

# VASTO™

Powered by  BELLUM™

**GROUP 27 | 2 HERBICIDES**

An Herbicide for Post-Emergence Use in  
Field Corn Grown for Grain or Silage

**ACTIVE INGREDIENT**

	BY WT.
Mesotrione.....	31.25%
Rimsulfuron: N-((4,6-dimethoxypyrimidin-2-yl)aminocarbonyl)-3-(ethylsulfonyl)-2-pyridinesulfonamide .....	7.50%

<b>OTHER INGREDIENTS</b> .....	61.25%
<b>Total</b> .....	<b>100.00%</b>

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

See label booklet for additional Precautionary Statements, Directions For Use, and Storage and Disposal.

EPA Reg. No.: 83100-57-83979 EPA Est. No.: 067545-AZ-002

Manufactured for:  
Rotam North America, Inc.  
4900 Koger Blvd., Suite #140,  
Greensboro, NC 27407  
1-866-927-6826

**Net Contents: 5 lbs. (80 oz.)**



VAS-01-R111517-REV102418-80oz

## FIRST AID

### 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 to an unconscious person.

### 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 INHALED:

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

## HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For 24-Hour Medical Emergency Assistance (Human or Animal) call: **1-800-222-1222**. For Chemical Emergency Assistance (Spill, Leak, Fire, or Accident) call CHEMTREC: **1-800-424-9300**.

## **PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION**

Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

### **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

#### **Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, made of butyl rubber ≥14 mils, natural rubber ≥14 mils, neoprene rubber ≥14 mils, or nitrile rubber ≥14 mils
- Shoes plus socks
- Protective eyewear

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.

### **ENGINEERING CONTROL STATEMENTS**

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR Part 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### **USER SAFETY RECOMMENDATIONS**

#### **Users should:**

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

### **ENVIRONMENTAL HAZARDS**

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters or rinsate.

#### **Surface Water Protection**

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of rimsulfuron from runoff water and sediment. Runoff of this product will be greatly reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

## DIRECTIONS FOR USE

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

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated area. Protect the forage and habitat of non-target organisms by minimizing spray drift. For further guidance and instructions on how to minimize spray drift, refer to the Spray Drift Advisories section of this label.

WINDBLOWN SOIL PARTICLES: **Vasto**<sup>™</sup> 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 **Vasto** if prevailing local conditions may be expected to result in off-site movement.

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

## AGRICULTURAL USE REQUIREMENTS

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

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

The following PPE is required for early entry into 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:

- Coveralls
- Chemical-resistant gloves, made of butyl rubber ≥14 mils, natural rubber ≥14 mils, neoprene rubber ≥14 mils, or nitrile rubber ≥14 mils
- Shoes plus socks

## PRODUCT INFORMATION

Use **Vasto** in accordance with instructions on this label.

**Vasto** is for use as a post-emergence herbicide for selective burndown and residual control of listed annual grass and broadleaf weeds in field corn grown for grain or silage.

To improve residual or burndown control, **Vasto** can be tank mixed with a variety of herbicides.

**Vasto** works best when used in a planned sequential application herbicide program, following a pre-plant application of another labeled corn herbicide. Consult the label of the corn herbicide product for specific use directions and additional information.

For post-emergence application of **Vasto**, if activating rainfall or sprinkler irrigation (greater than ½ inch) is not received within 5 to 7 days following application, cultivate or follow with a sequential application of a nicosulfuron-containing product, or glyphosate, as necessary.

**Vasto** is rainfast in 4 hours.

#### Use Restrictions

- Do not make application to field corn grown for seed, to popcorn, or to sweet corn.
- Do not make application of **Vasto** through any type of irrigation system.
- Do not apply **Vasto** by aerial application unless noted otherwise under the specific crop section on the label.
- Do not make application of more than 4.0 oz. of **Vasto** per acre per year.
- Do not apply more than 1.0 oz. a.i. of rimsulfuron per year. This includes post-emergence applications of **Vasto**, as well as other products containing the active ingredient rimsulfuron.
- Do not make application of more than 3.85 oz. a.i. of mesotrione per year. This includes post-emergence applications of **Vasto**, as well as other products containing the active ingredient mesotrione. Do not apply the second treatment of a mesotrione-containing product within 14 days of the first treatment.
- Do not make application of **Vasto** to corn that shows symptoms of herbicide injury from prior applications made to the previous or current crop.
- Do not use liquid nitrogen fertilizer as the total carrier solution for post-emergence applications.
- Do not graze, feed forage, grain or fodder (stover) from treated areas to livestock within 45 days of a **Vasto** treatment.

- Do not harvest grain within 70 days or harvest forage or stover within 45 days of a **Vasto** treatment.
- **Vasto** contains the safener isoxadifen-ethyl at 0.0375 lb. per pound of product. Applying the maximum application rate of **Vasto** at 4.0 oz. per acre will deliver 0.01 lb. of isoxadifen-ethyl per acre. When tank mixing for applications to field corn, do not make application of more than a total of 0.17 lb. of isoxadifen-ethyl per acre per year.
- 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.
- Injury or loss of desirable trees or vegetation may occur from failure to observe the following:
  - Do not make application of **Vasto** or drain or flush application equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
  - Do not use on lawns, walks, driveways, tennis courts, or similar areas.
  - Prevent drift or spray to desirable plants.
  - Do not contaminate any body of water.
- Thoroughly clean application equipment immediately after use. (Refer to the SPRAYER PREPARATION/CLEAN-UP section of this label for instructions).

#### Use Precautions

- Crop injury may result following an application of **Vasto** if there is a prolonged period of cold weather and/or in conjunction with wet soils.

## Resistance

**Vasto** contains two active ingredients with two different modes of action. Mesotrione is classified as a Group 27 herbicide and Rimsulfuron is classified as and a Group 2 herbicide. As a mixture herbicide, each listed weed may not be controlled by both mechanisms of action.

Herbicide resistance is defined as the inherited ability of a plant to survive and reproduce following exposure to a dose of herbicide normally lethal to the wild type. In a plant, resistance may be naturally occurring or induced by such techniques as genetic engineering or selection of variants produced by tissue culture or mutagenesis. While the development of resistance is well understood, it is not easily predicted. Therefore, herbicides must be used in conjunction with resistance management strategies in the area. Consult the local or State agricultural advisors for details. If weed resistance develops in the area, this product used alone may not continue to provide sufficient levels of weed control. If the reduced levels of control cannot be attributed to improper application timing, unfavorable weather conditions or abnormally high weed pressure, a resistant strain may have developed.

To delay herbicide resistance, consider:

- Avoiding the consecutive use of **Vasto** or other target site of action Group 27 and Group 2 herbicides that have a similar target site of action, on the same weed species.
- Using tank mixtures or premixes with herbicides from different target site of action Groups as long as the involved products are all registered for the same use, have different sites of action, and are both effective at the tank mix or prepack rate on the weed(s) of concern.
- Basing herbicide use on a comprehensive Integrated Pest Management (IPM) program.
- Monitoring treated weed populations for loss of field efficacy.

Users should scout before and after application. Users should report lack of performance to registrant or their representative. Contact your

local extension specialist, certified crop advisors, and/or manufacturer for herbicide resistance management and/or integrated weed management recommendations for specific crops and resistant weed biotypes.

## Integrated Pest Management

Integrate **Vasto** into an overall weed pest management strategy whenever the use of an herbicide is required. Practices known to reduce weed development (tillage, crop competition) and herbicide use (weed scouting, proper application timing, banding) should be followed wherever possible. Consult local agricultural and weed authorities for additional IPM strategies established for your area.

## Environmental Conditions and Biological Activity

**Vasto** rapidly inhibits the growth of susceptible weeds through absorption via the shoots and roots of plants. Rainfall or sprinkler irrigation is required to move **Vasto** into the soil. Susceptible weeds will typically not emerge from post-emerge application with activating rainfall or sprinkler irrigation (>0.5 inch). Occasionally, susceptible weeds may germinate and emerge a few days after application, but growth ceases and leaves become chlorotic three to five days after emergence. Death of leaf tissue and growing point will follow in some species, while others will remain green but stunted and noncompetitive.

## APPLICATION INFORMATION

### Ground Applications

Use a minimum of 15 gallons of water per acre to ensure thorough coverage of the weeds and the best performance. Use a minimum of 10 gallons of water per acre for light, scattered stands of weeds.

Adjust the spray boom to the lowest possible spray height recommended in manufacturers' specifications for optimal product performance and minimal spray drift. Be sure that equipment is set up to avoid applying an excessive rate directly over the rows and into the corn plant whorl. Overlaps or starting, stopping, slowing, and turning while spraying may result in crop injury.

### **Aerial Applications**

Application of **Vasto** may be made by air for pre-emergence or post-emergence weed control only in the following states: Alabama, Arkansas, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Texas.

Applications must be made in a minimum of 2 gallons of water per acre. Use only nozzles producing coarse-ultra coarse droplets. Do not use nozzles producing fine-medium size droplets.

### **SPRAY DRIFT**

#### **Aerial Applications:**

- 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 S572.1).
- For all other applications, applicators are required to use a Medium or coarser droplet size (ASABE S572.1).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use ½ 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.

#### **Ground Boom Applications:**

- Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy unless making a turf, pasture, or rangeland application, in which case applicators may apply with a nozzle height no more than 4 feet above the ground.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a Coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a Medium or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

**Boom-less Ground Applications:**

- Applicators are required to use a Medium or coarser droplet size (ASABE S572.1) for all applications.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

**SPRAY DRIFT ADVISORIES****SPRAY DRIFT****Boom-less Ground Applications:**

- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

**Handheld Technology Applications:**

- Take precautions to minimize spray drift.

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

**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.

**Controlling Droplet Size – Ground Boom**

- **Volume** - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- **Pressure** - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.

- **Spray Nozzle** - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

**Controlling Droplet Size – Aircraft**

- **Adjust Nozzles** - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

**BOOM HEIGHT – Ground Boom**

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

**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.

**SHIELDED SPRAYERS**

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

**TEMPERATURE AND HUMIDITY**

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

**TEMPERATURE INVERSIONS** Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or 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. Avoid applications during temperature inversions.

## WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

## Air Assisted (Air Blast) - Field Crop Sprayers

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift is not occurring. **Note:** Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Consult the application equipment section of this label to determine if use of an air assisted sprayer is recommended.

## Drift Control Additives

Using product compatible drift control additives can reduce drift potential. When a drift control additive is used, read and carefully observe cautionary statements and all other information on the additive's label. If using an additive that increases viscosity, ensure that the nozzles and other application equipment will function properly with a viscous spray solution. Preferred drift control additives have been certified by the Chemical Producers and Distributors Association (CPDA).

## SPRAY ADJUVANTS

Application of **Vasto** must include a crop oil concentrate (COC) or a high surfactant oil concentrate (HSOC) for control of emerged weeds.

The use of a nonionic surfactant (NIS) instead of a COC or HSOC is allowed, but the level of weed control achieved when using a COC or HSOC is consistently better than when using NIS. **The use of methylated seed oil (MSO) adjuvants or MSO blend adjuvants may result in severe crop injury. MSO adjuvants are not recommended.** In addition to COC or HSOC, always add spray grade UAN (e.g., 28-0-0) to the spray solution or AMS (except if precluded elsewhere on this label).

If application is made in tank mix combination with a glyphosate that contains a built-in adjuvant such as ABUNDIT® Extra, be sure that the total adjuvant load is equal to the directions on this label. Select adjuvants authorized for use with both products.

Do not use with additives that alter the pH of the spray solution below 5.0 or above 9.0 as rapid product degradation can result. Spray solutions of pH 6.0 - 8.0 allow for optimum stability of **Vasto**.

## Ammonium Nitrogen Fertilizer

- Make application of 2 quarts/acre of a high-quality urea ammonium nitrate (UAN), such as 27%N or 32%N, or 2 pounds/acre of a spray-grade ammonium sulfate (AMS).

## High Surfactant Oil Concentrate (HSOC)

- Make application at 0.5% (2 quarts per 100 gallons spray solution).

## Nonionic Surfactant (NIS)

- Make application at 0.25% v/v (1 quart per 100 gallons spray solution).
- Surfactant must have at least 60% nonionic surfactant with a hydrophilic/lipophilic balance (HLB) that is greater than 12.
- For post-emergence applications., do not use liquid nitrogen fertilizer

as the total carrier solution.

#### **Petroleum Crop Oil Concentrate (COC)**

- Make application at 1% v/v (1 gallon per 100 gallons spray solution) or 2% under dry conditions.
- Oil-based adjuvants must have at least 80% high quality, petroleum (mineral) oil with a minimum of 15% surfactant emulsifiers.

#### **Special Adjuvant Types**

- Adjuvant combination products may be used at doses that provide the required amount of NIS, COC, and/or ammonium nitrogen fertilizer. Consult the product literature for use rates and restrictions.

#### **Tank Mix Compatibility Testing**

Conduct a compatibility test before tank mixing to ensure physical compatibility of **Vasto** and other products. Use a clear quart-sized jar with lid, and mix the ingredients using their relative proportions. Invert the jar containing the mixture several times to mix the solution and observe for approximately 30 minutes. Do not use if the mixture balls-up, forms flakes, sludge, gel, oily film or layers, or other precipitates because these indicate that the products are not compatible.

### **TANK MIX INSTRUCTIONS**

1. Fill the tank  $\frac{1}{4}$  to  $\frac{1}{3}$  with water.
2. While agitating, add the specified amount of **Vasto**. Maintain agitation until the product is fully dispersed (for at least 5 minutes).
3. Continue agitation and fill the remainder of the tank with water once the **Vasto** is fully dispersed. Thoroughly mix **Vasto** with water before adding any other material.
4. While the tank is filling with water, add the required spray adjuvants (crop oil concentrate, nonionic surfactant, or ammonium nitrogen fertilizer).

5. If tank is not continuously agitated, settling will occur. If settling occurs, thoroughly mix before applying.
6. To avoid product degradation, make application of **Vasto** spray mixture within 48 hours of mixing.

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. Do not use a tank mix partner product if its label conflicts with this label. Tank mixture directions are only for use in states where the tank mixture product and application site are registered. Certain states or geographical regions may have established dose rate limitations. Consult your state Pesticide Control Agency for additional information regarding the maximum use rates.

### **SPRAYER PREPARATION/CLEAN-UP**

Spray equipment should be clean and free of previous pesticide deposits or residue before using **Vasto** followed by proper cleaning after application. Before applying **Vasto**, clean all application equipment, following the clean-up procedures specified on the label of the product previously sprayed. Use the procedure that follows, if no clean-up procedure is provided. Thoroughly clean all mixing and spray equipment to avoid subsequent adverse crop response immediately after application of **Vasto**.

### Clean-Up Procedure

1. Drain the spray tank and thoroughly hose down the inside surfaces. Flush the hoses, boom, and tank with clean water for at least 5 min.
2. Fill the tank partially with clean water. For every 100 gallons of water, add one gallon of household ammonia\*\*\* (that contains 3% active). Finish filling the tank with water, then flush the cleaning solution through the boom, hoses, and nozzles. Completely fill the tank with water and agitate/recirculate for at least 15 min. Again, flush the boom, hoses, and nozzles with the cleaning solution. Drain the tank.
3. Repeat Step 2.
4. Remove and clean the nozzles and screens separately in a container with the cleaning agent and water.
5. Rinse the tank with clean water thoroughly for a minimum of 5 minutes, flushing the water through the boom and hoses.

\*\*\*Equivalent amounts of an alternate strength ammonia solution or a tank cleaner recommended by the equipment manufacturer may be used.

### Notes:

- Read and follow product label directions for proper disposal of rinsate.
- To dislodge any visible pesticide deposits, steam-cleaning of aerial spray tanks should be conducted.
- When spraying or using mixing equipment over an extended period of time with **Vasto**, partially fill the tank with fresh water at the end of each day of spraying, flush the boom and hoses, and allow to sit overnight.

Do not drain or flush spray equipment or rinsate on or near desirable trees or plants.

Do not contaminate any body of water including irrigation water that may be used on other crops.

If the sprayer has been stored or left idle, purge the spray boom and nozzles with clean water before starting any application.

If equipment is not cleaned properly, residue of **Vasto** can remain in spray equipment, and may be released during subsequent applications potentially causing adverse crop response to certain crops and other vegetation. Rotam accepts no liability for any effects due to equipment that is not cleaned properly.

### SOIL INSECTICIDE INTERACTION INFORMATION

**Vasto** may interact with certain insecticides previously applied to the crop. Crop response varies with field corn variety, insecticide used, insecticide application method, and soil type.

Application of **Vasto** may be made to corn previously treated with chlorethoxyfos; chlorethoxyfos/bifenthrin; cyfluthrin; or tefluthrin insecticides or other non-organophosphate (OP) soil insecticides regardless of soil type.

Application of **Vasto** may be made with pyrethroid type insecticides or with diamide type insecticides.

- Do not make application of **Vasto** within 45 days of crop emergence where an organophosphate insecticide was applied as a treatment since crop injury may result. Unacceptable crop injury may occur with applications made to corn previously treated with chlorpyrifos or other similar organophosphate insecticides. Any crop injury or yield loss resulting from these applications are the responsibility of the grower.
- Do not tank mix **Vasto** with product containing bentazon or severe crop injury may result.
- Do not apply **Vasto** in tank mix with foliar-applied organophosphate or carbamate insecticides such as chlorpyrifos, malathion, parathion, etc., as severe crop injury may result. To avoid crop injury or antagonism, make application of these products at least 7 days before or 7 days after the application of **Vasto**.

## ROTATIONAL CROPS

Rotational crops vary in their response to low concentrations of **Vasto** remaining in the soil. The amount of **Vasto** that may be present in the soil is dependent on soil moisture, soil temperature, application rate, elapsed time since application and other environmental factors. When **Vasto** is used in combination with other products, always follow the most restrictive rotational crop requirements.

Planting unspecified rotational crops, or those rotational crops that are specified at shorter than listed intervals may result in injury to the rotational crop.

When using **Vasto**, follow the rotational intervals listed below:

### Crop Rotational Intervals - 4oz. Maximum Use Rate per Acre per Year (0.078 lbs. a.i. mesotrione and 0.019 lbs. a.i. rimsulfuron)

Crop	Crop Rotational Interval
Corn (field)	Anytime
Cereals, Winter (wheat)	4 Months
Cereals, Spring (barley, oats, wheat)	9 Months
Alfalfa <sup>††</sup> , Canola*, Corn (pop, seed, or sweet), Cotton*, Flax, Peas <sup>1,2</sup> , Peanuts, Potatoes, Rice, Snap Beans <sup>1,2</sup> , Sorghum*, Soybeans, Sunflower, Sweet Potatoes/ Yams <sup>**</sup> , Tobacco	10 Months

Crop	Crop Rotational Interval
Cucurbits, Dry Beans, Red Clover, Sugar Beets	18 Months
Crops Not Listed	18 Months
<p>*18 months in the Red River Valley region of ND and MN. In all other areas, the rotation intervals should be extended to 18 months if drought conditions persist following application and before the rotational crop is planted, unless sprinkler irrigation is used and totals greater than 15" during the growing season.</p> <p>**On soils with pH 6.5 or less.</p> <p>†On sprinkler irrigated fields in Idaho, Utah, and Northern Nevada it is best to use deep fall tillage such as plowing prior to planting alfalfa. Product degradation may be less on furrow irrigated soils and some crop injury may occur.</p> <p>†Plant these rotational crops only if the criteria below have been met. If all criteria are not met, plant peas and snap beans a minimum of 18 months after <b>Vasto</b> application.</p> <ul style="list-style-type: none"> <li>• A minimum of 20" of rainfall plus irrigation has been received between treatment and planting of the rotational crop.</li> <li>• Soil pH is 6.0 or greater.</li> <li>• Treatment of <b>Vasto</b> applied no later than June 30 the year preceding rotational crop planting.</li> <li>• No other HPPD herbicides were applied the year before planting peas and snap beans.</li> </ul> <p>‡Do not plant peas or snap beans on sand, sandy loam or loamy sands in Minnesota or Wisconsin.</p>	

## FIELD CORN GROWN FOR GRAIN OR SILAGE

### Directions for Use

#### Post-Emergence

Make application of **Vasto** at 4 oz. per acre as a post-emergence broadcast treatment to corn up to 20" tall or that is exhibiting up to and including 6-leaf collars (V6), whichever is more restrictive.

While **Vasto** has a wide application window, research has shown best results are obtained when treatments are made early post-emergence when corn and weeds are small. For best overall performance target post-applications to corn that is generally less than 12" tall. Treatment of **Vasto** made after weed emergence will provide contact control of labeled weeds as well as residual control of later emerging weeds.

Make application of **Vasto** when grasses and broadleaf weeds are young and actively growing, but before they exceed sizes listed on this label. Treatments made to weeds taller than those listed on this product label may result in incomplete control. Grass and broadleaf weed competition due to incomplete control may result in reduce corn yields.

#### Restrictions:

- Do not make application of **Vasto** to corn that shows herbicide injury from previous applications made to the current or preceding crop.
- Do not apply more than one application of **Vasto** per year.
- Do not make application of more than 4 oz. of **Vasto** per acre (0.078 lbs. a.i. mesotrione/acre and 0.019 lbs. a.i. rimsulfuron/acre) during a single year.

## WEEDS CONTROLLED/SUPPRESSED

### Weeds Controlled with a Post-Emergence Application of Vasto

Broadleaf & Grass Weeds	Vasto Alone 4.0 Oz./Acre	Vasto 4.0 Oz./Acre Plus Atrazine
	Weeds < 5 Inches Tall	
Amaranth, Palmer <sup>1</sup>	S <sup>3</sup>	C <sup>3</sup>
Amaranth, Powell	C	C
Amaranth, spiny	C	C
AtripleX	C	C
Barnyardgrass	C	C
Bluegrass, annual	C <sup>3</sup>	C
Broadleaf signalgrass	S <sup>2</sup>	C <sup>2</sup>
Buckwheat, wild	S	S
Buffalobur	C	C
Burcucumber	C <sup>2</sup>	C
Carpetweed	C	C

**Weeds Controlled with a Post-Emergence  
Application of Vasto (cont.)**

<b>Broadleaf &amp; Grass Weeds</b>	<b>Vasto Alone 4.0 Oz./Acre</b>	<b>Vasto 4.0 Oz./Acre Plus Atrazine</b>
	<b>Weeds &lt; 5 Inches Tall</b>	
Carrot, wild	C	C
Chickweed, common	C	C
Cocklebur, common	C	C
Dandelion	C	C
Dock, curly	S	S
Foxtails (bristly, giant, green, yellow)	C <sup>4</sup>	C <sup>4</sup>
Galinsoga	C	C
Hemp	C	C
Horsenettle	C	C
Itchgrass	C	C
Jimsonweed	C	C

**Weeds Controlled with a Post-Emergence  
Application of Vasto (cont.)**

<b>Broadleaf &amp; Grass Weeds</b>	<b>Vasto Alone 4.0 Oz./Acre</b>	<b>Vasto 4.0 Oz./Acre Plus Atrazine</b>
	<b>Weeds &lt; 5 Inches Tall</b>	
Johnsongrass, seedling	S	C
Knotweed, prostrate	S	S
Kochia <sup>1</sup>	C <sup>2</sup>	C <sup>2</sup>
Lambsquarters, common	C	C
Mallow, Venice	C	C
Marestail (horse- weed) <sup>1</sup>	S	C
Morningglogy (entire- leaf, ivyleaf, pitted)	C <sup>2</sup>	C <sup>2</sup>
Mustard, wild	C	C
Nightshade (black, eastern black)	C	C

**Weeds Controlled with a Post-Emergence  
Application of Vasto (cont.)**

Broadleaf & Grass Weeds	Vasto Alone 4.0 Oz./Acre	Vasto 4.0 Oz./Acre Plus Atrazine
	Weeds < 5 Inches Tall	
Nightshade, hairy	C	C
Nutsedge, yellow	S	S
Panicum (Texas, browntop)	C <sup>3</sup>	C <sup>3</sup>
Panicum, fall	C	C
Pigweed (redroot, smooth, tumble)	C	C
Pokeweed, common	S	S
Potatoes, volunteer	C	C
Pusley, Florida	C <sup>2</sup>	C <sup>2</sup>
Quackgrass	S	C
Ragweed, common	C <sup>3</sup>	C <sup>3</sup>
Ragweed, giant	C <sup>3</sup>	C <sup>3</sup>

**Weeds Controlled with a Post-Emergence  
Application of Vasto (cont.)**

Broadleaf & Grass Weeds	Vasto Alone 4.0 Oz./Acre	Vasto 4.0 Oz./Acre Plus Atrazine
	Weeds < 5 Inches Tall	
Ryegrass <sup>1</sup> (Italian, perennial)	S	C
Sandbur (field, longspine)	C <sup>3</sup>	C <sup>3</sup>
Sesbania, hemp	C	C
Shattercane	C <sup>4</sup>	C <sup>4</sup>
Sida, prickly (tea- weed)	S <sup>3</sup>	C <sup>3</sup>
Smartweed (ladythumb, pale, Pennsylvania)	C	C
Sorghum, album	C	C
Stinkgrass	S	C
Sunflower, common	C	C
Thistle, Canada	S	S

**Weeds Controlled with a Post-Emergence  
Application of Vasto (cont.)**

Broadleaf & Grass Weeds	Vasto Alone 4.0 Oz./Acre	Vasto 4.0 Oz./Acre Plus Atrazine
	Weeds < 5 Inches Tall	
Timothy	C	C
Velvetleaf	C	C <sup>3</sup>
Volunteer cereals	C	C
Waterhemp <sup>1</sup>	S <sup>3</sup>	C <sup>3</sup>
Wild oats	C	C
Wild proso millet	S <sup>4</sup>	C <sup>4</sup>
Wirestem muhly	C	C
Witchgrass	C	C
Woolly cupgrass	C <sup>2</sup>	C <sup>4</sup>
C = Control                      S = Suppression <sup>1</sup> ALS-resistant biotypes are known to exist. <sup>2</sup> Apply before weed exceeds 2 inches in height. <sup>3</sup> Apply before weed exceeds 3 inches in height. <sup>4</sup> Apply before weed exceeds 4 inches in height.		

**TANK MIXTURES**

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. Do not use a tank mix partner product if its label conflicts with this label.

Application of **Vasto** may be made as a sequential application in a planned post-emergence weed control program in corn following a pre-emergence herbicide. Consult the pre-emergence herbicide label for use restrictions, application information, rotational crop guidelines, and cautionary statements before making application of **Vasto**.

On Roundup® Ready corn, application of glyphosate may be made with **Vasto** after weeds emerge but before they reach the maximum size listed on the glyphosate herbicide label.

On "LibertyLink" corn, application of glufosinate may be made with **Vasto** after weeds emerge but before they reach the maximum size listed on the glufosinate herbicide label.

Refer to the SPRAY ADJUVANTS section for additional information on proper adjuvant selection.

**Vasto 4.0 oz./Acre with Glyphosate**

Glyphosate may be tank mixed with post-emerge treatment of **Vasto** when made to corn hybrids that contain the "Roundup Ready" gene. Consult the **SPRAY ADJUVANTS** section for additional information on proper adjuvant selection.



When used in tank mixture with glyphosate, 4.0 oz. **Vasto** will provide improved burndown and/or residual activity on the weeds listed in the table below:

Alfalfa, volunteer	Quackgrass
Canada thistle	Ryegrass, Italian
Chamomile, false	Sandbur (field, longspine)
Crabgrass	Shepherd's purse
Filaree, redstem	Signalgrass, broadleaf
Henbit	Stinkgrass
Johnsongrass, seedling	Waterhemp (smooth, tall)
Millet, wild proso	Wild buckwheat
Morningglory, ivyleaf	Wild oat
Mustard (birdsrape, black, wild)	Yellow nutsedge
Purslane, common	

#### **Vasto 4.0 oz./Acre with Glufosinate**

When treatment is made to corn hybrids that contain the "LibertyLink" gene, **Vasto** can be tank mixed with a glufosinate-containing herbicide. Consult your seed supplier to confirm the corn hybrid is "LibertyLink" before making application of any herbicide that contains glufosinate.

#### **Tank Mixtures for Additional Control of Broadleaf and Grass Weeds**

To provide added residual or burndown activity on emerged weeds, **Vasto** may be tank mixed with other labeled post-emergence grass and broadleaf herbicides. Refer to the tank mix partner labeling for rate and soil-type restrictions. Ensure the tank mix product is labeled for the same timing, method of application, adjuvants, and use restrictions as **Vasto** and other products used in the tank mixture.

EC formulation products, acetochlor or metolachlor herbicides can act like an adjuvant in certain combinations and therefore may increase the risk of crop injury. If these tank mixtures are used, the user should leave the crop oil concentrate (COC) out of the adjuvant mix.

Application of **Vasto** may be made in tank mix with products that contain the same active ingredients, but special attention must be paid to adjuvant selection and/or application method. If any of these tank mixtures are used the user should leave the urea ammonium nitrate (UAN) out of the mix. There is still risk of temporary crop injury with these mixtures. To further reduce the risk of crop injury, the user should also leave out the crop oil concentrate (COC), and replace it with a nonionic surfactant (NIS).

Control of weeds that have emerged may be reduced due to less than optimum adjuvant effect or weed coverage and there is still a risk of temporary crop injury with these mixtures.

The crop safety of all possible tank mixture combinations with **Vasto** which may include physically compatible pesticides, fertilizers, adjuvants and/or additives has not been tested.

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. Do not use a tank mix partner product if its label conflicts with this label.

## STORAGE AND DISPOSAL

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

### **Pesticide Storage**

Store product in original container only. Store in a cool, dry place.

### **Pesticide Disposal**

Waste resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

### **CONTAINER HANDLING:**

**Nonrefillable Plastic and Metal Containers (Capacity Equal to or Less Than 50 Pounds):** Nonrefillable 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 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, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

**Nonrefillable Plastic and Metal Containers (Capacity Greater Than 50 Pounds):** Nonrefillable 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, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

**DO NOT USE CONTAINERS FOR THE STORAGE OF FOOD, FEED, OR DRINKING WATER!**

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