

# RESTRICTED USE PESTICIDE (DUE TO GROUND AND SURFACE WATER CONCERNS)

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS, OR PERSONS UNDER THEIR DIRECT SUPERVISION, AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

# PHENOMENON™ DUO

## HERBICIDE

### FOR WEED CONTROL IN CORN AND GRAIN OR FORAGE SORGHUM

ACTIVE INGREDIENTS:	% BY WT.
Atrazine: 2-chloro-4-ethylamino-6-isopropylamino-s-triazine .....	30.0%
Atrazine related compounds .....	0.5%
Metolachlor: 2-chloro-N-(2-ethyl-6-methylphenyl)N-(2-methoxy-1-methylethyl)acetamide .....	28.9%
<b>INERT INGREDIENTS:</b> .....	<b>40.6%</b>
<b>TOTAL</b> .....	<b>100.0%</b>

Phenomenon Duo contains 2.8 lbs. atrazine active ingredient + related compounds per gallon and 2.7 lbs. metolachlor active ingredient per gallon.

## KEEP OUT OF REACH OF CHILDREN CAUTION

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>

14738

*(continued)*

EPA Reg. No. 66222-132

FIRST AID <i>(continued)</i>	
<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>
<p>Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact PROSAR at 1-877-250-9291 for emergency medical treatment information.</p>	

For additional precautionary, handling, and use statements, see inside of this booklet.



Manufactured for:  
**Makhteshim Agan  
of North America, Inc.**  
3120 Highwoods Blvd  
Suite 100

**M A N A** Raleigh, NC 27604

EPA 111505/Notif 032411/Rev A

## ONE BOX MUST BE CHECKED IN EACH COLUMN:

**Net Contents**

270 gallons

\_\_\_\_ gallons

**EPA Est. No.**

70989-MO-001

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Metolachlor: 2-chloro-N-(2-ethyl-6-methylphenyl)N-(2-methoxy-1-methylethyl)acetamide .....	28.9%
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<b>TOTAL</b> .....	100.0%

Phenomenon Duo contains 2.8 lbs. atrazine active ingredient + related compounds per gallon and 2.7 lbs. metolachlor active ingredient per gallon.

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## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS & DOMESTIC ANIMALS

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. Wear protective eyewear or clothing specified in the PPE section below.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

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

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate  $\geq$  14 mils, butyl rubber  $\geq$  14 mils, nitrile rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, polyvinyl chloride  $\geq$  14 mils, Viton  $\geq$  14 mils
- Shoes plus socks
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when mixing/loading, cleaning up spills, cleaning equipment, or otherwise exposed to the concentrate

See engineering controls for additional 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. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

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

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

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

Flaggers supporting aerial applications must use an enclosed cab that meets the definition of the Worker Protection Standard for Agricultural Pesticides [40 CFR 170.240(d)(5)] for dermal protection.

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

## USER SAFETY RECOMMENDATIONS

**Users should:**

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

## ENVIRONMENTAL HAZARDS

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

This product must not be mixed or loaded within 50 ft. of intermittent streams and rivers, natural or impounded lakes, and reservoirs. This product must not be applied within 66 ft. of points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 ft. of natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66-ft. buffer or setback from runoff entry points must be planted to crop or seeded with grass or other suitable crop.

This product must not be mixed or 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 washwater, and rainwater 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 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 to the mixing/loading sites.

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

One of the following restrictions must be used in applying atrazine to tile-terraced fields containing standpipes:

- Do not apply this product within 66 ft. of standpipes in tile-outletted terraced fields.

- Apply this product to the entire tile-outletted terraced field and immediately incorporate it to a depth of 2 – 3 inches in the entire field.
- Apply this product to the entire tile-outletted terraced field under a no-till practice only when a high crop residue management practice is practiced. High crop residue management is described as a crop management practice where little or no crop residue is removed from the field during and after crop harvest.

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 – Metolachlor**

Metolachlor can contaminate surface water through ground spray drift. Under some conditions, metolachlor may also have a high potential for runoff into surface water (primarily via dissolution in runoff water) for several months postapplication. These include poorly draining or wet soils with readily visible slopes toward adjacent surface water, frequently flooded areas, areas overlying extremely shallow groundwater, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface water with vegetated filter strips, and areas overlying tile drainage systems that drain to surface water.

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

### **MIXING/LOADING INSTRUCTIONS**

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

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

This product must not be mixed/loaded or used within 50 ft. of all wells, including abandoned wells, drainage wells, and sinkholes. 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 rainwater 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.

States may have in effect additional requirements regarding well head setbacks and operational area containment.

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 applied aerially or by ground within 66 ft. of the points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 ft. around natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66 ft. buffer or setback from runoff entry points must be planted to crop or seeded with grass or other suitable crop.

### **TILED-OUTLETTED TERRACED FIELDS CONTAINING STANDPIPES**

One of the following restrictions must be used in applying this product to tile-terraced fields containing standpipes:

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

### **DIRECTIONS FOR USE**

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

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**For PRODUCT USE Information Call 1-866-406-MANA (6262).**

### **AGRICULTURAL USE REQUIREMENTS**

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

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours. Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

*(continued)*

## AGRICULTURAL USE REQUIREMENTS *(continued)*

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

- Coveralls
- Chemical-resistant gloves such as barrier laminate  $\geq$  14 mils, butyl rubber  $\geq$  14 mils, nitrile rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, polyvinyl chloride  $\geq$  14 mils, Viton  $\geq$  14 mils
- Shoes plus socks

**ANY USE OF THIS PRODUCT IN AN AREA WHERE USE IS PROHIBITED IS A VIOLATION OF FEDERAL LAW.** Before using this product, you must consult the Atrazine Watershed Information Center (AWIC) to determine whether the use of this product is prohibited in your watershed. AWIC can be accessed through [www.atrazine-watershed.info](http://www.atrazine-watershed.info) or 1-866-365-3014. If use of this product is prohibited in your watershed, you may return this product to your point of purchase or contact MAKHTESHIM AGAN OF NORTH AMERICA, INC. for a refund.

**Not for sale, use, or distribution in Nassau or Suffolk Counties, NY.**

## CHEMIGATION PROHIBITION

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

## GENERAL INFORMATION

Phenomenon™ Duo is a herbicide recommended before planting, before or after emergence for control of most annual grasses and broadleaf weeds in corn. Phenomenon Duo can also be used before crop emergence for control of most annual grasses and broadleaf weeds in grain or forage sorghum provided the sorghum seed has been properly treated by the seed company with Concep® or Screen®. This product may be tank mixed with other herbicides for weed control in conventional tillage corn. This product may also be tank mixed with other herbicides specified on this label for weed control in conventional, minimum-till, and no-till corn, grain sorghum, or forage sorghum. Tank mixtures are permitted only in those states where the tank mix partner is registered. Refer to and follow the label of each tank mix product used for precautionary statements, directions for use, geographic and other restrictions.

When tank mixing or sequentially applying atrazine or products containing atrazine to corn or sorghum, do not exceed an application rate of 2.0 pounds active ingredient of atrazine per acre for any single application and the total pounds of atrazine applied (lb. ai per acre) must not exceed 2.5 pounds active ingredient per acre per year.

Following many years of continuous use of atrazine (one of the active ingredients in this product), and products chemically related to atrazine, biotypes of some of the weeds listed on this label which are controlled by the atrazine component have been reported to develop resistance to this and chemically-related herbicides. Where this is known or suspected and weeds controlled by this product are expected to be present along with resistant biotypes, we recommend the use of Phenomenon Duo in combination or in sequence with registered herbicides which do not contain triazines. Consult with your State Agricultural Extension Service for specific recommendations.

## Precautions to observe when using this product:

- If sorghum seed is not properly pretreated with Concep or Screen, Phenomenon Duo will severely injure the crop.
- Injury may occur to sorghum following the use of Phenomenon Duo under abnormally high soil moisture conditions during early development of the crop.

Phenomenon Duo alone or in tank mixture with Atrazine, Balance, Dual Magnum, Dual II Magnum, Cycle, Phenomenon, or Princep may be applied early preplant, preplant surface, preplant incorporated, or preemergence on corn in water or fluid fertilizer. Apply postemergence treatments of this product to corn using water only as the carrier. Phenomenon Duo may be applied in tank mix combination with Gramoxone Max, Landmaster BW, Touchdown, or Roundup with or without the above herbicides preplant surface or preemergence to corn. Phenomenon Duo alone may also be applied on sorghum early preplant, preplant incorporated, preplant surface, or preemergence in water or in fluid fertilizer.

Phenomenon Duo may be applied in water by aircraft. Applications in fluid fertilizer should be only by ground equipment.

To avoid spray drift, do not apply under windy conditions. Avoid spray overlap, as crop injury may result. For additional information about spray drift, refer to **AERIAL SPRAY DRIFT MANAGEMENT** section found elsewhere on this label.

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

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

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

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.

Dry weather following preemergence application of Phenomenon Duo or a tank mixture may reduce effectiveness. Cultivate if weeds develop in conventional tillage corn or sorghum.

Observe all precautions and limitations on the label of each product used in tank mixtures.

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 other materials, or crop damage or sprayer clogging of the application device may occur.

## MIXING INSTRUCTIONS

Shake 2.5 gal. jug well or thoroughly recirculate larger containers and bulk tanks before using. Phenomenon Duo is a liquid that may be mixed with water or fluid fertilizer and applied as a spray. Phenomenon Duo may also be sprayed onto dry bulk granular fertilizer and applied with the granular fertilizer.

## DRY BULK GRANULAR FERTILIZERS

Many dry bulk granular fertilizers may be impregnated or coated with Phenomenon Duo and used to control weeds in corn or Concep-treated sorghum.

When applying Phenomenon Duo with dry bulk granular fertilizers, follow all directions for use and precautions on the Phenomenon Duo label regarding target crops, rates per acre, soil texture, application methods, 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.

Impregnation of bulk fertilizer is restricted to commercial facilities. On-farm fertilizer impregnation is prohibited. No more than 500 tons of dry bulk fertilizer can be impregnated per day. No single facility may impregnate fertilizer with this product for more than 30 days per calendar year.

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

- Applicators must wear long-sleeved shirt, long pants, shoes, and socks.
- The restricted-entry interval is 24 hours.

Prepare the herbicide/fertilizer mixture by using any closed drum, belt, ribbon, or other commonly used dry bulk fertilizer blender. Nozzles used to spray Phenomenon Duo onto the fertilizer must be placed to provide uniform spray coverage. Care should be taken to aim the spray onto the fertilizer only, avoiding the walls of the blender.

If the herbicide/fertilizer mixture is too wet, add a highly absorptive material such as Agsorb® F.G. or Celatom MP-79® or similar granular clay or diatomaceous earth materials to obtain a dry, free-flowing mixture. Absorptive materials should be added 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 the amount of Phenomenon Duo to be used by the following:

$$\frac{2,000}{\text{lbs. of fertilizer per acre}} \times \begin{matrix} \text{qts. of} \\ \text{Phenomenon} \\ \text{Duo per acre} \end{matrix} = \begin{matrix} \text{qts. of} \\ \text{Phenomenon Duo} \\ \text{per ton of fertilizer} \end{matrix}$$

## PNEUMATIC (Compressed Air) APPLICATION

High humidity, high urea concentrations, low fertilizer use rates, and dusty fertilizer may cause fertilizer mixtures to build up or plug the distributor head, air tubes, or nozzle deflector plates. To minimize buildup, premix Phenomenon Duo with Exxon Aromatic 200 at a rate of 2.0 – 2.5 pts./gal. of Phenomenon Duo. Aromatic 200 is a noncombustible/non-flammable petroleum product. Aromatic 200 may be used in either a fertilizer blender or through direct injection systems. Drying agents should not be used when using Aromatic 200.

Mixtures of Phenomenon Duo and Aromatic 200 must be used 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 Phenomenon Duo in a blender before application, a drier mixture can be attained by substituting a drying agent for Aromatic 200. The use of Agsorb F.G. or another drying agent of 6/30 particle size is recommended.

Drying agents are not recommended for use with On-the-Go impregnation equipment.

### Precautions to follow to avoid the potential for explosion:

- Do not impregnate Phenomenon Duo on ammonium nitrate, potassium nitrate, or sodium nitrate, either alone or in blends with other fertilizers.
- Do not combine Phenomenon Duo with a single superphosphate (0-20-0) or treble superphosphate (0-46-0).
- Do not use Phenomenon Duo on straight limestone since absorption will not be achieved. Fertilizer blends containing limestone can be impregnated.

## APPLICATION

Apply 200 – 700 lbs. 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 in order to prevent possible crop injury or injury to subsequent rotational crops. 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 is recommended to obtain satisfactory 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.

To help avoid rotational crop injury, make applications as early as possible since Phenomenon Duo impregnated onto dry bulk granular fertilizers can be expected to last longer in the soil than when Phenomenon Duo is applied as a spray in water or fluid fertilizer.

To avoid potential crop injury, do not use the herbicide/fertilizer mixture on crops where planting beds are to be formed.

## APPLICATION IN WATER OR FLUID FERTILIZERS

**Phenomenon Duo Alone:** Fill the spray tank 1/2 to 3/4 full with water or fluid fertilizer, add the proper amount of Phenomenon Duo, and then add the rest of the water or fluid fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform suspension.

**Tank Mixtures:** Fill the spray tank 1/2 to 3/4 full with water or fluid fertilizer, add the proper amount of Phenomenon Duo, and then add Atrazine, Banvel, linuron, Princep or Balance; next add Phenomenon; then add Gramoxone Extra, Landmaster BW, Touchdown or Roundup, depending on the tank mix combination desired; and finally add the rest of the water or fluid fertilizer. Only water may be used with Phenomenon Duo + Liberty Herbicide when applied postemergence to corn designated as tolerant to Liberty (glufosinate) and with Roundup Ultra or Touchdown when applied postemergence to corn designated as tolerant to Roundup (glyphosate). Provide sufficient agitation during mixing and application to maintain a uniform suspension.

**Compatibility Test:** Check the compatibility of Phenomenon Duo and tank mixtures in fluid fertilizer by mixing proportionate quantities in a small container, as described below, before mixing in the spray tank. Nitrogen solutions of complete fluid fertilizers may replace all or part of the water in the spray. Since liquid fertilizers can vary, even within the same analysis, **always check compatibility each time before reuse.** Be especially careful when using complete suspension or fluid fertilizers, as serious compatibility problems are more apt to occur. Commercial application equipment may improve compatibility in some instances. The following test assumes a spray volume of 25 gal./A. For other spray volumes, make appropriate changes in the ingredients. Check compatibility using this procedure:

1. Add 1 pt. of fertilizer to each of two 1-qt. jars with tight lids.
2. To **one** of the jars, add 1/4 tsp. or 1.2 milliliters of a compatibility agent approved for this use such as Compex® or Unite® (1/4 tsp. is equivalent to 2 pts./100 gals. spray). Shake or stir gently to mix.
3. To **both** jars, add the appropriate amount of herbicides(s). If more than one herbicide is used, add them separately with dry herbicides first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix. The appropriate amount of herbicides for this test follows:  
**Dry herbicides:** For each pound to be applied per acre, add 1.4 teaspoons to each jar.  
**Liquid herbicides:** For each pint to be applied per acre, add 0.5 teaspoon or 2.5 milliliters to each jar.
4. After adding all ingredients, put lids on and tighten, and invert each jar 10 times to mix. Let the mixtures stand 15 minutes and then look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray mixture by comparing the 2 jars. If either mixture separates but can be remixed readily, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, test the following methods of improving compatibility: (A) slurry the dry herbicides(s) in water before addition, or (B) add 1/2 of the compatibility agent to the fertilizer and the other 1/2 to the emulsifiable concentrate or flowable herbicide before addition to the mixture. If still incompatible, do not use the mixture.
5. After compatibility testing is complete, dispose of any pesticide wastes in accordance with the directions in the **STORAGE AND DISPOSAL** section.

## SOIL TEXTURE INFORMATION

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

**Recommendations are based upon soil textures which are defined as follows:**

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

When tank mixing or sequentially applying atrazine or products containing atrazine to corn or sorghum, do not exceed an application

rate of 2.0 lbs. atrazine active ingredient per acre for any single application, and the total lbs. of atrazine active ingredient per acre must not exceed 2.5 lbs. active ingredient per acre per year.

## APPLICATION PROCEDURES

**Ground Application:** Use sprayers that provide accurate and uniform applications. Screens in nozzles and in suction and in-line strainers should be no finer than 50-mesh. Use a pump with capacity to maintain 35 – 40 psi at the nozzles, and provide sufficient agitation in tank to keep mixture in suspension. Unless otherwise specified, use a minimum of 10 gals. of spray mixture per acre. Rinse sprayer thoroughly with clean water immediately after use.

For band applications, calculate amount to be applied per acre as follows:

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \begin{matrix} \text{Broadcast rate} \\ \text{per acre} \end{matrix} = \begin{matrix} \text{Amount needed} \\ \text{per acre of field} \end{matrix}$$

**Low Carrier Application (Broadcast Ground Application Only):** Use sprayers such as Ag-Chem RoGator®, Hagie, John Deere Hi-Cycle™, John Deere 4700 Sprayer, Melroe Spra-Coupe, Tyler Patriot™, or Willmar Air Ride®, that provide accurate and uniform application. Only water may be used as a carrier. Screens in suction and in-line strainers should be 50-mesh. Manufacturers may require that tip screens as fine as 100-mesh be used with some nozzles. Use a pump with capacity to maintain up to 35 – 40 psi at the nozzles and provide sufficient agitation in tank to keep mixture in suspension. Use a minimum of 5.0 gals. of spray mixture per acre. Maximum recommended sprayer speed is 15 mph. Maintain uniform travel speed while spraying. Rinse sprayer thoroughly with clean water immediately after each use.

**Note:** Low-pressure nozzles are recommended to reduce drift and increase application accuracy. Care should be taken when using automatic rate-controlling devices to spray the material within the rated working pressure and flow ranges of the nozzle selected. Nozzle screens should be used when recommended by the manufacturer. All nozzles should be placed on 20-inch centers, except flooding types, which should be placed on 40-inch centers. When flat fan-type nozzles are used, angles of 80° to 110° are recommended. Always read and follow the manufacturer's directions for optimum setup and performance of their nozzles or tips.

**Aerial Application (for Phenomenon Duo alone):** Use aerial application only where broadcast applications are specified. Apply a minimum of 1.0 gal. of water for each 1.0 gal. of this product applied per acre, but for rates below 1.0 gal./A, use in sufficient water to equal 2.0 gals./A of total spray. Avoid applications under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur. In order to assure that spray will be controllable within the target area when used according to label directions, make applications at a maximum height of 10 ft., using low-drift nozzles at a maximum pressure of 40 psi, and restrict application to periods when wind speed does not exceed 10 mph. To assure that spray will not adversely affect adjacent sensitive nontarget plants, apply Phenomenon Duo by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.



Avoid application to humans or animals. Flagmen and loaders should avoid inhalation of spray mist and prolonged contact with skin.

## AERIAL SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses, or to applications using dry formulations.

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the airstream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information** section below.

## AERIAL DRIFT REDUCTION ADVISORY INFORMATION

### Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (see **Wind, Temperature and Humidity, and Temperature Inversions**).

### 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 recommended 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 recommended 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.

### Boom Length

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

### Application Height

Applications should not be made at a height greater than 10 feet 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.

### 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. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

### 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. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

### Temperature and Humidity

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

### Temperature Inversions

Applications should not occur 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.

### Sensitive Areas

The pesticide should only be applied 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).



# PHENOMENON DUO APPLIED ALONE – CORN (Field, Sweet, Pop), GRAIN SORGHUM, OR FORAGE SORGHUM

Early Preplant, Preplant Surface-Applied, Preplant Incorporated,  
or Preemergence

WEEDS CONTROLLED	
Barnyardgrass (watergrass)	Henbit
Browntop panicum	Jimsonweed
Carpetweed	Lambsquarters
Chickweed	Morningglory
Cocklebur*	Mustards
Common purslane	Nightshades
Common ragweed	Pigweed
Crabgrass	Prairie cupgrass
Crowfootgrass	Red rice
Fall panicum	Signalgrass (Brachiaria)*
Florida pusley	Smartweed
Foxtail millet	Southwestern cupgrass
Galinsoga	Velvetleaf*
Giant foxtail	Waterhemp
Giant ragweed*	Witchgrass
Goosegrass	Yellow foxtail
Green foxtail	Yellow nutsedge*

WEEDS PARTIALLY CONTROLLED**	
Sandbur	Sicklepod
Seedling johnsongrass	Volunteer sorghum
Shattercane	Woolly cupgrass

\* Control of these weeds can be erratic, especially under dry weather conditions. Control escaped weeds with cultivation or application of an appropriate EPA-registered postemergence herbicide. On fine-textured soils, only partial control can be expected.

\*\* Control may be improved by following these suggested procedures:

- In corn, apply up to the maximum single application rate in Table 1 for your given soil texture and rate limitation based on your soil conservation practices.
- Thoroughly till moist soil to destroy germinating and emerged weeds. If Phenomenon Duo is to be applied preplant incorporated, this tillage may be used to incorporate Phenomenon Duo if uniform 2-inch incorporation is achieved as recommended elsewhere on this label.
- Plant crop into moist soil immediately after tillage. If Phenomenon Duo 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, a uniform, shallow cultivation is recommended as soon as weeds emerge.

## Phenomenon Duo Rate Limitations and Precautions – Corn and Sorghum

Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or greater setbacks) which are different from the label, the more restrictive/protective requirements must be followed. Certain states may have established rate limitations 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.

When tank mixing or sequentially applying atrazine or products containing atrazine to corn or sorghum, do not exceed an application rate of 2.0 lbs. atrazine active ingredient per acre for any single application, and the total lbs. of atrazine active ingredient per acre must not exceed 2.5 lbs. active ingredient per acre per year.

When tank mixing or sequentially applying atrazine or other products containing atrazine, the total pounds of atrazine applied (lbs. ai/A) must not exceed the specified seasonal rate limits from pre-emergence, postemergence, or preemergence + postemergence applications.

For purposes of calculating total atrazine active ingredient applied, Phenomenon Duo contains 2.8 lbs. ai atrazine + related compounds per gal. (0.7 lb. ai/qt.).

### FOR ALL SOIL APPLICATIONS PRIOR TO CROP EMERGENCE

#### • On Highly Erodible Soils (as defined by NRCS)

- If conservation tillage is practiced (leaving at least 30% of the soil covered with plant residues at planting), apply a maximum of 2.85 qts./A as a broadcast spray.
- If the soil coverage with plant residue is less than 30% at planting, a maximum of 2.29 qts./A may be applied.

#### • On Soils Not Highly Erodible

- Apply 2.85 qts./A as a broadcast spray.

### FOR POSTEMERGENCE APPLICATION

- If no atrazine was applied prior to corn emergence, apply a maximum of 2.85 pts./A broadcast. If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs. active ingredient (3.57 qts. of this product) per acre per calendar year.

### FOR POSTEMERGENCE APPLICATION TO CORN

If no atrazine was applied prior to corn emergence, a maximum of **2 lbs. ai/A (2.85 qts./A)** may be applied postemergence. If a post-emergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs. active ingredient (**3.57 qts.** of Phenomenon Duo) per acre per calendar year.

Do not graze or feed forage from treated areas for 60 days following application for all types of corn except sweet corn. For sweet corn, do not graze or feed forage from treated areas for 45 days following application.

Do not graze or feed forage from preemergent-treated sorghum for 60 days. Do not graze or feed forage from postemergent-treated sorghum for 45 days.

Postemergent applications must be made before the crop reaches 12 inches in height.

## APPLICATION PROCEDURES

**Early Preplant (Corn):** Use on medium- and fine-textured soils with minimum tillage or no-tillage systems in CO, IA, IL, IN, KS, KY, MN, MO, MT, ND, NE, SD, TN, WI, and WY. Apply 2/3 the recommended rate of Phenomenon Duo as a split treatment 30 – 45 days before planting and the remainder at planting using the rates in Table 1. Applications made less than 30 days prior to planting may be as either a split or single treatment. Use the lower rate for light expected weed infestations and the higher rate for heavy expected weed infestations. On coarse-textured soils, apply 1.9 qts./A not more than 2 weeks prior to planting. The above procedure may be followed if Atrazine or Phenomenon or Princep is used in tank mixtures with Phenomenon Duo. Substitute a fluid fertilizer for some or all of the water carrier for burndown of existing annual weeds listed on this label up to the 2-leaf stage of development. The addition of crop oil concentrate to the spray mixture will enhance the burndown activity. If larger weeds are present at the time of treatment, apply in a tank mixture combination with a contact herbicide (for example, Gramoxone Extra or Roundup). Observe directions for use, precautions, and restrictions on the label of the contact herbicide. When tank mixing atrazine-containing products, do not exceed 2.0 lbs. ai/A of atrazine as a pre- or postapplication or 2.5 lbs. ai/A as the total of pre plus post applications per calendar year.

On medium- and fine-textured soils with minimum- or no-tillage systems in DE, MD, MI, NY, OH, PA, VA, and WV, early preplant applications may be applied following the directions for use above. If the amount of rainfall results in unsatisfactory length of weed control following the earlier treatment, a postemergence application of an appropriately labeled broadleaf and/or grass weed herbicide may be used, i.e., Atrazine, Beacon®, Banvel, Basagran®, bromoxynil (Brominal® or Buctril®), Exceed®, Marksman®, or 2,4-D. If the postemergence treatment includes the herbicide used early preplant, do not exceed the labeled rate for corn on a given soil texture. Observe all directions for use, precautions, and limitations on the label of the postemergent herbicide.

Phenomenon Duo may be used according to the above directions to control winter wheat planted as a cover crop in IN, KY, and OH in addition to providing residual weed control. The wheat must be less than 6 inches tall (preferably still in a dormant or semi-dormant state coming out of winter) at the time of application. Depending on rainfall, 10 – 20 days may be required to completely kill the wheat. In the event that adequate rainfall does not occur, control of the winter wheat may be unsatisfactory and the application of a contact herbicide (i.e., Gramoxone Extra or Roundup), may be required before planting the crop.

Phenomenon Duo may be applied in the fall as a single application for control of winter weeds listed on this label within the ecofallow (no-till) production areas of NE and KS where wheat (or other small grain cereals) will be rotated to corn. The application must be made to untilled wheat stubble in the fall following wheat harvest but before soil freeze-up. The ground must remain untilled through the establishment of the corn crop.

On medium- and fine-textured soils following final seed bed preparation in the Blacklands and Gulf Coast areas of TX, an early preplant application of Phenomenon Duo at 2.1 – 2.37 qts./A may be made 30 – 45 days before planting. Grass suppression of 2 – 3 weeks after planting can be expected as a result of this application. Do not incorporate or disturb the soil before planting and avoid moving the soil during the planting operation. A followup application of Phenomenon may be needed in fields with a history of heavy grass pressure. Apply after planting but before corn and grass weeds emerge.

**Note:** (1) If a followup application of Phenomenon is needed, do not exceed a total of 1.6 lbs. ai of metolachlor per acre including the preplant Phenomenon Duo application on medium- or fine-textured soils. On fine-textured soils with more than 3% organic matter, do not exceed 1.91 lbs. ai of metolachlor. (2) 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.

**Table 1: Phenomenon Duo – Early Preplant – Corn**

Soil Texture	Single Application	Split application*	
		30 – 45 DBP**	At Planting
Coarse (Sand, Loamy sand, Sandy loam)	1.9 qts./A	DO NOT APPLY	
Medium (Loam, Silt loam, Silt)	2.29 qts./A	1.53 qts./A	0.76 qt./A
Fine (Sandy clay loam, Silty clay loam, Clay loam, Silty clay, Sandy clay, Clay)	2.29 qts./A <sup>A</sup>	1.53 qts./A	0.76 qt./A
	2.29 – 2.83 qts./A <sup>B</sup>	1.90 qts./A	0.93 qt./A

\* Split applications can be made less than 30 days before planting if desired.

\*\* DBP – Days before planting.

<sup>A</sup> Do not exceed this rate on highly erodible land with less than 30% plant residue cover. Control of certain weeds may be reduced and a tank mix partner or an application of a post-emergence herbicide may be needed.

<sup>B</sup> Use these rates for all other applications.

### Early Preplant (Sorghum – Seed Treated with Concep or Screen):

For minimum-tillage and no-tillage systems only, Phenomenon Duo may be applied up to 45 days before planting grain sorghum in IA, IL, eastern KS, MO, NE, and SD using the rates in Table 2. Use only split applications for treatments made 30 – 45 days before planting with 2/3 the recommended rate applied initially and the remaining 1/3 at planting. Applications made less than 30 days prior to planting may be made as either a split or single application.

Substitute a fluid fertilizer for some or all of the water carrier for burndown of existing annual weeds listed on this label up to the 2-leaf stage of development. The addition of crop oil concentrate to the spray mixture will enhance the burndown activity. If larger weeds are present at the time of treatment, apply in a tank mixture combination with a contact herbicide (for example, Gramoxone Extra, Landmaster BW, or Roundup). Observe directions for use, precautions, and restrictions on the label of the contact herbicide. Under dry conditions, irrigation after application is recommended to move Phenomenon Duo into the soil.

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. Do not use on coarse soils. Do not use on medium soils with less than 1.0% organic matter.

On medium- and fine-textured soils following final seed bed preparation in the Blacklands, Panhandle, and Gulf Coast areas of TX, an early preplant application of Phenomenon Duo at 2.1 – 2.37 qts./A may be made 30 – 45 days before planting. Grass suppression of 2 – 3 weeks after planting can be expected as a result of this application.

Do not incorporate or disturb the soil before planting and avoid moving the soil during the planting operation. A followup application of Phenomenon may be needed in fields with a history of heavy grass pressure. Apply after planting but before sorghum and grass weeds emerge.

Do not use on soils with a pH greater than 8.0 if grain sorghum is to be planted.

If a followup application of Phenomenon is needed, do not exceed a total of 1.47 lbs. ai of metolachlor per acre including the early preplant Phenomenon Duo application on medium-textured soils. On fine-textured soils, do not exceed 1.6 lbs. ai of metolachlor per acre.

**Table 2: Phenomenon Duo – Early Preplant – Grain or Forage Sorghum (Seed treated with Concep or Screen)**

Soil Texture	Organic Matter Content	Single Application	Split Application*	
			30 – 45 DBP**	At Planting
Coarse (Sand, Loamy sand, Sandy loam)	Any Level	DO NOT USE	DO NOT USE	
Medium (Loam, Silt Loam, Silt)	Less than 1.0%	DO NOT USE	DO NOT USE	
	More than 1.0%	2.18 qts./A	1.46 qts./A	0.72 qt./A
Fine (Sandy Clay loam, Silty Clay loam, Clay loam, Sandy clay, Silty clay, Clay)	Less than 1.5% <sup>B</sup>	2.18 qts./A	1.46 qts./A	0.72 qt./A
	More than 1.5% <sup>B</sup>	2.18 – 2.37 qts./A	1.59 qts./A	0.78 qt./A

\* Split applications can be made less than 30 days before planting if desired.

\*\* DBP – Days before planting

A Do not exceed this rate on highly erodible land with less than 30% plant residue cover. Control of certain weeds may be reduced and a tank mix partner or an application of a post-emergence herbicide may be needed.

B Use these rates for all other applications.

**Preplant Surface, Preplant Incorporated, or Preemergence (Corn or Sorghum – Seed Treated with Concep or Screen):** Apply Phenomenon Duo preplant surface, preplant incorporated, or preemergence using the appropriate rates from Table 3 for corn or from Table 4 for sorghum.

**Preplant Surface:** Apply uniformly to the soil surface within 14 days before planting. Where applications are made to coarse soils more than 7 days before planting, use the rates in Table 1 for corn.

**Preplant Incorporated:** Apply to the soil and incorporate into the top 2 inches of the soil within 14 days before planting using a finishing disk, finishing harrow, rolling cultivator, or similar implement capable of providing uniform 2-inch incorporation. Use the preplant-incorporated method if furrow irrigation is used or when a period of dry weather after application is expected. If crop is to be planted on beds, apply and incorporate after bed formation.

**Preemergence:** Apply to the soil surface at planting (behind the planter) or after planting but before weeds or crop emerge.

**Table 3: Phenomenon Duo – Preplant Surface, Preplant Incorporated, or Preemergence – Corn**

Soil Texture	Broadcast Rate Per Acre	
	Less Than 3% Organic Matter	3% Organic Matter or Greater
Coarse (Sand, Loamy sand, Sandy loam)	1.4 – 1.90 qts.	1.48 – 1.90 qts.
Medium (Loam, Silt loam, Silt)	1.89 – 2.29 qts.	1.89 – 2.29 qts.
Fine (Sandy clay loam, Silty clay loam, Clay loam, Sandy clay, Silty clay, Clay)	1.89 – 2.29 qts.	1.90 – 2.29 qts. <sup>A</sup>
		2.29 – 2.83 qts. <sup>B</sup>
Muck or peat soils (more than 20% organic matter)	DO NOT USE	

• For cocklebur, yellow nutsedge, and velvetleaf control on fine-textured soils above 3% organic matter, apply 2.83 qts. of Phenomenon Duo per acre.

A Do not exceed this rate on highly erodible land with less than 30% plant residue cover. Control of certain weeds may be reduced and a tank mix partner or an application of a post-emergence herbicide may be needed.

B Use these rates for all other applications.

In the event of escape of annual weeds following an early preplant, preplant surface, preplant incorporated, or preemergence treatment of Phenomenon Duo applied alone or in combination, follow with a postemergence application of an appropriately labeled broadleaf and/or grass weed herbicide, i.e., Atrazine, Beacon, Accent<sup>®</sup>, Banvel, Basagran, Brominal, Butciril, Exceed, Marksman, or 2,4-D. If the postemergence treatment includes the herbicide used in the earlier treatment, do not exceed the labeled rate on a given soil texture.

Brominal or Buctril may be applied postemergence alone or in a tank mix combination with Atrazine. Do not exceed 1.2 lbs. ai/A of Atrazine in tank mix combination with Brominal or Buctril post-emergence. Refer to the Atrazine, Brominal, and Buctril labels for specific rates and precautions.

If Atrazine or another product containing atrazine is used post-emergence following application of Phenomenon Duo, do not exceed a total of 2.5 lbs. ai/A of atrazine per year.

Substitute a fluid fertilizer for some or all of the water carrier for burndown of existing annual weeds listed on this label up to the 2-leaf stage of development. The addition of crop oil concentrate to the spray mixture will enhance the burndown activity. If larger weeds are present, add a contact herbicide as noted in the **Phenomenon Duo COMBINATION** section of this label.

**Table 4: Phenomenon Duo – Preplant Surface, Preplant Incorporated, or Preemergence – Grain or Forage Sorghum\* (Seed treated with Concep or Screen)**

Soil Texture	Organic Matter	Broadcast Rate Per Acre
Coarse (Sand, Loamy sand, Sandy loam)	Any level	DO NOT USE
Medium and Fine (Loam, Silt loam, Silt, Sandy clay loam, Silty clay loam, Clay loam, Sandy clay, Silty clay, Clay)	Less than 1.0%	DO NOT USE
	More than 1.0%	1.90 – 2.49 qts.

\* Do not use in NM or TX, except the TX panhandle, Gulf Coast, and Blacklands areas. Do not apply preplant incorporated in AZ or the Imperial Valley of CA.

Substitute a fluid fertilizer for some or all of the water carrier for burndown of existing annual weeds listed on this label up to the 2-leaf stage of development. The addition of crop oil concentrate to the spray mixture will enhance the burndown activity. If larger weeds are present at the time of treatment, add a contact herbicide as noted in the **PHENOMENON DUO COMBINATION** section of this label.

**Precautions:**

- Do not apply Phenomenon Duo on highly alkaline soils (pH greater than 8.0) or on eroded areas where calcareous subsoils are exposed.
- Do not apply Phenomenon Duo when sorghum is planted in deep furrows because heavy rains following application can cause excessive concentrations of herbicide in the furrow.
- Do not apply to sorghum grown under dry mulch tillage.
- Injury may occur if both Phenomenon Duo applied early preplant, preplant surface, preplant incorporated, or preemergence and an at-planting systemic insecticide applied in furrow are used.
- In addition, sorghum growing under stress caused by minor element deficiency may be injured by Phenomenon Duo.

**Rotational Crops:**

- Do not rotate to food or feed crops other than those listed below:
- If treated crop is lost due to poor germination, hail, flood, insects, etc., corn may be replanted immediately or sorghum may be replanted immediately provided the seed has been properly treated with Concep or Screen. Do not make a second broadcast application. If the original application was banded and the second crop is planted in the

untreated row middles, a second banded treatment may be applied.

- Corn, sorghum, soybeans, cotton, or peanuts may be planted in the spring following treatment. Do not graze or feed forage or fodder from cotton to livestock or illegal residues may result.
- Injury may occur to soybeans planted the year following application on soil having a calcareous surface layer.
- In eastern parts of the Dakotas, KS, western MN, and NE, do not rotate to soybeans for 18 months following application if the rate applied to corn or sorghum was more than 2.0 lbs. ai of atrazine or equivalent band application rate or soybean injury may occur.
- If applied after June 10, do not rotate with crops other than corn or sorghum the next year or crop injury may occur.
- In the High Plains and Intermountain areas of the West where rainfall is sparse and erratic or where irrigation is required, use only when corn or sorghum is to follow corn or sorghum or a crop of untreated corn or sorghum is to precede other rotational crops.
- Do not plant sugar beets, tobacco, vegetables (including dry beans), spring-seeded small grains, or small seeded legumes the year following application or injury may occur.

**Postemergence Broadcast – Corn**

Weeds Controlled	
Barnyardgrass (watergrass)	Lambsquarters
Cocklebur	Morningglory
Common ragweed	Mustard
Crabgrass	Pigweed
Crowfootgrass	Prickly sida
Fall panicum	Purslane
Giant foxtail	Smartweed
Green foxtail	Velvetleaf
Jimsonweed	Waterhemp
Kochia	Yellow foxtail
Weeds Partially Controlled	
Yellow nutsedge	

**Application:** Apply early postemergence using the appropriate rate from Table 5. Apply this treatment before grass and broadleaf weeds pass the 2-leaf stage and before corn exceeds 5 inches in height. Application to weeds larger than the 2-leaf stage will generally result in unsatisfactory control. Occasional corn leaf burn may result, but this should not affect later growth or yield. Do not apply postemergence in fluid fertilizer or severe crop injury may occur.

**Table 5: Postemergence Broadcast – Corn**

Soil Texture	Broadcast Rate Per Acre
Coarse (Sand, Loamy sand, Sandy loam)	1.90 qts.
Medium (Loam, Silt loam, Silt)	2.29 qts.
Fine (Sandy clay loam, Silty clay loam, Clay loam, Sandy clay, Silty clay, Clay)	2.37 – 2.83 qts.*

\* For better residual control of cocklebur, velvetleaf, and yellow nutsedge on fine-textured soils above 3% organic matter, apply 2.83 qts. of Phenomenon Duo per acre.

If Phenomenon Duo has been applied early preplant, preplant surface, preplant incorporated, or preemergence, do not exceed a total of 2.85 qts./A of Phenomenon Duo on corn crop.

If Atrazine or Atrazine plus Phenomenon tank mixtures have been applied preplant surface, preplant incorporated, or preemergence, limit the Phenomenon Duo early postapplication not to exceed a total of 2.5 lbs. of the active ingredient in Atrazine or 4 lbs. of the active ingredient in Phenomenon per acre on a corn crop or illegal residues may result.

#### Rotational Crops:

Follow the preceding crop rotation instructions for **Phenomenon Duo – Early Preplant, Preplant Surface-Applied, Preplant Incorporated, or Preemergence.**

#### Postemergence-Directed – Corn

Phenomenon Duo may be applied at 1.19 – 2.37 qts./A in a minimum of 15 gals. of water as a postemergence directed treatment to corn to extend control of weeds listed in the **Early Preplant, Preplant Surface-Applied, Preplant Incorporated, Preemergence, or Postemergence Broadcast** section of the corn label. Apply using the appropriate rate from Table 6.

For best results, apply Phenomenon Duo to weed-free soil following use of a preplant surface, preplant incorporated or preemergence herbicide, or following a lay-by cultivation. If weeds have emerged at the time of Phenomenon Duo application, apply before grass and broadleaf weeds exceed the 2-leaf stage. Application to weeds larger than the 2-leaf stage will generally give unsatisfactory control. Apply to corn not exceeding 12 inches in height. Minimize contact with corn leaves. Do not apply postemergence in fluid fertilizer or severe crop injury may occur.

**Table 6: Postemergence-Directed – Corn**

Soil Texture	Broadcast Rate Per Acre
Coarse (Sand, Loamy sand, Sandy loam)	1.78 – 1.90 qts.
Medium (Loam, Silt loam, Silt)	1.90 – 2.37 qts.
Fine (Sandy clay loam, Silty clay loam, Clay loam, Sandy clay, Silty clay, Clay)	1.90 – 2.83 qts.*

\* For better residual control of cocklebur, velvetleaf, and yellow nutsedge on fine-textured soils above 3% organic matter, apply 2.83 qts. of Phenomenon Duo per acre.

If Phenomenon Duo has been applied early preplant, preplant surface, preplant incorporated, or preemergence, do not exceed a total of 3.0 qts./A of Phenomenon Duo on corn crop.

If Atrazine plus Phenomenon tank mixtures have been applied preplant surface, preplant incorporated, or preemergence, limit the Phenomenon Duo post-directed application not to exceed a total of 2.5 lbs. of the active ingredient in Atrazine or 4 lbs. of the active ingredient in Phenomenon per acre on a corn crop or illegal residues may result.

## PHENOMENON DUO COMBINATION – CORN\*

Always follow tank mix instruction for tank mix products when mixing with Phenomenon Duo.

\* When tank mixing Phenomenon Duo with atrazine formulations, refer to the **Phenomenon Duo Rate Limitations** section of this label. Do not exceed the following:

On highly erodible land with less than 30% plant residue cover prior to crop emergence	1.6 lbs. ai of atrazine
On other land prior to crop emergence	2.0 lbs. ai of atrazine
Postemergence applications only – any land	2.0 lbs. ai of atrazine
Preemergence + postemergence applications	2.5 lbs. ai of atrazine

#### Tank Mixture with Atrazine, Phenomenon, Princep or Balance – Conventional Tillage

Check the compatibility of Phenomenon Duo tank mixtures with Balance before mixing in spray tank by using the procedure described under **APPLICATION IN WATER OR FLUID FERTILIZERS.**

**Atrazine (4L or 90DF):** Add up to 1 qt. of Atrazine 4L (1.1 lbs. Atrazine 90DF) per acre to the rate of Phenomenon Duo recommended in Table 3 in the southeastern U.S. where high rainfall can shorten the duration of control of broadleaf weeds and in all areas where heavy infestations of cocklebur, morningglory, velvetleaf, or other broadleaf weeds claimed are expected.

**Phenomenon:** Add up to 0.5 pt. of Phenomenon per acre to the rate of Phenomenon Duo recommended in Table 3 when heavy infestation of yellow nutsedge, sandbur, or seedling johnsongrass are expected.

**Princep (4L or 90):** Add up to 1 qt. of Princep 4L (1.1 lbs. of Caliber 90) per acre to the rate of Phenomenon Duo recommended in Table 3 where heavy infestations of crabgrass or fall panicum are expected or additional control of certain broadleaves is desired.

**Balance (Isoxaflutole) (Field Corn Only):** The tank mixture of Phenomenon Duo + Balance provides control of weeds listed on the Phenomenon Duo label, certain weed biotypes resistant to ALS-inhibitor herbicides and to triazine herbicides, velvetleaf, and others on the respective product labels. Balance will contribute to the control of problem grass and other broadleaf species on its label. Application may be preplant (surface-applied up to 14 days before planting), preplant incorporated or preemergence in conventional tillage, conservation tillage and no-till systems. Refer to **Table 1: Phenomenon Duo – Early Preplant** for the early preplant application rate (8 – 14 days before planting) or refer to Table 3 for the appropriate rate for preplant (surface-applied 0 – 7 days before planting), preplant incorporated, or preemergence application. Refer to the application procedures and tank mix directions on the Balance label, but to reduce the potential for injury from isoxaflutole contact with corn, use 1.0 oz./A of Balance on coarse-textured soils and 1.0 – 1.5 oz./A on medium- and fine-textured soils in conventional, conservation, and no-tillage systems. For early preplant applications 8 – 14 days before planting, add 0.5 oz./A of Balance to the rates of Balance described above.

Observe all applicable directions, precautions, and limitations on the Phenomenon Duo and Balance labels when applying these

products in tank mix combinations in states where Balance is registered. Where difficult species and/or severe weed populations are expected, use the maximum rates of Phenomenon Duo and Balance where rate ranges are listed for the tank mixture.

**Tank Mixture of Phenomenon Duo Alone or Phenomenon Duo + Atrazine, Phenomenon, Princep or Balance with Gramoxone Extra, Landmaster BW, Touchdown, or Roundup for Minimum-Tillage or No-Tillage Systems**

In minimum-tillage or no-tillage systems where corn is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, the contact herbicides Gramoxone Extra, Landmaster BW, Touchdown, or Roundup should be tank mixed with Phenomenon Duo alone or with Phenomenon Duo + Atrazine, Phenomenon, Princep, or Balance. When used as directed, the Gramoxone Extra portion of the tank mixture controls most emerged annual weeds and suppresses many perennial weeds. Landmaster BW, Touchdown, or Roundup combinations will control emerged annual and perennial weeds when applied as directed on its label. The Phenomenon Duo portion of the tank mixture provides preemergence control of the weeds listed on this label in the **Phenomenon Duo APPLIED ALONE** section for corn. The addition of Atrazine, Phenomenon, Princep, or Balance offers the advantage indicated for each under **Conventional Tillage**.

**Application:** Apply before, during, or after planting but before corn emerges at the appropriate rate in Table 7. Up to 1.0 qt. of Atrazine 4L (1.1 lbs. of Atrazine 90DF) or 1.0 – 2.0 oz. of Balance (refer to tank mixture with Balance for specific rate) or 0.33 pt. of Phenomenon or 1.0 qt. of Princep 4L (1.1 lbs. of Caliber 90) per acre may be added to the rate of Phenomenon Duo recommended in Table 7. Add Gramoxone Extra, Landmaster BW, Touchdown, or Roundup at labeled rates. **Tank mixtures with Balance can be used only on field corn.**

Apply in 20 – 60 gals. of water per acre with conventional spray equipment.

**Tank mixture of Phenomenon Duo Alone or Phenomenon Duo + Atrazine or Balance with 2,4-D or 2,4-D + Banvel for Minimum-Tillage or No-Tillage Systems**

In minimum-tillage or no-tillage systems where corn is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, Phenomenon Duo may be applied in combination with Atrazine or Balance.

When used as directed, the Phenomenon Duo portion on the tank mixture provides preemergence control of the weeds listed on this label in the **Phenomenon Duo APPLIED ALONE** section for corn. The addition of Atrazine or Balance offers the advantage indicated for each under **Conventional Tillage**.

**Application:** Apply Phenomenon Duo before, during, or after planting but before corn emerges at the appropriate rate in Table 7. Up to 1 qt. of Atrazine 4L (1.1 lbs. of Atrazine 90DF) or 1.0 – 2.0 oz. of Balance (refer to tank mixture with Balance for specific rate) per acre may be added to the rate of Phenomenon Duo recommended in Table 7.

Where heavy crop residues exist, add an appropriately labeled 2,4-D amine or low-volatile ester to the spray tank last and apply in a minimum of 25 gals. of carrier per acre.

As carriers, nitrogen solutions and complete liquid fertilizers applied before corn emergence enhance burndown of existing weeds and therefore are recommended instead of water. Add X-77® surfactant at 1.0 – 2.0 qts./100 gals. of diluted spray or another surfactant cleared for use on growing crops at its recommended rate. Apply

before weeds exceed 3 inches in height. If alfalfa is present, add Banvel to the spray mixture at 0.33 – 0.5 pt./A and apply before the alfalfa exceeds 6 inches in height.

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

**Table 7: Phenomenon Duo for Minimum-Tillage or No-Tillage Corn**

Soil Texture	Broadcast Rate Per Acre
Coarse (Sand, Loamy sand, Sandy loam)	1.90 qts.
Medium (Loam, Silt loam, Silt)	2.29 qts.
Fine (Sandy clay loam, Silty clay loam, Clay loam, Sandy clay, Silty clay, Clay)	2.29 qts. <sup>A</sup>
	2.37 – 2.83 qts. <sup>*B</sup>
Muck or peat soils	DO NOT USE

<sup>\*</sup> For cocklebur, velvetleaf, and yellow nutsedge control on fine-textured soils above 3% organic matter, apply 2.83 qts. of Phenomenon Duo per acre.

<sup>A</sup> Do not exceed this rate on highly erodible land with less than 30% plant residue cover. Control of certain weeds may be reduced and a tank mix partner or an application of a post-emergence herbicide may be needed.

<sup>B</sup> Use these rates for all other applications.

**Tank Mixture with Linuron for Control of Lambsquarters and Pigweed**

For prolonged control of lambsquarters and pigweed in DE, MD, NJ, NY, PA, VA, and WV, Phenomenon Duo may be applied preemergence in combination with linuron. Apply Phenomenon Duo according to the rates in Table 3 and linuron according to the following rates:

Soil Texture	Broadcast Rate Per Acre
Sandy loam (1 – 3% organic matter)	0.67 lb. Lorox*
Sandy loam (3 – 6% organic matter)	1.0 lb. Lorox*
Medium- and fine-textured soils (1 – 6% organic matter)	1.0 lb. Lorox*

<sup>\*</sup> When using Lorox L or Lorox DF, use equivalent rates. One pt. of Lorox L equals 1 lb. of Lorox DF.

Follow instructions and precautions on the Phenomenon Duo and Lorox labels when tank mixing these products.

**Rotational Crops:**

Follow the crop rotation instructions in the **PHENOMENON DUO APPLIED ALONE** section for corn.

**Tank Mixture with Callisto® (Mesotrione)**

For preemergence control of weeds in corn, Phenomenon Duo may be applied in combination with Callisto. Apply Phenomenon Duo according to the rates in Table 3 and Callisto at a rate of 5.0 – 6.0 fl. oz./A. Observe all directions for use, precautions, and limitations on the respective product labels when applying these products in a tank mixture.



## PHENOMENON DUO COMBINATIONS – FIELD CORN ONLY

### Tank Mixture with Broadstrike + Dual for Preemergence Weed Control in Field Corn Only

Reduced rates of Broadstrike + Dual herbicide and Phenomenon Duo herbicide may be tank mixed for control of several annual grasses and broadleaf weeds in field corn. In addition to the weeds listed as controlled on the Phenomenon Duo label, this mixture will control velvetleaf and triazine-resistant populations of lambsquarters, pigweed, and velvetleaf. Weeds partially controlled by this tank mix include those under the **WEEDS PARTIALLY CONTROLLED** section of the Phenomenon Duo label plus common ragweed and morningglory. Control of a few weeds can be erratic. Refer to the **WEEDS CONTROLLED** section of this label for further information.

The Broadstrike + Dual and Phenomenon Duo tank mix may be applied preplant incorporated, preemergence, or applied postemergence through the “spike” stage of corn growth but before weed emergence. When applied postemergence to the crop, apply only with water before corn is 2 inches tall and first true leaf is unfurled. Target weeds that have emerged at the time of application may not be controlled.

#### Mixing Instructions:

Fill the spray tank 1/4 to 1/2 full with water or liquid fertilizer and start agitation. Add the required amount of Phenomenon Duo and allow to become fully dispersed; then add the required amount of Broadstrike + Dual; then add the rest of the water or liquid fertilizer. For tank mixtures with liquid fertilizers, always check compatibility as described on the labels for Phenomenon Duo and Broadstrike + Dual.

#### Precautions and Restrictions:

- Do not apply more than two weeks before planting.
- Do not apply to field corn grown for seed.
- Do not use when Counter® or Thime® insecticides are to be applied due to the risk of severe crop injury.
- Plant corn at least 1 1/2 inches deep.
- Refer to the product labels for Broadstrike + Dual and Phenomenon Duo for specific use restrictions, use precautions, and rotational crop intervals. The most restrictive provisions on either label shall apply.

**Table 8: Broadcast Application Rate Per Acre For Preemergence Weed Control In Field Corn**

Soil Texture	Less Than 3% Organic Matter <sup>1</sup>			Greater Than 3% Organic Matter		
	Broadstrike + Dual (pts.)	+	Phenomenon Duo (pts.)	Broadstrike + Dual (pts.)	+	Phenomenon Duo (pts.)
Coarse	1.5	+	1.78	1.5	+	1.89
Medium	1.5 – 1.75 <sup>2</sup>	+	2.13	1.75	+	2.6
Fine	1.75	+	2.49	2.0	+	2.37 – 2.83 <sup>2</sup>

<sup>1</sup> Application on soils with <1.5% organic matter may result in unacceptable crop injury.

<sup>2</sup> Use the higher rate in fields with heavy weed pressure.

Follow directions in the **PHENOMENON DUO APPLIED ALONE** section of this label for improved control of certain weeds.

Add 1 – 2 pts./A of Atrazine 4L or equivalent rate of Atrazine 90DF for an improved spectrum of broadleaf control and for more effective burndown in no-till or minimum-till situations. Follow atrazine rate restrictions on the Atrazine label.

Triazine-resistant weeds (triazine-tolerant biotypes) are controlled by the tank mixture of Broadstrike + Dual and Phenomenon Duo.

## TANK MIXTURE FOR POSTEMERGENCE SALVAGE WEED CONTROL IN FIELD CORN ONLY

**Phenomenon Duo + Liberty Herbicide: Postemergence Use in LibertyLink® Corn or Corn Warranted by Bayer CropScience as being tolerant to Liberty Herbicide:** The tank mixture of Phenomenon Duo + Liberty Herbicide can be applied postemergence to weeds and corn from seed designated as LibertyLink or corn warranted by Bayer CropScience as being tolerant to Liberty Herbicide. Liberty provides postemergence control of a broad spectrum of grass and broadleaf weeds, and the Phenomenon Duo provides residual control of grasses and broadleaf weeds listed in the label section **PHENOMENON DUO APPLIED ALONE – WEEDS CONTROLLED**. For the proper rate of Phenomenon Duo applied postemergence, refer to Table 5 and use the minimum rate per soil texture for season-long residual control. Refer to the Liberty label for the Liberty postemergence application rate according to weed species and their maximum height at the time of postemergence application. Where multiple weed species are present, use the highest Liberty rate recommended to control the species and growth stages present. Follow all applicable use directions, limitations, precautions, and information regarding application to corn on the Phenomenon Duo and Liberty Herbicide labels.

**Phenomenon Duo + Touchdown or Roundup Ultra (glyphosate) for Postemergence Application to Corn with the Roundup Ready® Gene** – The tank mixture of Phenomenon Duo + Touchdown or Roundup Ultra can be applied postemergence to weeds and to corn designated as containing the Roundup Ready Gene. Application may be applied postemergence to Roundup Ready corn up to 12 inches in height. This mixture will provide postemergence control of weed species on the Roundup Ultra label and also residual control of weed species on the Phenomenon Duo label. Use the minimum Phenomenon Duo rate postemergence with Roundup Ultra in Roundup Ready corn as specified in Table 5 of this label according to soil texture. Refer to the Supplemental Labeling of Touchdown or Roundup Ultra for Postemergence Applications to Corn with the Roundup Ready Gene and to each product label and follow all appropriate use directions, application procedures, precautions, and limitations. Apply 24 – 32 fl. oz./A of Roundup Ultra for control of problem species. Follow all applicable use directions, limitations, precautions, and information regarding application to corn on the Phenomenon Duo and Roundup Ultra labels and on the Supplemental labeling of Roundup Ultra for Postemergence Application to Corn with the Roundup Ready Gene. Where difficult species and/or severe weed populations are expected, use the maximum rate where rate ranges are listed.



**Phenomenon Duo + Exceed:** Apply 1.78 – 2.37 qts./A of Phenomenon Duo + 1.0 oz./A of Exceed to corn that is 4 to 12 inches tall. The application may be broadcast, semi-direct, or direct. The Phenomenon Duo rate is based on the soil texture with 1.78 qts./A on coarse and 1.99 – 2.37 qts./A on medium and fine soils. Add a nonionic surfactant at 0.25% v/v.

This mixture is effective for control of many annual broadleaf weeds and some grasses. A few instances of broadleaf weed control antagonism have been observed with this combination. Control of certain annual grasses can be improved with the addition of Accent.

**Phenomenon Duo + Exceed + Accent:** Apply the same rates of Phenomenon Duo and Exceed as mentioned above. Add Accent at 0.33 oz./A for more effective control of certain annual grasses. Apply to field corn between 4 and 12 inches. Add a nonionic surfactant at 0.25% v/v.

**Phenomenon Duo + Spirit:** Spirit herbicide at 1.0 oz./A can be substituted in place of Exceed in the above combinations in field corn only.

Do not use fertilizer or crop oil concentrate with these mixtures or injury to field corn may occur. The combination of Phenomenon Duo with other products for postemergence weed control in corn is generally not recommended. **These combinations may cause injury and/or weed control concerns that would not exist when the products are used separately.** A certain inherent risk is involved when the various combinations of these products are used postemergence in corn. It should be noted that early preplant, preplant incorporated, or preemergence control of these weeds would usually provide more timely weed control resulting in higher yields than postemergence treatments.

#### Mixing Order:

Add these products to the tank mix in the following order:

1. Products in water-soluble bags should be added first.
2. Phenomenon Duo
3. Additives

#### Precautions:

- Follow all label instructions, precautions, and rotational restrictions for individual products when making these applications to field corn. When Phenomenon Duo is applied after June 10, crop injury may occur the following year if you rotate to crops other than corn or sorghum.
- In-row weed control may be reduced because of lack of coverage when applied to corn over 4 inches tall.

## PHENOMENON DUO COMBINATIONS – GRAIN AND SORGHUM

### (SEED TREATED WITH CONCEP OR SCREEN)

Tank mixture with Phenomenon Duo with Gramoxone Extra, Landmaster BW, Touchdown, or Roundup for Minimum-Tillage or No-Tillage Systems

In minimum-tillage or no-tillage systems where grain sorghum is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, the contact herbicides Gramoxone Extra, Landmaster BW, Touchdown, or Roundup may be tank mixed with Phenomenon Duo. When used as directed, the Gramoxone Extra

portion of the tank mixture controls most emerged annual weeds and suppresses many perennial weeds. Landmaster BW, Touchdown, or Roundup combinations will control emerged annual and perennial weeds when applied as directed on its label. The Phenomenon Duo portion of the tank mixture provides preemergence control of the weeds listed on this label in the **PHENOMENON DUO APPLIED ALONE** section.

Refer to the label of each product used in combination and observe the planting details, restrictions, and all other precautions and limitations.

**Application:** Apply before, during, or after planting but before grain sorghum emerges at the appropriate rate in Table 9. Add Gramoxone Extra, Landmaster BW, Touchdown, or Roundup at the labeled rates.

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

**Table 9: Phenomenon Duo for Minimum-Tillage or No-Tillage Grain Sorghum\* (Seed treated with Concep or Screen)**

Soil Texture	Organic Matter	Broadcast Rate Per Acre
Coarse (Sand, Loamy sand, Sandy loam)	Any level	DO NOT USE
Medium and Fine (Loam, Silt loam, Silt, Sandy clay loam, Silty clay loam, Clay loam, Sandy clay, Silty clay, Clay)	Less than 1.0%	DO NOT USE
	1 – 1.5%	2.18 qts.
	More than 1.5%	2.37 qts.

\* Do not use in NM or TX, except the TX panhandle, Gulf Coast, and Blacklands areas. Do not apply preplant incorporated in AZ or the Imperial Valley of CA.

#### Precautions:

- Do not apply Phenomenon Duo on highly alkaline soils (pH greater than 8.0) or on eroded areas where calcareous subsoils are exposed.
- Do not apply Phenomenon Duo when sorghum is planted in deep furrows because heavy rains following application can cause excessive concentrations of herbicide in the furrow.
- Do not apply to sorghum grown under dry mulch tillage.
- Injury may occur if both Phenomenon Duo applied early preplant, preplant surface, preplant incorporated, or preemergence and an at-planting systemic insecticide applied in furrow are used.
- In addition, sorghum growing under stress caused by minor element deficiency may be injured by Phenomenon Duo.

#### Rotational Crops:

Follow the crop rotation instructions in the **PHENOMENON DUO APPLIED ALONE** section.

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store in a cool dry place. Store product in original container only.

**PESTICIDE DISPOSAL:** Open dumping is prohibited. Wastes resulting from the use of this product are toxic. Improper disposal of unused pesticide is a violation of Federal law. Pesticide 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:

**Nonrefillable Container (five gallons or less):** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container 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. Puncture and dispose of in a sanitary landfill, or by incineration, or by open burning, if allowed by state and local authorities. If burned, keep out of smoke.

**Nonrefillable Container (greater than five gallons):** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container 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. Puncture and dispose of in a sanitary landfill, or by incineration, or by open burning, if allowed by state and local authorities. If burned, keep out of smoke.

**Refillable Container (greater than 55 gallons):** Refillable container. Refill this container with metolachlor and atrazine 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 refiller. To clean the 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. For final disposal, offer for recycling or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

## LIMITATION OF WARRANTY AND LIABILITY

Read the entire directions for use, conditions of warranties and limitations of liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following **CONDITIONS, DISCLAIMER OF WARRANTIES and LIMITATIONS OF LIABILITY.**

**CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Makhteshim Agan of North America, Inc. All such risks shall be assumed by the user or buyer.

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