



MESOTRIONE GROUP 27 HERBICIDE

# BELLUM®

**Controls annual broadleaf weeds in Corn  
(field, seed, yellow pop, sweet) and other listed crops**

<b>ACTIVE INGREDIENT:</b>	<b>By Weight</b>
Mesotrione: 2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione .....	40.0%
<b>OTHER INGREDIENTS:</b> .....	<u>60.0%</u>
<b>TOTAL:</b> .....	<b>100.0%</b>

Contains 4 lbs. active ingredient mesotrione per gallon.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

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

**EPA Reg. No. 83100-41-83979**

- EPA Est. No. 72344-MO-004**
- EPA Est. No. 069821-CHN-005**
- EPA Est. No. 089446-TWN-001**
- EPA Est. No. 088159-TWN-001**

Distributed by:  
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PRODUCT OF CHINA



**Net Contents: 1 GALLON (3.78 liters)**

BEL-A022420-V022520-1G

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## FIRST AID

<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 do so by the poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>IF ON SKIN OR CLOTHING</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF 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 by mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
<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>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>HOT LINE NUMBER</b>	
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: <b>1-800-222-1222</b> . For Chemical Emergency Assistance (Spill, Leak, Fire, or Accident) call CHEMTREC: <b>1-800-424-9300</b> .	

## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

### CAUTION

Harmful if swallowed, or absorbed through 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. Remove and wash contaminated clothing before reuse.

### Personal Protection Equipment (PPE)

#### Applicators and Other Handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC), or Viton  $\geq$ 14 mils)

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.

#### **USER SAFETY RECOMMENDATIONS**

**Users should:**

- Wash thoroughly with soap and water after handling and 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 and wash contaminated clothing before reuse.
- 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.

#### **Engineering Control Statements**

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

#### **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 when disposing of equipment wash water or rinsate.

#### **Surface Water Advisory**

This product may contaminate water through drift or spray in wind. This product has a high potential for runoff for several weeks after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. 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 for contamination of water from runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

#### **Physical and Chemical Hazards**

**DO NOT** use or store near heat or open flame.

#### **DIRECTIONS FOR USE**

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

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

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and 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.**

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
- shoes plus socks
- chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC), or Viton  $\geq$  14 mils)

### PRODUCT INFORMATION

**Bellum**<sup>®</sup> is a systemic pre-emergence and post-emergence herbicide for selective contact and residual control of broadleaf weeds in asparagus, bluegrass, ryegrass (annual and perennial) and tall fescue ground for seed, bush and caneberries (Crop Group 13-07A and 13-07B), citrus fruit (Crop Group 10-10), cranberry, field corn, flax, oats, okra, pearl millet, pome fruit (Crop Group 11-10), rhubarb, seed corn, yellow popcorn, sweet corn, soybean, sorghum (grain and sweet), stone fruit (Crop Group 12-12), sugarcane, and tree nuts (Crop Group 14-12). If used pre-emergence, weeds take up the product through the soil during emergence. Dry weather conditions can reduce pre-emergent effectiveness of **Bellum**. If at least ¼-inch of rainfall does not occur within 7-10 days of application, rotary hoeing will activate the product. If used post-emergence weeds take up the product through treated foliage and stop growing soon after application. It may take up to two weeks for weeds to die. **Bellum** is absorbed by soil and/or through foliage of emerged weeds.

**Bellum** will not control most species of grass weeds. **Bellum** can be tank-mixed with other herbicides registered to control grass weeds (see tank-mix information in this label for additional information). **Bellum** can be used in combination with a burndown herbicide prior to planting to provide weed control in field corn, seed corn, yellow popcorn, and sweet corn.

### RESISTANCE MANAGEMENT

**Bellum** contains mesotrione and is classified in the triketone chemical class as a Group 27 herbicide, 4-hydroxyphenyl-pyruvatedioxygenase inhibitor. 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. Any weed population may contain or develop plants that are naturally resistant to **Bellum** and other Group 27 herbicides. Weed species with acquired resistance to Group 27 herbicides may eventually dominate the weed population if Group 27

herbicides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by **Bellum** or other Group 27 herbicides.

To delay herbicide resistance, consider the below best practices for resistance management:

- Plant into weed-free fields and keep fields as weed-free as possible.
- To the extent possible, use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.
- Fields with difficult to control weeds must be rotated to crops that allow the use of herbicides with alternative mechanisms of action or different management practices.
- To the extent possible **DO NOT** allow weed escapes to produce seeds, roots or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seed-bank.
- Prevent field-to-field and within-field movement of weed seed or vegetative propagules. Thoroughly clean plant residues from equipment before leaving fields.
- Prevent an influx of weeds into the field by managing field borders.
- Identify weeds present in the field through scouting and field history and understand their biology. The weed control program must consider all of the weeds present.
- Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.
- Apply this herbicide at the correct timing and rate needed to control the most difficult weed in the field.
- Use a broad-spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. **DO NOT** use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.
- If resistance is suspected, treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes.
- Monitor treated weed populations for loss of field efficacy.
- Scout field(s) before and after application.
- Report lack of performance to registrant or their representative.

Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of noncontrolled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species.

Contact your local sales representative, extension agent, or certified crop advisors to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of action for each target weed.

## INTEGRATED PEST (WEED) MANAGEMENT

Integrate **Bellum** into an overall weed and 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) must be followed wherever possible. Consult local agricultural and weed authorities for additional IPM strategies established for your area.

### Bellum Use Precautions

- Severe corn injury can result from post-emergent application of **Bellum** to corn treated with Terbufos or chlorpyrifos.
- Severe corn injury and/or yield loss can occur if foliar post-emergent applications of **Bellum** are made to corn in a tank mix with any organophosphate or carbamate insecticide.
- Severe corn injury and/or yield loss can occur if an organophosphate or carbamate insecticide is applied foliar post-emergence within 7 days before or 7 days after **Bellum** application.
- When weeds are stressed due to drought, heat, lack of fertility, flooding, or prolonged cool temperatures control can be reduced or delayed since the weeds are not actively growing. Weed escapes or regrowth may occur when application is made under prolonged stress conditions. Optimum weed control will be obtained if an application of **Bellum** is made following label directions when weeds are actively growing.
- **Bellum** may be applied with pyrethroid type insecticides (e.g., lambda-cyhalothrin).

### Bellum Use Restrictions

- **DO NOT** apply this product to white popcorn or ornamental (Indian) corn.
- **DO NOT** cultivate corn within 7 days before or after a **Bellum** application as weed control from the **Bellum** application may be reduced.
- **DO NOT** apply this product through any type of irrigation system unless specified otherwise under the specific crop section of the label.
- **DO NOT** apply **Bellum** with suspension fertilizers as the carrier.
- **DO NOT** apply **Bellum** post-emergence in a tank mix with emulsifiable concentrate grass herbicides, unless specifically addressed under one of the tank mix sections of this label, or crop injury can occur.
- **DO NOT** make aerial applications of **Bellum** unless otherwise specified in the specific crop directions of this label.

## MANDATORY SPRAY DRIFT MANAGEMENT

### 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 all applications, applicators are required to use a Coarse 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 Applications

- Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or crop canopy.
- For all applications, applicators are required to use a Coarse 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.

### Spray Drift Advisories

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 lower 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.

### **WINDBLOWN SOIL PARTICLES**

**Bellum** 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 **Bellum** if prevailing local conditions may be expected to result in off-site movement.

## **AERIAL APPLICATION INSTRUCTIONS FOR CORN AND SUGARCANE**

Aerial application of **Bellum** is permitted on **corn and sugarcane only.**

**Bellum** is approved for aerial application for pre-emergence and post-emergence control in corn in the states of: **Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Nebraska, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.**

**Bellum** is approved for aerial application for pre-emergence and post-emergence control in sugarcane in the

states of **Florida, Louisiana, and Texas.**

Make aerial applications in a minimum of 2 gallons water per acre.

#### **PRE-EMERGENCE GROUND APPLICATION INSTRUCTIONS**

Apply **Bellum** pre-emergence with a carrier volume of 10-60 gals./A.

Space spray nozzles of the same size and type uniformly to provide accurate and uniform coverage. Apply in a spray volume of 10-60 gals./A with water or liquid fertilizer (NOT suspension fertilizer) as the carrier. Use a pump that will maintain pump pressure of 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures can be used with extended range or drift reduction nozzles.

Maintain constant agitation until spraying is complete, even if stopping for brief periods of time. If agitation is stopped for longer than 5 minutes, resuspend the spray solution by running on full agitation prior to spraying.

#### **POST-EMERGENCE GROUND APPLICATION INSTRUCTIONS**

Space spray nozzles of the same size and type uniformly to provide accurate and uniform coverage. Complete weed coverage is essential for optimum weed control. Boom height for broadcast over-the-top applications must be based on the height of the crop, at least 15 inches above the crop canopy.

Apply in a spray volume of 10-30 gals./A with water as the carrier. Use a pump that will maintain pump pressure of 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures can be used with extended range or drift reduction nozzles. If weed foliage is dense, use a minimum of 20 gals.

Apply with flat fan nozzles 80°-100° for optimum post-emergent coverage. **DO NOT** use flood jet nozzles or controlled droplet application equipment for post-emergence applications.

Angle nozzles forward 45° to enhance product penetration and provide better coverage. In-line strainers and nozzle screens must be a minimum of 50-mesh or coarser.

Maintain constant agitation until spraying is complete, even if stopping for brief periods of time. If agitation is stopped for longer than 5 minutes, resuspend the spray solution by running on full agitation prior to spraying.

#### **USE DIRECTIONS WITH SPRAY ADDITIVES**

##### **Post-Emergence Adjuvants**

Any adjuvant used with **Bellum** must meet the certification program requirements of the Chemical Producers and Distributors Association (CPDA).

##### **Adjuvant Use Post-Emergence to Field and Seed Corn**

After corn has emerged, add 1.0 gal./100 gals. of water (1.0% v/v) Crop Oil Concentrate (COC) to the spray solution. 1 qt./100 gals. of water (0.25% v/v) of a nonionic surfactant (NIS) can be used, but better weed control is achieved with the use of a COS versus a NIS.

**DO NOT** use methylated seed oil (MSO) or MSO adjuvant blends for post-emergence applications of **Bellum** or severe crop injury can occur. **DO NOT** use MSO adjuvants unless it is specifically permitted in the **Bellum Tank Mixtures for Corn** section of this label.

In addition to COC, add 2.5% (v/v) a spray grade UAN (e.g., 28-0-0) to the spray solution, or 8.5 lbs./100 gals. AMS, except if precluded elsewhere on this label.

### **Adjuvant Use Post-Emergence to Sweet and Yellow Corn**

**DO NOT** use UAN or AMS on sweet and yellow corn as severe crop injury can occur.

Use a nonionic surfactant (NIS) instead of a COC to reduce the likelihood of crop injury. COCs will maximize weed control under dry growing conditions, but will significantly injure crops under lush growing conditions. To optimize weed control, add atrazine wherever rotational or local atrazine restrictions allow.

### **Pre-Emergence Adjuvant Use**

Any adjuvant approved for use on agriculture is permitted when making **Bellum** pre-plant or pre-emergence applications. MSO adjuvants perform better than COC and NIS adjuvants under pre-plant/pre-emergence conditions. UAN and AMS adjuvants will provide better weed control than not using any adjuvant. If **Bellum** is being tank-mixed with another registered herbicide, refer to the tank mix partner label for adjuvant precautions and restrictions.

## **SPRAY EQUIPMENT CLEANING**

Follow the procedures below for cleaning equipment before spraying a crop other than corn. Mix only as much spray solution as is needed.

- 1) Flush tank, hoses, boom, and nozzles with clean water.
- 2) Prepare cleaning solution of 1 gal. of household ammonia per 25 gals. of water. Commercial spray tank cleaners can be used in lieu of ammonia/water solution.
- 3) Using a pressure washer, clean the inside of the spray tank with the cleaning solution. Wash ALL parts of the tank, including the inside top surface. If a pressure washer is not available, fill the sprayer with the cleaning solution to ensure contact of the cleaning solution with all internal surfaces of the tank and plumbing. Start agitation in the spray and recirculate the cleaning solution for a minimum of 15 minutes. All visible deposits of spray solution must be removed from the spray tank before making any other applications.
- 4) Flush hoses, spray lines, and nozzles with cleaning solution for a minimum of 1 minute.
- 5) Dispose of rinsate from steps 1-3 in an appropriate manner.
- 6) Repeat steps 2-5.
- 7) Remove nozzles, screens, and strainers and clean separately in the ammonia solution after completing the previous steps.
- 8) Rinse the complete spray system with clean water.

## **MIXING INSTRUCTIONS**

See the **Crop Use Directions** sections of the label for specific tank mix instructions.

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.

### MIXING RESTRICTIONS

- **DO NOT** exceed any dosage rates specified on labels.
- **DO NOT** mix this product with any product containing a label prohibition against such mixing.
- **DO NOT** tank mix **Bellum** with any other insecticide, fungicide, fertilizer, or adjuvant not specified on this label without first testing compatibility, as poor mixing can occur. Test compatibility on a small scale (including a jar test) before actual tank mixing.

### MIXING PROCEDURE

1. Use sprayers in good operating condition with good agitation. Ensure that the sprayer is cleaned according to the label instructions of the product label used prior to **Bellum**. For post-emergence applications, use clean water only for the spray solution. Ensure that all in-line strainers and nozzle screens in the sprayer are 50-mesh or coarser. **DO NOT** use screens finer than 50-mesh.
2. Use liquid fertilizer (NOT suspension fertilizer) as the carrier for pre-emergence applications.
3. Start filling spray tank or pre-mix tank with clean water and begin agitation. Maintain constant agitation.
4. When sprayer or pre-mix is half full of water, add AMS, maintaining agitation until dispersed.
5. Add **Bellum** slowly and agitate until completely dissolved. Wait at least 1 minute after the last of the **Bellum** has been added to allow for complete dispersion. If using cold water, a longer agitation period may be required to ensure adequate dispersing.
6. If tank mixing, add the tank mix product.
7. Add the adjuvant and UAN, if needed, and continue to fill tank to desired level with water.

### BELLUM WEED CONTROL TABLES

Partial control means either erratic control (good to poor control) or control that is below what is accepted as acceptable control for commercial weed control.

For best post-emergence results, apply **Bellum** to actively growing weeds.

For best pre-emergence results, avoid applying **Bellum** in dry weather as residual weed control may be reduced. If irrigation is available, apply ½ - 1 inch water after pre-emergence application. If irrigation is not available, make a uniform shallow cultivation as soon as weeds emerge.

**Bellum** applied alone or in a tank-mix with atrazine will not provide consistent or adequate control of weeds that are resistant to post-emergence HPPD inhibiting herbicides. Refer to the crop sections of the label for specific use directions and application rates.

**Table 1. Weeds Controlled with Post-Emergence Applications of Bellum**

Common Name	Scientific Name	Bellum 3 Fl. Oz./A (0.09 lb. a.i./A) Applied Alone	Bellum 2.5-3.0 Fl. Oz./A (0.08-0.09 lb. a.i./A) + Atrazine
		Apply to Weeds <5" Tall^	
Amaranth, palmer	<i>Amaranthus palmeri</i>	PC*	C*
Amaranth, powell	<i>Amaranthus powellii</i>	C	C
Amaranth, spiny	<i>Amaranthus spinosus</i>	C	C
Atriplex	<i>Chenopodium orach</i>	C	C
Broadleaf signalgrass	<i>Urochloa platyphylla</i>	C*	C*
Buckwheat, wild	<i>Polygonum convolvulus</i>	PC	PC
Buffalobur	<i>Solanum rostratum</i>	C	C
Burcucumber	<i>Sicyos angulatus</i>	PC	C*
Carpetweed	<i>Mollugo verticillata</i>	C	C
Carrot, wild	<i>Daucus carota</i>	PC	C
Chickweed, common	<i>Stellaria media</i>	C	C
Cocklebur, common	<i>Xanthum strumarium</i>	C	C
Crabgrass, large	<i>Digitaria sanguinalis</i>	C*	C*
Dandelion	<i>Taraxacum officinale</i>	NC	PC
Dock, curly	<i>Rumex crispus</i>	PC	PC
Galinsoga	<i>Galinsoga parviflora</i>	C	C
Hemp	<i>Cannabis sativa</i>	C	C
Horsenettle	<i>Solanum carolinense</i>	PC	C
Jimsonweed	<i>Datura stramonium</i>	C	C
Horseweed (marestail)	<i>Coryza canadensis</i>	PC	C
Knotweed, prostrate	<i>Polygonum aviculare</i>	PC	PC
Kochia	<i>Kochia scoparia</i>	PC*	C*
Lambsquarters, common	<i>Chenopodium album</i>	C	C
Mallow, Venice	<i>Hibiscus trionum</i>	NC	C
Morningglory, entireleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, pitted	<i>Ipomoea lacunosa</i>	PC	C

**Table 1. Weeds Controlled with Post-Emergence Applications of Bellum** *Continued*

Common Name	Scientific Name	Bellum 3 Fl. Oz./A (0.09 lb. a.i./A) Applied Alone	Bellum 2.5-3.0 Fl. Oz./A (0.08-0.09 lb. a.i./A) + Atrazine
		Apply to Weeds <5" Tall^	
Mustard, wild	<i>Brassica kaber</i>	C	C
Nightshade, black	<i>Solanum nigrum</i>	C	C
Nightshade, Eastern black	<i>Solanum ptychanthum</i>	C	C
Nightshade, hairy	<i>Solanum sarrachoides</i>	C	C
Nutsedge, yellow	<i>Cyperus esculentus</i>	PC	PC
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C	C
Pigweed, tumble	<i>Amaranthus albus</i>	C	C
Pokeweed, common	<i>Phytolacca americana</i>	PC	PC
Potatoes, volunteer	<i>Solanum spp.</i>	C	C
Pusley, Florida	<i>Richardia scabra</i>	C*	C*
Ragweed, common	<i>Ambrosia artemisiifolia</i>	PC	C
Ragweed, giant	<i>Ambrosia trifida</i>	C*	C
Sesbania, hemp	<i>Sesbania exaltata</i>	C	C
Sida, prickly (teaweed)	<i>Sida spinosa</i>	NC	C*
Smartweed, ladysthumb	<i>Polygonum persicaria</i>	C*	C
Smartweed, pale	<i>Polygonum lapathifolium</i>	C*	C
Smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>	C*	C
Sunflower, common	<i>Helianthus annuus</i>	C	C
Thistle, Canada	<i>Cirsium arvense</i>	NC	PC
Velvetleaf	<i>Abutilon theophrasti</i>	C	C
Waterhemp, common	<i>Amaranthus rudis</i>	C*	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C*	C

^Weeds can be controlled at larger than listed sizes; however, to protect crop yield, manage weed resistance, and provide effective control, treat weeds before they reach 5" tall.

+Apply before weeds exceed 3" tall. C = Control NC = Not Controlled PC = Partial Control

**Table 2. Weeds Controlled with Pre-Emergence Applications of Bellum**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Bellum Applied Alone</b>	<b>Bellum + Atrazine</b>
Amaranth, palmer	<i>Amaranthus palmeri</i>	C	C
Amaranth, powell	<i>Amaranthus powellii</i>	C	C
Amaranth, spiny	<i>Amaranthus spinosus</i>	C	C
Broadleaf signalgrass	<i>Urochloa platyphylla</i>	PC	PC
Buffalobur	<i>Solanum rostratum</i>	C	C
Carpetweed	<i>Mollugo verticillata</i>	C	C
Chickweed, common	<i>Stellaria media</i>	C	C
Cocklebur, common	<i>Xanthum strumarium</i>	PC	C
Crabgrass, large	<i>Digitaria sanguinalis</i>	PC	PC
Galinsoga	<i>Galinsoga parviflora</i>	C	C
Jimsonweed	<i>Datura stramonium</i>	C	C
Kochia	<i>Kochia scoparia</i>	PC	C
Lambsquarters, common	<i>Chenopodium album</i>	C	C
Morningglory, entireleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	PC	C
Morningglory, pitted	<i>Ipomoea lacunosa</i>	PC	C
Nightshade, Eastern black	<i>Solanum ptychanthum</i>	C	C
Nightshade, hairy	<i>Solanum sarachoides</i>	C	C
Pigweed, redroot	<i>Amaranthus retroflexus</i>	C	C
Pigweed, smooth	<i>Amaranthus hybridus</i>	C	C
Pigweed, tumble	<i>Amaranthus albus</i>	C	C
Ragweed, common	<i>Ambrosia artemisiifolia</i>	C	C
Ragweed, giant	<i>Ambrosia trifida</i>	PC	C
Smartweed, ladysthumb	<i>Polygonum persicaria</i>	C	C
Smartweed, pale	<i>Polygonum lapathifolium</i>	C	C
Smartweed, Pennsylvania	<i>Polygonum pennsylvanicum</i>	C	C
Sunflower, common	<i>Helianthus annuus</i>	PC	C
Velvetleaf	<i>Abutilon theophrasti</i>	C	C
Waterhemp, common	<i>Amaranthus rudis</i>	C	C
Waterhemp, tall	<i>Amaranthus tuberculatus</i>	C	C

## ROTATIONAL CROP INTERVALS

If **Bellum** is applied according to the enclosed label instructions, follow the crop rotation intervals listed below in Table 3. If **Bellum** is tank-mixed with other products, follow the most restrictive product's crop rotation interval.

**Table 3. Time Interval Between Bellum Application and Replanting/Planting of Rotational Crop**

Replant/Rotational Interval	Crop
Anytime	Asparagus, Corn (all types), Cranberry, Flax, Kentucky bluegrass grown for seed, Pearl Millet, Oats, Rhubarb, Ryegrass (perennial and annual) grown for seed, Sorghum (grain and sweet), Sugarcane, Tall fescue grown for seed
4 Months	Small grain cereals (wheat, barley, rye)
10 Months	Alfalfa, Blueberry, Canola, Cotton, Currant, Lingonberry, Okra, Peanuts, Peas*, Potato, Rice, Snap Beans*, Non-Resistant Mesotrione Soybeans, Sunflowers, Tobacco
18 Months	Cucurbits, Dry beans, Red Clover, Sugar Beets, All other crops

\*Plant these rotation crops **ONLY** if the criteria listed below have been met. If all criteria have **NOT** been met, plant peas and snap beans a minimum of 18 months following **Bellum** application.

- A minimum of 20" of rainfall plus irrigation has occurred between application and planting of the rotational crop.
- Soil pH is >6.0.
- 3 fl. oz./A (0.09 lb. a.i./A) or less has been applied no later than June 30th the year preceding rotational crop planting.
- No other HPPD herbicides (e.g., **Bellum**, Mesotrione, Glyphosate + Mesotrione + S-Metolachlor, + S-Metolachlor 19% + Atrazine 18.61% + Mesotrione 2.44%, S-Metolachlor 27.1% + Atrazine 9.94% + Mesotrione 2.71%, Mesotrione + S-Metolachlor, Topramezone, Isoxaflutole, Thien carbazole-methyl + Tembotrione, Thien carbazole-methyl + Isoxaflutole, or Tembotrione) were applied the year prior to planting peas and snap beans.
- **DO NOT** plant peas or snap beans on sand, sandy loam, or loamy sand soils in Minnesota or Wisconsin.



## CROP USE DIRECTIONS - CORN

Apply **Bellum** by ground for pre-emergence or post-emergence weed control in field corn, seed corn, yellow popcorn, and sweet corn. Apply **Bellum** to corn up to 30" tall or up to the 8-leaf stage of corn growth to control broadleaf and grass weeds listed in Tables 1 and 2.

Aerial applications of **Bellum** can be made pre-emergence or post-emergence in the following states: **Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.**

See seed company instructions for use on field corn inbred lines. Special adjuvant restrictions must be followed for post-emergence applications of **Bellum** in yellow popcorn or sweet corn (see the Spray Additives section of this label). **DO NOT** apply **Bellum** to white popcorn or ornamental (Indian) corn.

Post-emergence application of **Bellum** to yellow popcorn and sweet corn hybrids may cause crop bleaching. Bleach is transitory and will not affect final yield or quality. Herbicide sensitivity, however, can vary widely in yellow popcorn and sweet corn, and all hybrids of these have not been tested. Contact your local popcorn/sweet corn company, Fieldman, or University Specialist to learn about hybrid recommendations before making a post-emergence application of **Bellum** to yellow popcorn or sweet corn. **DO NOT** include nitrogen based adjuvants (UAN or AMS) when making post-emergence applications of **Bellum** to yellow popcorn or sweet corn.

Temporary transient bleaching may occur in field corn treated with **Bellum** post-emergence under extreme weather conditions or when the crop is under stress. Field corn will quickly outgrow this condition and develop normally.

### Corn Restrictions

- **DO NOT** apply more than 7.7 fl. oz. (0.24 lb. a.i./A) of **Bellum** per year.
- **DO NOT** make more than 2 applications per year.
- **DO NOT** exceed 3.0 fl. oz. (0.09 lb. a.i./A) in a single post-emergence application.
- **RTI: DO NOT** make a second application of **Bellum** within 14 days of the first application.
- **DO NOT** feed or harvest forage, grain, or stover within 45 days after application.

### Bellum Used Alone – Post-Emergence

Apply 3.0 fl. oz./A (0.09 lb. a.i./A) per application. Always add an appropriate adjuvant to the spray tank (see the Spray Additives section of this label).

Apply to actively growing weeds. See Table 1 for a complete list of weeds controlled. Susceptible weeds that emerge post-application may be controlled after the herbicide is absorbed into the soil. **Bellum** will not control most grass weeds.

Two post-emergence applications of **Bellum** may be made under the following restrictions:

- Only one post-emergence application may be made if **Bellum** has been applied pre-emergence.

- **DO NOT** exceed a total of 7.7 fl. oz./A (0.24 lb. a.i./A) per year.
- **RTI: DO NOT** make a second application within 14 days of the first application.
- Applications made at rates lower than 3.0 fl. oz./A. (0.09 lb. a.i./A) post-emergence may not provide adequate weed control and no residual control.
- **DO NOT** exceed a total of 6.0 fl. oz./A (0.19 lb. a.i./A) for the two post-emergence applications.
- If a post-emergence application of **Bellum** was made to ground that received pre-emergence treatment of another mesotrione-containing herbicide, atrazine must be tank mixed with **Bellum**.
- If mixing **Bellum** with atrazine, **DO NOT** apply to corn taller than 12".
- Treat corn up to 30" tall or up to the 8-leaf stage of growth.
- **DO NOT** harvest, forage, or stover within 45 days post-application.

#### **Bellum Used Alone – Pre-Emergence**

Apply 6.0-7.7 fl. oz./A (0.19-0.24 lb. a.i./A) by ground sprayer in 10-30 gals. of water per acre to control broadleaf weeds (up to 80 gals. if applied with liquid fertilizer). See Table 2 for a complete list of weeds controlled. **Bellum** can be tank mixed with other approved pre-emergence grass herbicides to control grasses. Refer to the tank mix section for a list of tank-mix partners.

#### **Bellum Tank Mixtures for Corn**

Apply **Bellum** in tank mix with other registered herbicides to improve spectrum of weed control in burndown, pre-emergence, or post-emergence applications. These tank mixtures can also be used to include a different mode of action herbicide to control and manage the development of resistant weed biotypes.

#### **Burndown Tank Mixtures in Corn**

Apply **Bellum** in tank mixture with other registered herbicides for burndown and residual weed control.

Apply 3.0 fl. oz./A (0.09 lb. a.i./A) **Bellum** with paraquat, glyphosate, dicamba and/or 2,4-D for improved broadleaf weed control with limited residual control before planting corn and before corn emergence. For better residual control, apply 6.0-7.7 fl. oz./A (0.19-0.24 lb. a.i./A) **Bellum** (see Table 2) with the products listed. Use the adjuvant system specified by the burndown herbicide. Refer to individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled.

#### **Pre-Emergence Tank Mixture in Corn**

Apply 5.3-7.7 fl. oz./A (0.17-0.24 lb. a.i./A) of **Bellum** in tank mixture with other registered herbicides (Table 4) for pre-emergence residual weed control. Refer to Table 2 for a list of weeds controlled by **Bellum** and **Bellum** + Atrazine applied pre-emergence.

#### **Table 4. Bellum Tank Mixtures for Pre-Emergence Application in Corn**

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.

Atrazine	Atrazine + Dimethenamide-P	Dimethenamide-P
Atrazine + S-Metolachlor	Acetochlor	Pendimethalin
Atrazine + Glyphosate + S-Metolachlor	Acetochlor + Atrazine	S-Metolachlor

### Post-Emergence Tank Mixtures in Corn

See Table 5 below for a list of tank mixtures that can be applied after corn has emerged. **DO NOT** apply less than 3.0 fl. oz./A (0.09 lb. a.i./A) of **Bellum** unless specified on this label as a loss of residual control can occur.

Always add an appropriate adjuvant to the spray tank (See the Spray Additives section of this label). Refer to the individual product labels for precautionary statements, restrictions, rates, approved uses, and a list of weeds controlled. Not all of the tank mix pesticides listed are registered for use on field corn, yellow popcorn, or sweet corn.

**Table 5. Bellum Tank Mixtures for Post-Emergence Application to Corn**

Refer to the individual product labels for products listed for precautionary statements, restrictions, use rates, approved uses, and a list of weeds controlled.

<b>Tank Mix Partner</b>	<b>Use Directions</b>
Atrazine	See Table 1 for application rates and list of weeds controlled. This mixture will control additional weeds. See product label for list of weeds controlled.
Nicosulfuron	This mixture will provide additional grass control. Refer to the product label for a list of weeds controlled.
Sodium Bentazon	This mixture will provide additional broadleaf weed control. Refer to the product label for a list of weeds controlled.
Thifensulfuron + Rimsulfuron	This mixture will provide additional weed control. Refer to the product label for a list of weeds controlled.
Metolachlor	Regarding tank mix adjuvants, it is advised to use non-nitrogen-based products; or if using nitrogen-based products (like UAN or AMS) apply as a post-directed spray to limit contact with crop foliage. To minimize risk of crop injury, the user may use nonionic surfactants (NIS) instead of the crop oil concentrates (COC). Control of emerged weeds can be reduced due to substandard adjuvant effect or poor weed coverage. This mixture will control additional weeds. See product label for list of weeds controlled.
Metolachlor + Atrazine	<b>DO NOT</b> use nitrogen-based adjuvants (UAN or AMS); apply as post-directed spray. <b>DO NOT</b> use crop oil concentrate (COC); use a nonionic surfactant (NIS) to avoid crop injury. Control of emerged weeds can be reduced due to the adjuvant effect on weed coverage. This mixture will control additional weeds. See product label for list of weeds controlled.

**Table 5. Bellum Tank Mixtures for Post-Emergence Application to Corn** *Continued*

<b>Tank Mix Partner</b>	<b>Use Directions</b>
Bromoxynil	This mixture will provide additional broadleaf weed control. Refer to product labels for use rates.
Atrazine + Glyphosate + S-Metolachlor	Use only on glyphosate resistant corn (e.g., Agrisure® GT, Roundup Ready®). Crop death will occur if this mixture is applied to a corn hybrid that is not glyphosate resistant. <b>DO NOT</b> add urea ammonium nitrate (UAN) or methylated seed oil (MSO) adjuvants to this mixture or crop injury can occur.
Glufosinate	Use only on corn designated as LibertyLink® or warranted as resistant to glufosinate. Use of this mixture on corn hybrids not resistant to glufosinate will result in severe crop injury or death. <b>DO NOT</b> use crop oil concentrate (COC) as an adjuvant or crop injury can occur.
Imazethapyr + Imazapyr	Use only on corn designated at Clearfield® corn. Use of this mixture on corn hybrids not resistant to imazethapyr + imazapyr will result in severe crop injury or death. <b>DO NOT</b> use Methylated Seed Oil (MSO) or any MSO blend with this mixture or severe crop injury can occur.
Dicamba + Primisulfuron	This mixture will control additional weeds. See product label for list of weeds controlled.
Prosulfuron	This mixture will control additional weeds. See product label for list of weeds controlled.
Primisulfuron + Prosulfuron	This mixture will control additional weeds. See product label for list of weeds controlled.
Nicosulfuron + Rimsulfuron	This mixture will control additional weeds. See product label for list of weeds controlled.
Nicosulfuron + Thifensulfuron	This mixture will control additional weeds. See product label for list of weeds controlled.

**Table 5. Bellum Tank Mixtures for Post-Emergence Application to Corn** *Continued*

Tank Mix Partner	Use Directions
Glyphosate	Use only on glyphosate resistant corn (e.g., Agrisure GT, Roundup Ready). Use of this mixture on corn hybrids that are not glyphosate resistant will result in crop death. Add spray-grade ammonium sulfate (AMS) at a rate that delivers 8.5-17.0 lbs. of AMS/100 gals. of water. If the glyphosate product calls for an adjuvant in addition to AMS, add 0.25-0.5% v/v (1-2 quarts/100 gallons) of a non-ionic surfactant (NIS). <b>DO NOT</b> add urea ammonium nitrate (UAN), crop oil concentrate (COC) or methylated seed oil (MSO) adjuvants to this tank mixture or crop injury can occur.

#### **CROP USE DIRECTIONS – ASPARAGUS**

Apply **Bellum** as broadcast or banded at a rate of 3.0-7.7 fl. oz./A (0.09-0.24 lb. a.i./A) to asparagus as a spring application prior to spear emergence, as a post-harvest application (after final harvest), or both.

For post-emergence control or partial control of the emerged weeds listed in Table 1, use the 3.0 fl. oz./A (0.09 lb. a.i./A). For pre-emergence control or partial control of the weeds listed in Table 2, use the 6.0-7.7 fl. oz./A (0.19-0.24 lb. a.i./A) rate. For banded applications, the application must be made to account for band width, i.e. to deliver 3.0-7.7 fl. oz. per treated acre (0.09-0.24 lb. a.i./A). For the best pre-emergence weed control with spring applications, applications of **Bellum** must be made after fern mowing, disking or other tillage operation but before asparagus spear emergence.

When treatments are made during post-harvest, the rate applied pre-emergence in the spring must be taken into account so as not to exceed the 7.7 fl. oz./A/year (0.24 lb. a.i./A) rate limit. Post-harvest applications must be made in a way that minimizes contact with any standing asparagus spears or ferns and maximizes contact with the weeds and/or soil, e.g. by using a directed or semi-directed type application, or crop injury may occur. With post-harvest applications, the use of an adjuvant will increase the risk of crop injury.

If weeds are emerged at the time of application of **Bellum**, the addition of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v or a nonionic surfactant (NIS) at the rate of 0.25% v/v is advised. In addition to COC or NIS, a spray grade UAN (e.g. 28-0-0) at the rate of 2.5% v/v or ammonium sulfate (AMS) at the rate of 8.5 lbs./100 gallons of spray solution may be added for improved burndown of emerged weeds. If weeds have not yet emerged, no adjuvant is advised.

#### **Restrictions:**

- **DO NOT** apply more than 7.7 fl. oz./A (0.24 lb. a.i./A) of **Bellum** per year.
- **DO NOT** apply more than 7.7 fl. oz./A (0.24 lb. a.i./A) in a single application.
- **DO NOT** make more than two **Bellum** applications per year when using reduced application rates.
- **RTI: DO NOT** make the second application within 14 days of the first application.

## **CROP USE DIRECTIONS – BLUEGRASS, RYEGRASS (ANNUAL AND PERENNIAL) AND TALL FESCUE GROWN FOR SEED**

Make an application of **Bellum** to bluegrass, annual ryegrass, perennial ryegrass, or tall fescue which is grown for seed. Make an application of **Bellum** as a pre-emergence application to bare soil (new seeding) or as a post-emergence application to an emerged grass crop.

**Pre-emergence Application:** Make an application of **Bellum** as a broadcast, surface spray at a rate of 6.0 fl. oz./A (0.19 lb. a.i./A) to a newly seeded crop. The application of **Bellum** must be made before crop and weed emergence. Rainfall or irrigation as the newly seeded grass crop emerges from the soil may increase the risk of injury from **Bellum**. Grass crop injury symptoms include temporary bleaching of newly emerged leaves, or in extreme conditions, stunting. See Table 2 for a list of pre-emergence weeds controlled or partially controlled. In addition to the weeds listed in Table 2, **Bellum** will control mannagrass when applied pre-emergence.

**Post-emergence Application:** Make an application of **Bellum** as a broadcast post-emergence spray at a rate of 3.0-6.0 fl. oz./A (0.09-0.19 lb. a.i./A) to emerged bluegrass, perennial ryegrass or tall fescue grown for seed. Use the 3.0 fl. oz./A rate for post-emergence control or partial control of the weeds listed in Table 1. In addition to the weeds listed in Table 2, **Bellum** will control mannagrass (up to 3 tillers) when applied post-emergence.

Use the 6.0 fl. oz./A (0.19 lb. a.i./A) rate for post-emergence weed control plus extended residual weed control (see Table 2). The addition of a crop oil concentrate type adjuvant at 1% v/v or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v is advised. Post-emergence applications of **Bellum** may result in temporary bleaching of the grass crop.

In addition to COC or NIS, a spray grade UAN (e.g. 28-0-0) at the rate of 2.5% v/v or ammonium sulfate (AMS) at the rate of 8.5 lbs./100 gallons of spray solution may also be added for improved control of emerged weeds. The addition of UAN or AMS will improve consistency of post-emergence weed control but will also increase the risk of grass crop injury, especially at **Bellum** rates greater than 3.0 fl. oz./A (0.09 lb. a.i./A). If grass crop injury is a concern, **DO NOT** add UAN or AMS to the spray solution.

Tank mixing other pesticides with **Bellum** post-emergence may increase the risk of crop injury. Avoid adding pesticides with emulsifiable concentrate (EC) type formulations to **Bellum** for applications made post-emergence to the crop.

### **Restrictions:**

- **DO NOT** harvest the grass crop for seed or straw within 60 days following the application of **Bellum**.
- **DO NOT** graze or feed forage from treated areas within 14 days following harvest of seed or straw and at least 74 days after application of **Bellum**.
- **DO NOT** make more than two applications of **Bellum** per year.
- **RTI: DO NOT** make the second application within 14 days of the first application.
- **DO NOT** apply more than 6 fl. oz./A (0.19 lb. a.i./A) in a single application and not more than 9 fl. oz./A (0.281 lb. a.i./A) of **Bellum** per year.
- Applying **Bellum** to grasses grown for seed species not listed on this label may result in severe injury.

## **CROP USE DIRECTIONS – BUSH AND CANEBERRIES (CROP GROUP 13-07A and 13-07B)**

**Note:** Not all cultivars and types of berries that are included within the Environmental Protection Agencies definition of bush and caneberrys (Crop Subgroups 13-07A and 13-07B) have been tested and shown to have adequate crop safety to **Bellum**. Those that have been tested, and are believed to be reasonably fit, are listed below along with use directions for that crop. If **Bellum** is used on bush or caneberrys not listed below, severe crop injury may occur.

Apply **Bellum** as a pre-bloom post-directed spray in high bush blueberry, lingonberry, red currant, black currant, black raspberry, red raspberry, and blackberry. For a list of weeds controlled see Tables 1 and 2. Apply **Bellum** in bush or caneberrys at a rate up to 6 fl. oz./A (0.19 lb. a.i./A). If a split application weed control program is desired, 3 fl. oz./A (0.09 lb. a.i./A) followed by 3 fl. oz./A (0.09 lb. a.i./A) may be used. The use of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v is advised, but avoid using COC adjuvants that are injurious to bush or caneberry leaves.

In low bush blueberries, applications of **Bellum** may only be made in the non-bearing year. Apply application as a broadcast application. Up to 6 fl. oz./A (0.19 lb. a.i./A) of **Bellum** may be made in a single application, or 3 fl. oz./A (0.09 lb. a.i./A) followed by 3 fl. oz./A (0.09 lb. a.i./A) if used in a split application program. The use of a crop oil concentrate (COC) type adjuvant at 1% v/v is advised. Applications of **Bellum** during dry weather conditions and/or temperatures above 85° can cause injury to Lowbush blueberries. Applications of **Bellum** can cause yellowing or necrosis of leaves and under severe conditions, leaf drop may occur especially on "Sourtop" variety blueberries.

### **Restrictions:**

- **DO NOT** apply more than two applications of **Bellum** per year when using reduced application rates.
- **DO NOT** apply more than 6.0 fl. oz./A (0.19 lb. a.i./A) of **Bellum** per year.
- **DO NOT** apply more than 6.0 fl. oz./A (0.19 lb. a.i./A) in a single application.
- **RTI:** If two applications are made, they must be made no closer than 14 days apart.
- **DO NOT** apply **Bellum** to bush or caneberrys after the onset of the bloom stage or illegal residues may occur.

## **CROP USE DIRECTIONS - CITRUS FRUIT, POME FRUIT, STONE FRUIT AND TREE NUTS (CROP GROUP 10-10, 11-10, 12-12 AND 14-12)**

**Bellum** may be used for post-emergence and residual control of weeds listed in Tables 1 and 2 in the following crops.

**Citrus fruit** (Australian desert lime, Australian finger lime, Australian round lime, Brown River finger lime, calamondin, citron, citrus hybrids, grapefruit, Japanese summer grapefruit, kumquat, lemon, lime, Mediterranean mandarin, sour orange, sweet orange, pummelo, Russell River lime, Satsuma mandarin, sweet lime, Tachibana orange, Tahiti lime, tangelo, tangerine (Mandarin), tangor, trifoliolate orange, unqi fruit, cultivars, varieties and/or hybrids of these)

**Pome fruit** (apple, azarole, crabapple, loquat, mayhaw, medlar, pear, Asian pear, quince, Chinese quince, Japanese quince, tejocote, cultivars, varieties and/or hybrids of these)

**Stone fruit** (apricot, Japanese apricot, capulin, black cherry, Nanking cherry, sweet cherry, tart cherry, Chinese jujube, nectarine, peach, plum, American plum, beach plum, Canada plum, cherry plum, Chickasaw plum, Damson plum, Japanese plum, Klamath plum, prune plum, plumcot, sloe, cultivars, varieties and/or hybrids of these)

**Tree nuts** (African nut-tree, almond, beech nut, Brazil nut, Brazilian pine, bunya, bur oak, butternut, Cajou nut, candlenut, cashew, chestnut, chinquapin, coconut, Coquito nut, Dika nut, ginkgo, Guiana chestnut, hazelnut (filbert), heartnut, hickory nut, Japanese horse-chestnut, macadamia nut, Mongongo nut, monkey-pot, monkey puzzle nut, Okari nut, Pachira nut, peach palm nut, pecan, pequi, pili nut, pine nut, pistachio, Sapucaia nut, tropical almond, black walnut, English walnut, yellowhorn, cultivars, varieties and/or hybrids of these)

#### Precautions

- To avoid crop injury, make application of the spray to the grove or orchard floor and to the weeds, avoiding contact with crop foliage, stems or fruit. Contact of **Bellum** with the crop may result in bleaching injury that is typically temporary. Use trunk guards to protect plants until adequate bark has developed.
- Specified rates are based on broadcast treatment. For band applications around trees in fruit or nut plantings, reduce the broadcast rate of **Bellum** and carrier per acre in proportion to the area actually sprayed. (See Banded Applications Section.)
- Applying **Bellum** in nectarine, plum or tree nuts grown in coarse soils may cause bleaching, especially when application is made during time of heavy water use and root growth including during bud break or rapid shoot expansion.

#### Restrictions

- Apply **Bellum** only in pome fruit, stone fruit and nut trees that have been established for one full growing year and are in good health and vigor. Apply **Bellum** in citrus trees or citrus tree plantings that are less than 12 months old and are exhibiting normal growth and vigor.
- **DO NOT** apply in orchards that are stressed due to poor weather or other abiotic factors.
- **DO NOT** exceed a total of 12 fl. oz. per acre (0.38 lb. a.i./A) of **Bellum** per year or in a 12-month period.
- **DO NOT** exceed 6 fl. oz. per acre (0.19 lb. a.i./A) of **Bellum** for the first application.
- **DO NOT** exceed 3 applications per year or in a 12-month period when using reduced application rates.
- **RTI:** Allow at least 12 weeks between applications of **Bellum** at 6 fl. oz./A (0.19 lb. a.i./A) and at least 6 weeks between applications of 6 fl. oz./A and subsequent applications of 3 fl. oz./A (0.09 lb. a.i./A). (Applications must follow one of the four programs listed in Table 6 below.)
- **PHI: DO NOT** harvest pome fruit, stone fruit or tree nuts within 30 days after application.
- **PHI: DO NOT** harvest citrus fruit within 1 day after application.
- **DO NOT** use on soils with greater than 20% gravel.
- **DO NOT** apply **Bellum** through any type of irrigation system.
- **DO NOT** apply **Bellum** by air.



### Spray Additives

For application to emerged weeds, the use of crop oil concentrate (COC) type adjuvant at 1% v/v or non-ionic surfactant (NIS) at 0.25% v/v is advised. Addition of ammonium sulfate or other nitrogen-based adjuvants will increase efficacy when used in combination with COC or NIS. For more information see Spray Additives section on this label.

### Banded Applications

When applying a row or banded treatment of **Bellum**, the following formula may be used to calculate the amount per acre:

$$\frac{\text{band width in inches}}{\text{row width in inches}} \times \text{broadcast rate per acre} = \text{Amount needed per acre of field}$$

### Tank Mix Instructions

**Bellum** may be mixed and applied in combination with most commonly used herbicides registered for use in the approved crops in order to expand the postemergence (paraquat, glyphosate, glufosinate or oxyfluorfen) or residual (somazine, norflurazon, rimsulfuron, oryzalin, oxyfluorfen, pendimethlin, diuron, bromacil, bromacil + diuron or indaziflam) weed control spectrum. These tank mixtures can be used to help control or manage the development of resistant weeds. The application of mixtures or sequences of effective herbicides, with different sites of action, can provide the diversity needed for management of herbicide resistance.

Refer to individual product labels for precautionary statements, restrictions, rates, approved uses and a list of weeds controlled. 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.

### Weed Control (Table 1 and 2)

**Bellum** provides both post-emergence and pre-emergence control of susceptible weeds. Best control is obtained if post-emergence applications are made before weeds reach 5 inches in height (Table 1) or before germination of seed for pre-emergence control (Table 2). Rainfall or irrigation soon after application will enhance preemergence activity.

### Use Directions

Make an application as a directed or shielded spray. Avoid contact with trunk surfaces, fruit or crop foliage. **DO NOT** apply when nuts or fruits are on the ground at harvest. Ensure that the soil is settled, firm and relatively free of debris at time of application. Also ensure that the soil is free of depressions around trees where rain or irrigation water can concentrate. Make the first application of **Bellum** in late fall/early winter or spring and subsequent applications utilizing one of the programs noted in the Table 6.

**Table 6. Bellum Application Programs, Rates and Intervals**

Program	Application Rate (fl. oz./A)*			Application Interval (wk)
	1st Application	2nd Application	3rd Application	
1	6	6	-	12
2	6	3	-	6
3	6	3	3	6
4	3	3	3	6

\*3 fl. oz./A (0.09 lb. a.i./A); 6 fl. oz./A (0.19 lb. a.i./A)

For optimum post-emergence weed control, apply **Bellum** to actively growing weeds in tank mixture with burndown herbicides including: paraquat, glyphosate, glufosinate or oxyfluorfen before weeds exceed 5 inches in height.

For effective residual weed control, **Bellum** must be moved into the weed seed germination zone. For pre-emergence weed control, apply **Bellum** before rainfall or irrigation. For optimum residual control **Bellum** can be tank mixed with herbicides including: somazine, norflurazon, rimsulfuron, oxyfluorfen, pendimethlin, diuron, bromacil, bromacil + diuron or indaziflam, where approved for use.

Subsequent application(s) of **Bellum** can be made alone or in tank mixture, with the herbicides noted above, if weed emergence occurs.

Refer to individual product labels for precautionary statements, restrictions, rates, approved uses and a list of weeds controlled.

Make an application **Bellum** in a spray volume of 10-40 gal/A.

Refer to individual product labels for precautionary statements, restrictions, rates, approved uses and a list of weeds controlled. 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.

### **CROP USE DIRECTIONS – CRANBERRY**

Apply **Bellum** to bearing or non-bearing cranberry beds to control or suppress the weeds listed in Tables 1 and 2, and:

- bog St. John's wort (*Hypericum boreale*)
- rushes (*Juncus canadensis*, *J. effuses*, *J. bufonius*, *J. tenuis*)
- sedges spp. (*Carex* spp.)
- silverleaf (*Potentilla pacifica*)
- yellow loosestrife (*Lysimachia terrestris*)

### Bearing/Non-Bearing Application rates:

- Apply up to 8 fl. oz./A (0.25 lb. a.i./A), but **DO NOT** apply more than 16 fl. oz./A (0.50 lb. a.i./A) in total per year.
- Make no more than two 8 fl. oz./A (0.25 lb. a.i./A) applications per year.
- **RTI:** If two applications are made, **DO NOT** make them closer than 14 days apart. Use 1% v/v of a crop oil concentrate (COC) or 0.25% v/v non-ionic surfactant (NIS).
- **DO NOT** use COC adjuvants that are known to injure cranberry leaves.
- **Non-bearing Cranberries:** Apply after the bud break stage no less than 45 days before flooding in fall or winter.
- **Bearing Cranberries:** Apply after the bud break stage no less than 45 days before flooding or harvest.

**Bellum** can be applied through irrigation systems (chemigation) including center pivot or solid set.

### Sprinkler Irrigation Application – Cranberries Only

Check the irrigation system to ensure uniform application of water to all areas. Thorough coverage of foliage is required for optimal control. Maintain good agitation in the pesticide supply tank prior to and during the entire application process. Inject the specified rate of **Bellum** into the irrigation system with a metering device designed to introduce a constant flow and will distribute the product to target areas in 0.1-0.2 acre-inch of water. Use the least amount of water with this rate range required for proper distribution and coverage.

After application is complete, flush the entire irrigation and injection systems with clean water before stopping the system. If application is being made during a normal irrigation set of a stationary sprinkler, the specified rate of **Bellum** for the area covered must be injected into the system only during the end of the irrigation set for sufficient time to provide optimal coverage and distribution.

### CHEMIGATION USE PRECAUTIONS – SPRINKLER IRRIGATION APPLICATION

Apply this product through center pivot or solid set sprinkler irrigation systems only. **DO NOT** apply this product through any other type of irrigation system.

Non-uniform distribution of treated water can cause crop injury, product ineffectiveness, and/or illegal pesticide residues in the crop. Contact State Extension Service Specialists, equipment manufacturers or other experts if you have questions about calibrating equipment.

**DO NOT** connect an irrigation system or greenhouse system used for pesticide application to any public water system. A public water system is any system used for provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible personal shall shut the system down and make necessary adjustments must the need arise.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back-flow. The pesticide

injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when pressure decreases to the point where pesticide distribution is adversely affected. Systems must also use a metering pump, including a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and are capable of being fitted with a system interlock.

Any alternatives to the above required safety devices must conform to the list of EPA approved alternative devices.

#### **CHEMIGATION USE RESTRICTIONS – SPRINKLER IRRIGATION APPLICATION**

- **DO NOT** apply this product through any other type of irrigation system.
- **DO NOT** apply when wind speed favors drift beyond the area intended for treatment or non-uniform distribution of treated water.
- **DO NOT** apply directly to water or areas where surface water is present outside the bog system.
- **DO NOT** contaminate water when disposing of equipment washwater or rinsate.
- **DO NOT** apply within 10 feet of surface water outside the bog system.
- **DO NOT** spray to runoff.

#### **CROP USE DIRECTIONS – FLAX**

A pre-emergence application of **Bellum** may be made in flax, i.e. after planting but before crop emergence, at a rate up to 6 fl. oz./A (0.19 lb. a.i./A). For a list of weeds controlled see Tables 1 and 2. If weeds are emerged at the time of application, the use of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v is advised. In addition, a spray grade UAN (e.g., 28-0-0) at the rate of 2.5% (v/v) or AMS at the rate of 8.5 lbs./100 gals. of spray solution may be added to improve the burndown of existing weeds. Apply **Bellum** to emerged flax can result in severe crop injury.

#### **Restrictions:**

- **DO NOT** apply more than one application of **Bellum** per year.
- **DO NOT** apply more than 6.0 fl. oz./A (0.19 lb. a.i./A) per year in flax.
- **DO NOT** apply more than 6.0 oz./A (0.19 lb. a.i./A) in a single application.

#### **CROP USE DIRECTIONS – OATS**

Applications of **Bellum** can be made as pre-emergence or post-emergence (but not both) for weed control in oats.

For pre-emergence control or partial control of the weeds listed in Table 2, make a broadcast application of **Bellum** at a rate of 6.0 fl. oz./A (0.19 lb. a.i./A) before oat emergence. For best pre-emergence weed control, the application of **Bellum** must be made before weed emergence.

For post-emergence (after oat emergence) control or partial control of the weeds listed in Table 1, make the application of **Bellum** at a rate of 3.0 fl. oz./A (0.09 lb. a.i./A). For best results, **Bellum** must be applied to emerged weeds that are less than 5" tall. Post-emergence applications of **Bellum** may result in temporary injury of the oat crop. Injury symptoms may include leaf bleaching, leaf burn and in extreme conditions, stunting.

If emerged weeds are present at the time of the **Bellum** application, the addition of a crop oil concentrate (COC) type adjuvant at a rate of 1% v/v or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v is advised. In addition to COC or NIS, a spray grade UAN (e.g. 28-0-0) at the rate of 2.5% v/v or ammonium sulfate (AMS) at the rate of 8.5 lbs./100 gallons of spray solution may be added for improved weed control. If emerged weeds are not present at the time of the **Bellum** application, no additives are advised. If oat injury is a concern, eliminating the use of UAN or AMS will reduce the risk for post-emergence crop injury. Additionally, the use of NIS instead of COC will also reduce the oat injury risk. However, weed control is also reduced if UAN or AMS is eliminated and when switching from COC to NIS.

Tank mixing other pesticides with **Bellum** post-emergence may increase the risk of injury. Avoid adding pesticides with emulsifiable concentrate (EC) type formulations to **Bellum** for applications made post-emergence to the crop.

#### Restrictions:

- **DO NOT** graze or feed forage from treated areas within 30 days following an application of **Bellum**.
- **DO NOT** harvest oats within 50 days following the application of **Bellum**.
- **DO NOT** apply more than one application of **Bellum** per year.
- **DO NOT** apply **Bellum** pre-emergence (prior to oat emergence) at more than 6.0 fl. oz./A (0.19 lb. a.i./A) per year.
- **DO NOT** apply **Bellum** postemergence at more than 3.0 fl. oz./A (0.09 lb. a.i./A) per year.
- If the oat crop treated with **Bellum** is lost or destroyed, oats may be replanted immediately. If **Bellum** was applied to the lost oat crop, no additional **Bellum** can be applied to the replanted oat crop.

#### CROP USE DIRECTIONS – OKRA

Apply **Bellum** as a row-middle or a hooded post-direct treatment (but not both) for weed control in okra.

**Pre-Emergence row-middle application:** Make an application of **Bellum** at a rate of 6.0 fl. oz./A (0.19 lb. a.i./A) as a banded application to the row middles prior to weed emergence. For this banded application, leave one foot of untreated area over the okra row or 6" to each side of the planted row. For banded applications, the application must be made to account for band width, i.e. to deliver 6.0 fl. oz. per treated acre (0.19 lb. a.i.). **DO NOT** apply **Bellum** directly over the planted okra row or severe crop injury may occur. Injury risk is greatest on coarse textured soils (sand, sandy loam or loamy sand).

**Post-Emergence hooded application:** Make an application of **Bellum** at a rate of 3.0 fl. oz./A (0.09 lb. a.i./A) as a post-emergence directed application using a hooded sprayer for control or partial control of the weeds listed in Table 1. Okra must be at least 3" tall at the time at the time the product is applied. It is advised that a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v be added to the spray solution. For post-emergence hooded applications, the spray equipment must be set up to minimize the amount of **Bellum** that contacts the okra foliage or crop injury will occur. For best post-emergence results, apply **Bellum** actively

growing weeds.

**Restrictions:**

- **DO NOT** harvest okra within 28 days following the application of **Bellum**.
- **DO NOT** apply more than one application of **Bellum** per year.
- **DO NOT** apply **Bellum** as a row-middle application at more than 6.0 fl. oz./A (0.19 lb. a.i./A) per year.
- **DO NOT** apply **Bellum** as a post-directed application at more than 3.0 fl. oz./A (0.09 lb. a.i./A) per year.
- **DO NOT** apply **Bellum** as a broadcast pre-emergence or broadcast post-emergence application to okra or severe injury will occur.
- If the okra crop treated with **Bellum** is lost or destroyed, okra can be replanted only in the soil band that was not treated with **Bellum**.

**CROP USE DIRECTIONS – PEARL MILLET**

Make an pre-emergence application of **Bellum** in pearl millet, i.e. after planting but before crop emergence, at a rate up to 6 fl. oz./A (0.19 lb. a.i./A). For a list of weeds controlled see Table 2. If weeds are emerged at the time of application, the use of a crop oil concentrate (COC) type adjuvant at the rate of 1% v/v is advised. In addition, a spray grade UAN (e.g., 28-0-0) at the rate of 2.5% (v/v) or AMS at the rate of 8.5 lbs./100 gals. of spray solution may be added to improve the burndown of existing weeds. Apply **Bellum** to emerged pearl millet can result in severe crop injury.

**Restrictions:**

- **DO NOT** apply more than one application of **Bellum** per year.
- **DO NOT** apply more than 6.0 fl. oz./A (0.19 lb. a.i./A) per year.
- **DO NOT** apply more than 6.0 fl. oz./A (0.19 lb. a.i./A) in a single application.

**CROP USE DIRECTIONS – RHUBARB**

Make an application of **Bellum** before crop emergence for weed control in established rhubarb.

Make an application of **Bellum** at a rate of 6.0 fl. oz./A (0.19 lb. a.i./A) to dormant (prior to any spring green-up) rhubarb for control or partial control of the weeds listed in Table 2. If weeds are emerged at the time of application, it is advised that a crop oil concentrate (COC) type adjuvant at 1% v/v or a nonionic surfactant (NIS) type adjuvant at a rate of 0.25% v/v be added to the spray solution. Apply **Bellum** to rhubarb that is not dormant may result in a temporary bleaching symptomology. Rainfall or irrigation after the **Bellum** application may increase the risk of injury to emerging rhubarb.

**Restrictions:**

- **DO NOT** harvest rhubarb within 21 days following the application of **Bellum**.
- **DO NOT** apply more than one application of **Bellum** per year.
- **DO NOT** apply **Bellum** at more than 6.0 fl. oz./A (0.19 lb. a.i./A) per year.
- **DO NOT** apply more than 6.0 fl. oz./A (0.19 lb. a.i./A) in a single application.

## CROP USE DIRECTIONS – SORGHUM (GRAIN and SWEET)

### Pre-Emergence Application Directions

Make pre-emergence application of **Bellum** or pre-plant non-incorporated applications up to 21 days before planting sorghum for control or partial control of the weeds listed in Table 2.

Apply 6.0-6.4 fl. oz./A (0.19-0.20 lb. a.i./A) broadcast non-incorporated application prior to sorghum emergence. Making the application less than 7 days before planting will increase the risk of plant injury, especially if rainfall or irrigation occurs after the application. Injury symptoms include temporary bleaching of newly emerged leaves. Making application of this product 8-21 days prior to planting will decrease risk of crop injury.

If **Bellum** is applied prior to planting, minimize disturbance of soil treated with herbicide during the planting process in order to reduce the potential for weed emergence.

If emerged weeds are present at the time of pre-emergence application, use 0.25% v/v of a non-ionic surfactant (NIS) adjuvant or 1% v/v of crop oil concentrate (COC) and add it to the spray solution. A spray-grade UAN applied at a rate of 2.5% v/v or 8.5 lbs./100 gallons of spray solution of ammonium sulfate (AMS) can be added to the spray solution in addition to the COC or NIS.

### Pre-Emergence Application Restrictions

- **DO NOT** make more than one application per year.
- **DO NOT** apply more than 6.4 fl. oz./A (0.20 lb. a.i./A) per year.
- **DO NOT** apply more than 6.4 fl. oz./A (0.20 lb. a.i./A) in a single application.
- **DO NOT** apply to emerged sorghum or severe crop injury can occur.
- **DO NOT** use **Bellum** in the production of forage sorghum, sudangrass, sorghum-sudangrass hybrids, or dual purpose sorghum.
- **DO NOT** apply to sorghum that is grown on coarse textured soils (e.g., sandy loam, loamy sand, sand).
- **Texas restriction: DO NOT** apply to sorghum grown south of Interstate 20 (I-20) or east of Highway 277.

### Post-Emergence Application Directions

Apply **Bellum** post-directed to grain sorghum to control and/or partially control weeds listed in Table 1. Apply to actively growing weeds for optimal control.

Apply 3.0 fl. oz./A (0.09 lb. a.i./A) post-directed application when sorghum is at least 8" tall. Make the application by directing the spray between crop rows, and toward the base of the plant. Direct application of **Bellum** onto foliage can result in crop injury including temporary bleaching. If leaves do bleach, newly emerged leaves following application will not be affected.

Use 0.25% v/v of a non-ionic surfactant (NIS) adjuvant or 1% v/v of crop oil concentrate (COC) and add it to the spray solution. A spray-grade UAN applied at a rate of 2.5% v/v or 8.5 lbs./100 gallons of spray solution of ammonium sulfate (AMS) can be added to the spray solution in addition to the COC or NIS.

**Bellum** can be tank-mixed with herbicides registered for use on sorghum to improve weed control. These tank-mixtures can also include a herbicide with a different mode of action to help control or manage the

development of resistant weed biotypes.

#### **Post-Directed Restrictions**

- **DO NOT** make more than one post-directed application.
- **DO NOT** apply more than 3.0 fl. oz./A (0.09 lb. a.i./A) post-directed.
- **DO NOT** apply more than 6.4 fl. oz./A (0.20 lb. a.i./A) per year.
- **DO NOT** apply broadcast over-the-top to emerged sorghum or severe crop injury can occur.
- **DO NOT** harvest sorghum for forage for 30 days following application.
- **DO NOT** harvest for grain or stover for 60 days following application.
- **DO NOT** apply after the sorghum seedhead emerges.
- **DO NOT** use in the production of forage sorghum, sudangrass, or sorghum-sudangrass hybrids.

#### **CROP USE DIRECTIONS – MESOTRIONE RESISTANT SOYBEAN**

A pre-emergence application of **Bellum** can be made to soybeans that are identified as mesotrione resistant. Applying treatments to soybeans that are not mesotrione resistant will result in significant crop injury. For a list of mesotrione resistant soybean varieties, contact a Rotam Technical Representative.

**Pre-Emergence Application:** For pre-emergence control of the weeds listed in Table 2, make an application of **Bellum** before soybean emergence at a rate of 6.0 fl. oz./A. Make an application of the higher rate for longer residual control. **Bellum** may be tank mixed with other registered soybean herbicides including S-Metolachlor and S-Metolachlor + Sodium salt of fomesafen. Refer to the tank mix partner label and follow all precautions and restrictions.

If weeds are emerged at the time of application, add either a non-ionic surfactant (NIS) at 1 qt/100 gallons (0.25% v/v) or a crop oil concentrate (COC) at 1 gallon/100 gallons (1% v/v). In addition to NIS or COC, it is also advised to add either ammonium sulfate (AMS) at 8.5-17 lbs./100 gallon (or equivalent).

#### **Restrictions:**

- **DO NOT** apply more than 6.0 fl. oz./A (0.19 lb. a.i./A) per year.
- **DO NOT** apply more than 6.0 fl. oz./A (0.19 lb. a.i./A) in a single application.
- **DO NOT** apply more than one application of **Bellum** per year.
- **DO NOT** apply **Bellum** to emerged soybeans.
- **DO NOT** graze or feed soybean forage or hay to livestock.

#### **CROP USE DIRECTIONS - SUGARCANE**

Apply **Bellum** by ground for pre-emergence, post-emergence over-the-top or post-emergence direct weed control in sugarcane.

Apply **Bellum** aerially for pre-emergence and post-emergence weed control in the states of: Florida, Louisiana, and Texas.

#### **Pre-Emergence Applications**

Apply 6.0-7.7 fl. oz./A (0.19-0.24 lb. a.i./A) of **Bellum** to control weeds listed in Table 2. Make application after



the planting of plant-cane or after harvest of ratoon-cane. If weeds are emerged at the time of application, add a crop oil concentrate (COC) type adjuvant at 1% v/v OR a nonionic surfactant (NIS) type adjuvant at 0.25% v/v to the spray solution. In addition to the COC or NIS, a spray grade UAN at a rate of 2.5% v/v OR ammonium sulfate (AMS) at a rate of 8.5 lbs./100 gals. of spray solution can be added to the spray solution. Tank mix atrazine or ametryn with **Bellum** to improve weed control. Refer to the tank mix partner label for specific rates and use directions.

#### **Post-Emergence Applications**

Apply 3.0 fl. oz./A (0.09 lb. a.i./A) of **Bellum** to control weeds listed in Table 1. Apply as a post-over-the-top or as a post-directed spray to the base of the sugarcane. If a pre-emergence application was made earlier in the season, only one single post-emergence application can be made. If no pre-emergence application was made earlier in the season, then both a post-over-the-top and a post-directed spray application can be made. For optimum weed control, apply to actively growing weeds.

Add either a crop oil concentrate (COC) adjuvant at 1% v/v OR a nonionic surfactant (NIS) adjuvant to the spray solution. In addition to the COC or NIS, use a spray grade UAN (e.g., 28-0-0) at 2.5% v/v OR ammonium sulfate (AMS) at 8.5 lbs./100 gals. of spray solution to improve weed control.

For additional post-emergence weed control, tank mix **Bellum** with atrazine, asulam and/or trifloxysulfuron-sodium. Refer to the tank mix product label for specific rate and use directions.

#### **Sugarcane Restrictions:**

- **DO NOT** apply more than 7.7 fl. oz./A (0.24 lb. a.i./A) in a pre-emergence application.
- **DO NOT** apply more than 3.0 fl. oz./A (0.09 lb. a.i./A) in a post-emergence application.
- **DO NOT** make more than 2 applications per year. If a pre-emergence application is made, only one post-emergence application can be made.
- **RTI: DO NOT** make two applications less than 14 days apart.
- **DO NOT** apply more than 10.7 fl. oz./A (0.33 lb. a.i./A) per year.
- **DO NOT** harvest sugarcane within 114 days following a post-over-the-top treatment (114-day PHI).
- **DO NOT** harvest sugarcane with 100 days following a post-directed application (100-day PHI).

## STORAGE AND DISPOSAL

**DO NOT** contaminate water, food, or feed by storage and disposal.

**Pesticide Storage:** Keep container tightly closed when not in use. Keep away from heat and flame. **DO NOT** store near seed, fertilizers, or foodstuffs. Can be stored at temperatures as low as minus 20°F.

**Pesticide Disposal:** Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Open dumping is prohibited.

**Container Handling ≤ 5 Gallons:** Non-refillable container. **DO NOT** reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into formulation equipment. 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 formulation equipment or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Container Handling ≥ 5 Gallons:** Refillable container. Refill this container with pesticide only. **DO NOT** use this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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

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

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of this product, which are beyond the control of ROTAM NORTH AMERICA, INC., or Seller. The Buyer and User shall assume all such risks, and Buyer and User agree to hold ROTAM NORTH AMERICA, INC. and Seller harmless for any claims relating to such factors.

To the extent consistent with applicable law, ROTAM NORTH AMERICA, INC. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of the product contrary to proper instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or ROTAM NORTH AMERICA, INC., and Buyer and User assume the risk of any such use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ROTAM NORTH AMERICA, INC. MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR NEITHER A PARTICULAR PURPOSE NOR ANY OTHER EXPENSES OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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MESOTRIONE GROUP 27 HERBICIDE

# BELLUM®

**Controls annual broadleaf weeds in Corn  
(field, seed, yellow pop, sweet) and other listed crops**

<b>ACTIVE INGREDIENT:</b>	<b>By Weight</b>
Mesotrione: 2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione .....	40.0%
<b>OTHER INGREDIENTS:</b> .....	<u>60.0%</u>
<b>TOTAL:</b> .....	<b>100.0%</b>

Contains 4 lbs. active ingredient mesotrione per gallon.

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

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

**EPA Reg. No. 83100-41-83979**

- EPA Est. No. 72344-MO-004**
- EPA Est. No. 069821-CHN-005**
- EPA Est. No. 089446-TWN-001**
- EPA Est. No. 088159-TWN-001**

Distributed by:  
**ROTAM NORTH AMERICA, INC.**  
4900 Koger Blvd., Suite #220  
Greensboro, NC 27407  
1-866-927-6826

PRODUCT OF CHINA



**Net Contents: 1 GALLON (3.78 liters)**

BEL-A022420-V022520-1G

## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

# CAUTION

Harmful if swallowed, or absorbed through 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. Remove and wash contaminated clothing before reuse.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and 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.**

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
- shoes plus socks
- chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC), or Viton  $\geq$  14 mils)

## FIRST AID

<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 do so by the poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>IF ON SKIN OR CLOTHING</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>IF 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 by mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
<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>

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

### 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**.

## 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.

## STORAGE AND DISPOSAL

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

**Pesticide Storage:** Keep container tightly closed when not in use. Keep away from heat and flame. Do not store near seed, fertilizers, or foodstuffs. Can be stored at temperatures as low as minus 20°F.

**Pesticide Disposal:** Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Open dumping is prohibited.

**Container Handling  $\leq$  5 Gallons:** Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into formulation equipment. 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 formulation equipment or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.