



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

January 7, 2022

Terri Moss
Regulatory Leader
Corteva Agriscience LLC
9330 Zionsville Road
Indianapolis, IN 46268

Subject: Registration Review Label Mitigation for Cloransulam-methyl and Sulfentrazone
Product Name: Sonic Herbicide
EPA Registration Number: 62719-680
Application Dates: 10/8/2018; 3/22/2016
Decision Numbers: 580354; 580353

Dear Ms. Moss:

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 Cloransulam-methyl and Sulfentrazone Interim Decisions, 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 stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 12 months from the date of this letter. After 12 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

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If you have any questions about this letter, please contact Darius Stanton by phone number at 202-566-2332 or via email at stanton.darius@epa.gov.

Sincerely,

A handwritten signature in blue ink, appearing to be "Linda Arrington", with a stylized flourish at the end.

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

Enclosure

(Base label):

SULFENTRAZONE	GROUP	14	HERBICIDE
CLORANSULAM –METHYL	GROUP	2	HERBICIDE

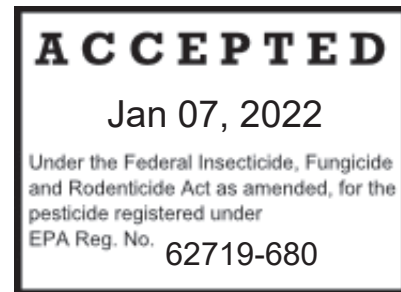
Sonic®

HERBICIDE

Intended For Use Only by Individuals/Firms Certified as Licensed Pesticide Applicators

Active Ingredients:

- Sulfentrazone: N-[2,4-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl]phenyl]methanesulfonamide 62.1%
- cloransulam-methyl: Benzoic acid,3-chloro-2-[[[(5-ethoxy-7-fluoro[1,2,4]triazolo[1,5-c]pyrimidin-2-yl)sulfonyl]amino]-,methyl ester.. 7.9%
- Other Ingredients 30.0%
- Total 100.0%



Contains 0.7 lb of active ingredient per lb of product (0.62 lb ai of sulfentrazone and 0.08 lb of ai of cloransulam-methyl)

Keep Out of Reach of Children

CAUTION

Precautionary Statements

Hazards to Humans and Domestic Animals

Harmful If Swallowed. Causes Moderate Eye Irritation. Wear long sleeved shirt, long pants, shoes and socks.

Avoid breathing vapor or spray mist. 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 Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves
- Shoes plus socks

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

Engineering Controls

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.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protections Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)].

User Safety Recommendations

Users should:

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

First Aid

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

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

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

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

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Environmental Hazards

This pesticide is toxic to marine/estuarine invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to terrestrial and aquatic plants in neighboring areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

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. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

Groundwater advisory: This chemical is known to leach through soil into groundwater under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground-water contamination. Do not use on coarse soils classified as sand which have less than 1% organic matter.

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

Physical or Chemical Hazards

Do not use or store near heat or open flame.

Agricultural Use Requirements

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

(Storage and Disposal for rigid containers 5 gal or less)**Storage and Disposal**

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

Pesticide Storage: Keep away from fire and sparks. Store in a cool, dry, well-ventilated area.

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

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

(Storage and Disposal for nonrigid containers any size)**Storage and Disposal**

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

Pesticide Storage: Keep away from fire and sparks. Store in a cool, dry, well-ventilated area.

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

Container Handling: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling if available, or dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

(Storage and Disposal for refillable rigid containers larger than 5 gal)**Storage and Disposal**

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

Pesticide Storage: Keep away from fire and sparks. Store in a cool, dry, well-ventilated area.

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

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

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Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Hold container upside down over application equipment or mix tank to collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refer to label booklet for Directions for Use.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-680

EPA Est. _____

™®Trademarks of Corteva Agriscience and its affiliated companies

**Produced for
Corteva Agriscience LLC
9330 Zionsville Road
Indianapolis, IN 46268**

NET WEIGHT _____

(Label booklet cover):

SULFENTRAZONE	GROUP	14	HERBICIDE
CLORANSULAM –METHYL	GROUP	2	HERBICIDE

Sonic®

HERBICIDE

Intended For Use Only by Individuals/Firms Certified as Licensed Pesticide Applicators

Active Ingredients:

- Sulfentrazone: N-[2,4-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl]phenyl]methanesulfonamide 62.1%
- cloransulam-methyl: Benzoic acid,3-chloro-2-[[[(5-ethoxy-7-fluoro[1,2,4]triazolo[1,5-c]pyrimidin-2-yl)sulfonyl]amino]-,methyl ester.. 7.9%
- Other Ingredients 30.0%
- Total 100.0%

Contains 0.7 lb of active ingredient per lb of product (0.62 lb ai of sulfentrazone and 0.08 lb of ai of cloransulam-methyl)

Keep Out of Reach of Children

CAUTION

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

Refer to inside of label booklet for additional precautionary information including Directions for Use.

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(Page 1 through end):

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION

Harmful If Swallowed. Causes Moderate Eye Irritation. Wear long sleeved shirt, long pants, shoes and socks.

Avoid breathing vapor or spray mist. 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 Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves
- Shoes plus socks

See Engineering Controls for additional requirements.

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

Engineering Controls

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

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Environmental Hazards

This pesticide is toxic to marine/estuarine invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to terrestrial and aquatic plants in neighboring areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

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. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

Groundwater advisory: Cloransulam-methyl is known to leach through soil into groundwater under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground-water contamination. Do not use on coarse soils classified as sand which have less than 1% organic matter.

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

Physical or 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. Read all Directions for Use carefully before applying.

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

Agricultural Use Requirements

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

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

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 over long-sleeved shirt and long pants
- Chemical-resistant gloves
- Shoes plus socks

(Storage and Disposal for rigid containers 5 gal or less)**Storage and Disposal**

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

Pesticide Storage: Keep away from fire and sparks. Store in a cool, dry, well-ventilated area.

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

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

(Storage and Disposal for nonrigid containers any size)**Storage and Disposal**

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

Pesticide Storage: Keep away from fire and sparks. Store in a cool, dry, well-ventilated area.

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

Container Handling: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment. Then offer for recycling if available, or dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

(Storage and Disposal for refillable rigid containers larger than 5 gal)**Storage and Disposal**

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

Pesticide Storage: Keep away from fire and sparks. Store in a cool, dry, well-ventilated area.

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

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose.

Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

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water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Hold container upside down over application equipment or mix tank to collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Attention

- Although this label may appear similar to the label on a product you may have used, there may be important label differences. Users must read, understand and strictly follow all label directions, precautions and restrictions.
- It is the user's responsibility to be aware of and to follow all state or local precautions or restrictions not appearing on this product label.
- Prior to purchase or use of this product, read the Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies on this label. If the terms and conditions are unacceptable, return the product immediately in the original and unopened container.

Product Information

Sonic® herbicide is for preemergence control of broadleaf and grass weeds in soybeans only.

The mode of action of Sonic involves uptake by weed roots and shoots. Preemergence and preplant incorporated applications of Sonic require rainfall or irrigation to activate the herbicide. The amount of rainfall or irrigation required for activation following application depends on existing soil moisture, organic matter content and soil texture. If adequate moisture (1/2" to 1") is not received within 7 to 10 days after the treatment with Sonic, a shallow cultivation may be needed to obtain desired weed control. When sufficient moisture is received after dry conditions, Sonic will provide control of susceptible germinating weeds.

Sonic is unlikely to damage crop when used as directed on this label. Poor growing conditions, such as excessive moisture, cool temperatures, and soil compaction or the presence of various pathogens may impact seedling vigor. Under these conditions, the active ingredients in Sonic, like other soil-applied herbicides, can contribute to crop response. However, these early symptoms are short-lived.

Observe all instructions, crop restrictions, mixing directions, application precautions, replanting directions, rotational crop guidelines and other label information of each product when tank mixing with Sonic.

Weed Resistance Management

Sonic, which contains sulfentrazone, a Group 14 herbicide (PPO inhibitor), and cloransulam-methyl, a Group 2 herbicide (ALS inhibitor), based on the mode of action classification system of the Weed Science Society of America.

Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is recommended best practice. A diversified weed management program may include the use of multiple herbicides with different modes of action and overlapping weed spectrum with or without tillage operations and/or other cultural practices. Research has demonstrated that using full labeled rates and following directions for use is important to delay the selection for resistance.

The continued effectiveness of this product depends on the successful implementation of a weed resistance management program.

To aid in the prevention of developing weeds resistant to this product, users should:

- Scout fields before application to ensure herbicides and rates will be appropriate for the weed species and weed sizes present.
- Start with a clean field, using either a burndown herbicide application or tillage.
- If using post-emergence herbicides or tank mixes, control weeds early when they are relatively small.
- Apply full rates of Sonic for the most difficult to control weed in the field at the specified time to minimize weed escapes.
- Scout fields after application to detect weed escapes or shifts in control of weed species.
- Control weed escapes before they reproduce by seed or proliferate vegetatively.
- Report any incidence of non-performance of this product against a particular weed to your local company representative, local retailer, or county extension agent.
- Contact your local company representative, crop advisor, or extension agent to find out if suspected resistant weeds to these MOAs have been found in your region. Do not assume that each listed weed is being controlled by multiple mode of action. Products with multiple active ingredients 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 resistance is suspected, treat weed escapes with an herbicide having a mode of action other than Group 14 or 2 and/or use nonchemical methods to remove escapes, as practical, with the goal of preventing further seed production.
- 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.

Additionally, users should follow as many of the following herbicide resistance management practices as is practical:

- Use a broad spectrum herbicide with other mode of action as a foundation in a weed control program, if appropriate.
- Utilize sequential applications of herbicides with alternative modes of action.
- Rotate the use of this product with non-Group 14 or 2 herbicides.
- Avoid making more than two sequential applications of Sonic and any other Group 14 or 2 herbicides within a single growing season unless mixed with an herbicide with a different mode of action with an overlapping spectrum for the difficult-to-control weeds.
- Incorporate non-chemical weed control practices, such as mechanical cultivation, crop rotation, cover crops and weed-free crop seeds, as part of an integrated weed control program.
- Use good agronomic principles that enhance crop development and crop competitiveness.
- Thoroughly clean plant residues from equipment before leaving fields suspected to contain resistant weeds.
- Manage weeds in and around fields to reduce weed seed production.

Proper Handling Instructions

This product may not be mixed or loaded within 50 feet of any wells (including abandoned wells and drainage wells), sink holes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas.

Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or washwater, and rainwater that may fall on the pad.

Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above specific minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

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

Do not use flood irrigation to apply or incorporate this product.

Product must be used in a manner which will prevent back siphoning in wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.

Rotational Crop Guidelines

Shown below are the minimum intervals in months from the time of an application of Sonic until soil treated with Sonic may be replanted with the crops listed. When Sonic is tank mixed with other herbicide(s), refer to all the labels for re-cropping instructions, following the intervals that are the most restrictive. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. For crops not listed, the interval is 30 months and a successful field bioassay.

Crop	Interval (Months)
alfalfa	12
barley	12
canola	24
corn, field ¹	10
corn, pop ¹	10
corn, seed ¹	10
corn, sweet ¹	10
cotton	18 or 12*
dry shelled beans and peas	9
lima beans	12
oats	12
peanuts	12
potatoes	18
rice	10
rye	12
snap beans	12
sorghum	12
soybeans	anytime
succulent peas	9
sugar beets ²	30
sunflower ²	30
tobacco ³	30
wheat	4

¹ Corn, including field, popcorn, seed corn, and sweet corn: Observe an 18-month rotational interval if 6.45 to 8 oz of Sonic is applied to soil of 1.5% organic matter or less, and pH is above 7. **Hybrid seed production:** Corn inbred lines grown for hybrid seed production may be injured in the growing season following an application of Sonic. Inbred lines should be thoroughly tested

for crop tolerance before rotating to production scale acreages. **Corteva Agriscience will not accept responsibility for any crop injury on field corn grown for seed following an application of Sonic.**

²These crops require a 30-month rotational interval and a successful field bioassay.

³Transplanted tobacco may be planted 10 months after application of a maximum application rate of 3 oz of Sonic per acre.

Tobacco in seedbed nurseries may be replanted 18 months after application of 3 oz of Sonic per acre and following a successful field bioassay. A rotational interval of 30 months and a successful field bioassay is required for all applications of Sonic greater than 3 oz per acre.

*Cotton may be planted after 12 months where Sonic was applied at rates of 5 oz/acre or less and meets the following conditions:

- Medium and fine soils
- Soil pH < 7.2
- Rainfall or irrigation must exceed 15" after application of Sonic.

Replanting Instructions

If the initial planting of soybeans fails to produce a uniform stand, soybeans may be replanted in fields treated with Sonic alone. Do not re-treat fields with a second application of Sonic. When tank mixing with a labeled product, refer to the replant instructions for that product. Do not replant treated fields with any crop at intervals that are inconsistent with the rotational crop guidelines on the label for Sonic. Where a tank mix is used, refer to the product's labels for any additional replant instructions. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Application Information

Do not apply to crops other than soybeans.

Ground Application

Use a standard low pressure herbicide boom sprayer equipped with suitable nozzles and screens. Apply uniformly using properly calibrated nozzles (10 to 40 psi) and screens and strainers no finer than 50 mesh. Use 10 to 40 gallons of spray solution per acre. Do not exceed 40 psi spray pressure unless required by the spray nozzle manufacturer.

Continuous agitation during application is required. Avoid swath overlaps. Shut off spray booms while turning, slowing or stopping as over application may result. Do not allow spray mixtures of Sonic to sit overnight as settling of product and difficulty of re-suspending may occur.

To avoid injury to sensitive crops, spray equipment used for applications of Sonic must be drained and thoroughly cleaned with water plus ammonia or detergent before being used to apply other products. See Spray Clean-Out section.

Avoid all direct and/or indirect spray contact with non-target plants. Do not apply near desirable vegetation. Allow adequate distance between target area and desirable plants to minimize exposure.

Runoff and Wind Erosion Precautions

Do not apply under conditions which favor runoff or wind erosion of soil containing Sonic to non-target areas. To prevent off-site movement due to runoff or wind erosion:

- Avoid treating powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, allow the soil surface to be settled by rainfall or irrigation.
- Do not apply to impervious substrates such as paved or highly compacted surfaces or frozen or snow covered ground.
- Do not apply to soils when saturated with water.
- Do not use tailwater from the first flood or furrow irrigation of treated fields to treat non-target crops unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.

Aerial Application

Use nozzle types and arrangements that will provide optimum spray distribution and maximum coverage. To minimize spray drift, apply Sonic in a spray volume of a minimum of 5 gallons of spray solution per acre. Increase the spray volume for fields with dense weed pressure. Aerial application is allowed only

when environmental conditions prohibit ground application. For aerial applications the maximum release height must be 10 feet from the top of the crop canopy, unless a greater application height is required for pilot safety. When this product is allowed by air, applicator must use a minimum finished spray volume of 5 gallons per acre.

Restriction

- Aerial applicators must be in enclosed cockpits.
- Aerial application is allowed only when local environmental conditions prohibit ground application.

SPRAY DRIFT ADVISORIES

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

The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

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.

Do not apply as spray droplets smaller than medium to coarse (defined by the ASABE standard S-572).

- Select nozzles and application pressure that deliver medium to coarse or larger spray droplets as indicated in the nozzle manufacturer's recommendations and in accordance with ASABE* Standard S-572.
- Select coarse to very coarse droplet size when this product is used as a preemergent/preplant application.
- Select medium to very coarse droplet size when this product is used postemergence with a contact burndown herbicide.

Controlling Droplet Size – Ground Boom

- **Aerial application is allowed only when environmental conditions prohibit ground application.**
- 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 manufacturer's 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.

- For aerial applications, the maximum release height must be 10 feet from the top of the crop canopy, unless a greater application height is required 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.

Volume: Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows usually produce larger droplets.

- Ground applicators must use a minimum finished spray volume of 10 gallons per acre.
- When Sonic is tank mixed with a contact burndown herbicide, ground applicators must use a minimum spray volume of 15 gallons per acre.
- When this product is allowed to be applied by air, applicator must use a minimum finished spray volume of 5 gallons per acre.

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.

Applicators may spray only when wind speed is between 3 and 10 mph.

Sensitive Areas

Applications should be made when the wind is blowing away from adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, and non-target crops).

Mixing Instructions and Loading Instructions

Sonic Applied Alone

Select the proper application rate of Sonic from Timing and Method of Application section of this label. Fill the spray tank with approximately one-half of the volume of water needed for the acreage being treated. With agitator operating, add the required amount of Sonic for acreage being treated by opening the bottle(s) and measuring directly into the spray tank. Allow the product to fully disperse. Complete the addition of spray water. Maintain agitation during filling, mixing and application. Apply the spray mixture of Sonic immediately after mixing. Do not store spray mixture.

Sonic Applied in Tank Mix Combination

Select the proper application rate of Sonic from Timing and Method of Application section of label. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. To ensure product compatibility, a jar test should be conducted before large volume mixing. Provided the jar test indicates the mixture is compatible, prepare the tank mixture as follows.

Fill the spray tank with approximately one-half of the volume of water needed for the acreage being treated. With agitator operating, add the required amount of Sonic for the acreage being treated by opening the bottle(s) and measuring directly into the spray tank. Allow the product to fully disperse. Next add the specified amount(s) of the additional tank mix product(s) in the following order: first, dry formulations (e.g., wettable powders, dry flowables); next, liquid suspensions (e.g., flowables); and,

finally, liquids (e.g., ECs). Allow time for complete mixing and dispersion after each addition, adding water as necessary. Complete the addition of spray water. Maintain agitation during filling, mixing and application. Use tank mixtures of Sonic immediately after mixing. Do not store tank mixtures.

Fertilizer Spray Mixtures

Applications of Sonic alone or with recommended tank mixtures in conjunction with fertilizer solutions may be used unless use directions specifically state otherwise. Small quantities should be tested for compatibility by the following procedure before mixing in full spray tank quantities:

1. Put 1 pint of fertilizer solution in a quart jar.
2. Add the appropriate amount of herbicide based on the table below. If more than one product is to be used, add each separately using the following sequence: dry formulations (e.g., wettable powders, dry flowables) first, liquid suspensions (e.g., flowables) next, and finally liquids (e.g., ECs).

Herbicide Type	Herbicide Field Use Rate	Amount Herbicide Added per Pint ¹
wetable powders or dry flowables	0.5 lb	0.75 teaspoon
	1 lb	1.5 teaspoons
	2 lb	3 teaspoons
	3 lb	4.5 teaspoons
emulsifiable concentrates	1 pt	0.5 teaspoon
liquid flowables	1 qt	1 teaspoon
	2 qt	2 teaspoons
	3 qt	3 teaspoons

¹Based on a spray volume of 25 gal per acre. For lower or higher spray volumes, adjust fluid fertilizer quantity accordingly.

3. Close jar and shake well.
4. Watch mixture for several seconds, again after 5 minutes and again after 30 minutes. If herbicide/fertilizer combination remains mixed or can be remixed readily (i.e., does not permanently separate, foam, gel or become lumpy), the mixture is compatible and can be mixed in full volumes and sprayed. If the mixture is compatible, prepare spray by adding fertilizer solution to the tank first, then follow directions below.

Sonic Applied Alone with Liquid Fertilizer

In order to add Sonic to a liquid fertilizer carrier, Sonic must be premixed in a slurry of product and clear water. Fill the spray tank one-half full with fertilizer solution. With agitator operating, add the slurry with Sonic to the spray tank. Use a minimum of one gallon of water for each container of Sonic. Stir until completely dissolved. Then add slurry to the spray tank through a 20 to 35 mesh screen. Rinse container used for premixing and add rinsate to the spray tank. Complete filling the sprayer tank with fertilizer. Maintain agitation during filling, mixing and application. Use the spray mixture of Sonic immediately after mixing. Do not store mixture.

Application with Dry Bulk Fertilizer (Soil Application Only)

Dry bulk fertilizer may be impregnated or coated with Sonic. Soil applications of dry bulk fertilizer impregnated with Sonic provides weed control equal to the same rates of Sonic applied in liquid carriers. Follow label directions for Sonic regarding rates per acre, special instructions, precautions and limitations for soil application.

Most absorbent dry fertilizers can be used for impregnation with Sonic. Pure ammonium nitrate and/or limestone will not absorb the herbicide and are not suitable for impregnation with Sonic. Absorbent fertilizer blends containing a mixture of ammonium nitrate and/or limestone as part of the fertilizer mixture may be impregnated.

Apply 200 to 250 lbs of fertilizer/herbicide mixture per acre. Various equipment can be used to impregnate Sonic onto dry fertilizers, including vertical and horizontal mixers. Apply the mixture uniformly to the soil with properly calibrated equipment immediately after blending. Uniform application of the herbicide/fertilizer mixture is essential for satisfactory weed control and to prevent possible crop injury. Non-uniform application may result in unsatisfactory weed control. In areas where conventional tillage is practiced, a shallow soil incorporation of the mixture may improve weed control.

Compliance with all federal and state regulations relating to blending pesticide mixtures with dry bulk fertilizer, registration, labeling and application are the responsibility of the individual and/or company offering the fertilizer and chemical mixture for sale.

Impregnation

Sonic must be pre-mixed with water to form a slurry prior to impregnation of dry bulk fertilizer. For best results, use a minimum of 8 fl oz or 0.5 pint of water with one acre of Sonic. Pre-mixing can be accomplished by shaking desired amount of Sonic and water together in a closed container. Once impregnated, fertilizer may be applied with either spinner, airflow, or other suitable equipment. A small amount of a silicon-based defoaming agent may also be needed. Make sure Sonic is completely and uniformly dispersed in water. Add sufficient water to adjust the total volume of the mixture to deliver a spray volume of 0.5 to 1 gallon of fertilizer per ton. Nozzles used to spray Sonic onto the fertilizer should be placed to provide uniform spray coverage. Use constant agitation to keep the spray mixture suspended.

Herbicide Combinations with Sonic on Dry Bulk Fertilizer

To prepare concentrated tank mixtures of Sonic with emulsifiable concentrate formulations, the Sonic/water pre-mix should be added to the liquid mixing tank first. If additional water is required, this should be added next, followed by the emulsifiable concentrate. Care should be taken to avoid over-saturating the dry fertilizer with liquid. For this reason the volume of water in the mixing tank should be roughly equivalent to the volume of emulsifiable concentrate added to the mixing tank. Once impregnated, fertilizer may be applied with either spinner, airflow, or other suitable equipment. Depending upon the specific dry fertilizer blend and the emulsifiable concentrate application rates, it may be necessary to increase the fertilizer application rates to avoid over-saturating the dry fertilizer. Add drying agent as needed to prevent over-saturation of fertilizer. Over-saturation can result in a mixture with poor flow properties and increase residues of Sonic left in the blending equipment.

The spray time is no less than 3 to 5 minutes per batch. Avoid spraying mixture on side of the blender. Nozzle placement should minimize spray overlap in the blender and also avoid spraying the mixer walls. For best results, use a suitable in-line (no finer than 100 mesh) screen to avoid spray blockages. Any closed drum, belt, ribbon or other commonly used dry bulk fertilizer blender may be used. Immediately apply bulk fertilizers impregnated with Sonic. Do not store the impregnated fertilizer. All individual state regulations, including those related to dry bulk blending registration, labeling and application, are the responsibility of the individual and/or company selling mixtures of Sonic and fertilizer.

Calculate amounts of Sonic with the following formula:

$$\begin{array}{rcl}
 2000 & & \\
 \text{lb of fertilizer per acre} & \times & \text{oz/acre of Sonic} = \text{oz of product per ton of fertilizer}
 \end{array}$$

Example:

$$\begin{array}{rcl}
 2000 & & \\
 300 \text{ lb of fertilizer per acre} & \times & 4.0 \text{ oz/acre of Sonic} = 3 \text{ oz of product (Sonic) per ton of fertilizer}
 \end{array}$$

Note: Thoroughly clean dry fertilizer blending and application equipment prior to use with other herbicides. It is important to thoroughly clean the blender, herbicide spray tank, and spraying apparatus. Rinse the sides of the blender and the herbicide tank with water. Clean spraying apparatus prior to preparing fertilizer/herbicide mixtures for crops other than soybeans (see Spray Equipment Clean Out Procedures). If the following crop is soybeans, flushing may be accomplished by running one to two loads of dry fertilizer, which must be used only prior to planting soybeans. Inspect the equipment carefully for any spray build-up or deposits from earlier batches and wash or remove as appropriate.

If the following crop is not soybean, at a minimum, two dry flush batches are required. Both flushes should fill at least 50% of the blender's capacity. A third flush may be necessary if the blender batch of Sonic was "wet" due to over-saturating the fertilizer, or if the subsequent application is for a crop known to be highly sensitive to Sonic.

Alternately, an effective cleaning procedure is rinsing the blenders with a bleach or ammonia solution. The resulting rinsate can be mixed with the fertilizer used for flushing, but at no more than 1 gallon of rinsate per ton of fertilizer.

Sonic Applied in Tank Mix Combinations

Fill the spray tank one-half full with fertilizer solution. With the agitator operating, add a slurry of Sonic as described in the preceding paragraph. Next dilute the individual tank mix partners with sufficient water to form a free flowing dispersion, then add to the spray tank of fertilizer. While maintaining agitation, add the other products using the following order: slurry of dry formulations (wetable powders, dry flowables) first, diluted liquid formulations (ECs, flowables) second. Complete filling the sprayer tank with fertilizer. Maintain agitation during filling, mixing and application. Use tank mixtures of Sonic immediately after mixing. Do not store tank mixtures.

Sprayer Equipment Clean-Out

After spraying Sonic and before using sprayer equipment for any other applications, the sprayer must be thoroughly cleaned using the following procedure:

1. Drain sprayer tank, hoses, and spray boom and thoroughly rinse the inside of the sprayer tank with clean water to remove sediment and residues. Thoroughly flush sprayer hoses, boom and nozzles with clean water.
2. Fill the tank 1/2 full with clean water, and add appropriate detergent or ammonia (follow manufacturer's directions for use). Fill the tank to capacity and operate the sprayer for 15 minutes to flush hoses, boom, and nozzles.
3. Convenient and thorough cleaning of the sprayer can be achieved if the cleaning solution is left in the spray tank, hoses, spray booms and spray nozzles overnight or during storage.
4. Before using the sprayer, drain the spray system. Rinse the tank with clean water and flush through the hoses, boom, and nozzles. Remove and clean spray tips and screens separately with the detergent or ammonia solution.
5. Properly dispose of all cleaning solution and rinsate in accordance with federal, state and local regulations and guidelines.

Do not drain or flush equipment on or near desirable trees or plants. Do not contaminate any body of water including irrigation water that may be used on other crops. Should small quantities of Sonic remain in inadequately cleaned mixing, loading and/or spray equipment, they may be released during subsequent applications potentially causing effects to certain crops and other vegetation. Corteva Agriscience accepts no liability for any effects due to inadequately cleaned equipment.

Soybeans (Conventional and GMO)

Timing and Method of Application

Sonic may be used alone or in tank mixture combinations for the control of the weeds listed in conventional or GMO soybean varieties.

Application Rates

Soil Organic Matter ¹	Sonic (oz/acre) ²	Rate of Sonic (lb ai/acre)	
		Sulfentrazone	Cloransulam-methyl
3% or less	6.45	0.25	0.032
greater than 3%	8	0.31	0.04

¹Do not apply Sonic to soils classified as sand with less than 1% organic matter.

²Maximum application rates: See Preplant Surface and Preemergence Application for specifications.

- The maximum single application rate for Sonic is 8 oz/acre, the equivalent of 0.31 lb/a.i./A of sulfentrazone and 0.04 lb/a.i./A of Cloransulam-methyl.
- The maximum annual application rate for Sonic is 8 oz/acre, the equivalent of 0.31 lb/a.i./A of sulfentrazone and 0.04 lb/a.i./A of Cloransulam-methyl.

Preplant Incorporated Application

Apply Sonic alone or in tank mix combination with other herbicides registered for preplant incorporated application to soybeans. Incorporate the herbicide(s) into the top 1 to 3 inches of the final seedbed using equipment that provides thorough soil mixing. When Sonic is applied in tank mix combination with other herbicide(s), follow the incorporation directions for the tank mix partner(s). It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Preplant Surface Application

Apply Sonic alone or in tank mix combination with other herbicides registered for preplant soil surface application to soybeans. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Preemergence Application

Apply at planting time or within 3 days after planting. Sonic may be applied alone or in tank mix combination with other herbicides registered for preemergence application to soybeans. When applied in tank mix combination, follow applicable use instructions, including application rates. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. Apply before planting, at planting time or within 3 days of planting. Properly closed seed furrows are necessary when applying at planting time or before seed germination. Do not apply later than 3 days after planting as crop injury may result.

Weeds Controlled

When used as directed, Sonic will provide control or suppression of the following broadleaf weeds and grasses:

Common Name

Scientific Name

Broadleaves

amaranth, Palmer
 amaranth, spiny
 anoda, spurred
 beggarweed, Florida
 carpetweed
 cocklebur, common
 copperleaf, hophornbeam
 croton, tropic
 daisy, American

Amaranthus palmeri
Amaranthus spinosus
Anoda cristata
Desmodium tortuosum
Mollugo verticillata
Xanthium strumarium
Acalypha ostryifolia
Croton glandulosus
Eclipta alba

Common Name

dayflower, common
galinsoga, hairy
groundcherry, clammy
groundcherry, cutleaf
horseweed (marestail)²
jimsonweed
kochia
ladysthumb
lambsquarters, common
mallow, Venice
Mexicanweed
morningglory, entireleaf
morningglory, ivyleaf
morningglory, palmleaf
morningglory, pitted¹
morningglory, purple
morningglory, red
morningglory, smallflower
morningglory, tall
mustard, wild
nightshade, eastern black
nightshade, hairy
nightshade, silverleaf
pigweed, redroot
pigweed, smooth
pigweed, tumble
poorjoe
purslane, common
pusley, Florida
ragweed, common²
ragweed, giant²
senna, coffee
smartweed, Pennsylvania
smellmelon
spurge, spotted
starbur, bristly
sunflower, common
teaweed (prickly sida)
thistle, Russian
velvetleaf
waterhemp, common
waterhemp, tall

Scientific Name

Commelina communis
Galinsoga ciliata
Physalis heterophylla
Physalis angulata
Conyza canadensis
Datura stramonium
Kochia scoparia
Polygonum persicaria
Chenopodium album
Hibiscus trionum
Caperonia castanaefolia
Ipomea hederacea integriuscula
Ipomea hederacea
Ipomea wrightii
Ipomea lacunosa
Ipomea turbinata
Ipomea coccinea
Jacquemontia tamnifolia
Ipomea purpurea
Brassica kaber
Solanum ptycanthum
Solanum sarrachoides
Solanum elaeagnifolicum
Amaranthus retroflexus
Amaranthus hybridus
Amaranthus albus
Diodia teres
Portulaca oleracea
Richardia scabra
Ambrosia artemisiifolia
Ambrosia trifida
Cassia occidentalis
Polygonum pensylvanicum
Cucumis melo
Euphorbia maculata
Acanthospermum hispidum
Helianthus annuus
Sida spinosa
Salsola kali
Abutilon theophrasti
Amaranthus rudis
Amaranthus tuberculatos

Grasses

barnyardgrass¹
broadleaf signalgrass
crabgrass, large
crabgrass, smooth
crabgrass, southern¹
crowfootgrass¹
foxtail, giant¹
foxtail, green
foxtail, yellow¹
goosegrass
johnsongrass, seedling¹

Echinochloa crus-galli
Brachiaria platyphylla
Digitaria sanguinalis
Digitaria ischaemum
Digitaria ciliaris
Dactyloctenium aegyptium
Setaria faberi
Setaria viridis
Setaria lutescens
Eleusine indica
Sorghum halepense

Common Name

orchardgrass
 panicum, fall
 panicum, Texas

Scientific Name

Dactylis glomerata
Panicum dichotomiflorum
Panicum texanum

Sedges

nutsedge, purple
 nutsedge, yellow
 sedge, annual

Cyperus rotundus
Cyperus esculentus
Cares spp.

¹Provides suppression or partial control only.

²Will not control ALS resistant biotypes of these weed species.

Reduced Rates for Roundup Ready Soybeans

For use when no glyphosate resistant biotypes have been identified. Sonic may be used at reduced rates in conjunction with planned follow-up weed control applications with glyphosate based products such as Durango[®] DMA[®] herbicide, Roundup or other glyphosate herbicide products labeled for use on Roundup Ready soybean varieties. Follow all application directions for Sonic. Sonic may have reduced control of certain ALS resistant biotypes including marestalk, giant ragweed, common ragweed, and cocklebur. .

Apply before planting, at planting time or within 3 days after planting. Properly closed seed furrows are necessary when applying at planting. Postemergence treatments may include any product or combination of products labeled for use on soybeans.

Reduced Rate Application Rates

Soil Organic Matter ¹	Sonic (oz/acre)	Rate of Sonic (lb ai/acre)	
		Sulfentrazone	Cloransulam-methyl
3% or less	3.00 – 5.00	0.116 – 0.193	0.015 – 0.025
greater than 3%	4.00 – 6.00	0.155 – 0.233	0.020 – 0.030

¹Do not apply Sonic to soils classified as sand with less than 1% organic matter.

The maximum single application rate for Sonic is 8 oz/acre, the equivalent of 0.31 lb/a.i./A of sulfentrazone and 0.04 lb/a.i./A of Cloransulam-methyl.

The maximum annual application rate for Sonic is 8 oz/acre, the equivalent of 0.31 lb/a.i./A of sulfentrazone and 0.04 lb/a.i./A of Cloransulam-methyl.

Tank Mixes of Sonic with Saflufenacil containing Herbicides for Soybeans

It is the pesticide user’s responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. To improve burndown of existing broadleaf weeds prior to planting, Sonic, at up to 4 oz per acre may be tank mixed with the labeled rate of the saflufenacil product. For labeled rates greater than 4 oz of Sonic in combination with the labeled rate of th saflufenacil containing herbicide, wait a minimum of 10 days before planting soybeans. Always add MSO at 1% v/v and AMS at 1 to 2% v/v or UAN at 1.25 to 2.5% v/v to maximize burndown activity with saflufenacil containing products.. Do not use this tank mix on coarse soils with <2% organic matter.

Preplant Burndown Application

Sonic, used at 6.45 to 8 oz per acre as in the Application Rates chart for all soybeans above, provides burndown of weeds listed below when applied as directed. Thorough coverage is essential. Apply a minimum of 10 gallons per acre finished spray volume. Use a non-ionic surfactant (NIS) having at least 80% active ingredient strength at 0.125 to 0.25% v/v (1 to 2 pints per 100 gallons of spray solution) plus ammonium sulfate (AMS) at 2.5% v/v. Crop oil concentrate (COC) at 1.2% v/v plus ammonium sulfate may be used. Burndown results may be slowed or reduced when the growth of the weeds is affected by unusual environmental factors just prior to or after application such as especially cool or widely fluctuating day and night air temperatures, drought, heat stress, or waterlogged soils. To broaden the spectrum of weeds controlled, Sonic may be tank mixed with other herbicides such as carfentrazone-ethyl products, 2,4-D products, glyphosate products, paraquat products, glufosinate, or metribuzin. It is the pesticide user’s responsibility to ensure that all products in the listed mixtures are registered for the intended use.

Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Weeds Controlled

When used as directed for burndown, Sonic will provide control or suppression of the following broadleaf weeds:

Common Name	Scientific Name
Broadleaves	
cocklebur, common	<i>Xanthium strumarium</i>
horseweed (marestail) ²	<i>Conyza canadensis</i>
jimsonweed	<i>Datura stramonium</i>
mallow, Venice	<i>Hibiscus trionum</i>
morningglory, entireleaf	<i>Ipomea hederacea integruscula</i>
morningglory, ivyleaf	<i>Ipomea hederacea hederacea</i>
morningglory, palmleaf	<i>Ipomea wrightii</i>
morningglory, pitted ¹	<i>Ipomea lacunosa</i>
morningglory, purple	<i>Ipomea turbinata</i>
morningglory, red	<i>Ipomea coccinea</i>
morningglory, smallflower	<i>Jacquemontia tamnifolia</i>
morningglory, tall	<i>Ipomea purpurea</i>
ragweed, common ²	<i>Ambrosia artemisiifolia</i>
ragweed, giant ²	<i>Ambrosia trifida</i>
sicklepod	<i>Cassia obtusifolia</i>
smartweed, Pennsylvania	<i>Polygonum pensylvanicum</i>
sunflower, common	<i>Helianthus annuus</i>
velvetleaf ¹	<i>Abutilon theophrasti</i>

¹For velvetleaf control, use 28% nitrogen (UAN) or AMS with NIS or COC.

²Sonic will not control ALS resistant biotypes of these weed species.

Precautions

- Properly closed seed furrows are necessary when applying at planting time or within 3 days after planting.
- Maintain spray tank agitation until the spray mixture is applied.

Restrictions

- Do not apply this product through any type of irrigation system.
- Do not make more than one soil application per acre per year.
- Do not apply more than 8 oz of Sonic per acre per year as a cumulative total of soil application of Sonic and post-emergence application of FirstRate[®] herbicide (1 oz per acre of Sonic contains 0.005 lb a.i. cloransulam-methyl and 0.3 oz per acre of FirstRate contains 0.016 lb a.i. cloransulam-methyl. Do not apply more than 0.055 lb a.i. per acre of cloransulam-methyl per year).
- Do not feed treated soybean forage or soybean hay to livestock.
- Do not harvest soybeans for 65 days after application of Sonic.
- Do not apply Sonic to soils classified as sands containing less than 1% organic matter.
- Do not drain or flush equipment on or near desirable trees or plants. Do not contaminate any body of water including irrigation water that may be used on other crops.
- This product may only be used to control broadleaf weeds, grasses, and sedges in soybean (conventional and GMO).

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If terms of the following Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitation, of Remedies.

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