

Sale, use and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

PULL HERE TO OPEN ►

S-METOLACHLOR GROUP 15 HERBICIDE



# Dual II Magnum<sup>®</sup>

Herbicide



For weed control in corn; cotton; grasses grown for seed; horseradish; legume vegetables; peanuts; potatoes; pumpkin; rhubarb; safflowers; sorghum (forage, grain and sweet); soybean; sugar beets; sunflowers; and tomatoes

*Active Ingredient:*

S-metolachlor\* . . . . . 82.4%

*Other Ingredients:* . . . . . 17.6%

*Total:* . . . . . 100.0%

\*CAS No. 87392-12-9

Dual II Magnum<sup>®</sup> is formulated as an Emulsifiable Concentrate (EC) and contains the equivalent of 82.4% or 7.64 lb 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. 100-818

EPA Est. 11773-IA-01<sup>VWC</sup>, EPA Est. 100-LA-001<sup>GBL</sup>

(Superscript is first three letters of batch code on container)

SCP 818A-L1U 1020  
4127336

**2.5 gallons**  
Net Contents

®

## TABLE OF CONTENTS

<b>1.0</b>	<b>FIRST AID</b>	
		<b>PRECAUTIONARY STATEMENTS</b>
<b>2.0</b>	<b>PRECAUTIONARY STATEMENTS</b>	
	<b>2.1 Hazards to Humans and Domestic Animals</b>	
	<b>2.2 Personal Protective Equipment (PPE)</b>	
	<b>2.3 User Safety Requirements</b>	
	<b>2.4 Engineering Controls</b>	
	<b>2.5 User Safety Recommendations</b>	
	<b>2.6 Environmental Hazards</b>	
	2.6.1 Groundwater Advisory	
	2.6.2 Surface Water Advisory	
	2.6.3 Mixing/Loading Precautions	
		<b>DIRECTIONS FOR USE</b>
<b>3.0</b>	<b>PRODUCT INFORMATION</b>	
	<b>3.1 Weed Resistance Management</b>	
	3.1.1 Principles of Herbicide Resistant Weed Management	
<b>4.0</b>	<b>APPLICATION DIRECTIONS</b>	
	<b>4.1 Methods of Application</b>	
	4.1.1 Band Application	
	<b>4.2 Application Equipment</b>	
	<b>4.3 Application Volume and Spray Coverage</b>	
	<b>4.4 Mixing Directions</b>	
	4.4.1 Dual II Magnum Alone	
	4.4.2 Tank-Mix Precautions	
	4.4.3 Tank-Mix Compatibility	
	4.4.4 Dual II Magnum In Tank Mixtures	
	<b>4.5 Dry Bulk Granular Fertilizers</b>	
	4.5.1 Preparation of Herbicide/Fertilizer Mixtures	
	4.5.2 Pneumatic (Compressed Air) Application	
	4.5.3 Precautions	
	4.5.4 Application Instructions	

*continued...*

## **TABLE OF CONTENTS** *(continued)*

- 4.6 Application through Irrigation Systems (Chemigation)**
  - 4.6.1 Chemigation Restrictions
  - 4.6.2 Operating Instructions For Chemigation
  - 4.6.3 Specific Instructions For Public Water Systems
  - 4.6.4 Application Directions For Irrigation Systems
  - 4.6.5 Center Pivot Irrigation Application
- 4.7 Sprayer Cleanout**
- 5.0 REPLANT AND ROTATIONAL CROP RESTRICTIONS**
  - 5.1 Replant and Rotational Crops**
  - 5.2 Additional Rotational Crop Options**
  - 5.3 Limited Water or Irrigation Conditions**
- 6.0 COVER CROPS**
  - 6.1 Field Bioassay for Cover Crops**
- 7.0 RESTRICTIONS AND PRECAUTIONS**
  - 7.1 Use Restrictions**
  - 7.2 Use Precautions**
  - 7.3 Spray Drift Management**
    - 7.3.1 Aerial Spray Drift Management
  - 7.4 Drift Reduction Advisory Information**
    - 7.4.1 Importance of Droplet Size
    - 7.4.2 Controlling Droplet Size
    - 7.4.3 Release Height - Aircraft
    - 7.4.4 Application Height
    - 7.4.5 Swath Adjustment
    - 7.4.6 Temperature and Humidity
    - 7.4.7 Temperature Inversions
    - 7.4.8 Wind
    - 7.4.9 Windblown Soil Particles
    - 7.4.10 Sensitive Areas
- 8.0 WEEDS CONTROLLED OR PARTIALLY CONTROLLED BY DUAL II MAGNUM APPLIED PRIOR TO WEED EMERGENCE**
- 9.0 CROP USE DIRECTIONS**
  - 9.1 Corn**
    - 9.1.1 Fall, Preplant Surface, Preplant Incorporated, Preemergence or Postemergence Applications
    - 9.1.2 Tank-Mix Combinations for Corn

- 9.2 Cotton**
  - 9.2.1 Fall, Preplant Incorporated, Preemergence or Postemergence Applications
  - 9.2.2 Tank-Mix Combinations for Cotton
- 9.3 Grasses Grown for Seed**
- 9.4 Horseradish**
- 9.5 Legume Vegetables (Succulent or Dried), Crop Group 6, except Soybean**
  - 9.5.1 Fall, Preplant Incorporated or Preemergence Applications
  - 9.5.2 Tank-Mix Combinations for Legume Vegetables
- 9.6 Peanut**
  - 9.6.1 Preplant Incorporated, Postplant Incorporated, Preemergence or Lay-by Applications
  - 9.6.2 Tank-Mix Combinations for Peanut
- 9.7 Potato**
  - 9.7.1 Incorporated, Preemergence, and Postemergence and Lay-by Application
  - 9.7.2 Tank-Mix Combinations for Potato
- 9.8 Pumpkin**
- 9.9 Rhubarb**
- 9.10 Safflowers**
- 9.11 Sorghum (Concep III Treated Only)**
  - 9.11.1 Grain or Forage Sorghum, Fall, Preplant Surface, Preplant Incorporated, Preemergence or Postemergence Applications
  - 9.11.2 Tank-Mix Combinations for Sorghum (Concep III Treated Only)
- 9.12 Sweet Sorghum, Preplant Surface, Preplant Incorporated, Preemergence or Postemergence**
- 9.13 Soybeans (NOT FOR POSTEMERGENCE USE IN CALIFORNIA)**
  - 9.13.1 Fall, Preplant Surface, Preplant Incorporated, Preemergence or Postemergence Applications
  - 9.13.2 Tank-Mix Combinations for Soybeans
- 9.14 Sugar Beets**
  - 9.14.1 Postemergence Application
  - 9.14.2 Tank-Mix Combinations for Sugar Beets
- 9.15 Sunflowers**
- 9.16 Tomato**
- 10.0 STORAGE AND DISPOSAL**
- 11.0 CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**
- 12.0 APPENDIX**
  - 12.1 Tank-Mix Partner Table**

## 1.0 FIRST AID

FIRST AID	
<b>If in eyes</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If swallowed</b>	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to by a poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>If inhaled</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>HOTLINE NUMBER</b> For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call 1-800-888-8372	

## PRECAUTIONARY STATEMENTS

### 2.0 PRECAUTIONARY STATEMENTS

#### 2.1 Hazards to Humans and Domestic Animals

##### CAUTION

Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

#### 2.2 Personal Protective Equipment (PPE)

All applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves: barrier laminate or Viton® ≥ 14 mils
- Shoes plus socks

#### 2.3 User Safety Requirements

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

#### 2.4 Engineering Controls

Mixers and loaders supporting aerial applications are required to use closed systems. The closed system must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides. When using the closed system, the mixers' and loaders' PPE requirements may be reduced or modified as specified in the WPS.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides, the handler PPE requirements may be reduced or modified as specified in the WPS.

## 2.5 User Safety Recommendations

### User Safety Recommendations

#### Users should:

- 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.

## 2.6 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 washwater or rinsate.

### 2.6.1 GROUNDWATER ADVISORY

S-metolachlor is known to leach through soil into groundwater 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 groundwater contamination.

### 2.6.2 SURFACE WATER ADVISORY

S-metolachlor has the potential to contaminate surface water through ground spray 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 groundwater, 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.

### 2.6.3 MIXING/LOADING PRECAUTIONS

Care must be taken when using this product to prevent back-siphoning into wells, spills, or improper disposal of excess pesticide, spray mixtures, or rinsates. Check-valves or anti-siphoning devices must be used on all mixing and/or irrigation equipment.

- This product must not be mixed or loaded within 50 ft of perennial or intermittent streams and rivers, natural or impounded lakes and reservoirs.
- This product must 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.
  - o 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.
  - o Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained.
  - o The pad shall be sloped to facilitate material removal.
  - o 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.
  - o 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.

## DIRECTIONS FOR USE

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

Dual II Magnum must be used only in accordance with directions on this label or in separately published EPA accepted supplemental labeling for this product.

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.

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

### 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 (WPS).

**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: barrier laminate or Viton  $\geq$  14 mils
- Shoes plus socks

## 3.0 PRODUCT INFORMATION

Dual II Magnum is a combination of S-metolachlor plus the corn safener benoxacor. Dual II Magnum is recommended for management of the weed species listed in **Section 8.0**.

Dual II Magnum is a selective herbicide that can be applied for control of most annual grasses and certain broadleaf weeds in corn (all types); cotton; grasses grown for seed; horseradish; legume vegetables; peanuts; potatoes; pumpkin; rhubarb; safflowers; sorghum (forage, grain and sweet); soybean; sugar beets; sunflowers; and tomatoes.

Dual II Magnum is taken up by the shoots and/or roots of emerging weeds. This uptake results in the inhibition of shoot and root tissue growth soon after weed germination. Because of this, Dual II Magnum will not control emerged weeds. Control weeds that are present by another means, e.g., mechanical means or by another herbicide.

### 3.1 Weed Resistance Management

S-METOLACHLOR	GROUP	15	HERBICIDE
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S-metolachlor, the active ingredient in this product, is a Group 15 herbicide based on the mode of action classification system of the Weed Science Society of America. Any weed population may contain plants naturally resistant to Group 15 herbicides. Such resistant weed plants may not be effectively managed using Group 15 herbicides but may be effectively managed utilizing another herbicide alone or in mixtures from a different group and/or by using cultural or mechanical practices. However, an herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides. Consult your local company representative, state cooperative extension service, professional consultants or other qualified authorities to determine appropriate actions for treating specific resistant weeds.

### 3.1.1 PRINCIPLES OF HERBICIDE RESISTANT WEED MANAGEMENT

#### Scout and know your field

- Know weed species present in the field to be treated through scouting and field history. An understanding of weed biology is useful in designing a resistance management strategy. Ensure the weed management program will control all weeds present.
- Fields should be scouted prior to application to determine species present and growth stage. Always apply this herbicide at the full labeled rate and correct timing for the weeds present in the field.

#### Utilize non-herbicidal practices to add diversity

- Use diversified management tactics such as cover crops, mechanical weed control, harvest weed seed control, and crop rotation as appropriate.

#### Use good agronomic practices, start clean and stay clean

- Use good agronomic practices that enhance crop competitiveness.
- Plant into weed-free fields utilizing tillage or an effective burndown herbicide for control of emerged weeds.
- Sanitize farm equipment to avoid spreading seed or vegetative propagules prior to leaving fields.

#### Difficult to control weeds

- Fields with difficult to control weeds should be planted in rotation with crops that allow the use of herbicides with an alternative mode of action or different management practices.
- Difficult to control weeds may require sequential applications, such as a broad spectrum preemergence herbicide followed by one or more postemergence herbicide applications. Utilize herbicides containing different modes of action effective on the target weeds in sequential applications.

#### Do not overuse the technology

- Do not use more than two applications of this or any other herbicide with the same mode of action in a single growing season unless mixed with an herbicide with a different mode of action which provides overlapping spectrum for difficult to control weeds.

#### Scout and inspect fields following application

- Prevent an influx of weeds into the field by controlling weeds in field borders.
- Scout fields after application to verify that the treatment was effective.
- Suspected- herbicide resistant weeds may be identified by these indicators
  - Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
  - A spreading patch of non-controlled plants of a particular weed species; and
  - Surviving plants mixed with controlled individuals of the same species.
- Report non-performance of this product to your Syngenta retailer, Syngenta representative, or call 1-866-Syngenta (866-796-4368). If resistance is suspected ensure weed escapes are controlled using an herbicide with an effective mode of action and/or use non-chemical means to prevent further seed production.

#### Prevent weed escapes before, during, and after harvest

- Do not allow weed escapes to produce seed or vegetative structures such as tubers or stolons which contribute to spread and survival. Consider harvest weed seed management and control weeds postharvest to prevent seed production.

#### Resistant Weeds

- Contact your local Syngenta representative, retailer, crop advisor or extension agent to determine if weeds resistant to this mode of action are present in your area. If resistant biotypes have been reported, use the full labeled rate of this product, apply at the labeled timing, and tank-mix with a different mode of action product so there are multiple effective modes of application for each suspected resistant weed.



## 4.0 APPLICATION DIRECTIONS

### 4.1 Methods of Application

Applications with Dual II Magnum alone or in tank mixtures are permitted by ground, by air and via chemigation. Preplant surface, preplant incorporated, preemergence and postemergence or lay-by applications are allowed as specified in **Section 9.0**. For band-application refer to **Section 4.1**. Refer to **Section 4.6** for details of application by chemigation.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

#### 4.1.1 BAND APPLICATION

Calculate the amount of herbicide and water volume needed for band treatment by the following formula:

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \frac{\text{Broadcast rate}}{\text{Acre}} = \text{Amount needed per Acre of Field}$$

### 4.2 Application Equipment

- Spray equipment configuration should be arranged to provide accurate and uniform coverage of the target area and minimize potential for spray drift.
- To ensure accuracy, calibrate sprayer before each use.
- For information on spray equipment and calibration, consult spray equipment manufacturers and/or state recommendations.
- All ground, aerial, and chemigation application equipment must be properly maintained and calibrated using appropriate carriers.
- For aerial applications, use low-drift nozzles.
- For ground applications, use sprayers that provide accurate and uniform application.
- For preplant incorporated application, use an implement capable of providing uniform incorporation.

### 4.3 Application Volume and Spray Coverage

- For ground application, apply alone or in tank mixtures in a minimum of 10 gal/A of spray mixture unless otherwise specified.
- For aerial application, apply alone or in tank mixtures in a minimum total volume of 2 gal/A of spray mixture.

### 4.4 Mixing Directions

1. Thoroughly clean spray equipment before using this product. Dispose of the cleaning solution in a responsible manner.
2. Prepare no more spray mixture than is needed for the immediate operation.
3. Keep product container tightly closed when not in use.
4. Do not let the spray mixture stand overnight in the spray tank.
5. Flush the spray equipment thoroughly following each use and apply the rinsate to a previously treated area.

#### 4.4.1 DUAL II MAGNUM ALONE

1. Fill the spray tank  $\frac{1}{2}$ - $\frac{3}{4}$  full with water or fluid fertilizer.
2. Add the proper amount of Dual II Magnum.
3. Add the rest of the water or fluid fertilizer.
4. Provide sufficient agitation during mixing and application to maintain a uniform emulsion.

#### 4.4.2 TANK-MIX PRECAUTIONS

- It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions, limitations and directions for use on all product labels involved in tank mixing. User must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.
- For tank mixtures with wettable powder or dry flowable formulations, use screens and strainers no finer than 50-mesh.
- Check compatibility (**Section 4.4.3**) with other pesticides and/or liquid fertilizers before mixing in spray tank.

**NOTE:** Nitrogen solutions or complete fluid fertilizers may replace all or part of the water in the spray for applications prior to crop emergence. Because liquid fertilizers vary, even within the same analysis, **always check compatibility with pesticide(s) before use**. Incompatibility of tank mixtures is more common with suspensions of fertilizer and pesticides.

#### 4.4.3 TANK-MIX COMPATIBILITY

- Conduct a jar test using a 1 pt to 1 qt container with lid by adding water or other intended carrier such a liquid fertilizer to the jar.
- Next, add the appropriate amount of pesticides(s) or tank-mix partner(s) in their relative proportions based on recommended label rates. Add tank-mix components separately in the order described in the tank-mixing section, **Section 4.4.4**. After each addition, shake or stir gently to thoroughly mix.
- After all ingredients have been added, put the lid on the jar, tighten and invert the jar 10 times to mix.
- After mixing, let the mixture stand 15–30 minutes and then examine for signs of incompatibility such as obvious separation, large flakes, precipitates, gels or heavy oily film on the jar.
- If the mixture remains mixed or can be remixed readily, it is physically compatible and can be used.
- If the mixture is incompatible, repeat the test using a compatibility agent at the recommended rate. Or, if applicable, slurry dry formulations in water before adding to the jar. If incompatibility is still observed after following these procedures, do not use the mixture.
- After compatibility testing is complete, dispose of any pesticide wastes in accordance with the storage and disposal section, **Section 10.0**, of this label.

#### 4.4.4 DUAL II MAGNUM IN TANK MIXTURES

1. Fill the spray tank  $\frac{1}{4}$  full with water and start the agitation.
2. Check the tank mix partner label for any specific instructions pertaining to the tank-mix partner.
3. Add the tank mix partner and allow it to become dispersed.
4. Add Dual II Magnum.
5. Add glyphosate or paraquat product if one is being used.
6. Add the remainder of the water and maintain agitation during mixing and application to maintain a uniform suspension.
7. Fluid fertilizers may replace all or part of the water as carrier for applications prior to crop emergence unless otherwise specified.

### 4.5 Dry Bulk Granular Fertilizers

Many dry bulk granular fertilizers may be impregnated or coated with Dual II Magnum alone or selected Dual II Magnum tank mixtures which are registered for preplant incorporated or preplant surface applications which are used to control weeds in crops on the Dual II Magnum label and are not prohibited from use on dry bulk granular fertilizers.

When applying Dual II Magnum or Dual II Magnum mixtures with dry bulk granular fertilizers, follow all directions for use, restrictions 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.

#### 4.5.1 PREPARATION OF HERBICIDE/FERTILIZER MIXTURES

- Use any closed drum, belt, ribbon, or other commonly used dry bulk fertilizer blender.
- Place the nozzles used to spray Dual II Magnum and Dual II Magnum mixtures onto the fertilizer in such a way as to provide uniform spray coverage.
- Use care to aim the spray directly onto the fertilizer only and to avoid spraying the walls of the blender.
- If the herbicide/fertilizer mixture is too wet, add a highly absorptive material or similar granular clay or diatomaceous earth materials, to obtain a dry, free-flowing mixture.
- Add absorptive materials only after the herbicide has been thoroughly blended into the fertilizer mixture.
- Best application results will be obtained by using a granule of 6/30 particle size or of a size similar to that of the fertilizer material being used.
- Generally, less than 2% by weight of absorptive material will be needed.
- Avoid using more than 5% absorptive material by weight.
- Calculate amounts of Dual II Magnum by the following formula:

$$\frac{2000}{\text{lb of fertilizer per Acre}} \times \frac{\text{pt of liquid or flowable product}}{\text{Acre}} = \frac{\text{pt of liquid or flowable product}}{\text{ton of fertilizer}}$$

#### 4.5.2 PNEUMATIC (COMPRESSED AIR) APPLICATION

- High humidity, high urea concentrations, low fertilizer use rates, and dusty fertilizer may cause fertilizer mixture to build up or plug the distributor head, air tubes, or nozzle deflector plates.
- To minimize buildup, premix Dual II Magnum with Exxon Aromatic 200 at a rate of 1.0-4.0 pt/gal of Dual II Magnum.
- Aromatic 200 is a noncombustible/nonflammable petroleum product.
- Aromatic 200 may be used in either a fertilizer blender or through direct injection systems.
- Avoid drying agents when using Aromatic 200.

#### 4.5.3 PRECAUTIONS

- Use mixtures of Dual II Magnum and Aromatic 200 on dry fertilizer only. Poor results or crop injury may result if these mixtures are used in water or liquid fertilizer solutions for spraying applications.
- When impregnating Dual II Magnum in a blender before application, a drier mixture can be attained by substituting a drying agent for Aromatic 200.
- Agsorb® FG or drying agents of 6/30 particle size will provide best results.
- When possible, avoid drying agents when using on-board impregnation equipment.
- **TO AVOID POTENTIAL FOR EXPLOSION:**
  1. Do not impregnate Dual II Magnum or Dual II Magnum mixtures on ammonium nitrate, potassium nitrate, or sodium nitrate, either alone or in blends with other fertilizers.
  2. Do not use Dual II Magnum or Dual II Magnum mixtures on straight limestone, since absorption will not be achieved. Fertilizer blends containing limestone can be impregnated.

#### 4.5.4 APPLICATION INSTRUCTIONS

- Apply 200-700 lb 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.
- Non-uniform application may also result in unsatisfactory weed control. In areas where conventional tillage is practiced, a shallow incorporation of the mixture into the soil may improve weed control.
- On fine- or medium textured soils in areas where soil incorporation is not planned, 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.

### 4.6 Application through Irrigation Systems (Chemigation)

#### 4.6.1 CHEMIGATION RESTRICTIONS

##### • **ONLY APPLY THIS PRODUCT THROUGH CENTER-PIVOT IRRIGATION SYSTEMS.**

- If you have questions about calibration, you should contact State Extension specialists, equipment manufacturers, or other experts.
- Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system, unless the pesticide label-prescribed safety devices for public water systems are in place.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments when needed.

#### 4.6.2 OPERATING INSTRUCTIONS FOR CHEMIGATION

1. The system must contain a functional check-valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water-source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check-valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump or piston pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **4.6.3 SPECIFIC INSTRUCTIONS FOR PUBLIC WATER SYSTEMS**

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone (RPZ), back-flow preventer or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **4.6.4 APPLICATION DIRECTIONS FOR IRRIGATION SYSTEMS**

1. Prepare a mixture with a minimum of 1 part water to 1 part herbicide(s) and inject this mixture into the center pivot system. Injecting a larger volume of a more dilute mixture per hour will usually provide more accurate calibration of equipment.
2. Maintain sufficient agitation to keep the herbicide in suspension.
3. Meter into irrigation water during entire period of water application.
4. Apply in 1/2-1 inch of water. Use the lower water volume (1/2 inch) on *coarser soils* and the higher volume (1 inch) on *fine textured soils*. More than 1 inch of water at application may reduce weed control by moving the herbicide below the effective zone in the soil.

#### **4.6.5 CENTER PIVOT IRRIGATION APPLICATION**

- Dual II Magnum alone or in tank mixture with other herbicides on this label, which are registered for center pivot application, may be applied in irrigation water preemergence (after planting, but before weeds or crop emerge) at rates listed on this label.
- Dual II Magnum also may be applied postemergence to the crop and preemergence to weeds in crops where postemergence applications are allowed on this label.
- Follow all restrictions (height, timing, rate, etc.) to avoid illegal residues.
- Apply this product only through a center pivot irrigation system.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

Where sprinkler distribution patterns do not overlap sufficiently, unacceptable weed control may result. Where sprinkler distribution patterns overlap excessively, crop injury may result.

#### 4.7 Sprayer Cleanout

Thoroughly clean sprayer or other application device before using. Dispose of cleaning solution in a responsible manner. Do not use a sprayer or applicator contaminated with any other materials, or crop damage or clogging of the application device may result.

### 5.0 REPLANT AND ROTATIONAL CROP RESTRICTIONS

#### 5.1 Replant and Rotational Crops

- If a crop treated with Dual II Magnum is lost, any crop on this label, or on a supplemental Dual II Magnum label, may be replanted or rotated at any interval provided that the rate of Dual II Magnum applied to the previous crop was not greater than the labeled rate for the crop to be replanted.
- Dual II Magnum may be applied again following crop replanting provided the total annual maximum rate for that crop is not exceeded.

The crops listed in the table below and in **Section 5.2** may be planted at the specified interval following application of Dual II Magnum Herbicide. The following crops may be planted at the specified interval following application of Dual II Magnum Herbicide.

Crop	Plant-Back Interval
Alfalfa	4 months
Barley Oats Rye Wheat	4 1/2 months
Clover (seeded)	9 months
Buckwheat Rice Tobacco	Next spring following treatment
All other crops not listed above or in <b>Section 5.2</b> .	12 months
<b>Precaution:</b> <ul style="list-style-type: none"><li>• Refer to <b>Section 5.3</b> for rotational crop instructions when water or irrigation is limited.</li></ul>	
<b>ROTATIONAL CROPS USE RESTRICTIONS</b>	
1. <b>DO NOT</b> rotate to alfalfa or clover for 12 months if more than 1.9 lb active ingredient per acre (2.0 pt of Dual II Magnum) was applied in the previous crop.	
2. <b>DO NOT</b> rotate to alfalfa or clover for 12 months if lay-by or other postemergence applications of Dual II Magnum were made in the previous crop.	

#### 5.2 Additional Rotational Crop Options

This is a listing of rotational crop options that are made possible through S-metolachlor tolerances which were established by the EPA as crop groupings.

For the crop groups and crop subgroups below, not all crops within each group are specifically listed. Where a crop group or crop subgroup is listed, the plant-back interval applies to all the respective crops in that specific EPA crop group or EPA crop subgroup.

Crop Group or Crop Subgroup	Maximum Rate Previously Applied to the Field (pt/A)	Plant-Back Interval
Cilantro Spinach	1.0	60 days
Subgroup 1B: Vegetable root (except sugarbeet, except carrot)	1.33	60 days
Beet, garden                  Parsnip		
Burdock, edible              Radish		
Celeriac                        Radish, oriental		
Chervil, turnip-rooted      Rutabaga		
Chicory                        Salsify		
Ginseng                        Salsify, black		
Horseradish                  Salsify, Spanish		
Parsley, turnip-rooted      Skirret		
Turnip		
Subgroup 3-07B: Onion, green	1.33	60 days
Chive                            Onion, Beltsville bunching		
Chive, Chinese                Onion, fresh		
Leek, lady's                    Onion, green		
Leek                              Onion, Welsh		
Leek, wild                      Shallot		
Subgroup 4-16B : Brassica, leafy greens	1.33	60 days
Bok choy                        Kale		
Broccoli, Chinese            Greens, mustard		
Broccoli, Cavolo              Greens, turnip		
Cabbage, Chinese (napa)		
Collards		
Crop Group 9: Vegetable, cucurbit	1.33	60 days
Cantaloupe                    Squash, Summer		
Citron Melon                  Squash, Winter		
Cucumber                      Watermelon		
Gourd		
Muskmelon		
Pumpkin		
Carrot                            Strawberry	1.33	60 days
Leaf Lettuce                  Swiss Chard		
Sesame		

*continued...*

Crop Group or Crop Subgroup	Maximum Rate Previously Applied to the Field (pt/A)	Plant-Back Interval
Group 8-10: Vegetable fruiting (except tabasco pepper) Eggplant                      Pepper, chili Groundcherry (Physalis spp.)              Pepper, cooking Pepper, pimento Okra                              Pepper, sweet Pepino                            Tomatillo Pepper, bell                    Tomato	1.67	60 days
Subgroup 1C: Tuberous and Corm Vegetables Arracacha                      Dasheen (taro) Arrowroot                        Ginger Artichoke, Chinese            Leren Artichoke, Jerusalem        Potato Canna, edible                    Potato, sweet Cassava, bitter                 Tanier Cassava, sweet                 Turmeric Chayote (root)                 Yam bean Chufa                               Yam, true	2.0	60 days
Subgroup 3-07A: Onion, bulb Garlic, bulb                      Onion, dry bulb Garlic, great headed         Shallot		
Subgroup 22A: Stalk and stem vegetable (except Kohlrabi) Agave                              Fennel, Florence Asparagus                       Fern, edible Celtuce                             Kale, sea		
Subgroup 22B: Leaf petiole vegetable Cardoon                            Celery Celery, Chinese                 Rhubarb		
Subgroup 5-16: Vegetable, <i>Brassica</i> , head and stem Broccoli                          Cabbage, Chinese Brussel sprouts                 Cauliflower Cabbage		
Kohlrabi Lettuce, head		
<b>Precaution:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 5.3</b> for rotational crop instructions when water or irrigation is limited.</li> </ul>		

#### ADDITIONAL ROTATIONAL CROP USE RESTRICTIONS

1. **DO NOT** make a second application of an S-metolachlor containing product to these rotational crops within 60 days of the original application.
2. If the rate of Dual II Magnum applied in the previous crop was greater than the rate listed in the table, these crops cannot be planted until the following spring.

### 5.3 Limited Water or Irrigation Conditions

When planting rotational crops, special attention must be given to the amount of rainfall and type of irrigation used. Rotational crops listed on this label are safe for planting after a Dual II Magnum application provided the rotational interval is followed and the preceding crop received natural rainfall or overhead irrigation.

When non-overhead watering methods (e.g. drip tape, furrow irrigation, etc.) are used, the areas of the field not receiving water (e.g. furrows when drip irrigated or bed tops when furrow irrigated) will have a higher Dual II Magnum residue remaining in the soil resulting in a significant increase in the rotational crop injury risk.

To reduce the risk of rotational crop injury, thoroughly incorporate the Dual II Magnum treated field to a depth of 3-4 inches before planting the rotational crop. For more thorough incorporation, till the soil in 2 different directions (cross-till). Even with thorough tillage, injury to rotational crops is still possible following non-overhead watering methods or limited moisture conditions.

## 6.0 COVER CROPS

A cover crop can be an important tool for the overall farm cropping system. Cover crops are planted for conservation purposes, soil erosion control, soil health improvement, water quality improvement and weed management. A cover crop can be a single crop or a combination of crops, including grasses and/or broadleaf crops.

After harvest of a Dual II Magnum treated crop, planting of a cover crop is allowed provided the cover crop is not grazed or fed to livestock nor harvested for food. Terminate the cover crop through natural causes such as frost or intentional termination by herbicide application, crimping, rolling, tillage or cutting.

All possible cover crops or cover crop combinations have not been tested for tolerance to this product. Before planting the cover crop, determine the level of tolerance for the intended cover crops by conducting a field bioassay. Refer to **Section 6.1** for instructions on how to conduct a field bioassay.

### 6.1 Field Bioassay for Cover Crops

A field bioassay is a method of determining if herbicide residues are present in the soil at concentrations high enough to adversely affect crop growth.

Conduct the field bioassay by planting several strips of the desired cover crop across the field which has been previously treated with Dual II Magnum. Plant the cover crop strips perpendicular to the direction of the product application. The strips should be located so that all the different field conditions are encountered, including differences in field terrain, soil texture, organic matter, pH, and drainage.

If the cover crop does not show adverse effects such as crop injury and/or stand reduction, the field can be planted to this cover crop. If injury and/or stand reduction are visible, wait two to four weeks for further herbicide degradation to occur and repeat the bioassay. Alternatively, select a different cover crop and repeat the bioassay. Only plant cover crops that show acceptable tolerance in the field bioassay.

## 7.0 RESTRICTIONS AND PRECAUTIONS

### 7.1 Use Restrictions

- **DO NOT** sell, use or distribute this product in Nassau and Suffolk Counties in the State of New York.
- **DO NOT** use in nurseries, turf, or landscape plantings.
- **DO NOT** apply this product through any type of irrigation system except center pivot systems.



## 7.2 Use Precautions

- Avoid application 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:
  - Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, settle the soil surface first by rainfall or irrigation.
  - Avoid application to impervious substrates, such as paved or highly compacted surfaces.
  - Avoid use of 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.
- Use of a sprayer or applicator contaminated with any other materials, may result in crop damage or clogging of the application device.
- Avoid spray overlap, as crop injury may result.
- To avoid spray drift, avoid making applications under windy conditions.
- Avoid aerial application under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.
- Injury may occur following the use of Dual II Magnum under abnormally high soil moisture conditions during early development of the crop.
- Dry weather following application of Dual II Magnum may reduce weed control. Cultivate if weeds develop.
- To avoid crop injury, avoid the use of a herbicide/fertilizer mixture on crops where bedding occurs.
- Avoid application to humans or animals. Flagmen and loaders must avoid inhalation of spray mist and prolonged contact with skin.

## 7.3 Spray Drift Management

- AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND THE GROWER.
- The interaction of many equipment- and weather-related factors determines the potential for spray drift.
- The applicator and grower must consider the interaction of equipment and weather-related factors to ensure that the potential for drift to sensitive non-target plants is minimal.
- This pesticide may only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, non-target plants) is minimal (i.e., when the wind is blowing away from the sensitive area).

### 7.3.1 AERIAL SPRAY DRIFT MANAGEMENT

- Do not release spray at a height greater than 10 ft above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a coarse or coarser droplet size (ASABE S572).
- For all other applications, applicators are required to use a medium or coarser droplet size (ASABE S572).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use 1/2 swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.
- To assure that spray will not adversely affect adjacent sensitive nontarget plants, apply Dual II Magnum by aircraft at a minimum upwind distance of 400 ft from sensitive plants.

## 7.4 Drift Reduction Advisory Information

### 7.4.1 IMPORTANCE OF DROPLET SIZE

- An effective way to reduce spray drift is to apply large droplets.
- Use the largest droplets that provide target pest control.
- While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

#### **7.4.2 CONTROLLING DROPLET SIZE**

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Do not exceed the nozzle manufacturer's maximum pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the best practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **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. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

#### **7.4.3 RELEASE HEIGHT - AIRCRAFT**

- Higher release heights increase the potential for spray drift.
- When applying aerially to crops, do not release spray at a height greater than 10 ft above the crop canopy, unless a greater application height is necessary for pilot safety.

#### **7.4.4 APPLICATION HEIGHT**

- Do not apply at a height greater than 10 ft above the top of the largest plants, unless a greater height is required for aircraft safety.
- Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

#### **7.4.5 SWATH ADJUSTMENT**

- When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up- and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind.
- Increase swath adjustment distance with increasing drift potential (higher wind, smaller drops, etc.).

#### **7.4.6 TEMPERATURE AND HUMIDITY**

- When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation.
- Droplet evaporation is greatest when conditions are both hot and dry.

#### **7.4.7 TEMPERATURE INVERSIONS**

- If possible, avoid application during a temperature inversion because drift potential is high.
- Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud.
- This cloud can move in unpredictable directions due to the light variable winds common during inversions.
- Temperature inversions are characterized by increasing temperatures 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 an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

#### **7.4.8 WIND**

- Drift potential is lowest between wind speeds of 2-10 mph.
- However, many factors, including droplet size and equipment type, determine drift potential at any given speed.
- If possible, avoid application when wind speed is below 2 mph due to variable wind direction and high inversion potential.

**Note:** Local terrain can influence wind patterns.

#### 7.4.9 WINDBLOWN SOIL PARTICLES

- Dual II Magnum has the potential to move off-site due to wind erosion.
- Soils that are subject to wind erosion usually have a high silt and/or fine to very fine sand fractions and low organic matter content.
- Other factors which can affect the movement of windblown soil include the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, and drainage patterns.
- Avoid applying Dual II Magnum if prevailing local conditions may be expected to result in off-site movement.

#### 7.4.10 SENSITIVE AREAS

- Apply pesticides when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, nontarget crops) is minimal (e.g., when wind is blowing away from the sensitive areas).
- Avoid application to humans or animals. Flagmen and loaders must avoid inhalation of spray mist and prolonged contact with skin.

### 8.0 WEEDS CONTROLLED OR PARTIALLY CONTROLLED BY DUAL II MAGNUM APPLIED PRIOR TO WEED EMERGENCE

#### PARTIAL WEED CONTROL

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. Control of these weeds can be erratic, due partially to variable weather conditions.

Common Name	Scientific Name	Weed Type	Control (C) or Partial Control (PC)
Barnyardgrass	<i>Echinochloa crus-galli</i>	Grass	C
Crabgrass, large	<i>Digitaria ischaemum</i>	Grass	C
Crabgrass, smooth	<i>Digitaria sanguinalis</i>	Grass	C
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	Grass	C
Cupgrass, Prairie	<i>Eriochloa contracta</i>	Grass	C
Cupgrass, Southwestern	<i>Eriochloa acuminata</i>	Grass	C
Cupgrass, woolly	<i>Eriochloa villosa</i>	Grass	PC
Foxtail, bristly	<i>Setaria verticillata</i>	Grass	C
Foxtail, giant	<i>Setaria faberi</i>	Grass	C
Foxtail, green	<i>Setaria viridis</i>	Grass	C
Foxtail, millet	<i>Setaria italica</i>	Grass	C
Foxtail, yellow	<i>Setaria pumila</i>	Grass	C
Goosegrass	<i>Eleusine indica</i>	Grass	C
Johnsongrass (seedling)	<i>Sorghum halepense</i>	Grass	PC
Millet, wild-proso	<i>Panicum miliaceum</i>	Grass	PC
Panicum, fall	<i>Panicum dichotomiflorum</i>	Grass	C
Panicum, Texas	<i>Panicum texanum</i>	Grass	PC
Rice, red	<i>Oryza sativa</i>	Grass	C

Common Name	Scientific Name	Weed Type	Control (C) or Partial Control (PC)
Sandbur, field	<i>Cenchrus spinifex</i>	Grass	PC
Ryegrass, Italian	<i>Lolium multiflorum</i>	Grass	C
Sandbur, Southern	<i>Cenchrus echinatus</i>	Grass	PC
Shattercane	<i>Sorghum bicolor</i>	Grass	PC
Signalgrass, broadleaf	<i>Urochloa platyphylla</i>	Grass	C
Sorghum (volunteer)	<i>Sorghum bicolor</i>	Grass	PC
Witchgrass	<i>Panicum capillare</i>	Grass	C
Amaranth, Palmer	<i>Amaranthus palmeri</i>	Broadleaf	C
Amaranth, Powell	<i>Amaranthus powellii</i>	Broadleaf	C
Beggarweed, Florida	<i>Desmodium tortuosum</i>	Broadleaf	PC
Carpetweed	<i>Mollugo verticillata</i>	Broadleaf	C
Eclipta	<i>Eclipta prostrata</i>	Broadleaf	PC
Galinsoga, hairy	<i>Galinsoga quadriradiata</i>	Broadleaf	C
Galinsoga, smallflower	<i>Galinsoga parviflora</i>	Broadleaf	C
Nightshade, Eastern black	<i>Solanum ptychanthum</i>	Broadleaf	C
Nightshade, hairy	<i>Solanum physalifolium</i>	Broadleaf	PC
Pigweed, prostrate	<i>Amaranthus blitoides</i>	Broadleaf	C
Pigweed, redroot	<i>Amaranthus retroflexus</i>	Broadleaf	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	Broadleaf	C
Pigweed, tumble	<i>Amaranthus albus</i>	Broadleaf	C
Purslane, common	<i>Portulaca oleracea</i>	Broadleaf	PC
Pusley, Florida	<i>Richardia scabra</i>	Broadleaf	C
Spiderwort, tropical	<i>Commelina benghalensis</i>	Broadleaf	C
Waterhemp	<i>Amaranthus tuberculatus</i>	Broadleaf	C
Nutsedge, yellow	<i>Cyperus esculentus</i>	Sedge	C

**Procedures that might improve control of weeds listed above:**

- Thoroughly till soil to destroy germinating and emerged weeds.
- If Dual II Magnum is to be used preemergence, apply at planting or immediately after planting.
- 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.
- 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, make a uniform, shallow cultivation as soon as weeds emerge or apply an appropriately labeled herbicide to control emerged weeds.

## 9.0 CROP USE DIRECTIONS

### SOIL TEXTURES

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
Loamy sand Sand Sandy loam	Loam Silt Silt loam	Clay Clay loam Sandy clay Sandy clay loam Silty clay Silty clay loam

### 9.1 Corn

#### 9.1.1 FALL, PREPLANT SURFACE, PREPLANT INCORPORATED, PREEMERGENCE OR POSTEMERGENCE APPLICATIONS

Crops (including cultivars, varieties, and/or hybrid of these)			
Field Corn	Popcorn	Seed Corn	Sweet Corn
Application Timing	Rate (pt/A)	Use Directions	
<b>Fall Application for Spring Weed Control</b>  <b>For use in the following states:</b> <b>Iowa</b> <b>Illinois</b> <b>Minnesota</b> <b>Nebraska</b> <b>North Dakota</b> <b>South Dakota</b> <b>Wisconsin</b>	For minimum-till or no-tillage systems on soils with $\geq 2.5\%$ organic matter, apply rate based on soil texture:  <i>Medium Soils:</i> Apply 1.67-2.0 pt/A  <i>Fine Soils:</i> Apply 2.0 pt/A	Apply after harvest when the sustained soil temperature at a 4-inch depth is less than 55° F and falling.  Apply to ground that will be planted to corn the following spring.  <b>Apply after September 30</b> in ND, SD, MN, WI and north of Route 30 in IA.  <b>Apply after October 15</b> North of Route 91 in NE and south of Route 30 in IA.  <b>Apply after October 31</b> North of Route 136 in IL.  When a fall and/or a spring tillage follows application, do not exceed an incorporation depth of 2-3 inches.  Minimize furrow and ridge formation in the tillage operations.	
<b>Fall Application for Residual Control of Glyphosate Resistant Italian Ryegrass (<i>Lolium multiflorum</i>)</b>	1.33 - 1.67 pt/A  Use the lower rate for <i>coarse textured soils</i> and the higher rate for <i>fine textured soils</i> .	Apply from September 1 – December 1 after harvest of the previous crop and prior to Italian ryegrass emergence.  If tillage follows application, do not incorporate to a depth greater than 2-3 inches.  If glyphosate resistant Italian ryegrass is emerged at the time of application, a paraquat brand herbicide can be tank-mixed with Dual II Magnum to control emerged ryegrass.  Other registered herbicides may be tank mixed with Dual II Magnum for control or improved control of other weeds present at the time of application.	

Application Timing	Rate (pt/A)	Use Directions
<b>Fall Application for Residual Control or Suppression of Yellow Nutsedge (<i>Cyperus esculentus</i>) the Following Spring in ID, OR and WA</b>	1.33 pt/A	Apply in the fall after the harvest of the previous crop but before freeze-up. Application can be surface-applied or incorporated. If tillage follows application, do not incorporate to a depth greater than 2-3 inches.
<b>Early Preplant Surface Application</b>	1.33 pt/A on coarse soils 1.67 pt/A on medium soils 2.0 pt/A on fine soils  For extended residual or control of heavy weed infestations up to 2.6 pt/A is allowed.	Apply up to 14 days prior to planting on coarse soils. Apply up to 30 days before planting, on medium- and fine textured soils.
<b>Preplant Incorporated</b>	For all applications use the rate for the specific soil texture and organic matter (OM) as follows:  <i>Coarse Soil:</i> 1.0-1.33 pt/A; <3% OM 1.33 pt/A; ≥ 3% OM  <i>Medium Soil:</i> 1.33-1.67 pt/A  <i>Fine Soil:</i> 1.33-1.67 pt/A; <3% OM 1.67-2.0 pt/A; ≥ 3% OM  For extended residual or control of heavy weed infestations up to 2.6 pt/A is allowed.	Apply within 14 days of planting. Apply to the soil and incorporate into the top 2 inches of soil. 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 after bed formation, unless specified otherwise.  <b>For California Only:</b> Broadcast Dual II Magnum alone or with tank mix partners to the soil and thoroughly incorporate with a disk or similar implement set to till 4-6 inches deep. For more thorough incorporation, till the soil in 2 different directions (cross-till). Corn may be planted on flat surface or on beds. Use caution when forming the beds to ensure that only soil from the treated zone is used (i.e., do not bring untreated soil to soil surface). If application is made to preformed beds, incorporate with a tillage implement set to till 2-4 inches deep. Use care during tilling to keep the treated, tilled soil on the beds.
<b>Preemergence</b>	For all applications use the rate for the specific soil texture and organic matter (OM) as follows:  <i>Coarse Soil:</i> 1.0-1.33 pt/A; <3% OM 1.33 pt/A; ≥ 3% OM  <i>Medium Soil:</i> 1.33-1.67 pt/A  <i>Fine Soil:</i> 1.33-1.67 pt/A; <3% OM 1.67-2.0 pt/A; ≥ 3% OM  For extended residual or control of heavy weed infestations up to 2.6 pt/A is allowed.	Apply after planting but before crop emerges.  <b>For California Only:</b> Apply after planting. Water with sprinkler or flood irrigation within 7-10 days.

continued...

**9.1.1 FALL, PREPLANT SURFACE, PREPLANT INCORPORATED, PREEMERGENCE OR POSTEMERGENCE APPLICATIONS (continued)**

Application Timing	Rate (pt/A)	Use Directions
Postemergence or Lay-By	1.0 - 2.0 pt/A	<p>Apply after corn emergence up until corn reaches 40 inches in height.</p> <p>Apply to extend the duration of weed control in corn following any preplant surface-applied, preplant incorporated, or preemergence herbicide application, including Dual II Magnum.</p> <p>For best results, make applications prior to weed emergence and directed toward the base of corn plants in excess of 5 inches tall.</p>
<p><b>For Weed Control:</b></p> <ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<p><b>Tank Mix or Sequential Application Options:</b></p> <ul style="list-style-type: none"> <li>Refer to <b>Section 9.1.2</b> for tank-mix options.</li> </ul>		
<p><b>Resistance Management:</b></p> <ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		
<p><b>Precautions:</b></p> <ul style="list-style-type: none"> <li>For preplant surface application, to the extent possible, avoid moving treated soil out of the row or moving untreated soil to the surface during planting or weed control will be diminished.</li> <li>Use on peat or muck soils will result in reduced weed control.</li> </ul>		
<p><b>USE RESTRICTIONS</b></p>		
<ol style="list-style-type: none"> <li>Refer to <b>Section 7.1</b> for additional product use restrictions.</li> <li><b>Maximum Single Application Rate:</b> 2.6 pt/A             <ol style="list-style-type: none"> <li><b>DO NOT</b> apply more than 2.6 pt/A in a single preemergence application.</li> <li><b>DO NOT</b> apply more than 2.0 pt/A in a single postemergence application.</li> </ol> </li> <li><b>Minimum Application Interval:</b> Not Applicable</li> <li><b>Maximum Annual Rate:</b> 3.9 pt/A/year             <ol style="list-style-type: none"> <li><b>DO NOT</b> exceed 3.71 lb ai/A/year of S-metolachlor-containing products.</li> </ol> </li> <li>The combined total amount of Dual II Magnum from all applications in the fall plus spring must not exceed the maximum allowed annual rate.</li> <li><b>DO NOT</b> make more than 1 fall application per crop.</li> <li><b>DO NOT</b> apply to frozen ground.</li> <li><b>DO NOT</b> graze or feed forage for 30 days following application.</li> <li><b>Preharvest Interval (PHI):</b> <ol style="list-style-type: none"> <li>Sweet corn ears: 30 days</li> </ol> </li> </ol>		

### 9.1.2 TANK-MIX COMBINATIONS FOR CORN

Application	Tank-Mix Brands	Use Directions
<b>Burndown Weed Control</b>	2,4-D AAtrex® brands Banvel Gramoxone brands Glyphosate brands Princep brands Roundup® brands	Apply before, during or after planting, but before corn emerges. Apply the glyphosate or Roundup brands in water or fluid fertilizer with ground equipment. Gramoxone brands will not control weeds taller than 6 inches. Apply AAtrex tank mixture before weeds exceed 3 inches in height. Add non-ionic surfactant (NIS) at 1.0-2.0 qt/100 gal of diluted spray, or another appropriate surfactant at its labeled rate, or add crop oil concentrate plus 28% liquid nitrogen (or equivalent).
<b>Preplant Surface Preplant Incorporated Preemergence</b>	AAtrex brands Balance® Flexx Princep® brands	These tank mixes may be used to broaden the weed control spectrum in corn beyond that of Dual II Magnum alone. Use the Balance Flexx mixture on <b>field corn only</b> .
<b>Postemergence</b>	AAtrex brands Status	Apply before grass and broadleaf weeds pass the 2-leaf state and before corn exceeds 12 inches in height. Application to weeds larger than the 2-leaf stage will generally result in unsatisfactory control. Occasionally, some corn leaf burn may result, but this will likely not affect later growth or yield. Do not apply the postemergence tank mixes in fluid fertilizer, or severe crop injury may occur.
<b>Postemergence Application to Glufosinate Resistant Corn</b>	Liberty®	This tank mix provides postemergence control of a broad spectrum of grass and broadleaf weeds on the Liberty label and residual control of weeds on the Dual II Magnum label. Refer to the solo Dual II Magnum label and the Liberty label for rates recommended for weed populations and soil texture. Apply only to corn that is resistant to glufosinate.
<b>Postemergence Application to Glyphosate Resistant Corn</b>	Glyphosate brands and Roundup brands	These tank mixes provide postemergence control of weeds on the glyphosate brand label and residual control of weeds on the Dual II Magnum label. Application may be made from corn emergence until 30 inches tall or the V8 stage (8 leaves with collars), whichever comes first. Refer to the solo Dual II Magnum label and the glyphosate brands label for rates recommended for weed populations and soil texture. Apply only to corn that is resistant to glyphosate.
<b>Precautions:</b> <ul style="list-style-type: none"> <li>Dual II Magnum in any tank mixture for corn may be applied in water or fluid fertilizer before corn emerges. <b>After corn emergence</b>, use only water as a carrier when Dual II Magnum is applied.</li> <li>Do not apply combinations containing paraquat brands in suspension-type liquid fertilizers, because the activity of paraquat will be reduced.</li> </ul>		

*continued...*



**9.1.2 TANK-MIX COMBINATIONS FOR CORN (continued)**

TANK-MIX USE RESTRICTIONS
<p>1) All application rates, precautions, and use restrictions cited in <b>Section 9.1.1</b> for Dual II Magnum solo apply to tank-mixes with Dual II Magnum.</p> <p>2) It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <p><b>3) IMPORTANT: FOR TANK MIXTURES WITH AATREX (OR OTHER BRANDS OF ATRAZINE)</b></p> <p>a. If applying Dual II Magnum in tank mixture with AAtrex, all the restrictions and rate limitations on the AAtrex label must be followed.</p> <p>b. Certain states may have established rate limitations for atrazine within specific geographical areas. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.</p> <p>c. <b>DO NOT</b> exceed a total of 2.5 lb ai/A/year of atrazine-containing products.</p>

**9.2 Cotton**

**9.2.1 FALL, PREPLANT INCORPORATED, PREEMERGENCE OR POSTEMERGENCE APPLICATIONS**

Crops (including cultivars, varieties, and/or hybrids of these)		
Cotton		
Application Timing	Rate (pt/A)	Use Directions
<b>Fall Application for Residual Control of Glyphosate Resistant Italian Ryegrass (<i>Lolium multiflorum</i>)</b>	<p>1.33 - 1.67 pt/A</p> <p>Use the lower rate for <i>coarse textured soils</i> and the higher rate for <i>fine textured soils</i>.</p>	<p>Apply from September 1 – December 1 after harvest of the previous crop and prior to Italian ryegrass emergence.</p> <p>If tillage follows application, do not incorporate to a depth greater than 2-3 inches.</p> <p>If glyphosate resistant Italian ryegrass is emerged at the time of application, a paraquat brand herbicide can be tank-mixed with Dual II Magnum to control emerged ryegrass.</p>
<b>Preplant Incorporated (NM, OK and TX Only)</b>	<p>Use the following rates for the specific soil type:</p> <p><i>Sandy loam soil:</i> 1.0 pt/A</p> <p><i>Medium soils:</i> 1.0-1.33 pt/A</p> <p><i>Fine soils:</i> 1.33 pt/A</p>	<p>Apply to the soil and incorporate into the top inch of soil. Use a rolling cultivator or similar implement to uniformly incorporate not more than 1 inch deep.</p> <p>Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected.</p> <p>Where furrow irrigation is used, wet the top of the bed for best results.</p> <p>If the crop is to be planted on beds, apply and incorporate after bed formation.</p> <p>Plant cotton below the zone of incorporation; i.e. at least 1 inch on <i>fine soils</i> and 1.5 inches on <i>coarse</i> and <i>medium soils</i>.</p> <p>If incorporated prior to planting, use a planter that will result in a minimum of soil disturbance.</p>

Application Timing	Rate (pt/A)	Use Directions
<b>Preemergence (AR, KS, LA, MS, TN and Bootheel of MO only)</b>	Use the following rates for the specific soil type in AR, KS, LA, MS, TN, and Bootheel of MO only:  <i>Sandy loam soils:</i> 0.5 - 1.0 pt/A  <i>Medium soils:</i> 0.66 - 1.33 pt/A  <i>Fine soils:</i> 1.0 - 1.33 pt/A	Apply at planting or after planting, but before crop emerges.  If the crop is to be planted on beds, apply after bed formation.
<b>Preemergence (NM, OK and TX only)</b>	Use the following rates for the specific soil type in NM, OK and TX only:  <i>Sandy loam soils:</i> 1.0 pt/A  <i>Medium soils:</i> 1.0 - 1.33 pt/A  <i>Fine soils:</i> 1.33 pt/A	Apply at planting or after planting, but before crop emerges.  If the crop is to be planted on beds, apply after bed formation.
<b>Postemergence</b>	Use the postemergence rates below based upon the following geographical areas:  <b>VA, NC, SC, GA, FL, and AL:</b> Apply at 1.0 - 1.33 pt/A  <b>TN, AR, KS, MS, MO, and LA:</b> Apply at 0.5 - 1.33 pt/A  <b>TX, OK, NM, AZ, CA, and Clay Soils in AR:</b> Apply at 1.0 - 1.33 pt/A	Apply broadcast over-the-top or directed to the soil surface.  In sprinkler-irrigated areas, sprinkler irrigate after application with 1/2 - 1 inch of water (1/2 inch on <i>coarse textured soils</i> to 1 inch on <i>fine textured soils</i> ) to incorporate Dual II Magnum.  In furrow-irrigated areas, apply Dual II Magnum, incorporate with a rolling cultivator or similar implement that provides uniform shallow incorporation (2 inches or less), and then irrigate.  In non-irrigated areas, if at least 1/2 inch of rainfall does not occur within 10 days after application, cultivate with a rolling cultivator or similar implement that provides uniform shallow incorporation of Dual II Magnum.
<b>For Weed Control:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Tank Mix Options:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 9.2.2</b> for tank-mix options.</li> </ul>		
<b>Resistance Management:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		

continued...

**9.2.1 FALL, PREPLANT INCORPORATED, PREEMERGENCE OR POSTEMERGENCE APPLICATIONS (continued)**

<p><b>Precautions:</b></p> <ul style="list-style-type: none"> <li>• For best control of yellow nutsedge and suppression of seedling Johnsongrass, apply preplant incorporated, preemergence, or postemergence to cotton and preemergence to weeds at the maximum rate for the soil texture, whether applied alone or in combinations.</li> <li>• To avoid concentration in the seed furrow, do not make broadcast applications to cotton planted in furrows more than 2 inches deep. When making band applications to cotton planted in furrows deeper than 2 inches, ensure that band width does not exceed the width of the bottom of the furrow.</li> <li>• Applying over-the-top in fluid fertilizer or any other adjuvant, surfactant, oil, or other pesticide not listed in the cotton section of this label may result in crop injury.</li> <li>• In furrow-planted cotton, to avoid concentration in the furrow and potential injury, do not apply postemergence until after first “knifing” or cultivation to level soil surface.</li> <li>• Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>
<b>USE RESTRICTIONS</b>
<ol style="list-style-type: none"> <li>1) Refer to <b>Section 7.1</b> for additional product use restrictions.</li> <li>2) <b>Maximum Single Application Rate:</b> 1.67 pt/A</li> <li>3) <b>Minimum Application Interval:</b> Not Applicable</li> <li>4) <b>Maximum Annual Rate:</b> 2.6 pt/A/year             <ol style="list-style-type: none"> <li>a. <b>DO NOT</b> exceed 2.48 lb ai/A/year of S-metolachlor-containing products.</li> </ol> </li> <li>5) <b>DO NOT</b> apply on sand or loamy sand soils, or in areas where water is likely to “pond” over the bed.</li> <li>6) <b>DO NOT</b> apply on Taloka silt loam.</li> <li>7) <b>DO NOT</b> use in Gaines County, TX.</li> <li>8) <b>DO NOT</b> apply to frozen ground.</li> <li>9) The combined total amount of Dual II Magnum from all applications in the fall plus spring must not exceed the maximum allowed annual rate.</li> <li>10) <b>Preharvest Interval (PHI):</b> <ol style="list-style-type: none"> <li>a. 80 days after directed-postemergence application</li> <li>b. 100 days after postemergence over-the-top application</li> </ol> </li> </ol>

**9.2.2 TANK-MIX COMBINATIONS FOR COTTON**

Application	Tank-Mix Brands	Use Directions
<b>Burndown</b>	Cotoran® 4L Gramoxone brands Glyphosate brands Roundup brands	Use in applications where cotton is planted directly into a cover crop, stale seedbed, or previous crop residues.  Apply before, during or after planting, but before the cotton emerges. Apply in a minimum of 15 gallons of water or fluid fertilizer per acre with ground equipment.
<b>Preplant Incorporated Preemergence</b>	Caparol® 4L	Apply as a mixture in water or liquid fertilizer.  For preplant incorporated applications, plant cotton below the zone of incorporation. If incorporated before planting, use a planter that will result in a minimum of soil disturbance.
<b>Preemergence</b>	Cotoran 4L	Apply to the soil surface at planting or after planting, but before weeds or crop emerge.

Application	Tank-Mix Brands	Use Directions
<b>Postemergence Directed</b>	Caparol 4L	Tank mix in water only for postemergence-directed application in <b>AR, AZ, CA, LA, MS, NM, OK, TN, TX and MO</b> .  Apply the tank mix in a minimum of 15 gallons of spray volume per acre. Only use water as a carrier for postemergence applications.
<b>Postemergence Directed Semi Directed Over-the-Top Spray</b>	Cotoran 4L	Do not use fluid fertilizer as a carrier for postemergence applications.  Tank mix may be applied postemergence to cotton but preemergence to weeds or postemergence to both cotton and weeds for control of weeds on the Cotoran 4L label.
<b>Postemergence Application to Glyphosate Resistant Cotton</b>	Glyphosate brands Roundup brands	Apply as a tank mixture in water for control of emerged weeds on the glyphosate labels and for residual preemergence control of weeds listed on the Dual II Magnum label.  Adding additional spray adjuvants, surfactants, fertilizer additives, or other pesticides to a tank mixture of Dual II Magnum + Roundup brands applied postemergence can result in unacceptable crop injury.  Apply only to cotton that is resistant to glyphosate.
<b>Postemergence Application to Glufosinate Resistant Cotton</b>	Liberty	Apply as a tank mixture in water for control of emerged weeds on the Liberty label and for residual preemergence control of weeds listed on the Dual II Magnum label.  Apply only to cotton that is resistant to glufosinate.
<b>Tank Mix Instructions:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 4.4</b> for tank-mix instructions.</li> </ul>		
<b>Precautions:</b> <ul style="list-style-type: none"> <li>To avoid concentration in the seed furrow, do not make broadcast applications of Dual II Magnum + Caparol 4L or Dual II Magnum + Cotoran DF to cotton planted in furrows more than 2 inches deep. When making band applications to cotton planted in furrows deeper than 2 inches, ensure that the band width does not exceed the width of the bottom of the furrow.</li> <li>Do not apply Dual II Magnum + Caparol 4L postemergence over-the-top of cotton, or injury may occur.</li> <li>For tank mixtures of Dual II Magnum or Dual II Magnum + Cotoran, if heavy rain occurs soon after application, crop injury may result, especially in poorly drained areas where water stands for several days, or where the seeding slit has not been properly closed.</li> <li>Do not apply combinations containing Gramoxone brands in suspension-type liquid fertilizers, as the activity of paraquat will be reduced.</li> </ul>		
<b>TANK-MIX USE RESTRICTIONS</b>		
1) All use restrictions cited in <b>Section 9.2.1</b> for Dual II Magnum solo apply to tank-mixes with Dual II Magnum. 2) It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.		

### 9.3 Grasses Grown for Seed

Crops (including cultivars, varieties, and/or hybrids of these)		
Bentgrass Fine fescue	Kentucky bluegrass Orchardgrass	Perennial ryegrass Tall fescue
Application Timing	Rate (pt/A)	Use Directions
<b>Established Grasses Grown for Seed Crops in Idaho, Oregon and Washington</b>	Use the following rates for the specific grass type:  <i>Fine fescue and perennial ryegrass:</i> Apply 1.0 pt/A  <i>Bentgrass, Kentucky bluegrass, orchardgrass and tall fescue:</i> Apply 1.0 – 1.33 pt/A	Apply just before, during, or immediately following the first fall rains or just before or during a late summer or early fall irrigation, but before target grasses emerge.  Evenly spread, remove, or burn the postharvest residue (straw) before applying Dual II Magnum.  In addition to controlling the weeds listed in <b>Section 8.0</b> , Dual II Magnum will provide preemergence control/suppression of volunteer seedlings of Bentgrass, fine fescue spp., Kentucky bluegrass, orchardgrass, perennial ryegrass and tall fescue.  Dual II Magnum will also suppress or control annual bluegrass, California brome, doughstalk bluegrass, downy brome, Italian ryegrass and rattail fescue.  Apply by ground equipment in a minimum of 10 gallons of water per acre at the recommended rate.
<b>For Weed Control:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Resistance Management:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		
<b>Precautions:</b>		
<ul style="list-style-type: none"> <li>Avoid application after the 15<sup>th</sup> of November or poor control may result.</li> <li>Tank mixtures with other pesticides, or the addition of an adjuvant, can increase the risk of crop injury.</li> <li>Application to perennial ryegrass and fine fescue stands under stress may cause crop injury.</li> <li>If weed escapes occur following a Dual II Magnum application, an application of a postemergence herbicide may be necessary to control escapes.</li> <li>Control may be decreased if excessive straw from the previous harvest is present at application and/or insufficient rainfall/irrigation occurs.</li> <li>Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>		
USE RESTRICTIONS		
<ol style="list-style-type: none"> <li>Refer to <b>Section 7.1</b> for additional product use restrictions.</li> <li>The grass grown for seed crop must have at least one seed harvest or been established at least one year prior to application.</li> <li><b>Maximum Single Application Rate:</b> 1.33 pt/A</li> <li><b>Minimum Application Interval:</b> Not Applicable</li> <li><b>Maximum Annual Rate:</b> 1.33 pt/A/year               <ol style="list-style-type: none"> <li><b>DO NOT</b> exceed 1.27 lb ai/A/year of S-metolachlor-containing products.</li> </ol> </li> <li><b>DO NOT</b> apply Dual II Magnum more than once per crop year.</li> <li><b>DO NOT</b> graze forage regrowth for 60 days following application west of the Cascades.</li> <li><b>DO NOT</b> graze forage regrowth for 150 days following application in areas east of the Cascades.</li> <li><b>Preharvest Interval (PHI):</b> <ol style="list-style-type: none"> <li>Hay: harvest anytime between seed harvest and the next application of S-metolachlor.</li> </ol> </li> </ol>		

## 9.4 Horseradish

Crops (including cultivars, varieties, and/or hybrids)		
Horseradish		
Application Timing	Rate (pt/A)	Use Directions
<b>Preemergence</b>	1.0 – 1.33 pt/A Use lower rates on soils relatively coarse textured and higher rates on fine textured soils.	Apply a single broadcast application of Dual II Magnum to the soil surface after planting but before the crop emerges.
<b>For Weed Control:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Resistance Management:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		
<b>Precaution:</b>		
<ul style="list-style-type: none"> <li>Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>		
USE RESTRICTIONS		
1) Refer to <b>Section 7.1</b> for additional product use restrictions. 2) <b>Maximum Single Application Rate:</b> 1.33 pt/A 3) <b>Minimum Application Interval:</b> Not Applicable 4) <b>Maximum Annual Rate:</b> 1.33 pt/A/year a. <b>DO NOT</b> exceed 1.27 lb ai/A/year of S-metolachlor-containing products. 5) <b>DO NOT</b> apply Dual II Magnum more than once per crop year. 6) <b>Preharvest Interval (PHI):</b> normal timing for horseradish		

## 9.5 Legume Vegetables (Succulent or Dried), Crop Group 6, except Soybean

### 9.5.1 FALL, PREPLANT INCORPORATED OR PREEMERGENCE APPLICATIONS

Crops (including cultivars, varieties, and/or hybrids of these)			
<b>Edible Podded (only):</b> Jackbean Sword bean Soybean, (immature seed)	<b>Edible Podded, Succulent Shelled or Dried Shelled: Bean (<i>Phaseolus</i> spp.)</b> <i>(continued)</i> Tepary Bean Wax Bean	<b>Edible Podded, Succulent Shelled or Dried Shelled:</b> <i>(continued)</i> <b>Bean (<i>Vigna</i> spp.)</b> Adzuki bean Asparagus bean Blackeyed pea Catjang Chinese longbean Cowpea Crowder pea Moth bean Mung bean Rice bean Southern pea Urd bean Yardlong bean	<b>Succulent Shelled or Dried Shelled:</b> Broad bean (fava bean)  <b>Dried Shelled Only:</b> Chickpea (garbanzo bean) Guar Lablab bean (hyacinth bean) Grain lupin Sweet lupin White lupin White sweet lupin Lentils
<b>Edible Podded, Succulent Shelled or Dried Shelled: Bean (<i>Phaseolus</i> spp.)</b> Pigeon pea Field bean Great Northern Kidney bean Lima bean Navy bean Pinto bean Runner bean Snap bean	<b>Pea (<i>Pisum</i> spp.)</b> Dwarf pea Edible-pod pea English pea Field pea Garden pea Green pea Snow pea Sugar snap pea		

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9.5.1 FALL, PREPLANT INCORPORATED OR PREEMERGENCE APPLICATIONS (continued)

Application Timing	Rate (pt/A)	Use Directions
<p><b>Fall Application for Spring Weed Control</b></p> <p>For use in the following states:</p> <p>Iowa Illinois Minnesota Nebraska North Dakota South Dakota Wisconsin</p>	<p>For minimum-till or no-tillage systems on soils with <math>\geq 2.5\%</math> organic matter, apply rate based on soil texture:</p> <p><i>Medium Soils:</i> Apply 1.67-2.0 pt/A</p> <p><i>Fine Soils:</i> Apply 2.0 pt/A</p>	<p>Apply after harvest when the sustained soil temperature at a 4-inch depth is less than 55° F and falling.</p> <p><b>Apply after September 30</b> in ND, SD, MN, WI and north of Route 30 in IA.</p> <p><b>Apply after October 15</b> North of Route 91 in NE and south of Route 30 in IA.</p> <p><b>Apply after October 31</b> North of Route 136 in IL.</p> <p>When a fall and/or a spring tillage follows application, do not exceed an incorporation depth of 2-3 inches.</p> <p>Minimize furrow and ridge formation in the tillage operations.</p>
<p><b>Preplant Incorporated</b></p>	<p>For all applications use the rate for the specific soil texture and organic matter (OM) as follows:</p> <p><i>Coarse Soil:</i> 1.0-1.33 pt/A; &lt;3% OM 1.33 pt/A; <math>\geq 3\%</math> OM</p> <p><i>Medium Soil:</i> 1.33-1.67 pt/A</p> <p><i>Fine Soil:</i> 1.33-1.67 pt/A; &lt;3% OM 1.67-2.0 pt/A; <math>\geq 3\%</math> OM</p>	<p>Apply to the soil and incorporate in the top 2 inches within 14 days before planting using an implement capable of providing uniform incorporation.</p> <p>Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected.</p> <p>If a crop will be planted on beds, apply and incorporate after bed formation, unless specified otherwise.</p> <p><b>For California Only for Beans, Peas and Lentils:</b> For preplant incorporation, broadcast alone or with tank mix partners to the soil and thoroughly incorporate with a disk or similar implement set to till 4-6 inches deep. For more thorough incorporation, till the soil in 2 different directions (cross-till). Crops may be planted on flat surface or on beds.</p> <p>Use caution when forming the beds to ensure that only soil from the treated zone is used (i.e., do not bring untreated soil to soil surface). If application is made to preformed beds, incorporate with a tillage implement set to till 2-4 inches deep. Use care during tilling to keep the treated, tilled soil on the beds.</p>
<p><b>Preemergence</b></p>	<p>For all applications use the rate for the specific soil texture and organic matter (OM) as follows:</p> <p><i>Coarse Soil:</i> 1.0-1.33 pt/A; &lt;3% OM 1.33 pt/A; <math>\geq 3\%</math> OM</p> <p><i>Medium Soil:</i> 1.33-1.67 pt/A</p> <p><i>Fine Soil:</i> 1.33-1.67 pt/A; &lt;3% OM 1.67-2.0 pt/A; <math>\geq 3\%</math> OM</p>	<p>Make preemergence applications after planting, but before crop emerges.</p> <p><b>For California Only for Beans, Peas and Lentils:</b> Apply after planting. Water with sprinkler or flood irrigation within 7-10 days.</p>
<p><b>For Weed Control:</b></p> <ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		

<p><b>Tank Mix Application Options:</b></p> <ul style="list-style-type: none"> <li>Refer to <b>Section 9.5.2</b> for tank-mix options.</li> </ul>
<p><b>Resistance Management:</b></p> <ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>
<p><b>Precautions:</b></p> <ul style="list-style-type: none"> <li>On English peas, use only preemergence applications for a spring treatment. If soils are cold and wet during pea germination and emergence, the use of Dual II Magnum may delay maturity and/or reduce yields.</li> <li>Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>
<b>USE RESTRICTIONS</b>
<ol style="list-style-type: none"> <li>Refer to <b>Section 7.1</b> for additional product use restrictions.</li> <li><b>Maximum Single Application Rate:</b> 2.0 pt/A</li> <li><b>Minimum Application Interval:</b> Not Applicable</li> <li><b>Maximum Annual Rate:</b> 2.0 pt/A/year <ol style="list-style-type: none"> <li><b>DO NOT</b> exceed 1.91 lb ai/A/year of S-metolachlor-containing products.</li> </ol> </li> <li>The combined total amount of Dual II Magnum from all applications in the fall plus spring must not exceed the maximum allowed annual rate.</li> <li><b>DO NOT</b> apply to frozen ground.</li> <li><b>Preharvest Interval (PHI):</b> <ol style="list-style-type: none"> <li>Forage: 60 days</li> <li>Hay: 120 days</li> </ol> </li> </ol>

#### 9.5.2 TANK-MIX COMBINATIONS FOR LEGUME VEGETABLES

Application	Tank-Mix Brands	Use Directions
Preplant Incorporated	Treflan®	<p>For use with <b>Dry Beans</b> (Kidney, Navy, Pinto, Etc.; Lima; and Snap).</p> <p>Apply up to 14 days prior to planting. Incorporate to a uniform 2-inch depth using appropriate equipment.</p> <p>Choose the rate specified on the respective labels for each product used alone, for the specific soil texture/organic matter classification and weed species expected.</p>
<b>TANK-MIX USE RESTRICTIONS</b>		
<ol style="list-style-type: none"> <li>All use restrictions cited in <b>Section 9.5.1</b> for Dual II Magnum solo apply to tank-mixes with Dual II Magnum.</li> <li>It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</li> </ol>		



## 9.6 Peanut

### 9.6.1 PREPLANT INCORPORATED, POSTPLANT INCORPORATED, PREEMERGENCE OR LAY-BY APPLICATIONS

Crops (including cultivars, varieties, and/or hybrids)		
Peanut		
Application Timing	Rate (pt/A)	Use Directions
<b>Preplant Incorporated</b> <b>Postplant Incorporated</b>	Use the following rates for the specific geography: <i>Southeast:</i> Apply 1.0 - 1.33 pt/A  <i>NM, OK and TX:</i> Apply 0.8 - 1.33 pt/A  Within the rate range, use lower rates on soils relatively coarse textured and higher rates on fine textured soils.	<b>For Preplant Incorporation:</b> Apply within 14 days before planting.  Apply to the soil and incorporate into the top 2 inches of soil before planting using an implement capable of providing uniform incorporation.  Use preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected.  If peanuts will be planted on beds, apply and incorporate after bed formation.  <b>For Postplant Incorporation:</b> Apply and shallowly incorporate into the soil after planting but before peanut germination.  Incorporation depth and incorporating implements must be kept above the seed, or seed will be damaged.
<b>Preemergence</b> <b>Lay-By</b>	Use the following rates for the specific geography: <i>Southeast:</i> Apply 1.0 - 1.33 pt/A Apply 1.33 - 2.0 pt/A preemergence for partial control of Florida beggarweed.  <i>NM, OK and TX:</i> Apply 0.8 - 1.33 pt/A  Within the rate range, use lower rates on soils relatively coarse textured and higher rates on fine textured soils.	<b>Preemergence Application:</b> Apply after planting but before crop emergence. If applying at planting, apply behind the planter.  <b>Lay-By Application:</b> Apply to the soil immediately after the last cultivation.
<b>For Weed Control:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Tank Mix Options:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 9.6.2</b> for tank mix application options.</li> </ul>		
<b>Resistance Management:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		
<b>Precaution:</b> <ul style="list-style-type: none"> <li>Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>		

USE RESTRICTIONS
1) Refer to <b>Section 7.1</b> for additional product use restrictions. 2) <b>Maximum Single Application Rate:</b> 2.0 pt/A 3) <b>Minimum Application Interval:</b> Not Applicable 4) <b>Maximum Annual Rate:</b> 2.0 pt/A/year a. <b>DO NOT</b> exceed 1.91 lb ai/A/year of S-metolachlor-containing products. 5) <b>DO NOT</b> graze or feed peanut forage or fodder to livestock for 30 days following application. 6) <b>Preharvest Interval (PHI):</b> 90 days

#### 9.6.2 TANK-MIX COMBINATIONS FOR PEANUT

Application Timing	Tank-Mix Brands	Use Directions
<b>Preplant Incorporated</b>	Prowl® Pursuit® Sonalan®	Apply the tank mixture within 14 days before planting.  Apply to the soil and incorporate into the top 2 inches of soil before planting using an implement capable of providing uniform incorporation.  Use preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected.  If peanuts will be planted on beds, apply and incorporate after bed formation.
<b>Preemergence</b>	Pursuit	Apply after planting but before peanut cracking.
<b>Ground Cracking</b>	Basagran® Butyrac® 200 Gramoxone Brands Pursuit	Apply tank mixtures at ground cracking.  Apply <b>Gramoxone brands</b> as a tank mixture with Dual II Magnum at ground cracking to control or suppress small (1-6 inch) emerged annual grass and broadleaf weeds and provide residual control of weed listed in <b>Section 8.0</b> . Apply in a minimum spray volume of 20 gal/A with ground equipment.
<b>Ground Cracking to Postemergence</b>	Basagran Pursuit Storm®	Apply <b>Basagran</b> as a tank mixture with Dual II Magnum from ground cracking to postemergence.  Apply <b>Storm</b> as a tank mixture with Dual II Magnum postemergence (after peanut emergence) through 2 expanded tetrafoliate leaves.  Apply <b>Pursuit</b> as a tank mixture with Dual II Magnum at ground cracking and after peanut emergence.

TANK-MIX USE RESTRICTIONS
1) All use restrictions cited in <b>Section 9.6.1</b> for Dual II Magnum solo apply to tank-mixes with Dual II Magnum. 2) It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. 3) <b>DO NOT</b> apply more than the equivalent of 2.67 lb ai/A/year of Dual II Magnum.

## 9.7 Potato

### 9.7.1 INCORPORATED, PREEMERGENCE, AND POSTEMERGENCE AND LAY-BY APPLICATION

Crops (including cultivars, varieties, and/or hybrids)		
Potato		
Application Timing	Rate (pt/A)	Use Directions
<b>Incorporated</b>	<p>1.0-2.0 pt/A</p> <p>Within the rate range, 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.</p>	<p><b>Preplant Incorporated</b></p> <p>Apply and incorporate into the top 3 inches before planting using an implement capable of providing uniform incorporation.</p> <p>During planting and cultural practices later in the growing season, avoid bringing untreated soil to the surface or weed control will be reduced where untreated soil has been exposed.</p> <p><b>Postplant Incorporated</b></p> <p>Applications may be made any time after planting to drag-off, but before potato emergence. Use an implement that evenly distributes Dual II Magnum in the top 2 inches of soil. Do not damage potato seed pieces or sprouts with incorporation equipment.</p>
<b>Preemergence</b>	<p>1.0-2.0 pt/A</p> <p>Within the rate range, 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.</p> <p>For extended residual or control of heavy weed infestations of heavy weed infestations, up to 2.6 pt/A is allowed.</p>	<p>Apply either after planting as a preemergence, delayed preemergence, after drag-off or hilling treatment.</p> <p>Effectiveness will be reduced if later cultural practices expose untreated soil.</p>
<b>Postemergence After-Hilling/ Lay-By</b>	1.67 pt/A	Apply to potatoes after hilling or at lay-by for control of Dual II Magnum labeled weeds for remainder of the growing season.
<b>For Weed Control:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Tank Mix Options:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 9.7.2</b> for tank mix application options.</li> </ul>		
<b>Resistance Management:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		
<b>Precautions:</b>		
<ul style="list-style-type: none"> <li>If cool, wet soil conditions occur after application, Dual II Magnum may delay maturity and/or reduce yield of Superior and other early maturing potato varieties.</li> <li>Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>		

USE RESTRICTIONS
<ol style="list-style-type: none"> <li>1) Refer to <b>Section 7.1</b> for additional product use restrictions.</li> <li>2) <b>Maximum Single Application Rate:</b> 2.6 pt/A</li> <li>3) <b>Maximum Application Interval:</b> Not Applicable</li> <li>4) <b>Maximum Annual Rate:</b> 3.6 pt/A/year               <ol style="list-style-type: none"> <li>a. <b>DO NOT</b> exceed 3.43 lb ai/A/year of S-metolachlor-containing products.</li> </ol> </li> <li>5) <b>DO NOT</b> use on muck or peat soils.</li> <li>6) <b>DO NOT</b> apply both as a preemergence and an incorporated treatment.</li> <li>7) <b>Preharvest Interval (PHI):</b> <ol style="list-style-type: none"> <li>a. 40 days after a lay-by application</li> <li>b. 60 days after at-planting to drag-off application</li> </ol> </li> <li>8) <b>DO NOT</b> apply to sweet potatoes or yams.</li> </ol>

#### 9.7.2 TANK-MIX COMBINATIONS FOR POTATO

Application	Tank-Mix Brands	Use Directions
<b>Preemergence (East of the Rocky Mountains)</b>	Linex Lorox	<p>Apply this tank mix mixture preemergence broadcast application.</p> <p>Apply to the soil surface after planting and before emergence of the crop or after final drag-off.</p>
<b>Preemergence Incorporated</b> <b>Preemergence</b> <b>Early</b> <b>Postemergence</b>	Prowl®	<p>For <b>preemergence incorporated</b> use, apply this tank mixture after planting but before potato emerges. Keep incorporation depth above the seed pieces and elongated sprouts, or the crop will be damaged.</p> <p>For <b>preemergence</b> use, apply this tank mixture after planting but before potato emerges.</p>
<b>Preemergence</b> <b>Postemergence</b>	Tricor	<p>Apply this tank mixture preemergence or postemergence to potatoes.</p> <p>For <b>postemergence</b> use, apply this tank mixture as a directed or semi-directed spray to avoid chlorosis, minor necrosis, or leaf distortion.</p>
<p><b>Precaution:</b></p> <ul style="list-style-type: none"> <li>• These use directions for use do not apply to sweet potatoes or yams.</li> </ul>		
TANK-MIX USE RESTRICTIONS		
<ol style="list-style-type: none"> <li>1) All use restrictions cited in <b>Section 9.7.1</b> for Dual II Magnum solo apply to tank-mixes with Dual II Magnum.</li> <li>2) It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</li> </ol>		

## 9.8 Pumpkin

Crops (including cultivars, varieties, and/or hybrids)		
Pumpkin		
Application Timing	Rate (pt/A)	Use Directions
<b>Preemergence (Inter-Row or Inter-Hill)</b>	1.0 - 1.33 pt/A Use the lower rate on soils light in texture (loamy sand or lighter) and low in soil organic matter (less than 3%).	Apply as an inter-row or inter-hill application. Leave 1 foot of untreated area over the row, or 6 inches to each side of the planted hill and/or any emerged pumpkin foliage (inter-row or inter-hill means not directly over the planted seed or young pumpkin plants).
<b>For Weed Control:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Resistance Management:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		
<b>Precautions:</b>		
<ul style="list-style-type: none"> <li>Dual II Magnum applied as a broadcast spray over the planted row or hill, or applications made directly to crop foliage will increase the risk of injury to the pumpkin crop such as stand loss, delayed maturity, and loss of yield.</li> <li>Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>		
USE RESTRICTIONS		
<ol style="list-style-type: none"> <li>Refer to <b>Section 7.1</b> for additional product use restrictions.</li> <li><b>Maximum Single Application Rate:</b> 1.33 pt/A</li> <li><b>Minimum Application Interval:</b> Not Applicable</li> <li><b>Maximum Annual Rate:</b> 1.33 pt/A/year               <ol style="list-style-type: none"> <li><b>DO NOT</b> exceed 1.27 lb ai/A/year of S-metolachlor-containing products.</li> </ol> </li> <li><b>Preharvest Interval (PHI):</b> 30 days</li> </ol>		

## 9.9 Rhubarb

Crops (including cultivars, varieties, and/or hybrids)		
Rhubarb		
Application Timing	Rate (pt/A)	Use Directions
<b>Preemergence</b>	0.67 – 1.33 pt/A Use lower rates on soils relatively coarse textured and higher rates on fine textured soils.	Apply as a broadcast spray to the soil surface. Apply in early spring, prior to crop emergence.
<b>For Weed Control:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Resistance Management:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		
<b>Precaution:</b>		
<ul style="list-style-type: none"> <li>Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>		

USE RESTRICTIONS
1) Refer to <b>Section 7.1</b> for additional product use restrictions. 2) <b>Maximum Single Application Rate:</b> 1.33 pt/A 3) <b>Minimum Application Interval:</b> Not Applicable 4) <b>Maximum Annual Rate:</b> 1.33 pt/A/year a. <b>DO NOT</b> exceed 1.27 lb ai/A/year of S-metolachlor-containing products. 5) <b>DO NOT</b> make more than one application of Dual II Magnum per crop. 6) <b>Preharvest Interval (PHI):</b> 62 days

### 9.10 Safflowers

Crops (including cultivars, varieties, and/or hybrids)		
Safflowers		
Application Timing	Rate (pt/A)	Use Directions
<b>Preplant Incorporated</b>	For all applications use the rate for the specific soil texture and organic matter (OM) as follows:  <i>Coarse Soil:</i> 1.0-1.33 pt/A; <3% OM 1.33 pt/A; ≥ 3% OM  <i>Medium Soil:</i> 1.33-1.67 pt/A  <i>Fine Soil:</i> 1.33-1.67 pt/A; <3% OM 1.67-2.0 pt/A; ≥ 3% OM	Apply within 14 days of planting.  Apply to the soil and incorporate into the top 2 inches of soil using an implement capable of providing uniform 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 after bed formation, unless specified otherwise.  <b>For California Only:</b> Broadcast alone or with tank mix partners to the soil and thoroughly incorporate with a disk or similar implement set to till 4-6 inches deep. For more thorough incorporation, till the soil in 2 different directions (cross-till). Safflowers may be planted on flat surface or on beds.  Use caution when forming the beds to ensure that only soil from the treated zone is used (i.e., do not bring untreated soil to soil surface).  If application is made to preformed beds, incorporate with a tillage implement set to till 2-4 inches deep. Use care during tilling to keep the treated, tilled soil on the beds.
<b>Preemergence</b>	For all applications use the rate for the specific soil texture and organic matter (OM) as follows:  <i>Coarse Soil:</i> 1.0-1.33 pt/A; <3% OM 1.33 pt/A; ≥ 3% OM  <i>Medium Soil:</i> 1.33-1.67 pt/A  <i>Fine Soil:</i> 1.33-1.67 pt/A; <3% OM 1.67-2.0 pt/A; ≥ 3% OM	Apply during planting (behind the planter) or after planting.  <b>For California Only:</b> Apply after planting. Water with sprinkler or flood irrigation within 7-10 days.

continued...

## 9.10 Safflowers (continued)

<b>For Weed Control:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>
<b>Resistance Management:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>
<b>Precaution:</b> <ul style="list-style-type: none"> <li>Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>
<b>USE RESTRICTIONS</b>
<ol style="list-style-type: none"> <li>Refer to <b>Section 7.1</b> for additional product use restrictions.</li> <li><b>Maximum Single Application Rate:</b> 2.0 pt/A</li> <li><b>Minimum Application Interval:</b> Not Applicable</li> <li><b>Maximum Annual Rate:</b> 2.0 pt/A/year <ol style="list-style-type: none"> <li><b>DO NOT</b> exceed 1.91 lb ai/A/year of S-metolachlor-containing products.</li> </ol> </li> <li><b>Preharvest Interval (PHI):</b> Not Applicable</li> </ol>

## 9.11 Sorghum (Concep III Treated Only)

### 9.11.1 GRAIN OR FORAGE SORGHUM, FALL, PREPLANT SURFACE, PREPLANT INCORPORATED, PREEMERGENCE OR POSTEMERGENCE APPLICATIONS

Crops (including cultivars, varieties, and/or hybrids of these)		
Sorghum grain (seed-treated with approved Concep® III treated only)		Forage sorghum (seed-treated with Concep III treated only)
Application Timing	Rate (pt/A)	Use Directions
<b>Fall Application for Residual Control of Glyphosate Resistant Italian Ryegrass</b>	1.33-1.67 pt/A Use the lower rate for <i>coarse textured soils</i> and the higher rate for <i>fine textured soils</i> .	Apply from September 1 to December 1 after harvest of the previous crop and prior to Italian ryegrass emergence. If tillage follows application, avoid incorporating to a depth greater than 2-3 inches. After emergence of glyphosate resistant Italian ryegrass, a paraquat brand herbicide can be tank-mixed with Dual II Magnum to control emerged ryegrass.
<b>Preplant Surface Application in CO, IA, IL, KS, MO, NE and SD</b>	Apply the rate for the specific soil texture as follows: <i>Coarse soils:</i> 1.33 pt/A <i>Medium soils:</i> 1.5 pt/A <i>Fine Soils:</i> 1.67 pt/A	Apply up to 45 days before planting. On coarse soils apply no more than 2 weeks prior to planting. Under dry conditions, irrigate after application to activate Dual II Magnum and improve weed control.
<b>Preplant Incorporated Preemergence</b>	Apply the rate for the specific soil texture as follows: <i>Coarse soils:</i> 1.0 - 1.33 pt/A <i>Medium soils:</i> 1.33 - 1.5 pt/A <i>Fine Soils:</i> 1.33 -1.67 pt/A	<b>Preplant Incorporated Application:</b> Apply within 14 days of planting. Apply to the soil and incorporate into the top 2 inches of soil using an implement capable of providing uniform incorporation. Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected. <b>Preemergence Application:</b> Apply after planting but before crop emerges.

Application Timing	Rate (pt/A)	Use Directions
<b>Postemergence</b>	Apply the rate for the specific soil texture as follows: <i>Coarse soils:</i> 1.0 - 1.33 pt/A <i>Medium soils:</i> 1.33 - 1.5 pt/A <i>Fine Soils:</i> 1.33 -1.67 pt/A	Apply as a broadcast spray. When applied alone, Dual II Magnum will be safe to emerged sorghum. The risk of sorghum injury increases when adjuvants (e.g., non-ionic, crop oil), nitrogen sources (e.g., AMS, UAN) or fertilizers are applied with Dual II Magnum.
<b>For Weed Control:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Tank Mix Application Options:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 9.11.2</b> for tank-mix options.</li> </ul>		
<b>Resistance Management:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		
<b>Precautions:</b>		
<ul style="list-style-type: none"> <li>If sorghum seed is not properly treated with Concep III seed treatment, applications prior to sorghum emergence will result in severe injury or crop death.</li> <li>Under high soil moisture conditions prior to sorghum emergence, injury may occur following preplant and preemergence application. The crop will normally outgrow this effect.</li> <li>Avoid use of Dual II Magnum on sorghum grown under dry mulch tillage, or injury may occur.</li> <li>Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>		
<b>USE RESTRICTIONS</b>		
<ol style="list-style-type: none"> <li>Refer to <b>Section 7.1</b> for additional product use restrictions.</li> <li><b>Maximum Single Application Rate:</b> 1.67 pt/A</li> <li><b>Minimum Application Interval:</b> Not Applicable</li> <li><b>Maximum Annual Rate:</b> 1.67 pt/A/year <ol style="list-style-type: none"> <li><b>DO NOT</b> exceed 1.59 lb ai/A/year of S-metolachlor-containing products.</li> </ol> </li> <li>The combined total amount of Dual II Magnum from all applications in the fall plus spring must not exceed the maximum allowed annual rate.</li> <li>More than 1 application per year is allowed but the total must not exceed 1.67 pt/A/year.</li> <li><b>DO NOT</b> apply to frozen ground.</li> <li><b>Preharvest Interval (PHI):</b> 75 days</li> </ol>		

#### 9.11.2 TANK-MIX COMBINATIONS FOR SORGHUM (CONCEP III TREATED ONLY)

Application	Tank-Mix Brands	Use Directions
<b>Burndown Weed Control</b>	Gramoxone brands Landmaster® BW Glyphosate Roundup brands	For use where sorghum (seed treated with Concep III) is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues. Apply before, during or after planting, but before sorghum emerges. The herbicides identified as tank-mix partners may be tank mixed with Dual II Magnum or Dual II Magnum + AAtrex.

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**9.11.2 TANK-MIX COMBINATIONS FOR SORGHUM (CONCEP III TREATED ONLY) (continued)**

Application	Tank-Mix Brands	Use Directions
<b>Preplant Surface</b> <b>Preplant Incorporated</b> <b>Preemergence</b>	AAtrex	Tank mixtures with AAtrex may be applied in water or fluid fertilizer.
<p><b>Precautions:</b></p> <ul style="list-style-type: none"> <li>• If sorghum seed is not properly treated with Concep III seed treatment, applications prior to sorghum emergence will result in crop death.</li> <li>• Applications of Dual II Magnum + AAtrex on highly alkaline soils or on eroded areas where calcareous subsoils are exposed may cause sorghum injury.</li> <li>• Burndown, preplant or preemergence applications of Dual II Magnum to sorghum not treated with an Concep III seed treatment will result in severe injury or kill the crop.</li> <li>• Under high soil moisture conditions prior to sorghum emergence, injury may occur following the use of preplant and preemergence applications of Dual II Magnum + AAtrex. The crop will normally outgrow this effect.</li> <li>• Avoid use of Dual II Magnum + AAtrex on sorghum grown under dry mulch tillage, or injury may occur.</li> </ul>		
<p><b>TANK-MIX USE RESTRICTIONS</b></p>		
<ol style="list-style-type: none"> <li>1) All use restrictions cited in <b>Section 9.11.1</b> for Dual II Magnum solo apply to tank-mixes with Dual II Magnum.</li> <li>2) It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</li> <li>3) <b>IMPORTANT: FOR TANK MIXTURES WITH AATREX (OR OTHER BRANDS OF ATRAZINE)</b> <ol style="list-style-type: none"> <li>a. If applying Dual II Magnum in tank mixture with AAtrex, all the restrictions and rate limitations on the AAtrex label must be followed.</li> <li>b. <b>DO NOT</b> apply Dual II Magnum + AAtrex tank mixture on <i>coarse soils</i> or <i>medium soils</i> with less than 1.5% organic matter.</li> <li>c. <b>DO NOT</b> apply Dual II Magnum + AAtrex tank mixture as a preplant incorporated or preemergence treatment in NM, OK, or TX, except in northeast OK and the TX Gulf Coast and Blacklands areas.</li> <li>d. <b>DO NOT</b> apply Dual II Magnum + AAtrex tank mixture as a preplant incorporated treatment in AZ or the Imperial Valley of CA.</li> </ol> </li> </ol>		

## 9.12 Sweet Sorghum, Preplant Surface, Preplant Incorporated, Preemergence or Postemergence

Crops (including cultivars, varieties, and/or hybrids of these)		
Sweet sorghum (seed treated with Concep III only)		
Application Timing	Rate (pt/A)	Use Directions
<b>Preplant Surface Application</b>	Apply the rate for the specific soil texture as follows: <i>Coarse soils:</i> 1.33 pt/A <i>Medium soils:</i> 1.5 pt/A <i>Fine Soils:</i> 1.67 pt/A	On medium and fine soils, apply up to 30 days before planting. On coarse soils apply no more than 14 days prior to planting. 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. Under dry conditions, irrigate after application to activate Dual II Magnum and improve weed control.
<b>Preplant Incorporated Preemergence</b>	Apply Dual II Magnum at the rates below for the soil texture: <i>Coarse Soils:</i> 1.0 - 1.33 pt/A <i>Medium Soils:</i> 1.33-1.5 pt/A <i>Fine Soils:</i> 1.33-1.67 pt/A	<b>Preplant Incorporated Application:</b> Make applications within 14 days of planting. Apply to the soil and incorporate into the top 2 inches of soil using an implement capable of providing uniform 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 after bed formation, unless specified otherwise. <b>Preemergence Application:</b> Apply after planting but before crop emerges. Under dry conditions, irrigate after application to activate Dual II Magnum and improve weed control.
<b>Postemergence</b>	Apply Dual II Magnum at the rates below for the soil texture: <i>Coarse Soils:</i> 1.0 - 1.33 pt/A <i>Medium Soils:</i> 1.33 pt/A <i>Fine Soils:</i> 1.33 pt/A	Apply up to a crop height of 5 inches. When applied alone, Dual II Magnum will be safe to emerged sweet sorghum. Use of adjuvants is prohibited on sweet sorghum.
<b>For Weed Control:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Resistance Management:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		

continued...

**9.12 Sweet Sorghum, Preplant Surface, Preplant Incorporated, Preemergence or Postemergence (continued)**

<p><b>Precautions:</b></p> <ul style="list-style-type: none"> <li>• If sweet sorghum seed is not properly treated with Concep III seed treatment, Dual II Magnum applications prior to sorghum emergence will result in crop death.</li> <li>• Under high soil moisture conditions prior to sweet sorghum emergence, injury may occur following soil applications. The crop will normally outgrow this effect.</li> <li>• Avoid use of Dual II Magnum on sweet sorghum grown under dry mulch tillage, or injury may occur.</li> <li>• Weed control will be reduced under dry conditions, irrigate after application to activate the Dual II Magnum.</li> <li>• Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>
<b>USE RESTRICTIONS</b>
<ol style="list-style-type: none"> <li>1) Refer to <b>Section 7.1</b> for additional product use restrictions.</li> <li>2) <b>Maximum Single Application Rate:</b> 1.67 pt/A</li> <li>3) <b>Minimum Application Interval:</b> Not Applicable</li> <li>4) <b>Maximum Annual Rate:</b> 1.67 pt/A/year             <ol style="list-style-type: none"> <li>a. <b>DO NOT</b> exceed 1.59 lb ai/A/year of S-metolachlor-containing products.</li> </ol> </li> <li>5) <b>DO NOT</b> make more than 1 application per year.</li> <li>6) <b>Preharvest Interval (PHI):</b> 90 days</li> </ol>

**9.13 Soybeans (NOT FOR POSTEMERGENCE USE IN CALIFORNIA)**

**9.13.1 FALL, PREPLANT SURFACE, PREPLANT INCORPORATED, PREEMERGENCE OR POSTEMERGENCE APPLICATIONS**

Crops (including cultivars, varieties, and/or hybrids of these)		
Soybeans		
Application Timing	Rate (pt/A)	Use Directions
<p><b>Fall Application for Spring Weed Control</b></p> <p><b>For use in the following states:</b>  <b>Iowa</b>  <b>Illinois</b>  <b>Minnesota</b>  <b>Nebraska</b>  <b>North Dakota</b>  <b>South Dakota</b>  <b>Wisconsin</b></p>	<p>For minimum-till or no-tillage systems on soils with <math>\geq 2.5\%</math> organic matter, apply rate based on soil texture:</p> <p><i>Medium Soils:</i> Apply 1.67-2.0 pt/A</p> <p><i>Fine Soils:</i> Apply 2.0 pt/A</p>	<p>Apply after harvest when the sustained soil temperature at a 4-inch depth is less than 55° F and falling.</p> <p>Apply to ground that will be planted to soybeans the next spring and time application according to the following geographic schedule:</p> <p><b>Apply after September 30</b> in ND, SD, MN, WI and north of Route 30 in IA.</p> <p><b>Apply after October 15</b> North of Route 91 in NE and south of Route 30 in IA.</p> <p><b>Apply after October 31</b> North of Route 136 in IL.</p> <p>When fall and/or a spring tillage follows application, avoid incorporating to a depth greater than 2-3 inches.</p> <p>Minimize furrow and ridge formation in the tillage operations.</p>

Application Timing	Rate (pt/A)	Use Directions
<b>Fall Application for Residual Control of Glyphosate Resistant Italian Ryegrass</b>	1.33 – 1.67 pt/A Use the lower rate for <i>coarse textured soils</i> and the higher rate for <i>fine textured soils</i> .	Apply after harvest of the previous crop and prior to Italian ryegrass emergence. If tillage follows application, avoid incorporating to a depth greater than 2-3 inches. After emergence of glyphosate resistant Italian ryegrass, a Gramoxone brand herbicide can be tank-mixed with Dual II Magnum to control emerged ryegrass.
<b>Preplant Surface Application</b>	Apply Dual II Magnum at rates below for the soil texture: <i>Coarse Soils:</i> 1.33 pt/A <i>Medium Soils:</i> 1.67 pt/A <i>Fine Soils:</i> 2.0 pt/A  For extended residual or control of heavy weed infestations, up to 2.6 pt/A is allowed.	Apply up to 14 days prior to planting on coarse soils. Apply up to 30 days before planting on medium or fine soils.
<b>Preplant Incorporated Preemergence</b>	For all applications use the rate for the specific soil texture and organic matter (OM) as follows:  <i>Coarse Soil:</i> 1.0-1.33 pt/A; <3% OM 1.33 pt/A; ≥ 3% OM  <i>Medium Soil:</i> 1.33-1.67 pt/A  <i>Fine Soil:</i> 1.33-1.67 pt/A; <3% OM 1.67-2.0 pt/A; ≥ 3% OM  For extended residual or control of heavy weed infestations, up to 2.6 pt/A is allowed.	<b>Preplant Incorporation Application:</b> Apply within 14 days of planting.  Apply to the soil and incorporate into the top 2 inches of soil using an implement capable of providing uniform 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 after bed formation, unless specified otherwise.  <b>Preemergence Application:</b> Apply during planting or after planting but before crop emerges.
<b>Postemergence</b>	1.0 – 2.0 pt/A Use the lower rate for <i>coarse textured soils</i> and the higher rate for <i>fine textured soils</i> .	Apply as a broadcast treatment after soybean emergence up to 75 days before harvest. Apply to extend the duration of weed control in soybean.
<b>For Weed Control:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Tank Mix Application Options:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 9.13.2</b> for tank-mix options.</li> </ul>		
<b>Resistance Management:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		

continued...

**9.13.1 FALL, PREPLANT SURFACE, PREPLANT INCORPORATED, PREEMERGENCE OR POSTEMERGENCE APPLICATIONS (continued)**

<p><b>Precautions:</b></p> <ul style="list-style-type: none"> <li>For preplant surface application, to the extent possible, avoid moving treated soil out of the row or moving untreated soil to the surface during planting or weed control will be diminished.</li> <li>Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>
<b>USE RESTRICTIONS</b>
<ol style="list-style-type: none"> <li>Refer to <b>Section 7.1</b> for additional product use restrictions.</li> <li><b>Maximum Single Application Rate:</b> <ol style="list-style-type: none"> <li><b>DO NOT</b> apply more than 2.6 pt/A in a single preemergence application.</li> <li><b>DO NOT</b> apply more than 2.0 pt/A in a single postemergence application.</li> </ol> </li> <li><b>Minimum Application Interval:</b> Not applicable</li> <li><b>Maximum Annual Rate:</b> 3.9 pt/A/year           <ol style="list-style-type: none"> <li><b>DO NOT</b> exceed 3.71 lb ai/A/year of S-metolachlor-containing products.</li> </ol> </li> <li>The combined total amount of Dual II Magnum from all applications in the fall plus spring must not exceed the maximum allowed annual rate.</li> <li>More than one postemergence application may be applied, but the total applied to the crop must not exceed 3.9 pt/A.</li> <li><b>DO NOT</b> apply Dual II Magnum to frozen ground.</li> <li><b>DO NOT</b> graze or feed treated forage, hay or straw from soybeans to livestock for 30 days following a preplant surface, preplant incorporated or preemergence application.</li> <li><b>DO NOT</b> graze or feed treated forage or hay from soybeans to livestock following a postemergence application.</li> <li><b>Preharvest Interval (PHI):</b> 75 days</li> </ol>

**9.13.2 TANK-MIX COMBINATIONS FOR SOYBEANS**

Application	Tank-Mix Brands	Use Directions
<b>Preplant Surface Preemergence</b>	Gramoxone brands Glyphosate Roundup brands	Use these tank mixtures for burndown plus residual control in reduced or no-till systems.
	Authority® MTZ TriCor® Canopy® Authority® First Authority® Maxx Classic® FirstRate® Sharpen® Sonic® Verdict®	Use these tank mixtures for additional residual control.  Do not use this Authority MTZ of Tricor tank mixes on soil with less than 0.5% organic matter or on alkaline soils with a pH over 7.4.  If heavy rain occurs soon after application, crop injury may result.  Use of Authority MTZ of Tricor is not recommended for soybean varieties known to be metribuzin sensitive.
<b>Postemergence</b>	Classic FirstRate Flexstar® Fusilade® DX Fusion® Prefix® Python® Reflex®	Use these tank mixtures for control of emerged weeds plus residual control of grasses and small-seeded broadleaf weeds.  Follow the tank-mix partner label for adjuvant use instructions.

Application	Tank-Mix Brands	Use Directions
<b>Postemergence to Glyphosate Resistant Soybeans</b>	Flexstar® GT Glyphosate Roundup brands	Use these tank mixtures only on glyphosate resistant soybeans. Use of Dual II Magnum in these tank mixtures will provide residual control of weed listed in <b>Section 8.0</b> . Follow the tank-mix partner label for adjuvant use instructions. Apply only to soybeans that are resistant to glyphosate.
<b>Postemergence to Glufosinate Resistant Soybeans</b>	Liberty®	Use this tank mixture only on soybeans that are resistant to glufosinate (e.g., LibertyLink). Use of Dual II Magnum in this tank mixture will provide residual control of weed listed in <b>Section 8.0</b> . Follow the Liberty product label for adjuvant use instructions. Apply only to soybeans that are resistant to glufosinate.
<b>Precaution:</b>		
<ul style="list-style-type: none"> <li>The use of COC or UAN with Dual II Magnum may result in temporary crop injury with postemergence applications.</li> </ul>		
<b>TANK-MIX USE RESTRICTIONS</b>		
1) All use restrictions cited in <b>Section 9.13.1</b> for Dual II Magnum solo apply to tank mixes with Dual II Magnum. 2) It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.		

## 9.14 Sugar Beets

### 9.14.1 POSTEMERGENCE APPLICATION

Crops (including cultivars, varieties, and/or hybrids of these)		
Sugar Beets		
Application Timing	Rate (pt/A)	Use Directions
<b>Postemergence</b>	Apply Dual II Magnum at rates below for the soil texture: <i>Coarse soils:</i> 1.0 pt/A <i>Medium soils:</i> 1.33 pt/A <i>Fine Soils:</i> 1.67 pt/A	Apply after sugar beets have reached first true leaf stage. More than one postemergence application may be made.
<b>For Weed Control:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Tank Mix Application Options:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 9.14.2</b> for tank-mix options.</li> </ul>		
<b>Resistance Management:</b>		
<ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		
<b>Precaution:</b>		
<ul style="list-style-type: none"> <li>Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>		

continued...

**9.14.1 POSTEMERGENCE APPLICATION (continued)**

<b>USE RESTRICTIONS</b>
<ol style="list-style-type: none"> <li>1) Refer to <b>Section 7.1</b> for additional product use restrictions.</li> <li>2) <b>Maximum Single Application Rate:</b> 1.67 pt/A               <ol style="list-style-type: none"> <li>a. <b>DO NOT</b> apply more than 2.0 pt/A/year postemergence in a single application.</li> </ol> </li> <li>3) <b>Minimum Application Interval:</b> Not Applicable</li> <li>4) <b>Maximum Annual Rate:</b> 2.67 pt/A/year               <ol style="list-style-type: none"> <li>a. <b>DO NOT</b> exceed 2.54 lb ai/A/year of S-metolachlor-containing products.</li> </ol> </li> <li>5) More than one postemergence application may be applied, but the total must not exceed 2.6 pt/A.</li> <li>6) <b>Preharvest Interval (PHI):</b> 60 days</li> </ol>

**9.14.2 TANK-MIX COMBINATIONS FOR SUGAR BEETS**

<b>Application</b>	<b>Tank-Mix Brands</b>	<b>Use Directions</b>
<b>Postemergence</b>	Assure® II Poast® Select® Stinger® Upbeet®	Tank mixtures of these products will increase the risk of crop injury over that of either product applied alone.
<b>Precautions:</b> <ul style="list-style-type: none"> <li>• The addition of a spray adjuvant such as crop oil concentrates (COC's) or methylated seed oils (MSO's) can further increase the risk of crop injury.</li> <li>• Injury risk can be reduced by using the lowest effective rate of the tank mix partner(s) and/or adjuvant and by avoiding applications under adverse growing conditions or high soil or air humidity.</li> </ul>		
<b>TANK-MIX USE RESTRICTIONS</b>		
<ol style="list-style-type: none"> <li>1) All use restrictions cited in <b>Section 9.14.1</b> for Dual II Magnum solo apply to tank-mixes with Dual II Magnum.</li> <li>2) It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</li> </ol>		

## 9.15 Sunflowers

Crops (including cultivars, varieties, and/or hybrids of these)		
Sunflowers		
Application Timing	Rate (pt/A)	Use Directions
<b>Preplant Incorporated Preemergence</b>	<p>For all applications use the rate for the specific soil texture and organic matter (OM) as follows:</p> <p><i>Coarse Soil:</i> 1.0-1.33 pt/A; &lt;3% OM 1.33 pt/A; ≥ 3% OM</p> <p><i>Medium Soil:</i> 1.33-1.67 pt/A</p> <p><i>Fine Soil:</i> 1.33-1.67 pt/A; &lt;3% OM 1.67-2.0 pt/A; ≥ 3% OM</p> <p>Within the rate range, use the higher rate of Dual II Magnum if heavy weed infestations are expected.</p>	<p><b>Preplant Incorporation Application:</b> Apply within 14 days of planting.</p> <p>Apply to the soil and incorporate into the top 2 inches of soil using an implement capable of providing uniform incorporation.</p> <p>Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected.</p> <p>If crop will be planted on beds, apply and incorporate after bed formation, unless specified otherwise.</p> <p><b>Preemergence Application:</b> Apply after planting but before crop emerges.</p>
<p><b>For Weed Control:</b></p> <ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<p><b>Resistance Management:</b></p> <ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		
<p><b>Precaution:</b></p> <ul style="list-style-type: none"> <li>Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.</li> </ul>		
USE RESTRICTIONS		
<ol style="list-style-type: none"> <li>Refer to <b>Section 7.1</b> for additional product use restrictions.</li> <li><b>Maximum Single Application Rate:</b> 2.0 pt/A</li> <li><b>Minimum Application Interval:</b> Not Applicable</li> <li><b>Maximum Annual Rate:</b> 2.0 pt/A/year             <ol style="list-style-type: none"> <li><b>DO NOT</b> exceed 1.91 lb ai/A/year of S-metolachlor-containing products.</li> </ol> </li> <li><b>DO NOT</b> exceed the maximum label rates given above for the soil type.</li> <li><b>DO NOT</b> allow livestock to graze or feed in treated area.</li> <li><b>Preharvest Interval (PHI):</b> Not Applicable</li> </ol>		



## 9.16 Tomato

Crops (including cultivars, varieties, and/or hybrids of these)		
Tomato, seeded		Tomato, transplanted
Application Timing	Rate (pt/A)	Use Directions
<b>For Transplanted Tomatoes</b> <b>Preplant Incorporated</b> <b>Preplant</b> <b>Post-Directed</b>	For all applications, use the rate for the specific soil texture and organic matter (OM) as follows:  <i>Coarse Soil:</i> 1.0-1.33 pt/A; <3% OM 1.33 pt/A; ≥ 3% OM  <i>Medium Soil:</i> 1.33-1.67 pt/A  <i>Fine Soil:</i> 1.33-1.67 pt/A; <3% OM 1.67-2.0 pt/A; ≥ 3% OM	<b>Preplant Incorporation Application:</b> Apply to the soil and incorporate into the soil using an implement capable of providing uniform incorporation.  Use a preplant incorporated application if furrow irrigation is used or when a period of dry weather after application is expected.  <b>Preplant Application:</b> Apply before transplanting and keep soil disturbance to a minimum during the transplanting operation.  In bedded transplanted tomatoes, apply Dual II Magnum preplant non-incorporated to the top of the pressed bed, as the last step prior to laying plastic.  Dual II Magnum may also be used to treat row-middles in bedded tomatoes, as long as the total amount of Dual II Magnum does not exceed the maximum allowed per crop.  <b>Post-Directed Application:</b> Apply after the first settling rain or irrigation.  Apply in a minimum of 20 gallons of water per acre and minimize contact with tomato plants.
<b>For Seeded Tomatoes</b> <b>Post-Directed</b>	For all applications, use the rate for the specific soil texture and organic matter (OM) as follows:  <i>Coarse Soil:</i> 1.0-1.33 pt/A; <3% OM 1.33 pt/A; ≥ 3% OM  <i>Medium Soil:</i> 1.33-1.67 pt/A  <i>Fine Soil:</i> 1.33-1.67 pt/A; <3% OM 1.67-2.0 pt/A; ≥ 3% OM	Apply to when tomato plants are at least 4 inches tall. Apply in a minimum of 20 gallons of water per acre. Minimize spray contact with tomato plants.
<b>For Weed Control:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 8.0</b> for list of weeds controlled or partially controlled.</li> </ul>		
<b>Resistance Management:</b> <ul style="list-style-type: none"> <li>Refer to <b>Section 3.1</b>.</li> </ul>		

**Precautions:**

- Application to varieties or cultivars with unknown tolerance to Dual II Magnum may result in crop injury.
- Dual II Magnum may damage transplants that have been weakened by any cause. To prevent damage, plant only healthy transplants and avoid planting when wet, cool, or unfavorable growing conditions exist.
- In transplanted tomatoes, if Dual II Magnum is applied preplant incorporated, incorporate to a depth less than the depth of transplanting, and use the lower end of the rate range for the given soil type, or damage may occur.
- For row middle applications where tomatoes are grown on sandy soils and where high soil moisture conditions can exist (e.g., low binding and high evaporation conditions), as may be found in the States of Florida, Georgia, Maryland, and Virginia, there is potential for crop injury in the form of leaf epinasty. The risk of this type of injury can be reduced by: a) incorporating the Dual II Magnum immediately following application, b) applying the Dual II Magnum seven or more days before transplanting (but only after the beds have been formed), c) minimizing the application of Dual II Magnum onto the plastic of the bed, or d) any combination of the above.
- Dual II Magnum will not control emerged weeds. Control emerged weeds with an appropriate registered foliar herbicide or by mechanical means.

**USE RESTRICTIONS**

- 1) Refer to **Section 7.1** for additional product use restrictions.
- 2) **Maximum Single Application Rate:** 2.0 pt/A
- 3) **Minimum Application Interval:** Not Applicable
- 4) **Maximum Annual Rate:** 2.0 pt/A/year
  - a. **DO NOT** exceed 1.91 lb ai/A/year of S-metolachlor-containing products.
- 5) Apply only by ground application.
- 6) When applying at 1.33 pt/A per year with a 30 day PHI:
  - a. **DO NOT** exceed two applications per growing season and do not use adjuvants.
- 7) **Preharvest Interval (PHI):**
  - a. 30 days, if the total amount of Dual II Magnum applied does not exceed 1.33 pt/A/year.
  - b. 90 days, if the total amount of Dual II Magnum is greater than 1.33 pt/A/year.

**10.0 STORAGE AND DISPOSAL****STORAGE AND DISPOSAL**

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

**Pesticide Storage**

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

**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, spray mixture, or rinsate is a violation of federal law. Pesticide, spray 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 Handling [less than or equal to 5 gallons]**

Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

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## **STORAGE AND DISPOSAL (continued)**

### **Container Handling [greater than 5 gallons]**

Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

### **Container Handling [greater than 5 gallons]**

Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER.**

## **11.0 CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions, or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.**

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## 12.0 APPENDIX

### 12.1 Tank-Mix Partner Table

Product Name	EPA Registration Number	Active Ingredient(s)
2,4-D	1381-102-(multiple)	2,4-D
AAtrex	100-497 & 100-585	atrazine
Banvel	55947-38	dicamba
Gramoxone	100-1431 & 100-1652	paraquat
Roundup	524-549-(multiple)	glyphosate
Princep	100-526 & 100-603	simazine
Balance	264-1067	isoxaflutole
Status	7969-242	dicamba + Diflufenzopyr
Liberty	264-829 & 7969-448	glufosinate-Ammonium
Cotoran	66222-181	flumeturon
Caparol	100-620	prometryn
Eptam	10163-281 & 10163-283	EPTC
Treflan	34704-853-(multiple)	trifluralin
Prowl	241-337 & 241-418	pendimethalin
Pursuit	241-310	imazethapyr
Sonalan	10163-355 & 10163-356	ethalfuralin
Basagran	7969-112-(multiple)	bentazon
Butyrac	42750-39 & 42750-38	2-4DB
Storm	7050-59	bentazon + acifluorfen
Linex	61842-21	linuron
Lorox	61842-23	linuron
Tricor	70506-68 & 70506-103	metribuzin
Landmaster BW	42750-62	glyphosate + 2,4-D
Authority MTZ	279-3340	metribuzin + sulfentrazone
Canopy	352-444	metribuzin + chlorimuron
Authority First	279-3246	sulfentrazone + choransulam
Classic	352-436	chlorimuron
FirstRate	62719-275	choransulam
Sharpen	7969-278	saflufenacil
Sonic	62719-680	sulfentrazone + choransulam
Verdict	7969-279	dimethenamid-p + saflufenacil
Flexstar	100-1101	fomesafen
Fusilade DX	100-1070	fluazifop
Fusion	100-1059	fluazifop + fenoxaprop

*continued...*

## 12.1 Tank-Mix Partner Table (continued)

Product Name	EPA Registration Number	Active Ingredient(s)
Prefix	100-1268	s-metolachlor + fomesafen
Python	62719-277	flumetsulam
Reflex	100-933	fomesafen
Flexstar GT	100-1385	fomesafen + glyphosate
Liberty	264-829 & 7969-448	glufosinate
Assure II	352-541 & 5481-646	quizalofop
Select	59639- & 59639-3-1381	clethodim
Poast	7969-58	sethoxydim
Stinger	62719-73	clopyralid
Upbeet	279-9584	triflusalufuron

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For non-emergency (e.g., current product information), call Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:  
 Syngenta Crop Protection, LLC  
 P. O. Box 18300  
 Greensboro, North Carolina 27419-8300

**SCP 818A-L1U 1020**  
**4127336**

Sale, use and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

S-METOLACHLOR GROUP 15 HERBICIDE



For weed control in corn; cotton; grasses grown for seed; horseradish; legume vegetables; peanuts; potatoes; pumpkin; rhubarb; safflowers; sorghum (forage, grain and sweet); soybean; sugar beets; sunflowers; and tomatoes

Active Ingredient:

S-metolachlor: . . . . . 82.4%

Other Ingredients: . . . . . 17.6%

Total: . . . . . 100.0%

\*CAS No. 87392-12-9

Dual II Magnum® is formulated as an Emulsifiable Concentrate (EC) and contains the equivalent of 82.4% or 7.64 lb of active ingredient per gallon.

See additional precautionary statements and directions for use inside booklet.

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

EPA Reg. No. 100-818

EPA Est. 11773-IA-01<sup>WVC</sup>, EPA Est. 100-LA-001<sup>GBL</sup> (Superscript is first three letters of batch code on container)

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Manufactured for:

Syngenta Crop Protection, LLC

P.O. Box 18300

Greensboro, North Carolina 27419-8300

SCP 818A-L1U 1020

4127336

# 2.5 gallons

## Net Contents

# KEEP OUT OF REACH OF CHILDREN CAUTION

## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

Causes moderate eye irritation. Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

### FIRST AID

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**If swallowed:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. **HOTLINE NUMBER:** For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident), Call 1-800-888-8372.

**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 washwater or rinsate.

**Groundwater Advisory:** S-metolachlor is known to leach through soil into groundwater 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 groundwater contamination.

**Surface Water Advisory:** S-metolachlor has the potential to contaminate surface water through ground spray 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 groundwater, 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 Precautions:** Care must be taken when using this product to prevent back-siphoning into wells, spills, or improper disposal of excess pesticide, spray mixtures, or rinsates. Check-valves or anti-siphoning devices must be used on all mixing and/or irrigation equipment.

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

• This product must 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.

**Aerial Drift Management Requirements:** Do not apply this product by air, unless the supplemental labeling on Aerial Drift Management in attached booklet is followed.

**Chemigation:** Refer to supplemental labeling in attached booklet for use directions for chemigation. Do not apply this product through any irrigation system, unless the supplemental labeling on chemigation is followed.

## STORAGE AND DISPOSAL

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

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

**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, spray mixture, or rinsate is a violation of federal law. Pesticide, spray 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 Handling:** Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER.**

