



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

DEC - 1 2004

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Ms. Rebecca M. Ashley
E.I. DuPont de Nemours & Company
DuPont Crop Protection
Stine-Haskell Research Center
P.O. Box 30
Newark, DE 19714-0030

Dear Ms. Ashley:

Subject: DuPont Leadoff Herbicide (Revise Based on Atrazine MOA)
EPA Registration No. 352-600
Application Dated September 9, 2004

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

1. On page 4, under Maximum Broadcast Rates for Atrazine, add the phrase "soils (as defined by the Natural Resource Conservation Service)" to the second bullet between "highly erodible" and "if". Also, add the phrase "(as defined by the Natural Resource Conservation Service)" to the third bullet between "soils" and "if".

2. Based on the Atrazine component of this product, the following must be incorporated into your Dry Bulk Fertilizer Application section.

"Impregnation of bulk fertilizer is restricted to commercial facilities. On-farm fertilizer impregnation is prohibited.

-No more than 500 tons of dry bulk fertilizer can be impregnated per day.

-No single facility may impregnate fertilizer with this product for more than 30 days per calendar year.

-The commercial facility impregnating the dry bulk fertilizer must inform, in writing, the user (applicator) of the dry bulk fertilizer that:

- >Applicators must wear long-sleeved shirt, long pants, shoes and socks.
- > The restricted-entry interval is 12 hours."

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3. Under Storage and Container Disposal revise "Storage" to read "Pesticide Storage".

Submit two (2) copies of your final printed labeling incorporating the above change before you release the product for shipment. Amended labeling supercedes all previously accepted ones. A stamped copy of labeling is enclosed for your records.

Sincerely,

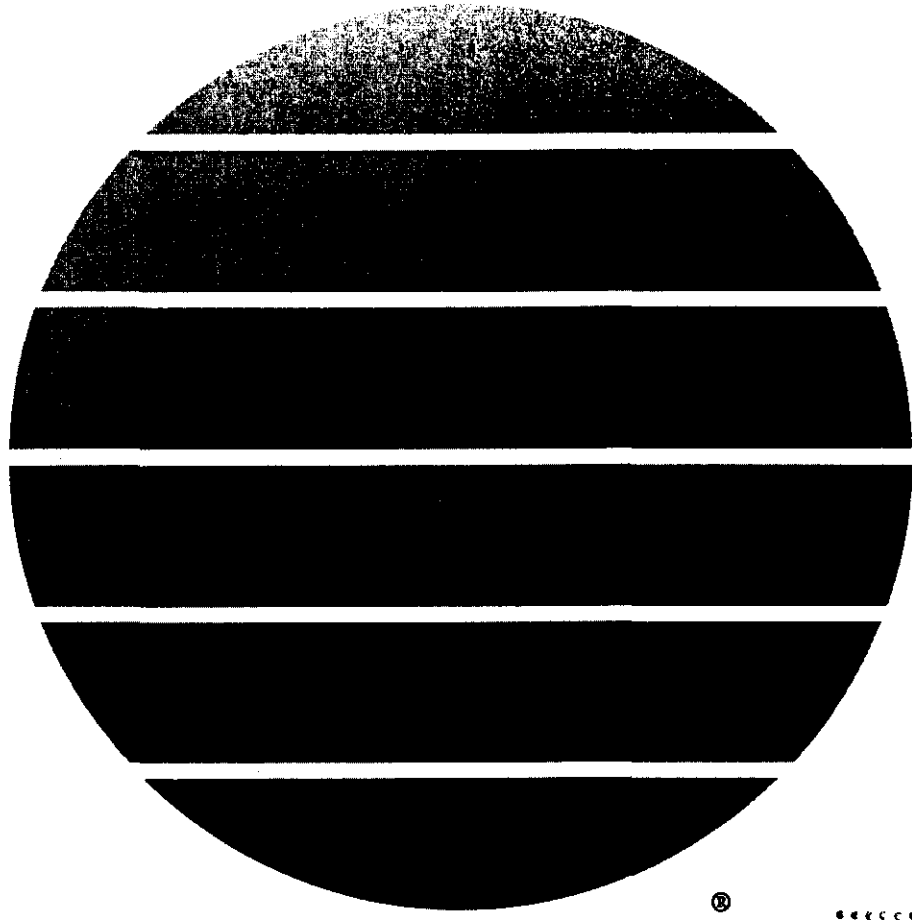
Victoria K. Waller for
James A. Tompkins
Product Manager 25
Herbicide Branch
Registration Division (7505C)



LeadOff™

herbicide

DRAFT LABEL



®



“..... A Growing Partnership With Nature?”

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RESTRICTED USE PESTICIDE

(GROUND AND SURFACE WATER CONCERNS)

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION. THIS PRODUCT IS A RESTRICTED USE HERBICIDE DUE TO GROUND AND SURFACE WATER CONCERNS.



LeadOff™

herbicide

**FOR WEED CONTROL IN FIELD CORN,
SEED CORN, SWEET CORN, POPCORN,
AND GRAIN SORGHUM**

<i>Active Ingredients</i>	<i>Percent By Weight</i>
Dimethenamid	
2-chloro-N-[(1-methyl-2-methoxy)ethyl] -N-(2,4-dimethyl-thien-3-yl)-acetamide	24.8%
Atrazine	
2-chloro-4-(ethylamino)-6-(isopropyl amino)-s-triazine	28.4%
<i>Inert Ingredients</i>	46.8%*
TOTAL	100.0%

LEADOFF contains 2.33 pounds of dimethenamid and 2.67 pounds of atrazine per gallon.

*Contains petroleum distillates

EPA Reg No. 352-600

KEEP OUT OF REACH OF CHILDREN

WARNING AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.) See next page for additional Precautionary Statements and Statement of Practical Treatment.

**ACCEPTED
with COMMENTS
EPA Letter Dated:**

DEC - 1 2004

Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under EPA Reg. No.
352-600

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING AVISO Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Harmful if swallowed, inhaled, or absorbed through the skin. Avoid breathing vapor or spray. Avoid contact with skin. Prolonged or frequent repeated skin contact may cause allergic reactions in some individuals.

STATEMENT OF PRACTICAL TREATMENT

IF IN EYES Hold eyelids open and flush with steady, gentle stream of water for 15 minutes. Get medical attention.

IF SWALLOWED Call a doctor or get medical attention. Do not induce vomiting. Drink promptly a large quantity of milk, egg whites, gelatin solution, or if these are not available, drink large quantities of water. Do not give anything by mouth to an unconscious person. Avoid alcohol.

IF INHALED Remove victim to fresh air. If not breathing give artificial respiration, preferably mouth to mouth. Get medical attention.

IF ON SKIN Wash with plenty of soap and water. Get medical attention.

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. May pose an aspiration pneumonia hazard.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category C on an EPA chemical resistance category section chart.

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

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as barrier laminate or butyl rubber or nitrile rubber or neoprene rubber or polyvinyl chloride (PVC) or viton
- Chemical-resistant apron, when mixing/loading, cleaning up spills, or cleaning equipment, or otherwise exposed to the concentrate
- Protective eyewear

See engineering controls for additional requirements.

Follow manufacturer's instructions for cleaning/ maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS STATEMENTS

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

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

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

Flaggers supporting aerial applications must use an enclosed cab that meets the definition on the Worker Protection Standard for agricultural pesticides [40 CFR 170.240(d)(5)] for dermal penetration.

When applicators use closed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(5)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

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

ENVIRONMENTAL HAZARDS

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

Dimethenamid has properties that may result in groundwater contamination. Application in areas where soils are permeable or coarse and groundwater is near the surface could result in ground water contamination. Following application and during rainfall events that cause run-off, this chemical may reach surface water bodies including streams, rivers, and reservoirs.

Atrazine can travel (seep or leach) through soil and can enter ground water which may be used as drinking water. Atrazine has been found in ground water. Users are advised not to apply atrazine to sand and loamy sand soils where the water table (ground water) is close to the surface and where these soils are very permeable, i.e., well-drained. Your local agricultural agencies can provide further information on the type of soil in your area and the location of ground water.

This product may not be mixed/loaded or used within 50 ft. of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50

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ft. of any well are prohibited, unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above-specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site.

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

Care must be taken when using this product to prevent 1) back siphoning into wells, 2) spills, or 3) improper disposal of excess pesticide, spray mixtures or rinsates. Check valves or antisiphoning devices must be used on all mixing equipment.

TILE-TERRACED FIELDS CONTAINING STANDPIPES

To ensure protection of surface water from run-off through standpipes and tile outlets in terraced fields, one of the following options may be used:

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

PHYSICAL OR CHEMICAL HAZARDS

DO NOT USE OR STORE NEAR HEAT OR OPEN FLAME.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

ANY USE OF THIS PRODUCT IN AN AREA WHERE USE IS PROHIBITED IS A VIOLATION OF FEDERAL LAW.

Before using this product, you must consult the Atrazine Watershed Information Center (AWIC) to determine whether the use of this product is prohibited in your watershed. AWIC can be accessed through www.atrazine-watershed.info, or 1-866-365-3014. If use of this product is prohibited in your watershed, you may return this product to your point of purchase or contact DuPont for a refund.

AGRICULTURAL USE REQUIREMENTS

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

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

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

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

- Coveralls
- Chemical-resistant gloves, such as barrier laminate or butyl rubber or nitrile rubber or neoprene rubber or polyvinyl chloride (PVC) or viton
- Chemical resistant footwear plus socks
- Protective eyewear

Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or higher setbacks) which are different from this label, the more restrictive/protective requirements apply.

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

The New York State Department of Environmental Conservation prohibits use in Long Island, NY.

LEADOFF should be used only in accordance with recommendations on this label or in supplemental DuPont publications. DuPont will not be responsible for losses or damage resulting from use of this product in any manner not specifically recommended by DuPont.

GENERAL INFORMATION

LEADOFF herbicide is a selective preemergence herbicide for control of most annual grasses, certain annual broadleaf weeds and sedges in field corn, seed corn, sweet corn, or popcorn and grain sorghum. This product will provide most effective weed control when applied (by ground or aerial equipment), and subsequently incorporated into soil by rainfall, sprinkler irrigation, or mechanical tillage prior to weed seedling emergence from soil.

LEADOFF is recommended for preplant incorporated, preplant surface, preemergence or early postemergence treatment. LEADOFF application may be made using either water or fluid fertilizer as the spray carrier or it may be impregnated on and applied with dry bulk fertilizer. Sprayable fluid fertilizer as a carrier is not recommended for use after crop emergence.

Observe all precautionary statements and limitations on labeling of all products used in tank mixtures. Tank mix recommendations are for use only in states and on application sites where the tank mix product is registered.

Single or split applications of LEADOFF may not exceed a total of 5 pints per acre in one crop year.

Recommended use rates of this product vary by soil type. The most accurate indicator of appropriate use rate for LEADOFF is the Cation Exchange Capacity (CEC) of the soil to be treated. CEC values are available in standard soil testing procedures. If CEC values are not available, the recommended use rate of LEADOFF may be determined using the soil texture and organic matter. Soil texture groupings used in this label are coarse, medium and fine. Soil textures included in these groupings are as follows:

Coarse	Medium	Fine
Sand	Silt	Sandy Clay
Loamy Sand	Silt Loam	Silty Clay
Sandy Loam	Loam	Silty Clay Loam
	Sandy Clay Loam	Clay Loam Clay

LEADOFF use rates, by either soil CEC values or by soil texture and organic matter, are given in specific crop use sections of this label. When use rates are expressed in ranges, use the lower end of the rate range for lower CEC values and use the higher end of the rate range for higher CEC values. If texture and organic matter are used to determine use rates, use the lower end of the rate range for more coarsely textured soils low in organic matter and the higher end of the rate range for more finely textured soils that are high in organic matter.

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When tank-mixing or sequentially applying atrazine or products containing atrazine to corn or sorghum, the total pounds of atrazine applied (lbs a.i./A) must not exceed a maximum of 2.5 pounds of atrazine per year. When tank mixing or sequentially applying atrazine or products containing atrazine to crops other than corn or sorghum, the total pounds of atrazine applied must not exceed the specific seasonal rate limits as noted in the use directions.

Maximum Broadcast Rates for Atrazine

- If no atrazine was applied prior to corn or sorghum emergence, apply a maximum of 2 lb ai/A broadcast. If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lb ai/A per calendar year.
- 2.0 lb ai/A as a single preemergence application on soils that are not highly erodible or on highly erodible if at least 30% of the soil is covered with plant residues, or
- 1.6 lb ai/A as a single preemergence application on highly erodible soils if < 30% of the surface is covered with plant residues, or 2.0 lb ai/A if only applied postemergence.
- If no atrazine was applied prior to corn emergence, apply a maximum of 2 lb ai/A broadcast.

Forage Interval: Do not graze or feed forage from treated areas for the following intervals:

Field Corn 60 days after application

Sweet Corn 45 days after application

Sorghum - preemergence 60 days after application

Sorghum - postemergence 45 days after application

Weed Species Controlled by LEADOFF Herbicide

LEADOFF applied at recommended rates and application timings will control many annual grass and broadleaf weeds.*

ANNUAL GRASSES

Barnyardgrass	Goosegrass
Broadleaf Signalgrass	Johnsongrass (seedling)**
Crabgrass, Smooth, Large	Red Rice
Fall Panicum	Southwestern Cupgrass
Foxtail, Giant, Green, Yellow	Wild Oats
	Witchgrass

SEDGE

Rice Flatsedge	Yellow Nutsedge**
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ANNUAL BROADLEAVES

Carpetweed	Palmer Amaranth
Cocklebur**	Pigweed, Prostrate,
Common Purslane	Redroot, Smooth, Tumble
Florida Pusley	Ragweed, Common,
Jimsonweed	Giant**
Kochia	Smartweed
Lambsquarters	Spurge, Nodding, Spotted
Morningglory, Annual	Velvetleaf**
Mustards	Waterhemp
Nightshade, Black, Eastern Black, Hairy	Wild Buckwheat

* Some weed species may have triazine resistant biotypes that will not be controlled adequately by this product. If resistant biotypes are suspected use an alternate program or use non-triazine products such as BANVEL¹ or CLARITY² Herbicide in combination or sequentially with this product

**For best control of these species use the highest recommended rate by soil type. If dry conditions exist near application or excessive rainfall occurs early in season, a postemergence herbicide and/or cultivation may be required to aid in control of these weeds.

Additional Weed Species Partially Controlled

LEADOFF will provide partial control or suppression of eclipta, woolly cupgrass, wild proso millet, shattercane, sandbur, and Texas panicum. Control of these species will generally not be commercially acceptable. To complement control LEADOFF should be used in tank mixtures or sequential applications with other herbicides that provide additional control of these weed species.

LEADOFF Use Methods and Timings

LEADOFF may be applied preplant surface, preplant incorporated, or preemergence to corn or grain sorghum; or may be applied early postemergence to corn. Best weed control will result when applied (by ground or aerial equipment), and subsequently incorporated into soil by rainfall, sprinkler irrigation, or mechanical tillage prior to weed seedling emergence from soil.

Preplant Surface Applications

For use in minimum tillage or no-tillage production systems, application of LEADOFF alone or in tank mixtures may be made up to 45 days before planting. When making early preplant applications (15 to 45 days prior to planting) use the highest rate recommended for the specific soil type. Early preplant applications are not recommended for use on coarse textured soils or in areas where average annual rainfall (or rainfall + irrigation) typically exceeds 40 inches. Early preplant applications may be applied as part of a split application program where the second application is made after planting (use 2/3 of LEADOFF rate early followed by 1/3 of rate after planting). A split application is recommended when initial application is made more than 30 days prior to planting. Tank mixtures with postemergence herbicides such as Roundup or Gramoxone Extra must be used when weeds are present at the time of application.

Preplant Incorporated Applications

Apply LEADOFF and incorporate into the upper (1 to 2 inch) soil surface up to two weeks before planting. Use a harrow, rolling cultivator, finishing disk, or other implement capable of giving uniform shallow incorporation. Avoid deeper incorporation or reduced weed control may result.

Preemergence Surface Applications

Broadcast treatment uniformly to the soil surface after planting and before crop emergence. Rainfall, sprinkler irrigation, or shallow mechanical incorporation after application is required to move this product into the upper soil surface where weed seeds germinate. If adequate rainfall or irrigation does not occur and weed seedling emergence begins, a shallow cultivation or rotary hoeing will improve performance.

Early Postemergence Applications

LEADOFF may be used in early postemergence applications up to 8 inch tall corn. Application must be made before weeds are greater than 1.5 inches tall or in a tank mixture with products that control the emerged weeds. Note restrictions and use directions on tank mix product labels. Do not apply to grain sorghum after crop emergence.

LEADOFF FIELD CORN, SEED CORN, SWEET CORN, OR POPCORN USE PROGRAMS

LEADOFF may be used as a preplant surface applied, preplant incorporated, preemergence, or early postemergence (up to 8 inches tall) treatment to corn. Corn, as used in this label, refers to field corn (grown for grain, silage or seed), sweet corn (does not include sweet corn grown for seed), and popcorn. Before application to seed corn, sweet corn, or popcorn, first verify with your local seed company (supplier) the LEADOFF selectivity on your inbred line or variety. This precaution will help avoid potential injury to sensitive varieties.

Corn may be grazed or fed to livestock at 40 or more days after application of LEADOFF. Sweet corn ears may be harvested at 50 or more days after application of LEADOFF.

LEADOFF USE RATES IN FIELD CORN, SEED CORN, SWEET CORN, AND POPCORN

Recommended broadcast use rates for LEADOFF when used alone or in tank mix combinations and/or sequential applications with other herbicides in corn are given in the following tables*. Cation exchange capacity (CEC) of soil is the preferred method for determining use rate. If CEC is not known, select use rate based on soil texture and organic matter content. If LEADOFF is used in early preplant applications, and/or used on soils with heavy surface plant residue, add 0.5 pints per acre to the rates given in the following tables. Do not exceed 4.75 pints per acre on highly erodible soils with less than 30% plant residue cover prior to crop emergence. Do not exceed 5 pints per acre per crop year on any soil.

USE RATE DETERMINED BY CATION EXCHANGE CAPACITY (CEC) OF SOIL					
Cation Exchange Capacity (CEC) of Soil	<5.0	5.0 - 9.0	10 - 14	15 - 20	>20.0**
LEADOFF Use Rate (Pints/acre)	2.5	3.0 - 3.5	3.5 - 4.0	4.0 - 4.5	5.0

USE RATE DETERMINED BY SOIL TEXTURE AND ORGANIC MATTER CONTENT		
	LEADOFF Use Rate (Pints per Acre)	
	Organic Matter	
Soil Texture	Less than 3%	3% or more**
Coarse	2.5 to 3.0	3.0 - 3.5
Medium	3.0 to 4.0	4.0 - 4.5
Fine	4.0 to 4.5	4.5 - 5.0

* See tank mix descriptions below for the recommended use rate ranges of other herbicides used in combination with LEADOFF. Refer to tank mix section of companion product labels for actual use rate by soil type, weed species, and weed or crop growth stage.

** On all soils with 8% to 20% organic matter, use 5 pints per acre of LEADOFF. LEADOFF is not recommended for use on soils with more than 20% organic matter.

LEADOFF TANK MIXTURES AND SEQUENTIAL USE PROGRAMS IN CORN

LEADOFF may be applied prior to, in tank mix with, or following the use of one or more of the following herbicides: ACCENT¹, atrazine, BANVEL, BASAGRAN², BEACON³, BLADEx¹, CLARITY, FRONTIER², GRAMOXONE⁴ EXTRA, LADDOK² S-12, MARKSMAN², PRINCEP³, PROWL¹, PURSUIT³, ROUNDUP⁴, or 2,4-D. LEADOFF use rates for herbicide combination programs and specific tank mixtures are presented in the above label section, LEADOFF Use Rates in Field Corn, Seed Corn, Sweet Corn, and Popcorn.

LEADOFF herbicide contains 2.67 pounds active of atrazine per gallon (0.334 lb ai per pint). When tank mixing or making sequential applications with atrazine or Marksman do not exceed the following total combined amounts of atrazine:

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Prior to corn emergence

- 1.6 lb ai/A - Highly erodible soils with less than 30% plant residue cover
- 2.0 lb ai/A - Other soils

After corn emergence

- 2.0 lb ai/A - Any soil

Prior to and after corn emergence (sequential applications)

- 2.5 lb ai/A - Any soil

When using tank mix or sequential applications with LEADOFF, always read the companion product label(s) to determine specific use rates by soil types, weed species, and weed or crop growth stage. Tank mixing must be in accordance with the most restrictive of label limitations and precautions. No label dosage rates should be exceeded. This product cannot be mixed with any product containing prohibition against such mixing.

LEADOFF may be tank mixed with one or more of the following herbicide combination programs.	
LEADOFF plus BANVEL (0.5 to 1.0 pt/A) or CLARITY (8.0 to 16.0 fl oz/A) or MARKSMAN (2.0 to 3.5 pt/A)	Application may be made preplant surface or preemergence in minimum or no tillage corn in all soil types. Preemergence applications may be used in all tillage systems where corn is grown on soils with CEC greater than 15, or medium and fine textured soils with 2.5% or more organic matter (For best performance make application just prior to corn emergence). Early postemergence (up to 8 inch tall corn) applications may be made on all soil types. This treatment must be combined with a herbicide that provides postemergence control of grass weeds if they are greater than 1.5 inches tall at the time of application. MARKSMAN contains atrazine. Do not exceed the maximum amount of atrazine allowed for the specific condition. This tank mixture is not labeled for use on sweet corn
LEADOFF plus FRONTIER (4.0 to 12.0 fl oz/A)	Application may be made preplant surface, preplant incorporated, preemergence, or early postemergence (up to 8 inch tall corn). FRONTIER may be added for improved annual grass control and/or for reducing atrazine use rate. Do not exceed 1.5 lb ai/A of dimethenamid (dimethenamid active is 0.29 lb ai/pint in LEADOFF and 0.06 lb ai/fl oz in FRONTIER).
LEADOFF plus ATRAZINE (0.5 to 1.0 lb ai/A)	Application may be made preplant surface, preplant incorporated, preemergence, or early postemergence (up to 8 inch tall corn). This treatment must be combined with a herbicide that provides postemergence control of weeds if they are greater than 1.5 inches tall at the time of application. Crop oil concentrate may be added to this mixture to aid in control of emerged weeds. Do not add crop oil concentrate if this mixture is combined with other herbicides for early postemergence applications. Do not exceed the amount of atrazine allowed for the specific condition.
LEADOFF plus BLADEX (1.25 to 3.0 lb ai/A)	Application may be made preplant surface, preplant incorporated, or preemergence to corn. This mixture is not recommended for use on soils with CEC less than 5 or on sand or loamy sand soils with organic matter less than 1%.

LEADOFF plus PROWL 3.3 EC (1.8 to 3.6 pt/A)	Application may be made preemergence to early postemergence (up to 3 inch tall corn) but before weeds are greater than 1.5 inches tall.
LEADOFF plus PRINCEP (1.0 lb ai/A)	Application may be made preplant surface, preplant incorporated or preemergence to corn.
LEADOFF plus PURSUIT 2.0 SL (4 fl oz/A) or PURSUIT 70DG (1.4 fl oz/A)	Use only on Pursuit resistant (IR) or tolerant (IT) corn varieties. Application may be made preplant surface, preplant incorporated, preemergence, or early postemergence (up to 3 inch tall weeds).
LEADOFF plus GRAMOXONE EXTRA (1.5 to 3.0 pt/A) or ROUNDUP (glyphosate) (0.5 to 4.0 lb ai/A)	Application may be made preplant surface or preemergence to control emerged weeds in minimum or no tillage corn. Applications must be made prior to corn emergence. To improve control of emerged broadleaf weeds, herbicides such as Banvel and/or 2,4-D should be added to this mixture.

LEADOFF GRAIN SORGHUM USE PROGRAMS

LEADOFF herbicide may be used as a preplant surface, preplant incorporated, or preemergence application in sorghum. A single or split application program may be used. All LEADOFF applications must only be made to sorghum seed that has been properly treated by the seed company with an approved chloroacetamide herbicide safener or severe injury may occur.

Under high soil moisture and/or cool conditions, LEADOFF application may cause temporary stunting or leaf wrapping of sorghum. Sorghum will normally outgrow these symptoms in 10 to 14 days.

For best performance make preemergence surface applications within 5 days of the last preplant tillage. If weeds are emerged apply LEADOFF with contact herbicides to control emerged vegetation.

If grasses are emerged LEADOFF must be applied before they reach the 2 leaf stage or must be used in combination with an effective postemergence herbicide.

Sorghum forage may be grazed or fed to livestock at 60 or more days after application. Grain and fodder may be harvested and fed at 80 or more days after application of LEADOFF.

LEADOFF is not registered for use on sweet or forage sorghum.

LEADOFF USE RATES IN SORGHUM

For LEADOFF herbicide rates in sorghum use rates given for corn in this Directions for Use Booklet. Additional rate recommendations specific for sorghum: for best weed control for sorghum produced under irrigation, use a minimum of 3.5 pt/A. LEADOFF is not recommended for use on coarse textured soils.

LEADOFF TANK MIXTURES AND SEQUENTIAL USE PROGRAMS IN SORGHUM

LEADOFF may be applied prior to, in tank mix with, or following use of one or more of the following herbicides in sorghum: atrazine, BANVEL, CYCLONE[®] CF, FALLOWMASTER, GRAMOXONE EXTRA, glyphosate (ROUNDUP), LANDMASTER[®] BW and MILO-PRO. In addition this product can be used prior to or used in sequential applications with other herbicides labeled for use in grain sorghum such as: Basagran, Buctril, Laddok S-12, MARKSMAN, WEEDMASTER or 2,4-D. No label dosage rates should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing.

When using tank mix or sequential applications with LEADOFF, always read the companion product label(s) to determine specific use rates by soil types, weed species, and weed or crop growth stage. In addition, follow precautions and restrictions including state and local use restrictions that may apply to specific products.

LEADOFF plus ATRAZINE (0.5 to 1.0 lb ai/A)	Applications may be made preplant, preplant incorporated, or preemergence. Do not apply on coarse textured soils or medium textured soils with less than 1.0% organic matter.
LEADOFF plus MILO-PRO (0.60 to 2.3 lb ai/A)	Applications may be made preplant or preemergence in states where Milo-Pro is approved for use. Do not apply on coarse textured soils or medium textured soils with less than 1.5% organic matter.
LEADOFF plus CYCLONE CF or GRAMOXONE EXTRA (1.5 to 3.0 pt/A) or ROUNDUP (Glyphosate) (0.5 to 4.0 lb ai/A) or LANDMASTER BW or FALLOWMASTER	Apply for burndown of emerged weeds in minimum or no-tillage production system. Application with Cyclone, Gramoxone, or Roundup must be made before crop emergence. For improved burndown of broadleaf weeds, BANVEL may be added to mixtures with Cyclone, Gramoxone, and Roundup (glyphosate) if application is made 15 or more days before planting. Landmaster or Fallow Master applications must be made 14 or more days before sorghum seeding.

MIXING AND APPLICATION DIRECTIONS

Mixing of Spray Solutions

LEADOFF is a concentrated liquid herbicide that can be mixed for application in water, sprayable fluid fertilizer, or it may be impregnated on dry bulk fertilizer. When herbicide tank mixtures or mixtures with sprayable fluid fertilizer are to be used, a compatibility test should be conducted prior to tank mixing (SEE COMPATIBILITY TEST section in this label).

SHAKE WELL BEFORE USING

When loading a spray tank for application of LEADOFF (applied alone or in tank mixtures with other products) use the following order for mixing:

1. Fill the tank 1/4 to 1/3 full of water.
2. While agitating, add the required amount of LEADOFF.
3. Continue agitation until the LEADOFF is fully dispersed, at least 5 minutes.
4. Once the LEADOFF is fully dispersed, maintain agitation and continue filling tank with water.
LEADOFF should be thoroughly mixed with water before adding any other material.
5. As the tank is filling, add the desired tank mix partners and then add the required spray adjuvants (crop oil concentrate or nitrogen fertilizer).
6. If the mixture is not continuously agitated, settling will occur. If settling occurs, thoroughly re-agitate before using.
7. Apply LEADOFF spray mixture within 4 hours of mixing to avoid product degradation. If spray mixture will not be applied within 4 hours and either 28-0-0 or ammonium sulfate was used as the nitrogen source, either add 1 qt./acre of 10-34-0 or 11-37-0, or a commercial tank buffer that will raise the tank pH to 7.0. If 10-34-0 or 11-37-0 was used as the liquid nitrogen source, do not add additional fertilizer or buffer solution to the spray tank.
8. If LEADOFF is applied in multiple loads, consider pre-slurrying the LEADOFF in clean water prior to adding to the next load. This prevents the crop oil concentrate from interfering with dissolution of LEADOFF.

Ground or Aerial Applications

Apply the recommended rates of LEADOFF in 2 or more gallons of spray solution per acre. Actual minimum spray volume per acre is determined by spray equipment used for application. Application must be made in adequate volume to provide accurate and uniform distribution of spray particles over treated area and to avoid drift of spray particles to non-target areas (see "Spray Drift Management" section of this label). In addition, when LEADOFF is used in tank mixtures, spray volume used must be no less than the minimum volume required by the tank mix product. Use nozzle screens no finer than 50 mesh when spraying tank mixtures with wettable powder or flowable formulations.

LEADOFF herbicide may be applied as a band treatment. Use rates within the treated area of the band must not exceed the use rates given for broadcast application. Use the formula below to determine the appropriate amount of product and volume of carrier needed per acre of field.

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \frac{\text{Broadcast RATE}}{\text{per acre}} = \text{Band RATE per acre}$$

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \frac{\text{Broadcast VOLUME}}{\text{per acre}} = \text{Band VOLUME per acre}$$

Use of Spray Adjuvants

Spray adjuvants have little or no influence on performance of LEADOFF when applications are made prior to weed emergence. To improve burndown of emerged weeds; surfactants and/or low rate fertilizer (28%, 30%, or 32% UAN or ammonium sulfate), or crop oil concentrate may be used with LEADOFF or LEADOFF tank mixes applied preplant, preemergence, or early postemergence to the crop. Crop oil concentrates are allowed after crop emergence only when LEADOFF is used alone or in tank mixtures with atrazine.

Compatibility Testing

A compatibility test is recommended for applications with liquid fertilizer. Before mixing products in the spray tank, small amounts of all products can be mixed in proportionate quantities to determine compatibilities. The amounts of carrier and products in this compatibility test are based on a spray volume of 25 gallons per acre. Make appropriate changes in amounts for your specific spray volume. To conduct this test begin by adding one pint of the liquid fertilizer solution to a one quart container. Then add, in sequence as given above, 1 1/2 level teaspoons per lb use rate for dry formulated products and 1/2 teaspoon per pint use rate of liquid formulated products. Agitate materials by covering and gently shaking container for 5 to 10 seconds between each product addition. If herbicide(s) do not ball-up or form flakes, gels, sludge, oily film or layers, or other precipitates, then the tested spray mix is compatible. Incompatibility in any of the above described forms will normally occur within 5 minutes after mixing. If components are incompatible, the use of a compatibility agent is recommended. Rerun the above compatibility test with a suitable compatibility agent (1/4 teaspoon in test is equivalent to a use rate of 2 pints per 100 gallons of spray volume). If the mixture is then compatible, use the compatibility agent as directed on its label. If the mixture is still incompatible, the liquid fertilizer and herbicide(s) should not be mixed for use in the same spray tank.

Dry Bulk Fertilizer Applications

LEADOFF may be impregnated or coated onto dry bulk granular fertilizer carriers for preplant surface, preplant incorporated or preemergence applications. Impregnation or coating may be conducted by either the in-plant bulk system or the on-board system. LEADOFF may also be applied in herbicide tank mixtures where the tank mix companion product is also registered for these application systems. Individuals or agents selling LEADOFF in these application systems are responsible for following all state and local regulations regarding fertilizer/herbicide blending.

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Addition of a drying agent may be necessary if the fertilizer/herbicide blend is too wet for uniform application due to high humidity, high urea concentration, and/or low fertilizer use rate. Slowly add the drying agent to the blend until a flowable mixture is obtained. Drying agents are not recommended for use with on-board impregnation systems.

Under some conditions fertilizer impregnated with LEADOFF may clog air tubes or deflector plates on pneumatic application systems. Mineral oil may be added to LEADOFF before blending with fertilizer to reduce plugging. Do not use drying agents when mineral oil is used. To avoid separation of LEADOFF and mineral oil mixes in cold temperatures either keep mixture heated or agitated prior to blending with fertilizer. Mineral oil may be used at in-plant blending stations or on-board injection systems.

Apply 200 to 750 pounds of fertilizer/herbicide blend per acre. Application must be made uniformly to the soil to prevent possible crop injury and offer satisfactory weed control. Impregnated fertilizer spread at half rate and overlapped to obtain a full rate will offer a more uniform distribution. A shallow (1 to 2 inch) incorporation is desirable for improved weed control. Deeper incorporation may result in unsatisfactory weed control.

Formula to Determine Herbicide Rate(s):

$$\frac{\text{Pints or Pounds Herbicide/Acre}}{\text{Pounds of Fertilizer/Acre}} \times 2000 = \frac{\text{Pints or Pounds of Herbicide}}{\text{per Ton of Fertilizer}}$$

INCOMPATIBLE MIXTURES - DO NOT impregnate LEADOFF or LEADOFF mixes on ammonium nitrate, potassium nitrate, or sodium nitrate fertilizers or fertilizer blends. Single superphosphate (0-20-0) and triple super phosphate (0-46-0) may be impregnated only with LEADOFF alone.

ROTATIONAL CROPS

If the corn or grain sorghum crop treated with LEADOFF herbicide is lost to adverse weather or for other reasons, the area treated may be replanted to either of these crops immediately. If the original LEADOFF treatment was broadcast do not make a second application of LEADOFF. If the original application was banded and the second crop is planted in the row middles a second band application may be applied. Corn, sorghum, soybeans, cotton or peanuts may be planted the year following treatment. Injury may occur to soybeans planted on soils having a calcareous surface layer. Do not graze or feed forage or fodder from cotton to livestock. Do not plant sugarbeets, tobacco, vegetables (including dry beans), spring-seeded small grains, or small seeded legumes and grasses the year following application, or injury may occur. LEADOFF used in tank mixtures: Refer to the labels of tank mix products for additional rotational crop information and restrictions.

SPRAY DRIFT MANAGEMENT

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150 - 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS! See Wind, Temperature and Humidity, and Surface Temperature Inversions sections of this label.

Controlling Droplet Size - General Techniques

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles.

Controlling Droplet Size - Aircraft

- **Number of Nozzles** - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- **Nozzle Type** - Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.

BOOM LENGTH AND HEIGHT

- **Boom Length (aircraft)** - The boom length should not exceed 3/4 of the wing length, using shorter booms decreases drift potential. For helicopters use a boom length and position that prevents droplets from entering the rotor vortices.
- **Boom Height (aircraft)** - Application more than 10 ft above the canopy increases the potential for spray drift.
- **Boom Height (ground)** Setting the boom at the lowest height which provides uniform coverage reduces the exposure of droplets to evaporation and wind. The boom should remain level with the crop and have minimal bounce.

WIND

Drift potential increases at wind speeds of less than 3 mph (due to variable direction and inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS.

Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they effect spray drift.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

SURFACE TEMPERATURE INVERSIONS

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

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring.

Note: Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Consult the application equipment section of this label to determine if use of an air assisted sprayer is recommended.

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RESISTANCE MANAGEMENT

When herbicides with the same mode of action are used repeatedly over several years to control the same weed species in the same field or site, naturally-occurring resistant weed biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field or site. These resistant weed biotypes may not be adequately controlled. Cultural practices such as tillage, preventing weed escapes from going to seed, and/or using herbicides with different modes of action can aid in delaying the proliferation and possible dominance of herbicide resistant weed biotypes.

INTEGRATED PEST MANAGEMENT

DuPont recommends the use of Integrated Pest Management (IPM) programs to control pests. This product may be used as part of an Integrated Pest Management (IPM) program which can include biological, cultural, and genetic practices aimed at preventing economic pest damage. Application of this product should be based on IPM principles and practices including field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop or site systems in your area.

STORAGE AND CONTAINER DISPOSAL

PROHIBITIONS: Do not contaminate water, food, or feed by storage or disposal.

STORAGE: Store in original container away from fertilizer, feed, or foodstuffs and separated from other pesticides.

PESTICIDE DISPOSAL: Spillage or leakage should be contained and absorbed with clay granules, sawdust, or equivalent material for disposal. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state, or local procedures under Subtitle C of the Resource Conservation and Recovery Act.

PLASTIC CONTAINERS: Triple rinse (or equivalent) and add rinsate to spray tank. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning. If containers are burned, do not inhale smoke.

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