

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

February 11, 2022

Travis Bui Regulatory Leader Corteva Agriscience LLC 9330 Zionsville Road Indianapolis, IN 46268

Subject: Label Amendment – To change the PBI form 9 months to 4 months for Alfalfa,

update warranty statement and branding; Incorporating Nine Acetolactate Synthase (ALS) Inhibiting Herbicides and Fluroxypyr Interim Registration

**Review Decisions** 

Product Name: Starane® Flex

EPA Registration Number: 62719-604

Application Dates: November 6, 2017, March 30, 2020, and September 15, 2021

Decision Numbers: 537040, 561194, and 578504

#### Dear Travis Bui:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

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 Fluroxypyr Interim Decision, and Nine Acetolactate Synthase (ALS) Inhibiting Herbicides Interim Decision (specifically Florasulam) and has concluded that your submission is acceptable.

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 18 months from the date of this letter. After 18 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.

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

Page 2 of 2 EPA Reg. No. 62719-604 Decision No. 537040, 561194, and 578504

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.

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Ralph Narain by phone at 202-566-2853, or via email at Narain.Ralph@epa.gov.

Sincerely,

Paul Di Salvo, MPS, CWB® Special Assistant / Wildlife Biologist Registration Division (7505P) Office of Pesticide Programs

Enclosure: Stamped Label

(Base label):

FLORASULAM	Group	2	HERBICIDE
FLUROXYPYR	Group	4	HERBICIDE

# Starane® Flex

### Herbicide

For postemergent control of annual broadleaf weeds in wheat (including durum), barley, oats, rye and triticale.

Active Ingredient:

Acid equivalent – fluroxypyr – 10.03% - 0.833 lb/gal Contains 0.042 lb of florasulam per gallon. Contains petroleum distillates

# ACCEPTED

02/11/2022

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 62719-604

Keep Out of Reach of Children

# WARNING AVISO

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 in eyes	<ul> <li>Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> </ul>
	Call a poison control center or doctor for treatment advice.
If on skin or	Take off contaminated clothing.
clothing	Rinse skin immediately with plenty of water for 15-20 minutes.
	Call a poison control center or doctor for treatment advice.
Note to Physician	: Contains petroleum distillate. May pose an aspiration pneumonia hazard
	ontainer or label with you when calling a poison control center or doctor, or going for y also contact 1-800-922-5994 day or night, for emergency treatment information.

# **Precautionary Statements**

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

Causes Substantial But Temporary Eye Injury • Prolonged Or Frequently Repeated Skin Contact May Cause Allergic Reactions in Some Individuals

Do not get in eyes or on clothing. Wear protective eyewear.

# **Personal Protective Equipment (PPE)**

Some materials that chemical-resistant to this product are listed below. If you want more options, follow the instructions for category F on an EPA chemical resistance category selection chart.

# Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Laminate, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, or Viton ≥ 14 mils
- · Shoes plus socks
- · Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, 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 170.607(d-e)], the handler PPE requirements may be reduced or modified as specified in the WPS.

# **User Safety Recommendations**

Users should:

- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove 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**

#### AQUATIC ORGANISM ADVISORY STATEMENT:

This pesticide may be toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark except as noted on appropriate labels. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

## NON-TARGET ORGANISM ADVISORY STATEMENT:

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.

## **GROUNDWATER ADVISORY STATEMENT:**

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

#### **SURFACE WATER ADVISORY STATEMENT:**

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow water.

This product is classified as having high potential for reaching surface water via runoff for several days 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 florasulam 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.

# **Physical or Chemical Hazards**

Combustible. 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:** Store in original container only. Storage below 14°F will cause the product to freeze. If product freezes, bring to room temperature and agitate before use.

**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**

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**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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Refer to 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.

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.

Shake Well Before Use -- Avoid Freezing

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EPA Reg. No. 62719-604

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(Label booklet cover):

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(Page 1 through end):

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# **Physical or Chemical Hazards**

**Combustible.** 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 the label about personal protective equipment, restricted-entry interval, and notification to workers (as applicable). The requirements in this box 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 24 hours.

For early entry into treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear:

- Coveralls
- Chemical-resistant gloves such as Barrier Laminate, Nitrile Rubber ≥ 14 mils, Neoprene Rubber ≥ 14 mils, or Viton ≥ 14 mils
- · Shoes plus socks
- Protective eyewear

# **Storage and Disposal**

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

**Pesticide Storage:** Store in original container only. Storage below 14°F will cause the product to freeze. If product freezes, bring to room temperature and agitate before use.

**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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#### **General Information**

Use Starane<sup>®</sup> Flex herbicide as a postemergence herbicide for the control of annual broadleaf weeds such as kochia, chickweed, wild buckwheat, mustards and cleavers in wheat (including spring, winter and durum), barley, oats, rye and triticale not underseeded with legumes.

Starane Flex rapidly stops growth of susceptible weeds. However, typical symptoms (discoloration) of dying weeds may not be noticeable for 1 to 2 weeks after application depending upon growing conditions and weed susceptibility. Degree of control and duration of effect are dependent upon weed sensitivity, weed size, crop competition, growing conditions at and following treatment, and spray coverage.

#### **Use Precautions:**

- When applying this product in tank mix combination, follow all applicable use directions, precautions, and limitations on each manufacturer's label.
- For best resistance management stewardship, do not use more than once per season or use in successive years at the same site.

### **Use Restrictions:**

- Chemigation: Do not apply this product through any type of irrigation system.
- Do not apply Starane Flex directly to, or otherwise permit it to come into direct contact with, susceptible crops or desirable plants including alfalfa, edible beans, canola, flowers and ornamentals, lentils, lettuce, peas, potatoes, radishes, soybeans, sugar beets, sunflowers, tomatoes, or tobacco. Do not permit spray mists containing Starane Flex to drift onto such plants.
- This product has potential to leach. Do not apply excessive irrigation.
- Do not apply to crops underseeded with legumes.
- This product is persistent and may be present in plant materials for over 30 days after application.
   Do not use treated plant material or manure from animals that have grazed or consumed forage from treated areas for compost, mulch or mushroom spawn until 30 days after application.
- Animals that have been fed fluroxypyr treated forage must be fed forage free of fluroxypyr for at least 3 days before they are moved off the treated property.
- Preharvest Interval: Do not apply within 60 days of crop harvest.
- Do not apply more than 13.5 fl oz of Starane Flex per acre per growing season.
- Livestock may be grazed on treated crops 7 days following application.
- Feed forage free of fluroxypyr for at least 3 days before they are moved off the treated property.

# **Crop Rotation Intervals**

The following rotational crops may be planted at the indicated interval following application of Starane Flex.

Numbers in parentheses (-) refer to Specific Crop Rotation Information.

Crop	Rotation Interval <sup>(1)</sup> (Months)
barley, oats, wheat, grasses	0
field corn, popcorn, seed corn,	3
sweet corn, sorghum	
alfalfa <sup>(2)</sup>	4
canola, chickpea, soybean, dry	9
bean, peas (dry and succulent), flax,	
lentil, potato, safflower, sugar beet,	
sunflower	
other crops not listed	12

### **Specific Crop Rotation Information:**

- 1. Minimum number of months that must pass before planting other crops after application of Starane Flex.
- 2. Alfalfa for forage may be planted 4 months after application if total rainfall (including irrigation) during the interval is greater than 10 inches. If total rainfall (including irrigation) is less than 10 inches, then the rotation interval is 9 months.

# **WEED RESISTANCE MANAGEMENT**

Starane Flex, which contains the active ingredients florasulam (Group 2) and fluroxypyr (Group 4) 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.

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 (less than 4 inches).
- Apply full rates of Starane Flex for the most difficult to control weed in the field at the specified time (correct weed size) 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 4 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 4 herbicides.
- Avoid making more than two sequential applications of Starane Flex and any other Group 2 or 4
  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.

#### **Management of Kochia Biotypes**

Research has suggested that many biotypes of kochia can occur within a single field. Application of Starane Flex at rates below 13.5 fl oz per acre can result in a shift to more tolerant biotypes within a field.

#### **Best Resistance Management Practice**

Extensive populations of dicamba tolerant kochia have been identified in certain small grain and corn production regions (such as Chouteau, Fergus, Liberty, Toole, and Treasure counties in the state of Montana). In these areas, Starane Flex should be rotated with products **that do not contain dicamba** to minimize selection pressure. Unless recommended by Corteva Agriscience, do not use less than 13.5 fl oz of Starane Flex per acre for control of ALS-resistant biotypes of kochia.

#### INTEGRATED PEST MANAGEMENT

This product may be used as part of an Integrated Pest Management (IPM) program that can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultant or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest / crop systems in your area.

## MANDATORY SPRAY DRIFT MANAGEMENT

#### **Aerial Applications:**

- Do not release spray at a height greater than 10 feet above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- For applications prior to the emergence of crops and target weeds, applicators are required to use a Coarse or coarser droplet size (ASABE S572.1).
- For all other applications, applicators are required to use a Medium or coarser droplet size (ASABE S572.1).
- Applicators must use one-half swath displacement upwind at the downwind edge of the field. Do not apply when wind speeds exceed 15 mph at the application site. If the windspeed is greater than 10mph, the boom length must be 65% or less of the wingspan for fixed-wing aircraft and 75% or less of the rotor blade diameter for helicopters.
   Otherwise, 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:**

- Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above
  the ground or crop canopy unless making a turf, pasture, or rangeland application, in which case
  applicators may apply with a nozzle height no more than 4 feet above the ground.
- · For applications prior to the emergence of crops, 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 Medium or coarser droplet size (ASABE S572.1) for all applications.
- Do not apply when wind speeds exceed 15 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 with the airflow in flight.

#### **BOOM HEIGHT – Ground Boom**

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

#### **RELEASE HEIGHT – Aircraft**

Higher release heights increase the potential for spray drift. When applying aerially to crops, do not release spray at a height greater than 10 ft above the crop canopy, unless a greater application height is necessary for pilot safety.

#### SHIELDED SPRAYERS

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

#### **TEMPERATURE AND HUMIDITY**

When making application 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 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 increased 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.

**Sensitive Areas:** The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

# **Mixing Directions**

#### **Starane Flex - Alone**

- 1. Fill the tank with 1/2 of the total amount of water.
- 2. Start agitation.
- 3. Add the required amount of Starane Flex.
- 4. Continue agitation while filling the spray tank to the required volume.
- 5. To ensure a uniform spray mixture, continuous agitation is required during application. If product is allowed to settle, thoroughly agitate to resuspend the mixture before spraying. Apply mixture immediately after it is prepared.

#### Starane Flex - Tank Mix

If a broader spectrum of weed control is needed, Starane Flex may be tank mixed with labeled rates of other herbicides provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product.

#### **Tank Mixing Precautions:**

- Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels.
- Do not exceed specified application rates for respective products or maximum allowable application rates for any active ingredient in the tank mix.
- Do not tank mix with products containing boron or mix in equipment previously used to apply a product mixture containing boron unless the tank and spray equipment have been adequately cleaned. (See Equipment Clean-Out Procedures.)
- · Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

**Tank Mix Compatibility Testing:** A jar test is recommended prior to tank mixing to ensure compatibility of Starane Flex and other pesticides. 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 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.

Vigorous, continuous agitation during mixing, filling and throughout application is required for all tank mixes. Sparger pipe agitators generally provide the most effective agitation in spray tanks. To prevent foaming in the spray tank, avoid stirring or splashing air into the spray mixture.

#### Mixing Order for Tank Mixes:

- 1. Fill the spray tank to 3/4 of the total spray volume required with water.
- 2. Start agitation.
- 3. Add Starane Flex and agitate for 2 to 3 minutes.
- 4. After adding Starane Flex, add different formulation types in the following order: (1) dry flowables; (2) wettable powders; (3) aqueous suspensions, flowables and liquids. Maintain agitation and add: (4) emulsifiable concentrates; (5) solutions; and (6) adjuvants. Allow time for complete mixing and dispersion after each addition.
- 5. Finish filling the spray tank. Maintain continuous agitation during mixing and throughout application. If product is allowed to settle, thoroughly agitate to resuspend the mixture before spraying. Apply mixture immediately after it is prepared.

If application or agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be resuspended before spraying is resumed. A sparger agitator is particularly useful for this purpose. Settled material may be more difficult to resuspend than when originally mixed.

## **Clean-Out Procedures for Spray Equipment**

- 1. Drain any remaining spray mixture from the application equipment.
- 2. Hose down the interior surfaces of the tank while filling the tank 1/2 full of water.
- 3. Add household ammonia at a rate of 1 gallon per 100 gallons of water. Recirculate for 5 minutes and spray out part of this mixture for 5 minutes through the boom. Drain tank.
- 4. Remove all spray nozzles and screens and clean separately.
- If spray equipment will be used for pesticide application to crops sensitive to Starane Flex, steps 1 through 3 should be repeated. Exterior surfaces of spray equipment should also be thoroughly cleaned.

**Note:** Rinsate may be disposed of on site according to label use directions or at an approved waste disposal facility.

# Weeds Controlled or Suppressed

#### **Weeds Controlled**

buckwheat, wild mustard, black

canola, volunteer<sup>1</sup> mustard, blue (purple)

chamomile, corn mustard, tansy

chamomile, false (scentless) mustard, treacle (bushy wallflower)

chamomile, mayweed (dogfennel) mustard, tumble (Jim Hill)

chamomile, wild mustard, wild pennycress, field cleavers pineappleweed prickly lettuce flixweed mustard, wild pennycress, field pennycress, field pineappleweed prickly lettuce puncturevine

flixweed puncturevine purslane, common kochia² ragweed, common London rocket shepherdspurse

mallow, Venice smartweed (green, ladysthumb,

Pennsylvania)

morningglory sunflower

# **Weeds Suppressed**

bindweed, field marshelder

canola, volunteer<sup>3</sup> nightshade species dandelion pigweed, redroot hempnettle sowthistle, annual horseweed (marestail) sowthistle, perennial mallow, common thistle, Russian

# **Application Directions**

## **Application Timing**

Apply Starane Flex early postemergence to actively growing weeds. Extreme growing conditions such as drought or near freezing temperatures prior to, at, or following time of application may reduce weed control and increase the risk of crop injury at all stages of growth. **Only weeds that have emerged at the time of application will be controlled.** If foliage is wet at the time of application, control may be decreased. Applications of Starane Flex are rainfast within 4 hours after application.

#### **Spray Coverage**

Use sufficient spray volume to provide thorough coverage and a uniform spray pattern. Do not broadcast apply in less than 3 gallons of total spray volume per acre. For best results and to minimize spray drift, apply in a spray volume of 10 gallons or more per acre. As vegetative canopy and weed density increase, spray volume should be increased to obtain equivalent weed control. Use only nozzle types and spray equipment designed for herbicide application. To reduce spray drift, follow precautions under Avoid Injurious Spray Drift.

#### **Adjuvants**

Generally, this product does not require the use of an adjuvant to achieve satisfactory weed control. An adjuvant may be added to optimize herbicidal activity when applications are made at lower use rates or lower carrier volumes; under conditions of cool temperature, low relative humidity or drought; to small, heavily pubescent kochia; or when a tank mix partner recommends the use of an adjuvant. When an adjuvant is to be used with this product, Corteva Agriscience recommends the use of a Chemical Producers and Distributors Association certified adjuvant.

# Wheat (Including Durum), Barley, Oats, Rye, Triticale

Apply 13.5 fl oz of Starane Flex per acre to actively growing wheat (including spring, winter and durum), barley, oats, rye and triticale from the 3-leaf crop growth stage up to flag leaf emergence (Zadoks scale 39). Apply when susceptible broadleaf weed seedlings and kochia are actively growing and less than 4 inches tall. Only weeds emerged at the time of treatment will be controlled. Best results are obtained from application made to seedling weeds.

Warm, moist growing conditions promote active weed growth and enhance the activity of Starane Flex by allowing maximum foliar uptake and contact activity. Weeds hardened off by cold weather or drought stress may not be adequately controlled or suppressed and re-growth may occur. For best results, ensure thorough spray coverage of target weeds.

**Tank Mixes for Wheat (Including Durum):** Starane Flex may be applied in tank mix combination with labeled rates of other products registered for postemergence application in wheat. See Tank Mixing Precautions under Mixing Directions. When tank mixing, do not exceed specified application rates and

<sup>&</sup>lt;sup>1</sup>Including herbicide-tolerant canola varieties except Clearfield (imidazolinone-tolerant) canola.

<sup>&</sup>lt;sup>2</sup>Includes herbicide tolerant or resistant biotypes.

<sup>&</sup>lt;sup>3</sup>Clearfield (imidazolinone-tolerant) canola.

use only in accordance with the most restrictive precautions and limitations on the respective product labels.

#### **Restrictions:**

- Preharvest Interval: Do not apply within 60 days of crop harvest.
- Do not apply more than 13.5 fl oz of Starane Flex per acre per growing season.
- Livestock may be grazed on treated crops 7 days following application.

# **Terms and Conditions of Use**

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 Limitations of Remedies.

# **Warranty Disclaimer**

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.

### Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application or other factors, all of which are beyond the control of Corteva Agriscience or the seller. Corteva Agriscience will not be responsible for losses or damages resulting from the use of this product in any manner not specifically directed by Corteva Agriscience. To the extent permitted by law, all such risks associated with non-directed use shall be assumed by buyer and/or user.

## **Limitation of Remedies**

To the extent permitted by law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, tort, strict liability, or other legal theories), shall be limited to, at Corteva Agriscience's election, one of the following:

- 1. Refund of purchase price paid by buyer or user for product bought, or
- 2. Replacement of product used.

To the extent permitted by law, Corteva Agriscience shall not be liable for losses or damages resulting from handling or use of this product unless Corteva Agriscience is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Corteva Agriscience be liable for consequential, incidental or special damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Corteva Agriscience or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

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