



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

December 18, 2020

Travis Bui  
Regulatory Product Manager  
Syngenta Crop Protection, LLC  
P.O. Box 18300  
Greensboro, NC 27419

Subject: Registration Review Label Mitigation for Primisulfuron-methyl & Prosulfuron  
Product Name: Spirit Herbicide  
EPA Registration Number: 100-911  
Application Date: 12/04/2017  
Decision Numbers: 567859 & 567858

Dear Mr. Bui:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Sulfonylurea Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

A copy of your label stamped "Accepted" is enclosed. Products shipped after 12 months from the date of this amendment must bear the new revised label. Your release for shipment of the product bearing the amended label constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6.

Page 2 of 2  
EPA Reg. No. 100-911  
Decision No. 567859 & 567858

If you have any questions about this letter, please contact Quinn Gavin by phone at 703-347-0325, or via email at [gavin.quinn@epa.gov](mailto:gavin.quinn@epa.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "Linda Arrington".

Linda Arrington, Branch Chief  
Risk Management and Implementation Branch 4  
Pesticide Re-Evaluation Division  
Office of Pesticide Programs

Enclosure

[Master]

CustomPak™

PROSULFURON	GROUP	2	HERBICIDE
PRIMISULFURON-METHYL	GROUP	2	HERBICIDE

### Spirit® Herbicide

For weed control in field corn (grown for grain, silage, or seed) and popcorn

Active Ingredients:

Prosulfuron <sup>1</sup> : .....	14.2%
Primisulfuron-methyl <sup>2</sup> : .....	42.8%
Other Ingredients:	43.0%
Total:	100.0%

<sup>1</sup>CAS No. 94125-34-5

<sup>2</sup>CAS No. 86209-51-0

Spirit® Herbicide is formulated as a water-dispersible granule (WDG) and contains 0.142 lb prosulfuron per lb of product and 0.428 lb primisulfuron-methyl per lb of product.

**KEEP OUT OF REACH OF CHILDREN.**

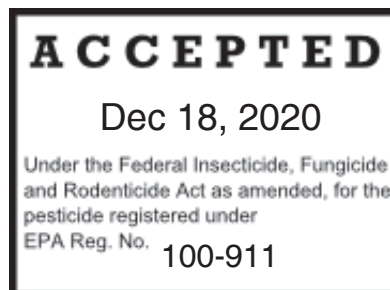
## CAUTION

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-911

EPA Est.

Net Weight



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

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## **PRECAUTIONARY STATEMENTS**

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### **Hazards to Humans and Domestic Animals**

#### **CAUTION**

Causes eye irritation. Harmful if swallowed, inhaled, or absorbed through skin. Avoid contact with eyes, skin, or clothing. Avoid breathing spray mist.

### **Personal Protective Equipment**

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

- Long-sleeved shirt and long pants
- Waterproof gloves made of barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber ≥ 14 mils, polyethylene, polyvinyl chloride (PVC) ≥ 14 mils or Viton® ≥ 14 mils
- Shoes plus socks

## **User Safety Requirements**

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

## **Engineering Controls**

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

### **User Safety Recommendations**

#### **Users should:**

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

## **Environmental Hazards**

For terrestrial uses: Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

### **Groundwater Advisory**

Prosulfuron is known to leach through soil into groundwater under certain conditions as a result of label use and primisulfuron-methyl has properties and characteristics associated with chemicals detected in groundwater. These chemicals may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

### **Surface Water Advisory**

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

**Non-Target Organism Advisory**

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

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## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

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

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

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

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

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

## DIRECTIONS FOR USE

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

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

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE). 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
- Waterproof gloves made of barrier laminate, butyl rubber  $\geq$  14 mils, nitrile rubber  $\geq$  14 mils, neoprene rubber  $\geq$  14 mils, natural rubber  $\geq$  14 mils, polyethylene, polyvinyl chloride (PVC)  $\geq$  14 mils or Viton®  $\geq$  14 mils
- Shoes plus socks

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

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### PRODUCT INFORMATION

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Spirit Herbicide is a selective herbicide applied after emergence of both crop and weeds for the control of weeds in field corn (grown for grain, silage, or seed; including white corn) and popcorn. Spirit Herbicide consists of water-dispersible granules which must be thoroughly and uniformly mixed in water and applied as a spray.



Refer to Table 1 for a listing of weeds controlled when Spirit Herbicide is applied at 1 oz of product per acre. The degree of weed control resulting from application of Spirit Herbicide is dependent upon weed species, weed size at application, environmental conditions, and growing conditions. Weed control is better when weeds have emerged, ample soil moisture exists, and weeds are actively growing, than when the soil is dry and weeds are under stress from lack of moisture.

Spirit Herbicide provides control or partial control of many annual and perennial weeds. When reference is made to weeds partially controlled, partial control means significant activity, but not always at a level generally considered acceptable for commercial weed control. If grasses are expected, a preemergence grass herbicide (such as Dual II®, Dual II Magnum®, Bicep Lite II®, Bicep Lite II Magnum®, Bicep II®, or Bicep II Magnum®) should be applied.

Growth of susceptible weeds is inhibited soon after application of Spirit Herbicide. The leaves of susceptible plants turn yellow, red, or brown after several days, followed by death of the growing point. Complete plant death occurs 1-3 weeks after application, depending upon weed species and growing conditions. Weeds not completely killed by Spirit Herbicide are often stunted and are less competitive to the crop. Spirit Herbicide reaching the soil surface during postemergence application may provide short-term preemergence control of certain weeds.

Spirit Herbicide contains two active ingredients: primisulfuron-methyl and prosulfuron. If a combination of adverse environmental conditions occurs, the degradation of prosulfuron in soil is slowed down. These conditions include: shorter than normal growing season, low soil temperatures for extended periods during growing season, unusually dry soil, lack of rainfall/irrigation following application of Spirit Herbicide, soil pH 7.8 or greater, or compacted soils. The rotational section of this label addresses these conditions. If Spirit Herbicide was applied in a season where several of the above conditions occurred, mitigating measures such as deep tillage, planting crops under optimal growing conditions, or planting varieties with enhanced tolerance to sulfonylurea herbicides (such as STS® soybeans) should be considered when rotating to broadleaf crops, such as soybeans or cotton.

Spirit Herbicide applied in accordance with this label rarely causes corn injury. When injury occurs, it is generally of short duration and yield potential is not affected.

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## WEED RESISTANCE MANAGEMENT

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PROSULFURON	GROUP	2	HERBICIDE
PRIMISULFURON-METHYL	GROUP	2	HERBICIDE

Spirit Herbicide is a Group 2 herbicide (acetolactate synthase (ALS)-inhibited mode of action). This product controls weeds by inhibiting a biochemical process that produces certain essential amino acids necessary for plant growth. Some naturally occurring weed populations have been identified as resistant to herbicides with the ALS-inhibitor mode of action. Selection of resistant biotypes, through repeated use of these herbicides or lower than specified use rates in the same field, may result in weed control failures. A resistant biotype may be present if poor performance cannot be attributed to adverse environmental conditions or improper application methods.

### Principles of Herbicide Resistant Weed Management

#### Scout and know your field

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

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

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

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

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

#### Difficult to control weeds

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

#### Do not overuse the technology

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

### **Scout and inspect fields following application**

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

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

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

### **Resistant weeds**

- Contact your local Syngenta representative, retailer, crop advisor or extension agent to determine if weeds resistant to modes of action contained in this product are present in your area. Do not assume that each listed weed is being controlled by multiple modes of action. Premixes are intended to broaden the spectrum of weeds that are controlled. Some weeds may be controlled by only one of the active ingredients in this product. If resistant biotypes have been reported, use the full labeled rate of this product, apply at the labeled timing, and tank-mix with an additional different mode of action product so there are multiple effective modes of application for each suspected resistant weed.

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## **USE PRECAUTIONS**

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Follow these precautions to reduce chances of crop injury and/or to avoid reduced weed control:

1. Spirit Herbicide should not be applied if corn is under severe stress due to drought, cold weather, hail, flooding, water-logged soils, compacted soil, disease, insect damage, nutrient deficiency (especially low nitrogen levels), or other causes. If Spirit Herbicide is applied when nighttime low temperatures are below

40°F, or the sum of the daytime high temperature plus the nighttime low temperature is below 110°F, corn injury may occur. Also, avoid application of Spirit Herbicide to corn which is stressed due to dense populations of weeds which are taller than the optimum heights listed in Table 1. Applications of Spirit Herbicide may result in reduced weed control if weeds are under severe stress due to drought or if weeds are taller than the optimum heights listed in Table 1.

2. A. If “normal” or IT corn hybrids (not an IR or IMR hybrid) are planted and Dyfonate®, Lorsban®, Thimet®, or other organophosphate insecticide is applied at planting or before applying Spirit Herbicide, temporary injury may occur following the Spirit Herbicide application. Application of Spirit Herbicide to corn treated with Counter CR applied in a surface band or T-band at planting time, may result in crop injury. Syngenta will not be held responsible for losses or damage resulting from such use.

B. If an IR or IMR corn hybrid is planted, organophosphate insecticides, including Counter, can be applied at any time according to label directions without increasing the likelihood of injury to those hybrids after Spirit Herbicide has been applied. The interaction between organophosphate insecticides and Spirit Herbicide is completely overcome by corn hybrids with IR or IMR designations, but not by IT hybrids; i.e., IT hybrids should be considered like “normal” hybrids with regard to this interaction.

\*IT – Corn with enhanced imidazolinone herbicide tolerance.

\*IR/IMR – Corn with enhanced imidazolinone herbicide resistance.

3. Spirit Herbicide should be applied postemergence to field corn between 4 and 24 inches in height. Corn plants less than 4 inches tall are more susceptible to herbicide injury. To ensure good spray coverage of the weeds and avoid potential injury, applications made after the field corn is 20 inches tall, or exhibits more than six collars (V6), whichever comes first, should be directed using drop nozzles. **If rotating to a Spirit Herbicide-sensitive broadleaf crop (i.e., soybeans, cotton) the next season, do not make applications of Spirit Herbicide after June 30 to allow for ample opportunity for prosulfuron degradation.**
4. Spirit Herbicide can be applied to all field corn hybrids, except a few that are classified by Syngenta as potentially susceptible to injury following Spirit Herbicide application. Consult your chemical dealer or Syngenta representative for a current listing of field corn hybrids classified as “potentially susceptible” to Spirit Herbicide.
5. **Field Corn Grown for Seed:** Spirit Herbicide may be broadcast or applied with drop nozzles to field corn grown for seed from a minimum of 4” up to 20” tall

(free-standing) or corn that exhibits 6 or fewer collars (V6), whichever occurs first. Drop nozzles must be used when the inbred plants are between 20 and 24 inches tall and before tassel emergence. Using drop nozzles provides the greatest crop safety when applying Spirit Herbicide on seed corn. However, Syngenta recommends that you thoroughly test the specific inbred for its sensitivity to Spirit Herbicide before treating large acreages, particularly if you choose to make a broadcast application. Not all inbred lines have been tested for sensitivity to Spirit Herbicide, nor does Syngenta have access to all seed company data. **Further, Syngenta is not responsible for any crop injury arising from the use of Spirit Herbicide on field corn grown for seed.**

6. **Popcorn:** Spirit Herbicide can be applied directed to popcorn; however, not all popcorn hybrids have been tested for sensitivity to Spirit Herbicide. Therefore, popcorn hybrids must be thoroughly tested for potential sensitivity to Spirit Herbicide before treating large acreages. To avoid crop injury, popcorn should not be sprayed with over-the-top applications of Spirit Herbicide or hooded sprayers; i.e., only directed applications using drop nozzles when the popcorn plants are between 10 and 24 inches tall, and before tassel emergence.
7. Soil pH may vary greatly within a field; pH variations of 1 to 2 units are not uncommon. Soil sampling techniques for fertility recommendations often use composite soil samples taken from over an entire field(s). Such sampling may not accurately reflect surface layer areas of high pH within a field. Subsampling, therefore, is recommended for areas expected to have pH values greater than the field average. Examples of where subsampling within fields may be required include: (1) areas where soil types differ within the field, and (2) where conditions may vary within the field such as: (a) areas where iron chlorosis occurs, (b) areas bordering limestone roads, (c) low areas subject to flooding, (d) eroded hillsides, (e) drainage tile lines, (f) areas amended with sludge, manure, or other materials which may alter soil pH, and (g) areas with visible calcareous deposits. Refer to Exception 4 regarding soil pH 7.8 or higher.
8. In areas where a rotation to soybeans or other broadleaf crops will occur, do not lime such that the resulting surface pH will be equal to or higher than 7.8. The use of Spirit Herbicide is not recommended in corn fields where lime will be applied prior to planting corn, or following harvest of the corn crop in the same year as the use of Spirit Herbicide, or prior to planting a broadleaf crop the following year, unless the resulting soil pH is <7.8. If necessary to lime, thorough incorporation of the lime through tillage is suggested to reduce the potential for soil pH stratification. In areas where lime has not been incorporated into the soil through tillage, shallow soil sampling (i.e., upper 2 inches) may be required to accurately measure the surface pH of the soil. Refer to Exception 4 regarding soil pH 7.8 or higher.
9. If Spirit Herbicide is applied to johnsongrass, aphids and other insects infesting

the johnsongrass may move to the corn crop. These insects may transmit viral diseases to the corn. Virus-resistant corn hybrids and/or control of the insects may be necessary to reduce the likelihood of disease development.

10. If spot spraying Spirit Herbicide, be careful to not overdose the treated areas.
11. Observe all precautions and limitations on the label of each product used in tank mixture with Spirit Herbicide.

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## USE RESTRICTIONS

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1. Do not apply Spirit Herbicide to a “normal” or IT\* corn hybrid crop that was treated with Counter® 15G (any application method) or Counter CR® applied in-furrow at planting or over the row at cultivation, as severe crop injury may occur.
2. Do not make a foliar postemergence or soil application of any organophosphate insecticide within 10 days before or 7 days after a Spirit Herbicide application, or severe crop injury may occur.
3. Do not use Spirit Herbicide on sweet corn or ornamental (Indian) corn.
4. Do not irrigate within 4 hours after Spirit Herbicide application. Rainfall or irrigation occurring within 4 hours after Spirit Herbicide application may reduce weed control.
5. Do not apply Spirit Herbicide in tank mixture with any formulation of cyanazine (Bladex® or Extrazine® II), or severe crop injury may result. Do not apply Spirit Herbicide in tank mixtures with Poast® or Poast Plus® herbicides, as grass control is often reduced significantly and/or crop injury may occur.
6. Do not apply Spirit Herbicide to corn that exhibits injury symptoms from a previous herbicide application or other causes.
7. Do not apply this product through any type of irrigation system.
8. Do not apply Spirit Herbicide by aerial application in New York state.

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## APPLICATION PROCEDURES

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**Ground Spray Equipment:** Spray nozzles should be uniformly spaced and of the same size, and should provide accurate and uniform application. Refer to the **SPRAY DRIFT Ground Boom Applications** section of this label for spray droplet size requirement.

To help assure accuracy, calibrate sprayer at the beginning of the season before use and recalibrate frequently. For ground application, use a minimum of 10 gallons of water per acre. Higher volumes (i.e., at least 20 gal/A) should be used for severe weed infestations to ensure adequate spray coverage. Always include crop oil concentrate or nonionic surfactant in the spray mixture (see the **Mixing Procedures** section which follows).

Use a pump with capacity to: (1) maintain 35-40 psi pressure at the nozzles and (2) provide sufficient agitation within the tank to keep product in uniform suspension. Lower spray pressures may be used with extended range or drift reduction flat fan nozzles. A centrifugal pump which provides shear action for dispersing and mixing the product is

recommended. The pump should provide a minimum of 20 gal/minute/100 gal tank size circulated through a correctly positioned sparger tube or jet agitators. If jet agitators are used, at least 2 agitators should be aligned on the bottom of the tank pointing toward each end. Agitation during both mixing and application is essential. Screens or strainers placed on the suction side of the pump should be 16-mesh or coarser. Do not place a screen in the recirculation line unless a roller or piston pump is used for spraying the solution. Use 50-mesh or coarser screens between the pump and boom, and when required, at the nozzles. Check nozzle manufacturer's recommendations.

Good weed coverage with the spray mixture is essential for optimum weed control results. Observe sprayer nozzles frequently during the spraying operation to ensure that the spray pattern is uniform. Avoid any spray overlaps which result in excessive rates in the overlap areas, i.e., point rows, headlands, sprayer start-up zones, etc., and can increase the chance of direct crop injury or potential injury to rotational crops. Also, avoid application under conditions when uniform coverage cannot be obtained or when excessive spray drift may occur. Allow adequate distance between target area and desirable vegetation to prevent drift to nontarget areas. Refer to the **SPRAY DRIFT Ground Boom Applications** and **SPRAY DRIFT ADVISORIES** sections of this label for spray drift management. **Avoid placing nozzles directly over the corn row or concentrating spray into the corn whorls.**

**Aerial Application:** Apply Spirit Herbicide in water, using a minimum spray volume of 3 gal/A. Include a nonionic surfactant, i.e., X-77®, at 1 qt/100 gal of spray mix (0.25% volume/volume), or a good quality crop oil concentrate at no more than 2 pt/A (see following **Mixing Procedures**). Avoid application under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur. Refer to the **SPRAY DRIFT Aerial Applications** and **SPRAY DRIFT ADVISORIES** sections of this label for spray drift management.

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

**Avoid all direct or indirect contact (such as drift) of Spirit Herbicide with crops other than those recommended for treatment on this label, since injury may occur.**



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## **SPRAY DRIFT MANAGEMENT**

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As with all crop protection products, it is important to avoid off-target movement onto adjacent land or crops, as even small amounts may injure sensitive plants. To reduce spray drift, the following spray drift management requirements must be followed.

### **SPRAY DRIFT** **Ground Boom Applications**

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

### **SPRAY DRIFT** **Aerial Applications**

- Do not release spray at a height greater than 10 ft above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a Coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a Medium or coarser droplet size (ASABE S572.1).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use ½ swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

## **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 lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

#### **Controlling Droplet Size – Aircraft**

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

### **BOOM HEIGHT – Ground Boom**

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

### **RELEASE HEIGHT - Aircraft**

Higher release heights increase the potential for spray drift. When applying aurally 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**

Spirit Herbicide 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 Spirit Herbicide if prevailing local conditions may be expected to result in off-site movement.

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## **SPRAY EQUIPMENT**

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### **Cleaning Equipment after Application**

Because most crops, other than corn, are extremely sensitive to low rates of Spirit Herbicide, special attention must be given to cleaning equipment before spraying a crop other than those registered for use and on this label. Mix only as much spray solution as needed. Immediately after spraying, clean equipment thoroughly using this procedure:

1. Flush tank, hoses, boom, and nozzles with clean water.
2. Prepare a cleaning solution of one gallon of household ammonia per 50 gal of water. Many commercial spray tank cleaners may be used. Please request and read a copy of the Syngenta brochure "Clean It Up! – A Guide to Cleaning Your

Sprayers” (SCP 175-00088-A 3/97) from your local Syngenta representative for more information about proper tank cleaning procedures. Do not use chlorine-based cleaners, such as Clorox®.

3. Use a pressure washer to clean the inside of the spray tank with this solution. Take care to wash all parts of the tank, including the inside top surface. If pressure washer is not available, **completely** 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 sprayer and thoroughly recirculate the cleaning solution for at least 15 minutes. All visible deposits must be removed from the spraying system.
4. Flush hoses, spray lines, and nozzles for at least one minute with the cleaning solution.
5. Dispose of rinsate from steps 1-3 in an appropriate manner. Spray the cleaning solution on untreated corn or return to a rinsate tank for later use as carrier water for spraying corn or use other approved disposal.
6. Repeat steps 2-5.
7. Remove nozzles, screens, and strainers and clean separately in the ammonia solution after completing the above procedures.
8. Rinse the complete spraying system with clean water.

**Note:** If the tank is equipped with the proper number of correctly mounted 360° tank-washing nozzles which are attached to a dedicated rinsing system, less cleaning solution than a full tank may be used. Use sufficient cleaning solution to thoroughly rinse all surfaces. Start the sprayer agitation and recirculate the cleaning solution for at least 15 minutes. Flush the spray boom with the cleaning solution. Repeat the rinsing procedure 1-2 times.

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## MIXING PROCEDURES

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**IMPORTANT: Follow the correct mixing order on the label or the material may not mix properly. Poor mixing may result in crop injury or poor product performance.**

1. Make sure the spray tank is clean before using. If it is contaminated with other materials, mixing problems and/or clogging may occur, or injury to the crop may result.
2. Prepare no more spray mixture than is required for the immediate operation.
3. Fill the spray tank  $\frac{1}{4}$ – $\frac{1}{2}$  full with clean water and begin agitation.

4. Make certain that the agitation system is working properly and creates a rippling or rolling action on the water surface. Maintain agitation throughout the mixing and spraying process.
5. Add any products packaged in water-soluble film to the tank at the same time. Allow the packets to completely dissolve and the contents of the packets to fully disperse into the mix water. **Important: Water-soluble packets must always be the first material put into the spray tank after water.**
6. Pour the required amount of Spirit Herbicide into the spray tank all at once.
7. While maintaining agitation, continue filling the spray tank. When the tank is  $\frac{3}{4}$  full, add any tank mix partners. Add any water-dispersible granule or other dry formulation, and allow that material to disperse. Then add any emulsifiable liquid formulation.
8. Then add either (a) a high quality petroleum- or vegetable-based crop oil concentrate containing not less than 12% emulsifier at 1-4 pt/A as specified on the oil adjuvant label, or (b) a good nonionic surfactant with a minimum of 80% of the constituents effective as a spray adjuvant at the rate of 1-2 qt/100 gal of spray mixture (0.25-0.5% v/v). In addition to crop oil concentrate or nonionic surfactant, liquid nitrogen fertilizer (28-34%) at 0.5-1 gal/A or 2-4 lb/A spray grade ammonium sulfate (or equivalent AMS liquid) may also be added to enhance activity against certain weeds, e.g., velvetleaf. Liquid nitrogen should not be used as a substitute for crop oil concentrate or nonionic surfactant. **Do not use liquid fertilizer as the total spray carrier.** Do not use crop oil concentrate as the spray adjuvant when using Banvel® (more than 2 oz/A), Buctril®, Buctril + atrazine, Clarity® (more than 2 oz/A), Marksman®, or 2,4-D tank mixtures, i.e., use only nonionic surfactant. Do not add liquid nitrogen when using Buctril, Buctril + atrazine, or 2,4-D tank mixtures.
9. Complete filling the tank, maintaining sufficient agitation at all times to ensure surface action until the spray tank mixture is uniform.
10. An anti-foaming agent may be added to reduce excessive foaming if needed.
11. **Do not leave spray in the spray tank without continuous agitation.** Always maintain agitation to avoid separation and build-up of undesirable residues on the walls of the spray tank.
12. Make only sufficient spray mixture which can be used the day in which it will be sprayed; however, Spirit Herbicide will remain active in the spray solution for at least 36 hours.

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## **CROP USE DIRECTIONS**

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### **Corn – Spirit Herbicide Applied Alone**

Spirit Herbicide controls many weeds, including several triazine-resistant biotypes, when applied postemergence in corn at the rate and timings specified in Table 1. Applications should be made to weeds in the optimum size range recommended; larger weeds may be only partially controlled. For optimum control, do not cultivate until approximately 7 days after Spirit Herbicide application, if cultivation is to be used. Deep cultivation (greater than 4 inches) after application of Spirit Herbicide may dilute the herbicide in the soil profile and reduce residual control.

Spirit Herbicide may be applied postemergence (over-the-top or directed) to field corn between 4 and 24 inches in height. To ensure good spray coverage of the weeds and avoid potential crop injury, applications made when the field corn is 20-24 inches tall or exhibits more than 6 collars (V6), whichever comes first, should be directed using drop nozzles. Since Spirit Herbicide offers up to 4 weeks residual weed control, it is more important to time applications to the optimum weed heights listed in Table 1, rather than corn height. In drier climates (i.e., the western Cornbelt), crop oil concentrate (COC) is the preferred additive, instead of nonionic surfactant, when applying Spirit Herbicide alone. If weeds other than those listed in Table 1 are anticipated, apply an appropriately labeled preplant, preemergence, or postemergence herbicide or herbicide combination. Dual II, Dual II Magnum, Bicep II, Bicep II Magnum, Bicep Lite II, Bicep Lite II Magnum, Dual II + AAtrex® are examples of herbicide treatments that can precede Spirit Herbicide application. Consult their respective labels for directions, precautions, and limitations before applying.

### **Use Restrictions:**

1. Do not apply more than 1 oz of Spirit Herbicide per acre (0.0268 lb primisulfuron-methyl per acre and 0.0089 lb prosulfuron per acre) in a single application.
2. Do not apply more than 1 application of Spirit Herbicide per year.
3. Do not apply more than 1 oz of Spirit Herbicide per acre per year (0.0268 lb primisulfuron-methyl per acre per year and 0.0089 lb prosulfuron per acre per year).
4. Do not graze or feed forage from Spirit Herbicide-treated crops to livestock until 30 days after application.
5. Do not harvest for silage until 40 days after application.
6. Do not harvest grain until 60 days after application.
7. Complete all Spirit Herbicide applications before corn exceeds 24 inches (2 ft.) in height.

**Table 1: Weeds Controlled or Partially Suppressed With Spirit Herbicide Applied Postemergence at 1 oz/A.**

<b>Weeds Controlled</b>	<b>Weed Size Ranges for Optimum Control (inches)</b>
Amaranth, Palmer ( <i>Amaranthus palmeri</i> ) <sup>2</sup>	1-4
Anoda, Spurred ( <i>Anoda cristata</i> )	1-4
Artichoke, Jerusalem ( <i>Helianthus tuberosus</i> )	1-6
Beggarweed, Florida ( <i>Desmodium tortuosum</i> )	1-4
Bindweed, Field ( <i>Convolvulus arvensis</i> ) <sup>1</sup>	2-4
Bindweed, Hedge ( <i>Calystegia sepium</i> )	1-3
Buckwheat, Wild ( <i>Polygonum convolvulus</i> ) <sup>3</sup>	2-4
Buffalobur ( <i>Solanum rostratum</i> )	1-5
Burcucumber ( <i>Sicyos angulatus</i> )	1-6
Carrot, Wild ( <i>Daucus carota</i> )	1-3
Cocklebur, Common ( <i>Xanthium strumarium</i> ) <sup>2</sup>	2-8
Dandelion ( <i>Taraxacum officinale</i> )	1-4
Devil's-Claw ( <i>Proboscidea louisianica</i> )	2-6
Foxtail, Yellow ( <i>Setaria glauca</i> ) <sup>1</sup>	1-3
Horsenettle ( <i>Solanum carolinense</i> ) <sup>1</sup>	2-9
Horseweed (Marestail) ( <i>Conyza canadensis</i> )	1-6
Jimsonweed ( <i>Datura stramonium</i> )	1-6
Johnsongrass, Rhizome ( <i>Sorghum halepense</i> ) <sup>1</sup>	8-16
Johnsongrass, Seedling ( <i>Sorghum halepense</i> ) <sup>1</sup>	4-12
Kochia ( <i>Kochia scoparia</i> ) <sup>2</sup>	1-4
Lambsquarters, Common ( <i>Chenopodium album</i> )	1-3
Mallow, Common ( <i>Malva neglecta</i> ) <sup>1</sup>	1-3
Mallow, Venice ( <i>Hibiscus trionum</i> )	1-4
Morningglory, Ivyleaf ( <i>Ipomoea hederacea</i> ) <sup>1</sup>	1-4
Morningglory, Pitted ( <i>Ipomoea lacunosa</i> ) <sup>1</sup>	1-4
Morningglory, Tall ( <i>Ipomoea purpurea</i> ) <sup>1</sup>	1-4
Mustard, Wild ( <i>Brassica kaber</i> )	1-6
Nightshade, Black ( <i>Solanum nigrum</i> )	1-5
Nightshade, Eastern Black ( <i>Solanum ptycanthum</i> )	1-5
Pigweed, Redroot ( <i>Amaranthus retroflexus</i> ) <sup>2</sup>	1-4
Pigweed, Smooth ( <i>Amaranthus hybridus</i> ) <sup>2</sup>	1-4
Pokeweed, Common ( <i>Phytolacca americana</i> ) <sup>1</sup>	2-12
Puncturevine ( <i>Tribulus terrestris</i> )	1-5
Pusley, Florida ( <i>Richardia scabra</i> )	1-4
Quackgrass ( <i>Elytrigia repens</i> ) <sup>1</sup>	4-8
Ragweed, Common ( <i>Ambrosia artemisiifolia</i> )	2-9
Ragweed, Giant ( <i>Ambrosia trifida</i> )	2-9
Sesbania, Hemp ( <i>Sesbania exaltata</i> )	1-5
Shattercane ( <i>Sorghum bicolor</i> ) <sup>2</sup>	4-12

Sicklepod ( <i>Cassia obtusifolia</i> )	1-3
Sida, Prickly ( <i>Sida spinosa</i> ) <sup>1</sup>	1-3
Smartweed, Pennsylvania ( <i>Polygonum pennsylvanicum</i> )	1-6
Sorghum-almum ( <i>Sorghum almum</i> ) <sup>1</sup>	4-12
Sorghum, Volunteer ( <i>Sorghum bicolor</i> ) <sup>1</sup>	4-12
Sunflower, Common ( <i>Helianthus annuus</i> )	1-12
Thistle, Canada ( <i>Cirsium arvense</i> ) <sup>1</sup>	2-9
Velvetleaf ( <i>Abutilon theophrasti</i> ) <sup>4</sup>	1-6
Waterhemp, Common ( <i>Amaranthus rudis</i> ) <sup>2</sup>	1-4

<sup>1</sup>Partial control.

<sup>2</sup>Certain biotypes of this weed species are known to be resistant to this and other ALS herbicides. Where these ALS-resistant biotypes are known to exist, an appropriate registered herbicide with another mode of action, active against that weed at the specified use rate, should be used alone or in tank mixture with Spirit Herbicide to control those biotypes.

<sup>3</sup>Spray after true leaves have emerged; earlier applications may result in unacceptable control.

<sup>4</sup>For optimum control of velvetleaf, include nitrogen in the spray mixture; refer to the Mixing Procedures section.

### **Corn – Spirit Herbicide Applied in Tank Mixtures**

Spirit Herbicide may be applied postemergence in various tank mixtures: (a) for improved control of weeds not fully controlled by Spirit Herbicide alone; (b) to control weeds which are larger than the optimum size range in Table 1; (c) to include a different mode of action herbicide to help control or manage resistant weed biotypes; or (d) to broaden the weed control spectrum (refer to Table 2). For all tank mixtures of Spirit Herbicide with other herbicides, refer to both labels for weeds controlled and application information. The tank mixtures in Table 2 will control the weeds listed in that table when treated at the growth stages recommended, plus the weeds at the weed sizes listed in Table 1. Refer to the **Mixing Procedures** section of this label.

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.

If another herbicide application is desired following the use of Spirit Herbicide, do not apply Spirit Herbicide a second time; i.e., make only one application of Spirit Herbicide during a cropping season.

**Waterhemp and other Amaranth Control Program:** Common waterhemp, tall waterhemp, Palmer amaranth, smooth and redroot pigweed are prolific seed producers,



and have a long germination period. ALS-resistant biotypes exist, and have become problem weeds in certain areas. The following 3-step program has provided good results for control of heavy infestations of these weeds: (1) Apply Bicep II, Bicep II Magnum, Bicep Lite II, Bicep Lite II Magnum, Dual II, or Dual II Magnum early preplant, preplant incorporated, or preemergence at the specified rate for that soil. If weeds have emerged prior to the application of Bicep II, Bicep II Magnum, Bicep Lite II, Bicep Lite II Magnum, Dual II, or Dual II Magnum, control them with tillage or a burndown herbicide; (2) Apply a postemergence tank mixture of Spirit Herbicide plus Banvel, Clarity, AAtrex (atrazine), or Marksman (refer to Table 2 regarding timings, rates, and additives for these tank mixtures); and (3) If needed, cultivate 1-3 weeks after the postemergence application. In addition to controlling waterhemp and other amaranth species, this program is also effective in controlling most other weeds common in corn.

**IMPORTANT: FOR TANK MIXTURES WITH AATREX (OR OTHER BRANDS OF ATRAZINE) – If applying Spirit Herbicide in tank mixture with AAtrex (atrazine), all the restrictions and instructions on the AAtrex (atrazine) label must be followed, if more restrictive/protective than those on this label.**

**Table 2: Spirit Herbicide Tank Mixtures – Use Spirit Herbicide at 1 oz/A and add one of the mixing partners recommended below.**

<b>Weed and Recommended Size (inches)<sup>1</sup></b>	<b>Tank Mix Partner and Rate</b>	<b>Recommended Additive<sup>3</sup></b>	<b>Corn Height Range (inches)</b>
Canada Thistle (1-8) Other Thistles (1-6) <sup>2</sup> Field Bindweed (2-8) <sup>2</sup> Hemp Dogbane (3-10) <sup>2</sup> Horsenettle (2-6) Poison Ivy (1-3) <sup>2</sup> Pokeweed (2-10) Milkweeds (2-8) <sup>2</sup>	Banvel or Clarity 1/4-1/2 pt/A	NIS	4-12 or 8-24 directed
	2,4-D 1/4-1/2 pt/A 4EC	NIS	4-8 or 8-24 directed
Giant Ragweed (2-12 or heavy infestations)	Beacon® 0.19 oz/A	COC or NIS	4-20
Cocklebur (2-12) Lambsquarters (1-8 or heavy infestations) Morningglories (1-6 or heavy infestations) Ragweed, Common (2-12) Smartweed (1-8) Velvetleaf (1-10)	AAtrex (atrazine) <sup>4</sup> 3/4-1½ qt/A 4L	COC	4-12 or 8-12 directed
	Banvel or Clarity 1/8-1/2 pt/A (3/8-1/2 pt/A for ALS- resistant weeds)	NIS <sup>6</sup>	4-20 or 8-24 directed
	Buctril 1/2-1 pt/A	NIS	4-20 or 8-24 directed
	Buctril + atrazine 1-2½ pt/A	NIS	4-12 or 8-12 directed
	Marksman 1-2 pt/A	NIS	4-12 or 8-12 directed
Kochia (1-8 or areas with confirmed ALS resistance 1-6) Pigweeds, Palmer Amaranth, and Waterhemp (1-6 or ALS-resistant)	AAtrex (atrazine) 1-1½ qt/A 4L	COC	4-12 or 8-12 directed
	Banvel or Clarity 1/4-1/2 pt/A (3/8-1/2 pt/A for ALS-resistant weeds)	NIS	4-20 or 8-24 directed
	Marksman 1-2 pt/A	NIS	4-12 or 8-12 directed
	Tough® 3.75EC <sup>5</sup> 1-2 pt/A	COC or NIS	4-20
Johnsongrass (3-15) Quackgrass (3-8) Shattercane (4-12)	Beacon 0.19 oz/A	COC or NIS	4-20 or 8-24
	Accent® 1/3 oz/A	COC or NIS	4-20 or 8-24 directed
	Accent 1/3 oz/A + Banvel or Clarity 1/8-1/2 pt/A	NIS <sup>6</sup>	4-12 or 8-24 directed
Other Grasses – refer to Accent label	Accent 1/3-1/2 oz/A	COC or NIS	4-20 or 8-24 directed
	Accent 1/3-1/2 oz/A + Banvel or Clarity 1/8-1/2 pt/A	NIS <sup>6</sup>	4-12 or 8-24 directed

<sup>1</sup>Recommended weed sizes for optimum control.

<sup>2</sup>Partial control.

<sup>3</sup>NIS=Nonionic Surfactant or COC = Crop Oil Concentrate; nitrogen may also be added, refer to the **Mixing Procedures** section of this label.

<sup>4</sup>Mixtures with AAtrex (atrazine) or premixes containing atrazine may result in some reduction in control (antagonism) on cocklebur, quackgrass, sunflower, and velvetleaf.

<sup>5</sup>Mixtures with Tough may result in some reduction in control (antagonism) on velvetleaf.

<sup>6</sup>If 1/8 pt/A (2 oz/A) of Banvel or Clarity is used, COC may be used in place of NIS. At higher rates of Banvel or Clarity, only use NIS or NIS + fertilizer (i.e., 28% UAN, etc.). When kochia, pigweeds, Palmer amaranth, and/or waterhemp are present, the minimum rate of Banvel or Clarity recommended is 1/4 pt/A.

## Crop Failure

If corn treated with Spirit Herbicide is lost due to a natural catastrophe, such as hail or frost, normal field corn may be replanted, but not until 4 weeks or more after application. An IR or IMR corn hybrid may be replanted immediately. For control of weeds in replanted corn, Spirit Herbicide may not be applied a second time; i.e., only one application of Spirit Herbicide may be applied during the calendar year.

## Rotational Crops

The following crops may be planted at the intervals indicated following an application of Spirit Herbicide. Planting at shorter intervals may result in injury to the rotational crop and/or illegal residues.

<b>Rotational Crops</b>	<b>Region A Minimum Plant Back Interval Where Soil pH is Below 7.8</b>	<b>Region B Minimum Plant Back Interval Where Soil pH is Below 7.8</b>
Soybeans	18 mos.	10 mos.
STS Soybeans <sup>1</sup>	18 mos.	10 mos.
Cotton	--	10 mos.
Canola, Dry Beans, Flax, Potatoes, Sweet Potatoes, Tobacco, Tomatoes	18 mos.	10 mos.

<sup>1</sup>STS Soybeans have enhanced tolerance to certain sulfonylurea herbicides. For soil pH at 7.8 or above, refer to Exception #4.



**Note:** Border between Regions A & B follow Interstate 80, unless otherwise indicated.

<b>Rotational Crops (Region A &amp; B)</b>	<b>Minimum Plant Back Interval Where Soil pH is Below 7.8</b>	<b>Comments</b>
IR or IMR Field Corn Hybrids	None	Refer to <b>Crop Failure</b> section
Normal Field Corn	4 Weeks	Refer to <b>Crop Failure</b> section
Wheat, Barley, Rye, Oats, Triticale	3 Months	
Popcorn, Sweet Corn	8 Months	
Sorghums, Cabbage, Forage Grasses, Green Beans, Peas, Proso Millet, Rice, Snap Beans	10 Months	Refer to <b>Exceptions</b> below
Alfalfa, Clovers, Lentils	18 Months	Refer to <b>Exceptions</b> below
Sunflowers, Sugar Beets, Leeks, Onions	18 Months; 36 Months in the Red River Valley area of MN or ND	
All other crops	18 Months	

For soil pH at 7.8 or above, refer to Exception #4.

**Exceptions to the above tables:**

1. **In Region A of the northern U.S.** (i.e., north of Interstate 80, including CT, IA, IL, MA, ME, MI, MN, ND, NE, NH, NY, RI, SD, VT, and WI (see county listings below) rotate only to field corn, popcorn, sweet corn, sorghum, wheat, barley, rye, oats, triticale, proso millet, or forage grasses the next year, or crop injury may occur. The following IA counties and all those located to the north are included in **Region A**: Harrison, Shelby, Audubon, Guthrie, Dallas, Polk, Jasper, Poweshiek, Iowa, Johnson, Muscatine, Cedar, and Scott. All NE counties intersected by I-80 are included in **Region B** except for the following northern counties which are included in **Region A**: Deuel, Cheyenne, and Kimball. The following NE counties located North of I-80 are included in **Region B**: Saunders, Butler, Polk, and Merrick. The following IL counties are included in **Region A**: Whiteside, Carroll, Joe Daviess, Stephenson, Lee, Ogle, Winnebago, Boone, DeKalb, Kane, McHenry, Cook, DuPage, and Lake.
2. **In the Red River Valley area of MN or ND or areas adjacent to the Red River Valley with the same soil type**, use this product only when field corn or small grain cereals will be the only crop grown the following year.
3. **In west TX, western OK, NM, AZ, CO, WY, the panhandle of NE, ID, UT, and the intermountain areas of WA and OR**, use this product only when corn, sorghum, small grain cereals, proso millet, cotton, dry beans, or peas will be the only crop grown the following year. Note pH and rainfall/irrigation restrictions in exceptions 5 and 6 below.
4. **For the entire U.S., in areas with very high pH soils (7.8 or higher)**, such as areas where iron chlorosis occurs or where calcareous deposits are visible in the soil, stunting or injury of soybeans or other broadleaf crops may occur the year following a Spirit Herbicide application. In these areas, use Spirit Herbicide only if field corn, sorghum, small grain cereals, or proso millet will be planted the next year. This restriction does not apply to MS, LA, AR, and southern and eastern TX, including South Texas, the Lower Rio Grande Valley, the Coastal Bend, and the Blacklands. In these areas, cotton or soybeans can be planted on all soils (at least 10 months after application) provided there are at least 12 inches of rainfall or irrigation during the first 5 months after application of Spirit Herbicide. Caution: Irrigation with alkaline water can result in elevated soil pH. **Refer also to Precaution Statements 7 and 8.**
5. **For the entire U.S., if severe drought conditions develop** (less than 12 inches of rainfall/irrigation within the first 5 months following application of Spirit Herbicide and/or less than 1 inch within the first 4 weeks after application) rotate only to field corn, sorghum, wheat, barley, rye, oats, triticale, proso millet, forage grasses, cotton, or STS soybeans (if not located in Region A), which have enhanced tolerance to certain sulfonyleurea herbicides the next year, or crop injury may occur.

6. For rotational crop restrictions **when Spirit Herbicide is used in tank mixtures or sequentially with other registered herbicides**, refer to the rotational intervals and exceptions above for Spirit Herbicide and to the respective product label of any mixing partner for additional restrictions and use the longest interval.

## **STORAGE AND DISPOSAL**

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

### **Pesticide Storage**

Store in a cool, dry place. Do not store this product under wet conditions.

### **Pesticide Disposal**

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

### **Container Handling (less than or equal to 50 pounds)**

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

### **Container Handling (bags)**

**Non-refillable container.** Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling if available or dispose of empty bag in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

### **Container Handling (fiber drums with liners)**

**Non-refillable container.** Do not reuse or refill this container. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then offer for recycling if available or dispose of liner in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities. If drum is contaminated and cannot be reused, dispose of it in the manner

required for its liner.

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

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

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