for preemergence surface applications.

Reference: The 'APPLICATION TIMING AND METHODS' section of this label provides detailed information and procedures for the application timing and method selected.

Preemergence Surface Application Rates

	BROADCAST RATE PER ACRE (QUARTS)			
	Less than 3% organic matter		3% or more organic matter	
SOIL TEXTURAL GROUP*	Lariat <sup>®</sup>	linuron 4L**	Lariat <sup>®</sup>	linuron 4L**
Coarse-sandy loam only	2.5	0.33	3	0.5
Medium	3	0.5	3.75	0.5
Fine	3.75	0.5	3.75 to 4.5	0.5

\* Refer to the 'SOIL TEXTURE' section of this label to determine the corresponding soil textural group for the soil to be treated.



■ **LARIAT plus PRINCEP plus** \_\_\_\_\_ ■  
**ROUNDUP**  
 or  
 ■ ~~LARIAT plus PRINCEP plus~~ \_\_\_\_\_ ■  
**GRAMOXONE-EXTRA**

Apply these tank mixtures with Roundup or 2,4-D (amine or low-volatile ester) in 10 to 20 gallons of water, or 10 to 60 gallons of nitrogen solution per acre, or the tank mixtures with Gramoxone Extra in 20 to 60 gallons of water or clear liquid fertilizer per acre immediately before, during or after planting, but BEFORE CROP EMERGENCE. As density of stubble, crop residue or weeds increases, spray gallonage and rate should be increased within the recommended ranges to insure complete coverage. In the absence of emerged vegetation, delete the Roundup or Gramoxone Extra or 2,4-D portion of these tank mixtures.

**APPROVED APPLICATION SYSTEMS**

Ground-Broadcast boom

Reference: The "APPLICATION SYSTEMS" section of this label provides detailed information on the application of this tank mixture using the system selected.

**CONTROL OR SUPPRESSION  
OF EMERGED WEEDS**

**ATTENTION**

AVOID DRIFT - EXTREME CARE MUST BE USED WHEN APPLYING THESE TANK MIXTURES TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS. Do not allow spray mist to drift since even minute quantities of spray can cause severe damage or destruction to nearby crops, plants or other areas on which treatment is not intended. Do not apply when winds are gusty or in excess of 5 miles per hour or when other conditions, including lesser wind velocities, will allow drift to occur. When spraying, avoid combinations of pressure and nozzle type that will result in fine particles (mist) which are more likely to drift.

■ **ROUNDUP®** ■

**Annual Weeds** - Apply 1 to 1.5 pints of Roundup per acre in these tank mixtures when weeds are less than 6 inches tall. Use 2 pints of Roundup per acre for control of fall panicum, barnyardgrass, crabgrass and shattercane up to 2 inches tall; Pennsylvania smartweed up to 6 inches tall; other annual weeds 6 to 12 inches tall. For emerged annual weeds controlled, see the "WEEDS CONTROLLED" section of the label booklet for Roundup.

**Perennial Weeds** - At normal application dates in minimum tillage

systems, perennial weeds may not be at the proper stage of growth for control. See the 'GENERAL INFORMATION' section of the label for Roundup for the proper stage of growth for perennial weeds. Use of 2 to 4 quarts of Roundup per acre in the above mixtures under these conditions provides top kill and reduces competition from many emerged perennial grasses and broadleaf weeds.

For emerged perennial weeds controlled see the 'WEEDS CONTROLLED' section of the label for Roundup. To obtain control of perennial weeds, follow recommendations on the label booklet for Roundup for stage of growth and rate of application.

USE OF THIS MIXTURE FOR BERMUDAGRASS OR JOHNSONGRASS CONTROL IS NOT RECOMMENDED.

NOTE: When using these tank mixtures, do not exceed 4 quarts of Roundup herbicide per acre.

**Ammonium Sulfate** - The addition of ammonium sulfate in the spray solution may increase the performance of Roundup tank mixtures on emerged annual weeds under adverse growing conditions. When using ammonium sulfate, add 2 percent dry ammonium sulfate by weight or 17 pounds per 100 gallons of water. Ammonium sulfate should be added to the water in the spray tank and completely dissolved prior to adding the herbicide or surfactant. Do not mix ammonium sulfate in fluid fertilizer solutions.

If ammonium sulfate is added directly to the spray tank, add slowly with agitation. Adding too quickly may clog outlet lines. Nozzle tip plugging may result from the use of low-quality ammonium sulfate. To determine quality, perform a jar test by adding 1/3 cup of ammonium sulfate to 1 gallon of water and agitate for one minute. If undissolved sediment is observed, predissolve the ammonium sulfate in water and filter prior to adding to the spray tank.

Following use of ammonium sulfate, thoroughly rinse the spray system with clean water to reduce corrosion.

**Surfactants**-Nonionic surfactants which are labeled for use with herbicides may be used with Roundup. Do not reduce rates of Roundup when adding surfactant. Use 0.5 percent surfactant concentration (2 quarts per 100 gallons of spray solution) when using surfactants which contain at least 50 percent active ingredient or a 1 percent surfactant concentration (4 quarts per 100 gallons of spray solution) for those surfactants containing less than 50 percent active ingredient. Read and carefully observe surfactant cautionary statements and other information appearing on the surfactant label.

■ **GRAMOXONE EXTRA** ■

When used as directed, Gramoxone Extra in labeled tank mixtures controls many emerged annual weeds and suppresses many emerged perennial weeds.

**Broadcast Treatment** - Apply 1.5 to 3 pints of Gramoxone Extra in these tank mixtures immediately before, during or after planting but BEFORE CROP EMERGENCE. Use 1.5 to 2 pints when weeds are 1 to 3 inches tall, 2 to 2.5 pints when weeds are 3 to 6 inches tall and 2.5 to 3 pints when weeds are 6 inches tall. This mixture may not control weeds taller than 6 inches. As density of stubble, crop residue or weeds increases, spray gallonage should be increased within the recommended range for complete coverage. Add a nonionic spreader surfactant (approved for use on crops) containing at least 75 percent surfactant active agent at 8 ounces per 100 gallons of diluted spray. REFER TO THE GRAMOXONE EXTRA LABEL FOR PRECAUTIONARY STATEMENTS.

■ **2,4-D** ■

When used as directed, 2,4-D in labeled tank mixtures controls many emerged annual and perennial broadleaf weeds. For emerged weeds controlled, see the "WEEDS CONTROLLED" section of the label for 2,4-D.

**Broadcast Treatment**-Apply 1 to 2 pints of 2,4-D (amine or low-volatile ester) in these tank mixtures. Applications should be made 7 to 14 days before planting or 3 to 5 days after planting but BEFORE CORN EMERGES. As density of stubble, crop residue or weeds increases, spray gallonage should be increased within the recommended range for complete coverage.

DO NOT use 2,4-D on light, sandy soils, or where soil moisture is inadequate for normal weed growth. Observe all precautions and limitations on the 2,4-D label booklet.

PREEMERGENCE WEED CONTROL

■ **LARIAT®** ■

For weeds controlled preemergence, see the "WEEDS CONTROLLED" section of this label. For recommended rates of this product with tank mixtures of Roundup or Gramoxone Super see the following table.

BROADCAST RATE PER ACRE (QUARTS)

SOIL TEXTURAL GROUP*	Lariat®
Coarse	3
Medium	3.75
Fine	3.75 to 4.5

Use 4 to 5 quarts of this product per acre in areas of heavy weed infestations. For specific rate recommendations on cocklebur, annual morningglory, velvetleaf and other hard-to-control weeds see the 'WEEDS CONTROLLED' section of this label.

- \* Refer to the 'SOIL TEXTURE' section of this label to determine the corresponding textural group for the soil to be treated.

**LARIAT® plus BLADEX**

For additional preemergence control of heavy weed infestations and/or hard-to-control weeds listed in the 'WEEDS CONTROLLED' Section of this label. Refer to the following rate table to determine the recommended rates for this tank mixtures on various soil types.

SOIL TEXTURAL GROUP*	BROADCAST RATE PER ACRE (QUARTS)	
	Lariat®	+ Bladex 4L**
Coarse***	3	1 to 1.25
Medium	3.75	1 to 2
Fine	3.75 to 4.5	1 to 2

- \* Refer to the 'SOIL TEXTURE' section of this label to determine the corresponding soil textural group for the soil to be treated.

- \*\* Use rates listed in this label when using Bladex 4L. Use equivalent rates when using Bladex 80W. One quart of Bladex 4L equals 1.25 pounds of Bladex 80W.

- \*\*\* DO NOT use this mixture on sand or loamy sand soils with less than 2% organic matter.

**LARIAT® plus EXTRAZINE II**

For additional preemergence control of heavy weed infestation and/or hard to control weeds listed in the 'WEEDS CONTROLLED' section of this label, refer to the following rate table to

determine the recommended rates for this tank mixtures on various soil types.

SOIL TEXTURAL GROUP*	BROADCAST RATE PER ACRE (QUARTS)	
	Bullet®	Extrazine II 4L**
Coarse***	2.5	1 to 1.5
Medium	3	1.5 to 2
Fine	3.75	1.5 to 2

\* Refer to the 'SOIL TEXTURE' section of this label to determine the corresponding soil textural group for the soil to be treated.

\*\* Use rates listed in this label when using Extrazine II 4L. Use equivalent rates when using Extrazine II 90% dry flowable formulation. One quart of Extrazine II 4L equals 1.1 pounds of Extrazine II 90% dry flowable.

\*\*\* Do not use this mixture on sand or loamy sand soils with less than 2% organic matter.

LARIAT® plus PRINCEP 4L

For additional preemergence controls of heavy weed infestation and/or hard to control weeds listed in the 'WEEDS CONTROLLED' section of this label. Refer to the following rate table to determine the recommended rates for this tank mixtures on various soil types.

SOIL TEXTURAL GROUP*	BROADCAST RATE PER ACRE (QUARTS)	
	Lariat®	Princep 4L**
Coarse	3	0.75 to 1
Medium	3.75	1 to 1.5
Fine	3.75 to 4.5	1 to 1.5

\* Refer to the 'SOIL TEXTURE' section of this label to determine the corresponding soil textural group for the soil to be treated.

\*\* Use rates listed in this label when using Princep 4L. Use equivalent rates when using Princep 80W or 90% dry flowable formulations. One quart of 4L formulation equals 1.25 pounds of 80W or 1.1 pounds of the 90% dry flowable formulations.

NOTE: LAND TREATED WITH PRINCEP SHOULD NOT BE PLANTED TO ANY CROP

EXCEPT CORN FOR ONE YEAR FOLLOWING TREATMENT AS CROP INJURY MAY OCCUR. AFTER HARVEST OF TREATED CROP PLOW AND THOROUGHLY TILL THE SOIL IN THE FALL OR SPRING TO MINIMIZE POSSIBLE INJURY TO SPRING SEEDED ROTATIONAL CROPS.

**EARLY PREPLANT APPLICATION**

For use in no-till and other conservation tillage systems in CONNECTICUT, DELAWARE, ILLINOIS, INDIANA, IOWA, KANSAS, KENTUCKY, MARYLAND, MASSACHUSETTS, MICHIGAN, MINNESOTA, MISSOURI, NEBRASKA, NEW JERSEY, NEW YORK, NORTH CAROLINA, OHIO, PENNSYLVANIA, SOUTH DAKOTA, VERMONT, VIRGINIA, AND WISCONSIN.

This product, when applied in a single application (alone or in a tank mix combination with Bladex or Princep), split application or as a sequential application to Bladex or Princep in early preplant programs, will provide preemergence control or reduced competition of listed annual grasses and broadleaf weeds.

If emerged weeds are present at the time of treatment, Roundup®, Gramoxone Extra or 2,4-D should be added to the product according to the directions for use on their respective product labels. If unsatisfactory weed control occurs (due to excessively dry or excessively wet conditions) following the earlier application, a postemergence application of an appropriate labeled grass and/or broadleaf weed herbicide may be used. If a postemergence treatment includes the herbicide used early preplant, do not exceed the labeled rate for corn on a given soil texture. Observe all precautions and limitations on the labels for Lariat, Bladex, Extrazine II, Roundup, Gramoxone Extra, 2,4-D and other postemergence herbicides before use of these products.

DO NOT apply tank mixtures containing Roundup, Gramoxone Extra or other contact herbicides by air.

**RECOMMENDED RATE AND TIMING OF APPLICATION:**

**Single application** - Application of this product should be made less than 30 days before planting but prior to weed emergence.

See the following table for recommended rates:

SOIL TEXTURAL GROUP*	BROADCAST RATE PER ACRE (QUARTS)**	
	Lariat®	
Coarse*	3.5	to 4
Medium	3.75	to 4.75
Fine	4.75	to 6

This product may also be tank mixed with ~~1 to 1.25 quarts per acre of Princep or 1.5 to 2 quarts per acre of Bladex~~ to 1.5 to 2 quarts per acre of Bladex or 1.5 to 2 quarts per acre of Extrazine II or 1 to 1.25 quarts per acre of Princep to provide improved control of fall panicum and crabgrass.

\*NOTE: Applications on coarse soils should NOT be made more than 2 weeks prior to planting.

\* Refer to the "SOIL TEXTURE" section of this label to determine the corresponding textural group for the soil to be treated.

\*\* Use the lower rate where light weed infestation is expected and the higher rate where heavy weed infestation is expected.

**Split application** - Apply 60 percent of the recommended rate as a split treatment prior to weed emergence and no more than 45 days prior to planting and the remaining 40 percent at or immediately following planting.

FOR CONTROL OF FALL PANICUM, CRABGRASS OR BROADLEAF SIGNALGRASS USE THE SEQUENTIAL APPLICATION OF THIS PRODUCT FOLLOWING BLADEX OR PRINCEP.

See the following table for recommended rates:

SOIL TEXTURAL GROUP*	BROADCAST RATE PER ACRE (QUARTS)**	
	LARIAT <sup>®</sup>	
Coarse	3.5	to 4
Medium	3.75	to 4.75
Fine	4.75	to 6

\* Refer to the "SOIL TEXTURE" section of this label to determine corresponding textural group for the soil to be treated.

\*\* Use the lower rate where light weed infestation is expected and the higher rate where heavy weed infestation is expected.

**Sequential application** - Application of this product following Bladex or Princep should be utilized for the control of fall panicum, crabgrass or broadleaf signalgrass. Apply 1.5 to 2 quarts per acre of Bladex or 1.5 to 2 quarts per acre of Extrazine II or 1 to 1.25 quarts per acre of Princep prior to weed emergence and no more than 45 days prior to planting. At or immediately following planting apply the recommended rate of this

product.

Following applications of Bladex or Princep see the following table for recommended rates:

SOIL TEXTURAL GROUP*	BROADCAST RATE PER ACRE (QUARTS)**	
	LARIAT®	
Coarse	3	to 4
Medium	3.5	to 4.5
Fine	3.75	to 4.75

\* Refer to the "SOIL TEXTURE" section of this label to determine corresponding textural group for the soil to be treated.

\*\* Use the lower rate where light weed infestation is expected and the higher rate where heavy weed infestation is expected.

When using Bladex 80W or Bladex 90 DF use equivalent rates. One quart of Bladex 4L equals 1.25 pounds of Bladex 80W and 1.1 pounds of Bladex 90 DF. When using Extrazine II 90 DF use equivalent rates. One quart of Extrazine II 4L equals 1.1 pounds of Extrazine II 90 DF. When using Princep 80W or Princep 90 use equivalent rates. One quart of Princep 4L equals 1.25 pounds of Princep 80W and 1.1 pounds of Princep 90.

DO NOT use Bladex on coarse textured soils or soils of less than 1 percent organic matter.

~~Plant only corn, peanuts, sorghum (milo) or soybeans the year following the use of this program. There is a possibility of crop injury due to carryover of atrazine if soybeans are planted the following year.~~

NOTE: Soil treated with Princep should not be planted to any crop except corn for one year following treatment as crop injury may occur. After harvest of the treated crop, plow and thoroughly till the soil in the fall or spring to minimize possible injury to spring seeded rotational crops.

#### GRAIN SORGHUM (MILO)

Do not make more than 2 applications per year or exceed a total of 6.4 quarts of Lariat per acre per calendar year.

Early preplant surface, preplant incorporated and preemergence

surface applications must be made ONLY to grain sorghum (milo) planted with seed that has been properly treated with Screen® seed protectant or a safener containing the active ingredient, flurazole. ~~Postemergence surface applications can be made to grain sorghum (milo) planted with protected or unprotected seed (grain sorghum seed not treated with a seed protectant).~~

In Texas, use only in the Panhandle area and the fine textured soils of the Gulf Coast and Blacklands. In the Texas Panhandle and Oklahoma Panhandle, apply this product as a preemergence surface application only. In the Texas Panhandle, Oklahoma Panhandle and the fine textured soils of the Gulf Coast and Blacklands of Texas DO NOT exceed 3.25 quarts of this product per acre as crop injury may result due to atrazine.

Applications made to grain sorghum (milo) growing on alkali soils or where cuts, fills or erosion have exposed calcareous or alkali subsoils may result in crop injury.

#### LARIAT®

Apply this product in water or sprayable fluid fertilizer solutions for control of yellow nutsedge and the annual grasses and broadleaf weeds listed in the "WEEDS CONTROLLED" section of this label.

DO NOT graze or harvest forage for 70 days following application of this product.

#### APPROVED APPLICATION SYSTEMS

Ground - Broadcast boom; banded  
Aerial - Fixed wing; helicopter  
Dry Bulk Fertilizer Impregnation

Reference: The "APPLICATION SYSTEMS" section of this label provides detailed information on the application of this product using the system selected.

#### APPROVED APPLICATION METHODS

**Preplant Incorporated** - Apply this product within 7 days prior to planting and shallowly incorporate or Surface Blend into the upper 1 to 2 inches of soil. See the following table for recommended broadcast rate per acre for preplant incorporated applications.

**Preemergence Surface** - Apply this product after planting, before crop and weed emergence and within 5 days after last preplant tillage operation. See the following table for recommended broadcast rate per acre for preemergence surface applications.

NOTE: Applications made to grain sorghum (milo) growing on alkali soils or where cuts, fills or erosion have exposed calcareous or alkali subsoils may result in crop injury.

~~Postemergence Surface~~ — Apply ~~this product after crop emergence until weeds reach the 2-leaf stage and the crop is no more than 5 inches tall. Application made beyond the 2-leaf stage will not provide satisfactory weed control. Some leaf burn may occasionally occur when applied early postemergence to corn, but subsequent growth and yield should not be affected. See the following table for recommended broadcast rates per acre for postemergence surface applications.~~

~~DO NOT apply in sprayable fluid fertilizer after crop emergence since crop injury may occur.~~

Reference: The 'APPLICATION TIMING AND METHODS' section of this label provides detailed information and procedures for the application timing and method selected.

**Preplant Incorporated, and Preemergence Surface and Postemergence Surface Application Rates**

SOIL TEXTURAL GROUP*	BROADCAST RATE PER ACRE (QUARTS)	
	Less than 1.5% organic matter	1.5% or more organic matter
Coarse**	2.5	2.75
Medium	2.75	2.75 to 3.75
Fine	3	3 to 4

Use 4 to 5 quarts of this product per acre in areas of heavy weed infestations. For specific rate recommendations on cocklebur, annual morningglory, velvetleaf, yellow nutsedge and other hard-to-control weeds see the 'WEEDS CONTROLLED' section of this label.

NOTE: When applied under sprinkler irrigation systems on coarse soils, use a minimum of 3 quarts of this product per acre.

\* Refer to the 'SOIL TEXTURE' section of this label to determine the corresponding textural group for the soil to be treated.

\*\* DO NOT use this product for preplant incorporated application in coarse soils.

**Conservation or Minimum  
Tillage systems  
TANK MIXTURES**



**Annual Weeds** - Apply 1 to 1.5 pints of Roundup per acre in this tank mixture when weeds are less than 6 inches tall. Use 2 pints of Roundup per acre for control of fall panicum, barnyardgrass, crabgrass and shattercane up to 2 inches tall; Pennsylvania smartweed up to 6 inches tall; other annual weeds 6 to 12 inches tall. For emerged annual weeds controlled, see the "WEEDS CONTROLLED" section of the label for Roundup.

**Perennial Weeds** - At normal application dates in minimum tillage systems, perennial weeds may not be at the proper stage of growth for control. See the "GENERAL INFORMATION" section of the label for Roundup for the proper stage of growth for perennial weeds. Use of 2 to 4 quarts of Roundup per acre in the above mixtures under these conditions provides top kill and reduces competition from many emerged perennial grasses and broadleaf weeds.

For emerged perennial weeds controlled see the "WEEDS CONTROLLED" section of the label booklet for Roundup. To obtain control of perennial weeds, follow recommendations on the label booklet for Roundup for stage of growth and rate of application.

USE OF THIS MIXTURE FOR BERMUDAGRASS OR JOHNSONGRASS CONTROL IS NOT RECOMMENDED.

NOTE: When using this tank mixture, do not exceed 4 quarts of Roundup herbicide per acre.

**Ammonium Sulfate** - The addition of ammonium sulfate in the spray solution may increase the performance of Roundup tank mixtures on emerged annual weeds under adverse growing conditions. When using ammonium sulfate, add 2 percent dry ammonium sulfate by weight or 17 pounds per 100 gallons of water. Ammonium sulfate should be added to the water in the spray tank and completely dissolved prior to adding the herbicide or surfactant. Do not mix ammonium sulfate in fluid fertilizer solutions.

If ammonium sulfate is added directly to the spray tank, add slowly with agitation. Adding too quickly may clog outlet lines. Nozzle tip plugging may result from the use of low-quality ammonium sulfate. To determine quality, perform a jar test by adding 1/3 cup of ammonium sulfate to 1 gallon of water and agitate for one minute. If undissolved sediment is observed, predissolve the ammonium sulfate in water and filter prior to adding to the spray tank.

Following use of ammonium sulfate, thoroughly rinse the spray system with clean water to reduce corrosion.

**Surfactants** - Nonionic surfactants which are labeled for use with herbicides may be used with Roundup. Do not reduce rates of Roundup when adding surfactant. Use 0.5 percent surfactant concentration (2 quarts per 100 gallons of spray solution) when

using surfactants which contain at least 50 percent active ingredient or a 1 percent surfactant concentration (4 quarts per 100 gallons of spray solution) for those surfactants containing less than 50 percent active ingredient. Read and carefully observe surfactant cautionary statements and other information appearing on the surfactant label.

**GRAMOXONE EXTRA**

When used as directed, Gramoxone Extra in this tank mixture controls many emerged annual weeds and suppresses many emerged perennial weeds.

**Broadcast Treatment** - Apply 1.5 to 3 pints of Gramoxone Extra per acre in this tank mixture immediately before, during or after planting but BEFORE CROP EMERGENCE. Use 1.5 to 2 pints when weeds are 1 to 3 inches tall, 2 to 2.5 pints when weeds are 3 to 6 inches tall and 2.5 to 3 pints when weeds are 6 inches tall. This mixture may not control weeds taller than 6 inches. As density of stubble, crop residue or weeds increases, spray gallonage should be increased within the recommended range for complete coverage. Add a nonionic spreader surfactant (approved for use on crops) containing at least 75 percent surfactant active agent at 3 fluid ounces per 100 gallons of diluted spray. For emerged annual weeds controlled, see the "WEEDS CONTROLLED" section of the label for Gramoxone Extra. REFER TO THE GRAMOXONE EXTRA LABEL FOR PRECAUTIONARY STATEMENTS.

**PREFEMERGENCE WEED CONTROL**

**LARIAT<sup>3</sup>**

For weeds controlled preemergence, see the "WEEDS CONTROLLED" section of this label. For recommended rates of this product with tank mixtures of Roundup or Gramoxone Extra, see the following table.

BROADCAST RATE PER ACRE (QUARTS)	
SOIL TEXTURAL GROUP*	Lariat <sup>3</sup>
Coarse-sandy loam only	2.75 to 3
Medium	3 to 3.75
Fine	3.25 to 4

\* Refer to the "SOIL TEXTURE" section of the label to determine the corresponding textural group for the soil to be treated.

Use the higher rate of this product in the recommended ranges in areas of heavy weed infestation, or when organic matter content is 1.5 percent or more. The rate of this product may be increased to a maximum of 4 quarts per acre on any soil type to reduce competition from the hard-to-control weeds listed in this label.

**EARLY PREPLANT APPLICATION**

Apply 3.75 to 5 quarts of this product per acre in 10 or more gallons of water or sprayable fertilizer as a single application within 30 days prior to planting. When making split applications, apply 2.75 to 3 quarts of this product no more than 45 days prior to planting, followed by 1 to 2 quarts of this product per acre at planting. Use the lower rate wher light weed infestation is expected and the higher rate where heavy weed infestation is expected. On coarse textured soils, apply 3 to 4 quarts per acre not more than 2 weeks prior to planting. If emerged weeds are present at the time of the early preplant application or at-planting application, a labeled contact herbicide or tillage should be used. The at-planting application should be made before crop or weed emergence. Minimize movement of treated soil out of the row or untreated soil to the surface during planting or weed control may be reduced. ~~Do not use on coarse or fine textured soils.~~

THIS PRODUCT IS NOT APPROVED FOR USE IN CALIFORNIA.

EPA Reg. No. 524-329-AA

843.89-000.42/53

843.89-000.47/53

In case of emergency involving this product,  
Call Collect, day or night, (314) 694-4000.

©MONSANTO COMPANY 1990 1992

MONSANTO COMPANY  
AGRICULTURAL PRODUCTS  
ST. LOUIS, MISSOURI 63167 U.S.A.