

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

May 27, 2021

Elaine Bauer Crop Protection Regulatory Specialist Corteva Agriscience LLC 9330 Zionsville Road Indianapolis, IN 46268

Subject: Registration Review Label Mitigation for Cyhalofop-butyl and Penoxsulam

Product Name: REBELEX CA

EPA Registration Number: 62719-616

Application Date: August 16, 2019 and April 28, 2020

Decision Number: 554294/562248

Dear Ms. Bauer:

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 Cyhalofop-butyl and ALS Inhibitor 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

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approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

If you have any questions about this letter, please contact Marisa Wright by phone at (703) 347-0463, or via email at wright.marisa@epa.gov.

Sincerely,

Linda Arrington, Branch Chief

Risk Management and Implementation Branch 4

Pesticide Re-Evaluation Division

Office of Pesticide Programs

Enclosure

ACCEPTED

May 27, 2021

Under the Federal Insecticide, Fungicide

and Rodenticide Act as amended, for the

pesticide registered under EPA Reg. No. 62719-616

(Base label):

PENOXSULAM	GROUP	2	HERBICIDE
CYHALOFOP-BUTYL	GROUP	1	HERBICIDE

# RebelEX® CA

#### **HERBICIDE**

## For selective postemergence weed control in rice in the state of California

Active Ingredient:

penoxsulam: 2-(2,2-difluoroethoxy)-N-(5,8-dimethoxy[1,2,4] triazolo[1,5c]pyrimidin-2-yl)-6-(trifluoromethyl)benzenesulfonamide .......2.95% cyhalofop: 2-[4-(4-cyano-2- fluorophenoxy) phenoxy] propanoic acid, butyl ester, (R) ...... 21.06 

Contains petroleum distillate

Contains 0.25 lb of penoxsulam active ingredient and 1.78 lb of cyhalofop-butyl active ingredient per gallon

# **Keep Out of Reach of Children**

#### **PRECAUCION** CAUTION

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

#### First Aid

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.

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

# **Precautionary Statements**

## Hazards to Humans and Domestic Animals

Wash Hands thoroughly with Soap before Eating, Drinking, Chewing Gum, using Tobacco, or using the Toilet. Harmful If Inhaled. Prolonged or Frequently Repeated Skin Contact May Cause Allergic Reactions in Some Individuals. Avoid Breathing Spray Mist.

#### Personal Protective Equipment (PPE)

#### Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- · Shoes plus socks
- Waterproof gloves

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, 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:

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

#### **Environmental Hazards**

Except when treating rice fields as specified in this product label, **DO NOT** apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwater or rinsate.

#### **Surface Water Advisory**

Cyhalofop-butyl can contaminate surface water through spray drift from aerial and ground application equipment. Treated rice field water can contaminate surface water through accidental release or overflow, or by deliberate release due to normal growing practices, including interim or final release of flood water at harvest.

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils with shallow ground water. 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 penoxsulam from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

#### **Groundwater Advisory**

This product has properties and characteristics associated with chemicals detected in groundwater. Penoxsulam and Cyhalofop-butyl may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

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

#### **Agricultural Use Requirements**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to 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: Store in cool dry place in original container.

**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 and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. 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 refillable rigid containers larger than 5 gal)

# **Storage and Disposal**

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

**Pesticide Storage:** Store in cool dry place in original container.

**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.

## (Storage and Disposal for nonrefillable rigid containers larger than 5 gal)

#### **Storage and Disposal**

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

**Pesticide Storage:** Store in cool dry place in original container.

**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. 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 and continue to drain for 10 seconds after the flow begins to drip. 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.

Refer to inside of label booklet for additional precautionary information and 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.

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Produced for Corteva Agriscience LLC 9330 Zionsville Road Indianapolis, IN 46268	
™® Trademarks of Corteva Agriscience and its affiliated companies	
EPA Reg. No. 62719-616	EPA Est.
Agricultural Chemical: <b>DO NOT</b> ship or store with food, feeds, drugs or clothing.	
In case of emergency endangering health or the environment involving this produ	uct, call 1-800-992-5994.

(Cover, shipping container):

PENOXSULAM	GROUP	2	HERBICIDE
CYHALOFOP-BUTYL	GROUP	1	HERBICIDE

# RebelEX® CA

#### **HERBICIDE**

# For selective postemergence weed control in rice in the state of California

Contains petroleum distillate

Contains 0.25 lb of penoxsulam active ingredient and 1.78 lb of cyhalofop-butyl active ingredient per gallon

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

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EPA Reg. No. 62719-616

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(Page 1 through end):

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# **Personal Protective Equipment (PPE)**

#### Applicators and other handlers must wear:

- · Long-sleeved shirt and long pants
- · Shoes plus socks
- Waterproof gloves

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.

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## **User Safety Recommendations**

Users should:

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

#### First Aid

**If swallowed:** Immediately call a poison control center or doctor. **DO NOT** induce vomiting unless told to do so by a poison control center or doctor. **DO NOT** give any liquid to person. **DO NOT** give anything by mouth to an unconscious person.

Note to physician: May pose aspirational pneumonia hazard. Contains petroleum distillate.

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

#### **Environmental Hazards**

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

#### **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
- Chemical-resistant gloves made of any waterproof material
- · Shoes plus socks

## **Storage and Disposal**

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

**Pesticide Storage:** Store in cool dry place in original container.

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

#### Nonrefillable containers 5 gallons or less:

**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 and drain for 10 seconds after the

flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. 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.

## Refillable containers 5 gallons or larger:

**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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#### **Product Information**

RebelEX® CA herbicide is a postflood, postemergence herbicide for selective control of susceptible grass, broadleaf, and sedge weeds in rice in California. Only susceptible weeds emerged at the time of application will be controlled. A spray volume of 10 gallons or more per acre (gpa) and uniform coverage are required for optimum performance. A crop oil concentrate at 2.5% v/v, or a methylated seed oil or vegetable oil concentrate, at specified label use rates is required with RebelEX CA. RebelEX CA is rainfast within 2 hours after application.

Rice crops grown under adverse environmental conditions, such as extreme cold or heat, may express temporary crop injury when RebelEX CA is applied, including slight height reduction or root stunting. Any crop stress or environmental factors which decrease plant metabolism and growth may reduce weed control efficacy and crop tolerance. Such effects are transient and **DO NOT** affect yield. RebelEX CA may be used on all rice varieties; however, it is important to recognize that the degree of crop tolerance may vary depending upon variety and environmental conditions. **DO NOT** apply RebelEX CA to wild rice.

#### **Use Precautions**

- RebelEX CA may not reliably control known ACC'ase or ALS resistant weed biotypes.
- One sequential application of Clincher® CA herbicide can be made greater than 10 days before or after an application of RebelEX CA depending upon the rate of RebelEX CA applied. **DO NOT** make more than two applications of RebelEX CA and Clincher CA combined per year. The two applications of RebelEX CA and Clincher CA must not exceed 0.47 lb/acre of cyhalofop-butyl per year combined. Use the chart below to determine the combined amount of RebelEX CA and Clincher CA that can be used. Follow all label use directions for Clincher CA.

Rate of RebelEX CA (fl oz/acre)	Maximum Sequential Rate of Clincher CA (fl oz/acre)	Cyhalofop- butyl (from RebelEX CA) lbs ai/acre	Cyhalofop- butyl (from Clincher CA) Ibs ai/acre	Maximum Cyhalofop- butyl lbs ai/acre
16	13	0.223	0.242	0.465
18	11.5	0.25	0.214	0.464
20	10	0.278	0.186	0.464

- After an application of RebelEX CA, begin re-flooding three hours after application. For best results, fields should be completely re-flooded 24 to 48 hours after application.
- Poor weed control may result from application of RebelEX CA made to plants under stress from abnormally hot or cold weather; environmental conditions such as drought, hail damage, or high pH soils; or prior herbicide applications.
- Application of RebelEX CA to fields which have been leveled within 12 months prior to application may
  result in serious rice injury in areas that have been cut or filled. This does not apply to normal annual
  land planning activities.
- Application of RebelEX CA to rice grown in soils with pH >7.8 or high salt content may result in serious rice injury.

#### **Use Restrictions**

- Preharvest Interval: DO NOT apply within 60 days of rice harvest.
- DO NOT apply RebelEX CA directly to, or otherwise permit RebelEX CA to come into contact with, commercially produced broadleaf crops such as cotton, green or dry beans, melons, tomatoes, grapes, pome/stone/fruit trees, peaches, nectarines, all vegetable crops, all perennial tree or vine crops as well as commercially grown flowers, ornamental shrubs or trees, or other desirable commercially produced broadleaf plants, as serious injury may occur. DO NOT permit spray mists containing RebelEX CA to drift onto desirable broadleaf plants.
- DO NOT apply RebelEX CA directly to, or otherwise permit RebelEX CA to come into contact with, commercially produced non-target cereal and grass crops such as corn, sorghum, wheat, sugar cane, turfgrass, sod farms, grass grown for seed, etc. DO NOT permit spray mists containing RebelEX CA to drift onto desirable grass plants.
- **DO NOT** make more than one application per year of RebelEX CA. **DO NOT** apply more than 20 fl oz of RebelEX CA per acre (0.039 lbs penoxsulam and 0.278 lbs cyhalofop-butyl per acre) per year.
- DO NOT overlap or double spray ends of fields.
- DO NOT allow tank mixes of RebelEX CA to sit overnight.
- **DO NOT** tank mix RebelEX CA with malathion or methyl parathion. **DO NOT** make an application of malathion or methyl parathion within 7 days of an application of RebelEX CA.
- DO NOT apply RebelEX CA where runoff or irrigation water may flow directly onto agricultural land other than rice fields.
- DO NOT rotate treated land to crops other than rice for three months following application.
- DO NOT use RebelEX CA for weed control in wild rice.
- DO NOT fish or commercially grow fish, shellfish or crustaceans on treated acres during the year of treatment.

- **DO NOT** make aerial applications of RebelEX CA when wind speeds are less than 3 mph or greater than 10 mph.
- DO NOT make ground applications of RebelEX CA when wind speeds are greater than 10 mph.
- Chemigation: DO NOT apply this product through any type of irrigation system.

## **Weed Resistance Management**

RebelEX CA, which contains the active ingredients Penoxsulam (Group 2) and Cyhalofop (Group 1) herbicides 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 a 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 the labeled rate and directions for use is important to delay the selection for resistance. Make only one application per year of RebelEX CA.

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 and after 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 (less than 4 inches).
- Apply full rates of RebelEX CA 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 2 or Group 1 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 2 or Group 1 herbicides.
- Avoid making more than two sequential applications of RebelEX CA and any other Group 2 or Group 1 herbicides per year 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.

## **Mandatory Spray Drift**

## Aerial Applications:

- **DO NOT** release spray at a height greater than 10 ft above the ground or 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).
- Applicators must use ½ swath displacement upwind at the downwind edge of the field.
- **DO NOT** apply when wind speeds exceed 10 mph at the application site. The boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- DO NOT apply during temperature inversions.

## **Ground Boom Applications:**

- 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."

#### **Boomless Ground Applications:**

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

## **Spray Drift Advisories**

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**

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.

#### 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.

#### **Boom-less Ground Applications:**

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

#### Handheld Technology Applications:

• Take precautions to minimize spray drift.

#### **Buffer Zones**

Buffer zones are defined as the minimum distance between the application site and the sensitive crop. The buffer zones listed below must be followed for ground applications of RebelEX CA:

Sensitive Crops	Ground Restrictions (ft)	Aerial Restrictions
non-target cereal and grass crops such as corn, sugar cane sudangrass, sorghum, grass grown for seed, millet, and sod farms.	50	450 feet
all other non-target broadleaf tree and vine crops not listed	200	2 miles
cotton		1/4 mile
peaches, nectarines, all melon and all bean crops	660	2 miles if wind blowing from treatment area away from sensitive crop.     4 miles if wind blowing from treatment area

	toward sensitive crop.

**Avoid direct or indirect contact with non-target plants.** Do not apply near desirable vegetation such as non target cereal and grass crops such as corn, sugar cane, sudangrass, sorghum, grass grown for seed, millet and sod farms, trees such as peaches, nectarines, vines, cotton, all melon and all bean crops and other non-target trees and broadleaf crops not listed here and other desirable crops. Allow adequate distance between target area and desirable plants to minimize exposure (See Buffer Zone above for restriction). The following drift management requirements must be followed to avoid off-target drift movement from aerial applications.

- Apply in highest possible spray volume per acre when applying by air.
- Apply with a minimum wind speed of 3 mph but no greater than 10 mph.
- Aircraft should check spray pattern per Operation Safe/PAASS program, or equivalent, for calibration and uniformity to provide adequate coverage.

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

#### **Endangered Species**

If endangered plant species occur in the proximity of the application site, the following mitigation measure is required to avoid adverse effects:

• Leave untreated buffer zones of 85 feet for ground applications or 470 feet for aerial applications.

To determine whether your county has an endangered terrestrial plant species, consult http://www.epa.gov/espp/usa-map.htm. Endangered Species Bulletins may also be obtained from extension offices or state pesticide agencies. If the bulletin is not available for your specific area, check with the appropriate local state agency to determine if known populations of terrestrial endangered plants occur in the area to be treated.

# **Mixing Directions**

#### **Use of Adjuvants**

Use of an agriculturally approved crop oil concentrate at a rate of 2.5% (v/v) or methylated seed oil or vegetable oil concentrate at specified label use rates is required with RebelEX CA. When an adjuvant is to be used with this product, Corteva Agriscience recommends the use of a Chemical Producers and Distributors Association certified adjuvant. Read and follow all use directions and precautions on adjuvant labels. **DO NOT** use organosilicone surfactants in spray mixtures with RebelEX CA.

#### RebelEX CA - Alone

Fill spray tank to one-half full with water. Start agitation. Add correct quantity of RebelEX CA and recommended adjuvant. Continue agitation while filling spray tank to required volume and during application.

#### RebelEX CA - Tank Mixes

Continuous agitation is required for tank mixes. Sparger pipe agitators generally provide the best agitation in spray tanks. **DO NOT** allow tank mixes of RebelEX CA to sit overnight.

**DO NOT** tank mix with Regiment, Shark, Londax or other bensulfuron-containing products. Reduced weed control or increased crop injury may result if RebelEX CA is applied in tank mix combinations with or immediately following any other herbicides not listed, especially if applied under conditions of plant stress and/or advanced weed growth stages.

**Tank Mix Compatibility Testing:** When tank mixing RebelEX CA with other materials, a compatibility test (jar test) using relative proportions of the tank mix ingredients should be conducted prior to mixing ingredients in the spray tank. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately one-half (1/2) hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

**Mixing Order:** Fill the tank one-third (1/3) full with water. Start the agitation. Different formulation types should be added in the following order: dry flowables (DF), wettable powders (WP), aqueous suspensions (AS), flowables (F), or liquids (L). Allow each product type to completely disperse before adding another. Continue agitation and fill tank to three-fourths (3/4) full, add the correct quantity of RebelEX CA and mix thoroughly. Finally, add any solution (S) formulations or surfactant, agitate and finish filling. Maintain agitation during filling and during application. If spraying and agitation must be stopped before the tank is empty, suspended materials may settle to the bottom. It is important to resuspend all of the settled material before continuing application. A sparger agitator is particularly useful for this purpose. **DO NOT** allow tank mixes to set overnight.

Carefully follow all mixing instructions for each material added to the tank. Initial dispersion of dry or flowable formulations can be improved by mixing with a small amount of water (slurrying) and pouring the slurry through a 20 to 35 mesh wetting screen in the top of the spray tank. Line screens in the tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

# **Application Directions**

#### **Environmental Conditions and Herbicidal Activity of RebelEX CA**

Best weed control results are obtained when RebelEX CA is applied to small, actively growing weeds, when daytime and nighttime temperatures are warm (60°F or more), and soil moisture is adequate to support active weed growth prior to and following application. If weeds are under drought stress, delay application until more favorable conditions resume. Application when weeds are moisture stressed or larger than the recommended size for control may result in only partial control.

#### **Ground Application**

Apply in a spray volume of 10 gpa or more when applying by ground. **DO NOT** ground apply RebelEX CA when wind speeds are greater than 10 mph.

#### **Application Timing**

For water seeded and drill seeded rice, apply RebelEX CA from the 1 leaf stage up to 60 days before harvest. Within this application window, application timing is dependent upon cultural practices and optimum timing for weed species present. (See Application Rates and Weeds Controlled table.) **DO NOT** apply if crop or weeds are under drought stress. A single postflood application is recommended.

One sequential application of Clincher CA herbicide can be made greater than 10 days before or after an application of RebelEX CA depending upon the rate of RebelEX CA applied. **DO NOT** make more than two applications of RebelEX CA and Clincher CA combined per year. The two applications of RebelEX CA and Clincher CA must not exceed 0.47 lb/acre of cyhalofop-butyle per year combined. Use the chart below to determine the combined amount of RebelEX CA and Clincher CA that can be used. Follow all label use directions for Clincher CA.

Rate of RebelEX CA (fl oz/acre)	Maximum Sequential Rate of Clincher CA (fl oz/acre)	Cyhalofop-butyl (from RebelEX CA) Ibs ai/acre	Cyhalofop- butyl (from Clincher CA) labs ai/acre	Maximum Cyhalofop- butyl lbs ai/acre
16	13	0.223	0.242	0.465
4.0		0.0=	0.044	0.404
18	11.5	0.25	0.214	0.464

## **Water Management**

Fields must be partially drained to expose weeds prior to application. Residual water remaining in the field does not adversely affect weed control so long as weeds are at least 70% exposed. For delayed pin point application, **DO NOT** allow excessive drying of the soil which may cause the weeds to become drought stressed, resulting in unacceptable weed control. For best results, soils should be moist at application and maintain good soil moisture after application by flushing or rainfall until establishment of permanent flood.

#### **Re-Flood Timing**

After an application of RebelEX CA, begin re-flooding 3 hours after application. For best results, fields should be completely re-flooded 24 to 48 hours after application.

## **Application Rates and Weeds Controlled**

Weeds (	Controlled <sup>1</sup>	Application Rates and Stage of Weed Development		
Common Name	Scientific Name	16 to 18 fl oz/acre	18 to 20 fl oz/acre <sup>2</sup>	
barnyardgrass	Echinochloa crus-galli	up to 5 leaf	up to 2 tiller	
watergrass (early and late)	Echinochloa oryzoides			
	Echinochloa phyllopogan			
California arrowhead	Sagittaria montevidensis		up to flower initiation <sup>3</sup>	
common waterplantain	Alisma plantago-aquatica			
ducksalad	Heteranthera limosa			
monochoria	Monochoria spp			
ricefield bulrush	Schoenoplectus mucronatus			
redstem	Ammannia spp		<10" or prior to	
			flowering <sup>3</sup>	
bearded sprangletop	Leptochloa fusca ssp.	up to 4 leaf prior to	tillered grasses	
	fascicularis	tillering		
junglerice	Echinochloa colona			
red sprangletop	Leptochloa panicea			
Weeds S	uppressed			
Gregg's arrowhead	Sagittaria longiloba	up to 3 leaf	up to 5 leaf	
rice mimic	Echinochloa spp			
smallflower umbrellaplant	Cyperus difformis			

<sup>&</sup>lt;sup>1</sup>RebelEX CA may not reliably control known ALS and ACC'ase resistant weed biotypes.

<sup>&</sup>lt;sup>2</sup>If RebelEX CA is applied as a rescue treatment (e.g., heavy weed infestations, headed weeds and/or previously untreated areas), it should be considered an emergency salvage treatment and good control of labeled weeds should not be expected. Poor control and regrowth of treated weeds may occur.

<sup>&</sup>lt;sup>3</sup>Best control is achieved with applications of RebelEX CA prior to weed flowering. Make postflood applications when weeds are well emerged above the water surface. Weeds submerged at the time of application will not be controlled.

**Note: DO NOT** make more than one application per year of RebelEX CA. **DO NOT** apply more than 20 fl oz of RebelEX CA per acre (0.039 lbs penoxsulam and 0.278 lbs cyhalofop-butyl per acre) per year.

For tank mixing options and instructions, refer to the Mixing Directions section.

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Corteva Agriscience warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent permitted by law, Corteva Agriscience MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

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- 2. Replacement of product used.

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