

Ms. Karen S. Stumpf  
Novartis Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419-8300

APR 16 1998

Dear Ms. Stumpf:

Subject: Dual II MAGNUM SI™ Herbicide  
EPA Registration No. 100-829  
Application and Letter Dated March 24, 1998, Request  
To Amend Registration by Revising Confidential  
Statement of Formula and Labeling, Add a Section G  
To Table of Contents (Variable Rate Application); add  
To List of Weeds Controlled (Common Waterhemp and Tall  
waterhemp), and a "Variable Rate Application" Section:  
"Variable-Rate Broadcast Ground Application for Corn  
and Soybeans"

The proposed amendment to the Confidential Statement of  
Formula (CSF) submitted on EPA Form 8570-4 and dated March 24, 1998  
has been reviewed and found acceptable. It has been placed in this  
Agency's files for the subject pesticide product registration.

The proposed subject label amendments have been reviewed  
and found acceptable as amendments to the registration of the  
subject pesticide product under the Federal Insecticide,  
Fungicide and Rodenticide Act (FIFRA) as amended, provided that  
you:

- o. Submit one (1) copy of the final printed labeling  
prior to shipping this pesticide product under the  
subject amended labeling

If this condition is not complied with, the registration  
will be subject to cancellation in accordance with FIFRA,  
section 6(e). Your release for shipment of the pesticide product  
under the subject labeling constitutes your acceptance of this  
condition.

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

Sincerely yours,

Joanne I. Miller  
CONCURRENCES  
Product Manager (23)  
Herbicide Branch  
Registration Division (7505C)

SYMBOL						
SURNAME						
DATE	EW	Enclosure	Elison:Diskette:Metolachlor:	04-09-98		

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(Front Cover of Removable Booklet)

Dual II MAGNUM SI™

HERBICIDE

For custom application to dry fertilizer only for weed control in corn and soybeans

Active Ingredient:

S-Metolachlor (CAS #87392-12-9) ..... 71.0%

Other Ingredients: ..... 29.0%

Total: ..... 100.0%

This product contains petroleum distillates, xylene, or xylene range aromatic solvent.

Dual II MAGNUM SI contains 6.3 lbs. of active ingredient per gallon.

**KEEP OUT OF REACH OF CHILDREN.**

**CAUTION**

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-829

NCP 829A-

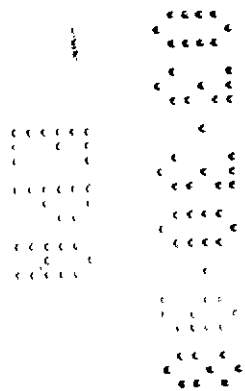
[GANNONC.LABELD-W/NDU2MSIA-A] - CCG - 3/17/98

**ACCEPTED  
with COMMENTS  
In EPA Letter Dated**

**APR 16 1998**

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

100-829



**TABLE OF CONTENTS**

**PAGE NO.**

**CONDITIONS OF SALE AND WARRANTY**

**DIRECTIONS FOR USE**

**AGRICULTURAL USE REQUIREMENTS**

**A. GENERAL INFORMATION**

**1. SOIL TEXTURES AND HERBICIDE RATES**

**2. APPLICATION PROCEDURES**

**B. DUAL II MAGNUM SI APPLIED ALONE ON DRY FERTILIZER**

**1. WEEDS CONTROLLED**

**2. ROTATIONAL CROPS**

**C. CORN (ALL TYPES) – DUAL II MAGNUM SI ALONE ON DRY FERTILIZER**

**1. PREPLANT SURFACE-APPLIED**

**2. PREPLANT INCORPORATED OR PREEMERGENCE ON DRY FERTILIZER**

**D. CORN – DUAL II MAGNUM SI COMBINATIONS (SEQUENTIALLY-APPLIED) ON DRY BULK FERTILIZER**

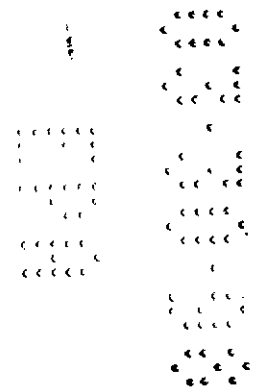
**E. SOYBEANS – DUAL II MAGNUM SI ALONE ON DRY FERTILIZER**

**F. DRY BULK GRANULAR FERTILIZERS**

**G. VARIABLE RATE APPLICATION**

**H. STORAGE AND DISPOSAL**

**I. PRECAUTIONARY STATEMENTS**



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**DIRECTIONS FOR USE AND CONDITIONS OF SALE AND WARRANTY**

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

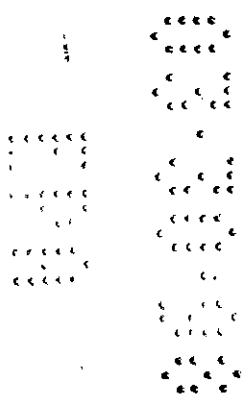
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**CONDITIONS OF SALE AND WARRANTY**

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The **Directions for Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application all of which are beyond the control of Novartis Crop Protection, Inc. or the Seller. All such risks shall be assumed by the Buyer.

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



**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.

**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 24 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, butyl rubber, nitrile rubber, or viton
- Shoes plus socks

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

To avoid drift, do not apply under windy conditions. Avoid application overlaps other than those used for even fertilizer application, as crop injury may result.

**A. GENERAL INFORMATION**

Dual II Magnum SI is a liquid herbicide formulation designed for impregnation on dry bulk fertilizer and recommended as a preplant surface-applied, preplant incorporated, or preemergence treatment when impregnated on fertilizer for control of most annual grasses and certain broadleaf weeds in corn (all types), and soybeans. Dual II Magnum SI can be used in bulk fertilizer blenders and onboard fertilizer impregnation systems. Dual II Magnum SI contains a red dye to aid operators to determine when a uniform blend is achieved. This low viscosity (free-flowing) formulation adsorbs quickly and thoroughly to dry fertilizer, improving the flowability of the fertilizer/herbicide mixture over varying temperature and moisture conditions.

**Note: Dual II Magnum SI will not mix with water or liquid fertilizers.**

Do not apply under conditions which favor runoff or wind erosion of soil containing this product to non-target areas.

To prevent off-site movement due to runoff or wind erosion,

1. Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.
2. Do not apply to impervious substrates, such as paved or highly compacted surfaces.
3. Do not use tailwater from the first flood or furrow irrigation of treated fields to treat non-target crops, unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.

If Dual II Magnum SI on dry fertilizer is incorporated, any supplemental tillage before planting must not exceed the depth of incorporation.

Dry weather following an application of Dual II Magnum SI on dry fertilizer may reduce effectiveness. Cultivate if weeds develop.

Dual II Magnum SI on dry fertilizer will not control emerged weeds.

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

*Precaution: Injury may occur to crops other than corn following the use of Dual II Magnum SI under abnormally high soil moisture conditions during early development of the crop.*

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# 1. SOIL TEXTURES AND HERBICIDE RATES

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

Coarse	Medium	Fine
Sand	Loam	Sandy clay loam
Loamy sand	Silt loam	Silty clay loam
Sandy loam	Silt	Clay loam
		Sandy clay
		Silty clay
		Clay

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

**Note:** Thoroughly clean application equipment before using. Dispose of cleaning solution in a responsible manner. Do not use an applicator contaminated with any other materials, or crop damage or application irregularities may result.

# 2. APPLICATION PROCEDURES

## Application Timing

Dual II Magnum SI on dry fertilizer may be applied for weed control in certain crops at various times. Refer to the given crop section of the label to determine if application timings listed below are recommended.

- 1. Preplant Surface-Applied:** For minimum-tillage or no-tillage systems only, Dual II Magnum SI on dry fertilizer may be applied up to 45 days before planting certain crops. Use only split applications for treatments made 30-45 days before planting, with 2/3 the recommended broadcast rate for the crop and soil texture applied initially and the remaining 1/3 at planting. Treatments less than 30 days before planting may be made either as a split or a single application. Refer to individual crop to determine if early preplant surface application is recommended. To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished.
- 2. Preplant Incorporated:** Apply Dual II Magnum SI on dry fertilizer to the soil and incorporate into the top 2 inches of soil within 14 days before planting, using a finishing disk, harrow, rolling cultivator, or similar implement capable of providing uniform 2-inch incorporation. Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected. If crop will be planted on beds, apply and incorporate Dual II Magnum SI on dry fertilizer after bed formation, unless specified otherwise.

- 3. **Preemergence:** Apply Dual II Magnum SI on dry fertilizer before planting and before weeds emerge.

**Special Application Procedures**

- 1. **Fall Application (Only in IA, MN, ND, SD, WI, and portions of NE and IL - See specific instructions in the Corn and Soybeans sections of this label for timing of application and other information):** Do not apply to frozen ground. Use on medium and fine soils with greater than 2.5% organic matter that will be planted to corn or soybeans the next spring. Ground may be tilled before or after application. Do not exceed a 2 to 3-inch incorporation depth if tilled after treatment. **Note:** If a spring application is made, the total rate of the fall plus spring applications must not exceed the maximum total rate for the specific crop, or illegal residues may result.

**Ground Application:** Apply Dual II Magnum SI on dry fertilizer by ground equipment in 200 lbs. or more of the herbicide/fertilizer mixture per acre, unless otherwise specified.

For information on impregnating dry fertilizer, see the **Dry Bulk Granular Fertilizers** section.

For information on application using variable-rate technologies, see the **Variable Rate Application** section.

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**B. DUAL II MAGNUM SI APPLIED ALONE ON DRY FERTILIZER**

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**1. WEEDS CONTROLLED**

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barnyardgrass (watergrass)	prairie cupgrass	yellow foxtail
bristly foxtail	red rice	yellow nutsedge
crabgrass	robust foxtails (purple, white)	carpetweed
crowfootgrass	signalgrass	common waterhemp
fall panicum	( <i>Brachiaria</i> )	Eastern black nightshade
foxtail millet	southwestern cupgrass	Florida pusley
giant foxtail	wild proso millet*	galinsoga
goosegrass	witchgrass	pigweed
green foxtail	woolly cupgrass*	tall waterhemp

\*For control of these weeds in corn only, refer to the **Corn – Woolly Cupgrass and Wild Proso Millet Control Program** section of this label.

**Weeds Partially Controlled\*:** common purslane, eclipta, Florida beggarweed\*\*, hairy nightshade, sandbur, seedling johnsongrass, shattercane, Texas panicum\*\*\*, volunteer sorghum, wild proso millet, and woolly cupgrass.



\*See General Information section. Control of these weeds can be erratic, due partially to variable weather conditions. Control may be improved by following these suggested procedures:

1. In Corn, use 2.4-3.0 pts./A or the preplant surface-applied rates for Dual II Magnum SI alone on dry fertilizer when making preplant incorporated or preemergence applications.
2. Thoroughly till moist soil to destroy germinating and emerged weeds. If Dual II Magnum SI on dry fertilizer is to be applied preplant incorporated, this tillage may be used to incorporate Dual II Magnum SI on dry fertilizer if uniform 2-inch incorporation is achieved as recommended under Application Procedures.
3. Plant crop into moist soil immediately after tillage. If Dual II Magnum SI on dry fertilizer is to be used broadcast preemergence, apply before planting.
4. If available, sprinkler irrigate within 2 days after application. Apply 1/2-1 inch of water. Use lower water volume (1/2 inch) on coarse-textured soils and higher volume (1 inch) on fine-textured soils.
5. If irrigation is not possible and rain does not occur within 2 days after planting and application, weed control may be decreased. Under these conditions, a uniform, shallow cultivation is recommended as soon as weeds emerge.

\*\*For partial control of this weed, use a minimum of 1.6 pts./A of Dual II Magnum SI on dry fertilizer and apply preemergence just before planting.

\*\*\*For partial control of this weed, use a minimum of 1.6 pts./A of Dual II Magnum SI on dry fertilizer and irrigate after application.

## 2. ROTATIONAL CROPS

Do not rotate to food or feed crops other than those listed below.

**Dual II Magnum SI on Dry Fertilizer Alone:** (1) If crop treated with Dual II Magnum SI alone on dry fertilizer is lost, corn, cotton, peanuts, pod crops, potatoes, safflowers, grain or forage sorghum (Concep®-treated), and soybeans may be replanted immediately. Do not make a second broadcast application of Dual II Magnum SI on dry fertilizer. (2) Barley, oats, rye, or wheat may be planted 4 1/2 months following treatment; alfalfa may be planted 4 months following application. Tomatoes may be planted 6 months following application. (3) Corn, cotton, peanuts, pod crops, potatoes, safflowers, grain or forage sorghum, soybeans, root crops, tobacco, barley, buckwheat, milo, oats, rice, rye, wheat, cabbage, or peppers may be planted in the spring following treatment. Clover may be seeded 9 months following application. Do not graze or feed forage or fodder from cotton to livestock. (4) Following a lay-by treatment or multiple treatments of Dual Magnum brands applied the previous season, any crop in (1) above, in addition to tobacco, cabbage, peppers, stone fruits, or tree nuts, may be planted in the spring.

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**Dual II Magnum SI Mixtures on Dry Fertilizer or Sequential Treatments:** For **Rotational Crops** restrictions for Dual II Magnum SI used in mixture or sequentially, refer to the statements/restrictions above for Dual II Magnum SI and to the respective product labels of any partner(s) for additional statements/restrictions.

**Important Notes:** To avoid injury to rotational alfalfa or clover: (1) Do not apply more than 1.9 lbs. active ingredient per acre (2.4 pts. of Dual II Magnum SI) preemergence (including preplant surface, preplant incorporated, etc.). (2) Do not make lay-by applications of Dual II Magnum SI on dry fertilizer.

**C. CORN (ALL TYPES) – DUAL II MAGNUM SI ALONE ON DRY FERTILIZER**

Apply Dual II Magnum SI on dry fertilizer, either preplant surface, preplant incorporated, or preemergence, using the appropriate rate specified below.

**1. PREPLANT SURFACE-APPLIED**

Refer to instructions for use of Dual II Magnum SI alone under **Application Procedures**.

**A. Fall Application:**

- 1. Apply after September 30 in ND, SD, MN, WI, and north of Route 30 in IA.
- 2. Apply after October 15 north of Route 91 in NE and south of Route 30 in IA.
- 3. Apply after October 31 north of Route 136 in IL.

In all locations, apply to crop stubble after harvest when the sustained soil temperature at a 4-inch depth is less than 55°F and falling. In minimum-till or no-tillage systems on soils having greater than 2.5% organic matter, use 2.0-2.4 pts./A on *medium-textured* and 2.4 pts./A on *fine-textured soils*. Do not apply to frozen ground. A tillage operation may precede the application. A fall and/or a spring tillage may follow application, but do not exceed an incorporation depth greater than 2-3 inches. Minimize furrow and ridge formation in the tillage operations. **Note:** If a spring application is made, the total rate of the fall plus spring applications must not exceed the maximum total rate for corn, or illegal residues may result.

**B.** Use on medium- and fine- textured soils with minimum-tillage or no-tillage systems in CO, IA, IL, IN, KS, KY, MN, MO, MT, ND, NE, SD, TN, WI, and WY. Apply 2/3 the recommended rate of Dual II Magnum SI on dry fertilizer (2.0 pts./A on *medium soils* and 2.4 pts./A on *fine soils*) as a split treatment 30-45 days before planting and the remainder at planting. Applications made less than 30 days prior to planting may be as either a split or single treatment. Apply 1.6 pts./A on *coarse soils* not more than 2 weeks before planting.

**C.** On medium- and fine-textured soils with minimum- or no-tillage systems in CT, DE, MA, MD, ME, MI, NH, NY, OH, PA, RI, VA, VT, and WV, preplant surface applications may be applied following the directions for use above. If the amount

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of rainfall results in unsatisfactory length of weed control following the earlier treatment, a postemergence application of an appropriately labeled broadleaf and/or grass weed herbicide may be used, i.e., AAtrex, Beacon®, Bicep®, Exceed®, Accent®, Banvel®, Basagran®, bromoxynil (Brominal® or Buctril®), or 2,4-D. If the postemergence treatment includes the herbicide used preplant surface-applied, do not exceed the total labeled rate for corn on a given soil texture. Observe all directions for use, precautions, and limitations on the label of the postemergent herbicide.

## 2. PREPLANT INCORPORATED OR PREEMERGENCE ON DRY FERTILIZER

Follow instructions for use of Dual II Magnum SI alone under **Application Procedures**. On *coarse soils*, apply 1.2-1.6 pts./A of Dual II Magnum SI if organic matter content is less than 3%, or 1.6 pts./A if organic matter content is 3% or greater. On *medium soils*, apply 1.6-2.0 pts./A of Dual II Magnum SI. On *fine soils*, apply 1.6-2.0 pts./A of Dual II Magnum SI if organic matter content is less than 3%, or 2.0-2.4 pts./A if organic matter content is 3% or greater.

**Note for all applications to corn:** To avoid possible illegal residues, do not graze or feed forage from treated areas for 30 days following application.

**Shattercane, Wild Proso Millet, Woolly Cupgrass, and Eclipta – Partial Control:** For more consistent partial control of shattercane, wild proso millet, woolly cupgrass, or eclipta, apply 2.4-3.0 pts./A on dry fertilizer as a single application; or apply 1.2-1.6 pts./A of Dual II Magnum SI on dry fertilizer preplant incorporated followed by 1.0-1.33 pts./A of Dual II Magnum preemergence; however, do not apply more than a total of 3.0 pts./A. Make the preemergence application before planting, and before weeds emerge. Apply the 1.6 pts./A rate of Dual II Magnum SI when a heavy infestation of shattercane, wild proso millet, woolly cupgrass, or eclipta is expected. A shallow cultivation may be needed to control any late emerging weeds.

**Woolly Cupgrass and Wild Proso Millet Control Program:** For control of these species, use the following 3-step program: (1) Apply Dual II Magnum SI on dry fertilizer early preplant, preplant incorporated, or preemergence before planting at 2.0 pts./A on *medium soil* and 2.4 pts./A on *fine-textured soils*, up to the maximum label rate. Lightly incorporate with a rotary hoe if rainfall does not occur within 5-7 days; (2) Apply a postemergence tank mix of Beacon at 0.38 oz./A or Exceed at 1 packet per 4 acres plus Accent SP at 0.33 oz./A plus 1.0 qt. of crop oil concentrate plus 1.0 gal./A of 28% nitrogen, or the equivalent amount of ammonium sulfate, when grasses are 2-3 inches tall and the corn is at least 4 inches tall; and (3) Cultivate 14-21 days after the postemergence application.

**Notes:** (1) Do not apply more than the labeled application rate for a given soil texture per year, either as a single or split treatment, or illegal residues may result. (2) In corn, Dual II Magnum SI on dry fertilizer may be used up to 3.0 pts./A as either a preplant surface, preplant incorporated, or preemergence treatment before planting on soils having an organic matter content between 6% and 20% or up to 2.4 pts./A on any soil for extended residual control and where severe stands of problem weeds are expected.

(3) In the event of escape of annual weeds following a preplant surface, preplant incorporated, or preemergence treatment of Dual II Magnum SI on dry fertilizer, follow with a postemergence application of an appropriately labeled broadleaf and/or grass weed herbicide, i.e., AAtrex, Beacon, Exceed, Accent, Banvel, Basagran, Brominal, Buctril, or 2,4-D. If the postemergence treatment includes the herbicide used in the earlier treatment, i.e., AAtrex, do not exceed the total labeled rate for corn on a given soil texture. (4) Brominal or Buctril may be applied postemergence alone or in tank-mix combination with AAtrex. Do not exceed 1.2 lbs. a.i./A of AAtrex in tank-mix combination with Brominal or Buctril, postemergence. Refer to the AAtrex, Brominal, and Buctril labels for specific rates and precautions. (5) Do not use Dual II Magnum SI on fertilizer on peat or muck soils.

**D. CORN – DUAL II MAGNUM SI COMBINATIONS (SEQUENTIALLY-APPLIED) ON DRY BULK FERTILIZER**

Dual II Magnum SI may be blended on dry bulk fertilizer. In a separate application, other herbicides registered for use with Dual II Magnum and also registered for application on dry fertilizer may be blended with the Dual II Magnum SI fertilizer blend. When other products are used, follow all restrictions, rate limitations, and precautions on the product's label.

Notes: (1) For all applications to corn, do not graze or feed forage from treated areas for 30 days following application, or possible illegal residues may result. (2) In corn, Dual II Magnum SI may be used up to 2.4 pts./A on any soil for extended residual control and where severe stands of problem weeds are expected.

**Shattercane, Wild Proso Millet, Woolly Cupgrass, and Eclipta – Partial Control**

For more consistent partial control of shattercane, wild proso millet, woolly cupgrass, or eclipta, where Dual II Magnum SI on dry fertilizer is applied sequentially with other registered corn herbicides, apply 2.4-2.8 pts. as a single application, or the following applications may be made:

1. Apply 1.2-1.6 pts./A of Dual II Magnum SI on dry fertilizer with 2.0 lbs. a.i./A of AAtrex or Princep preplant incorporated followed by 1.0-1.33 pts. of Dual II Magnum preemergence. Make the preemergence application during or after planting, but before weeds and corn emerge.
2. Apply Dual II Magnum SI on dry fertilizer at 1.6 pts./A alone or with up to 2.0 lbs. a.i./A of AAtrex, Princep, Bladex, or Extrazine II preplant incorporated. Do not exceed the total rate of triazine herbicide recommended for corn grown on a given soil texture. Follow with a post-directed application of Evik® 80W at 2.5 lbs./A. Refer to the Evik 80W label for specific directions for the post-directed application.
3. Apply Eradicane® or Sutan® (or equivalent EPTC or butylate formulations) at labeled rates preplant incorporated, followed by a preemergence application before planting of Dual II Magnum SI on dry fertilizer at 1.2-1.6 pts./A. Do not

use Eradicane or Sutan on soils where rapid degradation has been shown to occur. Make the preemergence application before planting, and before weeds emerge.

- 4. For partial control of wild proso millet only, apply Dual II Magnum SI on dry fertilizer preemergence before planting at 1.2-1.6 pts./A, followed by a postemergence application of Prowl + Bladex at labeled rates. Refer to the Prowl and Bladex labels for application instructions. Postemergence applications of Prowl and Bladex may cause corn injury.

*Precaution: When following the application regimes in numbers 1-4 above, a shallow cultivation may be needed after the preemergence or postemergence application to help control any late emerging shattercane or wild proso millet plants.*

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**E. SOYBEANS – DUAL II MAGNUM SI ALONE ON DRY FERTILIZER**

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Apply Dual II Magnum SI on dry fertilizer, either preplant surface-applied, preplant incorporated, or preemergence, using the appropriate rate specified below. **Preplant Surface-Applied, Preplant Incorporated, or Preemergence:** Follow instructions for use of Dual II Magnum SI alone under **Application Procedures**.

**Preplant Surface-Applied:** Refer to instructions for use of Dual II Magnum SI alone under **Application Procedures**.

**A. Fall Application: :**

- 1. Apply after September 30 in ND, SD, MN, WI, and north of Route 30 in IA.
- 2. Apply after October 15 north of Route 91 in NE and south of Route 30 in IA.
- 3. Apply after October 31 north of Route 136 in IL.

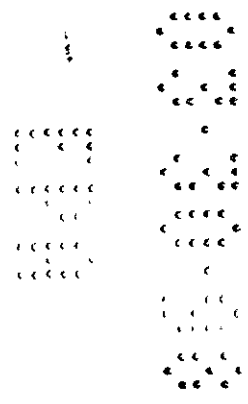
In all locations, apply to crop stubble after harvest when the sustained soil temperature at a 4-inch depth is less than 55°F and falling. In minimum-till or no-tillage systems on soils having greater than 2.5% organic matter, use 2.0-2.4 pts./A on *medium-textured* and 2.4 pts./A on *fine-textured* soils. Do not apply to frozen ground. A tillage operation may precede the application. A fall and/or a spring tillage may follow application, but do not exceed an incorporation depth greater than 2-3 inches. Minimize furrow and ridge formation in the tillage operations. **Note:** If a spring application is made, the total rate of the fall plus spring applications must not exceed the maximum total rate on soybeans, or illegal residues may result.

- B. Use on medium and fine soils with minimum-tillage or no-tillage systems in CO, CT, DE, IA, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MT, ND, NE, NH, NY, OH, PA, RI, SD, TN, VA, VT, WI, WV, and WY. Apply 2/3 the recommended rate of Dual II Magnum SI (2.0 pts./A on *medium soils*

and 2.4 pts./A on *fine soils*) as a split treatment 30-45 days prior to planting and the remainder at planting. Applications made less than 30 days before planting may be as either a split or single treatment. Apply 1.6 pts./A on *coarse soils* not more than 2 weeks before planting.

**Preplant Incorporated or Preemergence on Dry Fertilizer:** On *coarse soils*, apply 1.2-1.6 pts./A of Dual II Magnum SI if organic matter content is less than 3%, or 1.6 pts./A if organic matter content is 3% or greater. On *medium soils*, apply 1.6-2.0 pts./A of Dual II Magnum SI. On *fine soils*, apply 1.6-2.0 pts./A of Dual II Magnum SI if organic matter content is less than 3%, or 2.0-2.4 pts./A if organic matter content is 3% or greater.

**Note:** On soybeans, Dual II Magnum SI may be used up to 3.0 pts./A on dry fertilizer as a preplant surface-applied, preplant incorporated, or preemergence treatment before planting on soils having an organic matter content between 6% and 20%. The total Dual II Magnum SI rate applied to soybeans during any one crop should not exceed 3.0 pts./A.



**F. DRY BULK GRANULAR FERTILIZERS**

Many dry bulk granular fertilizers may be impregnated or coated with Dual II Magnum SI alone. Dual II Magnum SI may be sequentially applied to dry bulk fertilizer in separate operations with other products which are registered for preplant incorporated or preplant surface application which are used to control weeds in crops on the Dual II Magnum SI label and are not prohibited from use on dry bulk granular fertilizer.

When applying Dual II Magnum SI or Dual II Magnum SI with sequentially impregnated products on dry bulk granular fertilizers, follow all directions for use and precautions on the respective product labels regarding target crops, rates per acre, soil texture, application methods (including timing of application), and rotational crops.

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

Prepare the herbicide/fertilizer mixtures by using any closed drum, belt, ribbon, or other commonly used dry bulk fertilizer blender. Nozzles used to spray Dual II Magnum SI onto the fertilizer must be placed to provide uniform spray coverage. Care should be taken to aim the spray directly onto the moving fertilizer and to avoid spraying the walls of the blender.

**Blender Mixing Instructions**

**Dual II Magnum SI Alone:** Fill the blender with at least 2/3 of the required amount of dry bulk granular fertilizer to be used. Spray the Dual II Magnum SI directly onto the moving dry fertilizer. Allow the fertilizer to blend for 5 minutes or until the mixture is uniform. Add the remainder of the fertilizer. Blend for 5 minutes or until the mixture is uniform. Spread the herbicide/fertilizer mixture as soon as possible.

**Dual II Magnum SI Combinations:** Do not mix Dual II Magnum SI directly with other materials. Dual II Magnum SI may be applied sequentially onto dry fertilizer with other herbicides labeled for applications on dry fertilizer when the following procedure is followed:

Fill the blender with at least 2/3 of the required amount of dry bulk granular fertilizer to be used. Spray the Dual II Magnum SI **alone**, directly onto the moving dry fertilizer. Allow the fertilizer to blend for 5 minutes or until the mixture is uniform. Then spray the combination partner onto the moving fertilizer. Blend the herbicide/fertilizer mixture for 5 minutes or until uniform. Add the remainder of the fertilizer. Blend for 5 minutes or until the mixture is uniform. Spread the herbicide/fertilizer mixture as soon as possible. Follow the blender mixing instructions on the label of the companion product.



Calculate amounts of Dual II Magnum SI by the following formula:

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

**Pneumatic (Compressed Air) Application:** Dual II Magnum SI may be applied through pneumatic applicators, whether the herbicide/fertilizer mixture is blender-mixed, or on-board fertilizer impregnation systems are used.

Dual II Magnum SI must not be mixed with any other liquid or dry material in on-board fertilizer impregnation system tanks. Use high quality fertilizer with a minimum of fines when applying Dual II Magnum SI with on-board impregnation equipment.

**Notes:** (1) Dual II Magnum SI is designed and labeled to be applied to dry fertilizer only. Do not mix with water, other liquid additives, or liquid fertilizers for application by sprayers. Lack of mixing, poor results, and crop injury may result. (2) Drying agents are not recommended for use in on-board fertilizer impregnation systems. (3) When urea is to be used as one component in the dry bulk granular fertilizer mixture, it should be added to the blender last.

*Precautions: To avoid potential for explosion, (1) Do not impregnate Dual II Magnum SI or Dual II Magnum SI sequentials on ammonium nitrate, potassium nitrate, or sodium nitrate, either alone or in blends with other fertilizers. (2) Do not use Dual II Magnum SI or Dual II Magnum SI sequentials on straight unadulterated agricultural limestone, since absorption will not be achieved. Limestone prills which contain a binding agent and fertilizer blends containing limestone can be impregnated. (3) Do not mix Dual II Magnum SI with any water, liquid, or dry product. (4) Dual II Magnum SI may be applied only to dry bulk granular fertilizer.*

**Application**

Apply 200 lbs. or more of the herbicide/fertilizer mixture per acre. For best results, apply the mixture uniformly to the soil with properly calibrated equipment immediately after blending. Uniform application of the herbicide/fertilizer mixture is essential to prevent possible crop injury and achieve weed control. Non-uniform application will result in unsatisfactory weed control. In areas where conventional tillage is practiced, a shallow incorporation of the mixture into the soil may improve weed control. On fine- or medium-textured soils in areas where soil incorporation is not planned, i.e., reduced tillage situations or in some conventional till situations, make applications approximately 30 days before planting to allow moisture to move the herbicide/fertilizer mixture into the soil. On coarse-textured soils, make applications approximately 14 days prior to planting.

*Precaution: To avoid crop injury, do not use the herbicide/fertilizer mixture on crops where bedding occurs.*



**G. VARIABLE RATE APPLICATION**

**Variable-Rate Broadcast Ground Application for Corn and Soybeans**

Variable-rate technologies may be used for more precise applications. Two additive factors have been determined for use in applications using variable-rate technologies. One of these factors (A) is directly related to soil texture and the other (B) is related to percent organic matter (OM) and soil texture. When these two factors are added together, the resulting application rate will be more precise for a soil of a given soil texture and organic matter content. Use the formulas below to assure a more precise rate for any given area within a field.

**Formulas\* for Preplant Surface-Applied, Preplant Incorporated, Preemergence, and Early Preplant Applications**

Refer to specific instructions regarding these applications in the **Application Procedures** section of this label, as well as the appropriate crop section.

Soil Texture	Rates in Pints per Acre				
	Preplant Surface-Applied Preplant Incorporated Preemergence			Early Preplant	
	Factors			Factors	
	A	B	A	B	
COARSE	1.2	+ (0.12 x % OM)	1.45	+ (0.12 x % OM)	
MEDIUM	1.4	+ (0.12 x % OM)	1.7	+ (0.10 x % OM)	
FINE	1.6	+ (0.12 x % OM)	2.0	+ (0.08 x % OM)	

\*Do not use with soils with greater than 8% organic matter (OM).

**Formulas\* for Fall Applications**

This product is registered for use only where corn or soybeans will be grown the following year in IA, MN, SD, ND, WI, and portions of NE and IL. Refer to specific instructions and restrictions regarding fall applications in the **Corn and Soybeans** sections of this label.

Soil Texture	Rates in Pints Per Acre		
	Fall Applications		
	Factors		
	A	B	
COARSE	DO NOT USE		
MEDIUM	1.68	+ (0.136 x % OM)	
FINE	2.18	+ (0.08 x % OM)	

\*Do not use with soils with greater than 8% organic matter (OM).

**H. STORAGE AND DISPOSAL**

**Pesticide Disposal**

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

**Container Disposal**

Refer to label on container for disposal instructions.

This product may be stored at temperatures down to 30 degrees below 0°F.

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

**I. PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**CAUTION**

Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin, or clothing. May cause skin sensitization reactions in some people.

**Statement of Practical Treatment**

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

**If on skin:** Wash with plenty of soap and water. Get medical attention if irritation persists.

**Note to Physician:** If ingested, induce emesis or lavage stomach. Administration of an aqueous slurry of activated charcoal can be considered. Treat symptomatically.

### Personal Protective Equipment

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

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, or viton
- Shoes plus socks

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 Control Statements

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], 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 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

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 contaminate water when disposing of equipment wash waters or rinsate.

**Ground Water Advisory**

The active ingredient in Dual II Magnum SI has the potential to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

**Surface Water Advisory**

The active ingredient in Dual II Magnum SI has the potential to contaminate surface water through ground application drift. Under some conditions, the active ingredient may also have a high potential for runoff into surface water (primarily via dissolution in runoff water) for several months post-application. These include poorly drained or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain to surface water.

**Mixing/Loading Instructions**

Care must be taken using this product to prevent spills, or improper disposal of excess pesticide, herbicide/fertilizer mixtures, or rinsates.

Check-valves or antisiphoning devices must be used on all mixing equipment.

This product may not be mixed or loaded within 50 ft. of perennial or intermittent streams and rivers, natural or impounded lakes and reservoirs. 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 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.

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