

42750-32

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 28 2003

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Albaugh, Inc.
c/o Michael Kellogg
Pyxis Regulatory Consulting
11324 17th Ave. Ct. N.W.
Gig Harbor, WA 98332

Gentlemen:

Subject: Revised Labeling
Trifluralin 4EC
EPA Registration No. 42750-32
Your Submission Dated October 17, 2002

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended is acceptable provided that you:

1. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:
 - a. The revised text is too light. For all future submissions modify your software program to use bold or other means to assure that the revised text is clearly legible.
 - b. If the Precautionary Statements do not appear on the front panel, add a referral statement similar to the following

See side panel for additional Precautionary Statements

- c. Reinstate the following Aerial Spray Drift statements required by the Trifluralin RED:

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.

2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

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

The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory Information.

Aerial drift reduction advisory information

Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Controlling Droplet Size

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

Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of nozzles - Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified 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.

Sensitive Areas

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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).

Before preparing the final printed labeling look at the Trifluralin RED. A copy is available at the following internet site:

<http://www.epa.gov/oppsrrd1/REDS/0179.pdf>

d. Move the Agricultural Use Requirements Box to immediately below the statements "....., consult the agency in your State responsible for pesticide regulation".


e. The additional spray drift statements added on page 3 should be moved to the Application Methods section.

2. Submit one (1) copy of your final printed labeling before you release the product for shipment.

A stamped copy of the labeling is enclosed for your records.

The revised basic formula dated October 17, 2002 is acceptable and has been included in the files for this product. It supercedes all previously accepted ones. If you have any questions concerning this letter, please contact Mr. James Stone at 703-305-7391.

Sincerely yours,


Joanne I. Miller
Product Manager (23)
Herbicide Branch
Registration Division (7505C)

Enclosure

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ACCEPTED
with COMMENTS
In EPA Letter Dated:

MAR 28 2003

Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under EPA Reg. No.
43750-32

ALBAUGH

TRIFLURALIN 4EC

A Selective Herbicide for Preemergence Control
of Annual Grasses and Broadleaf Weeds

ACTIVE INGREDIENT:

Trifluralin: a,a,a-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine 45.643.0%

OTHER INGREDIENTS: 54.357.0%

*Contains 1.7 Distillates

TOTAL 100.0%

Contains 4 pounds active ingredient per gallon. Contains petroleum distillates. ✓

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 this label, find someone to explain it to you in detail.)

FIRST AID	
IF IN EYES:	<ul style="list-style-type: none"> • <u>Hold eye open and rinse slowly and gently with water for 15-20 minutes.</u> • <u>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</u> • <u>Call a poison control center or doctor for treatment advice.</u>
IF SWALLOWED	<ul style="list-style-type: none"> • <u>Immediately call a poison control center or doctor.</u> • <u>Do not induce vomiting unless told to do so by a poison control center or doctor.</u> • <u>Do not give any liquid to the person.</u> • <u>Do not give anything by mouth to an unconscious person.</u>
HOT LINE NUMBER	
<p><u>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.</u></p>	
NOTE TO PHYSICIAN	
<p><u>This product contains an aromatic hydrocarbon and can be extremely harmful if swallowed. Contains petroleum distillate – vomiting may cause aspiration pneumonia. Stomach lavage with a cuffed endotracheal tube in place and immediate administration of activated charcoal, 6-8 heaping teaspoonfuls with water, should be considered. Treatment is otherwise symptomatic and supportive.</u></p>	

* Double!

STATEMENT OF PRACTICAL TREATMENT

Label

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~~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. Call a poison control center or doctor for treatment advice.

~~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 by a poison control center or doctor.

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

~~Note to Physician:~~ This product contains an aromatic hydrocarbon and can be extremely harmful if swallowed. Aspiration of this product may produce a severe pneumonitis. Stomach lavage with a cuffed endotracheal tube in place and immediate administration of activated charcoal, 6-8 heaping teaspoonfuls with water, should be considered. Treatment is otherwise symptomatic and supportive.

EPA Reg. No. 42750-32

EPA Est. No. 42750-MO-1

Manufactured By:
Albaugh, Inc.
Ankeny, Iowa 50021

NET CONTENTS
____ Gals.
____ Liters

PRECAUTIONARY STATEMENTS
WARNING

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Causes substantial but temporary eye injury. Harmful if swallowed. Do not get in eyes or on clothing.

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G 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 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 and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS STATEMENTS

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

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing 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

This pesticide is extremely toxic to freshwater, marine, and estuarine fish and aquatic invertebrates including shrimp and oyster. Do not apply in a manner which will directly expose canals, lakes, streams, ponds, marshes or estuaries to aerial drift. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

PHYSICAL OR CHEMICAL HAZARDS

Do not use, pour, spill, or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency in your State responsible for pesticide regulation.

Do not allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks and recreation areas, nontarget crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals.

For ground boom applications, apply with nozzle height no more than 4 feet above the ground or crop canopy and when wind speed is 10 mph or less at the application site as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles.

For aerial applications, the boom width must not exceed 75% of the wingspan or 90% of the rotary blade. Use upwind swath displacement and apply only when wind speed is 3-10 mph as measured by an anemometer. Use medium or coarser spray according to ASAE 572 definition for standard nozzles or VMD for spinning atomizer nozzles. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground or the crop canopy.

For overhead chemigation, apply only when wind speed is 10 mph or less.

The applicator also must use all other measures necessary to control drift.

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 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.

Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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, such as barrier laminate or viton > 14 mils

Shoes plus socks

Protective eyewear

STORAGE AND DISPOSAL

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

STORAGE

Avoid freezing. Store above 40°F. If frozen, poor weed control may result. Store in original container only. In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.

DISPOSAL

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

BULK/MINI-BULK TANK CLEANING: Triple rinse (or equivalent) and wash with appropriate cleaners before reusing.

GENERAL INFORMATION

Trifluralin 4EC herbicide is a selective preemergence herbicide for control of many annual grasses and broadleaf weeds. Trifluralin 4EC may be applied in liquid sprays of water or liquid fertilizer, or impregnated on dry bulk fertilizer. To prevent loss of herbicidal activity, Trifluralin 4EC must be soil incorporated within 24 hours after application. Trifluralin 4EC may be tank mixed or followed by overlay or postemergence treatments with other herbicides to improve the spectrum of weeds controlled. Trifluralin 4EC controls weeds by disrupting growth processes during germination. Trifluralin 4EC does not control established weeds.

GENERAL USE PRECAUTIONS

Applied according to directions and under normal growing conditions Trifluralin 4EC will not harm the treated crop. Overapplication may result in crop injury or rotational crop damage from soil residue. Uneven application or improper incorporation can result in erratic weed control or crop injury. Seedling disease, cold weather, deep planting, excessive moisture, high salt concentration or drought may weaken crop seedlings and increase the possibility of damage from Trifluralin 4EC. Under these conditions, delayed crop development or reduced yields may result.

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Do not apply Trifluralin 4EC to soils that are wet or are subject to prolonged periods of flooding as poor weed control may result.

Do not use Trifluralin 4EC on any crop in Pecos County or Reeves County, Texas.

In Montana, uses of Trifluralin 4EC are limited to those described in supplemental labeling. Refer to supplemental labeling for crops and specific use directions.

Chemigation: Trifluralin 4EC may be applied by chemigation of certain crops. See instructions for chemigation in the "Application Methods" section of this label. Also, see specific instructions for certain crops in the "Approved Crops" section of this label.

ROTATION CROP RESTRICTIONS

Sugarbeets, Redbeets and Spinach

In Arizona, Colorado, California, Idaho, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming: Sugarbeets, redbeets or spinach should not be planted for 12 months after a spring application or 14 months after a fall application. Plowing to a depth of 12 inches prior to planting these crops will reduce the possibility of crop injury. If land has not been irrigated, these crops should not be planted for 18 months after a spring application or 20 months after a fall application of Trifluralin 4EC.

In all other areas: Sugarbeets redbeets, and spinach should not be planted for 12 months after a spring application or 14 months after a fall application. Before planting sugarbeets, moldboard plow to a depth of 12 inches to reduce the possibility of crop injury.

Proso Millet, Corn, Sorghum (Milo), Oats and Annual or Perennial Crops or Grass Mixtures

In Arizona, Colorado, California, Idaho, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming: Proso millet, corn, sorghum (milo), oats, and annual or perennial grass crops or grass mixtures should not be planted for 12 months after a spring application or 14 months after a fall application of Trifluralin 4EC to avoid the possibility of crop injury. If land has not been irrigated, these crops should not be planted for 18 months after a spring application or 20 months after a fall application. Moldboard plowing to a depth of 12 inches before planting these crops will reduce the possibility of crop injury.

In Minnesota, North Dakota and South Dakota: Proso millet, sorghum (milo), oats and annual or perennial grass crops or grass mixtures should not be planted for 18 months after a spring application or 21 months after a fall application of Trifluralin 4EC.

In those portions of Kansas, Nebraska, Oklahoma and Texas that receive less than 20 inches of rainfall and irrigation to produce a crop: Do not plant proso millet, sorghum (milo), oats and annual or perennial grass crops or grass mixtures for 18 months after an application of Trifluralin 4EC. In sorghum, cool wet weather conditions during early growth stages may increase the possibility of crop injury. In areas receiving more than 20 inches of rainfall and irrigation, these crops should not be planted for 12 months after a spring application or 14 months after a fall application of Trifluralin 4EC.

Other Crops

Vegetable crops other than those listed on this label for use with preplant soil incorporated application of Trifluralin 4EC should not be planted within 5 months after an application of Trifluralin 4EC.

Soil Texture Guide for Application Rates

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Trifluralin 4EC rate recommendations for incorporated treatments are based on "Soil Texture Class" (coarse, medium or fine) and soil organic matter content. A fine textured soil (e.g., clay loam) will require a higher application rate than a coarse textured soil (e.g., loamy sand). In the table below, find the "Soil Texture Class" (coarse, medium or fine) corresponding to the soil texture to be treated. Choose the proper rate for each application based on the "Soil Texture Class" and specific crop recommendations. Do not exceed recommended rates.

Soil Texture Class	Soil Texture to be Treated
Coarse (Light) Soils	Sand, loamy sand, sandy loam
Medium Soils	Loam, silty clay loam†, silt loam, silt, sandy clay loam†
Fine (Heavy) Soils	Clay, clay loam, silty clay loam†, silty clay, sandy clay, sandy clay loam†

†Silty clay loam and sandy clay loam soils are transitional soils and may be classified as either medium or fine textured soils. If silty clay loam or sandy clay loam soils are predominantly sand or silt, they are usually classified as medium textured soils. If they are predominantly clay, they are usually classified as fine textured soils.

Mixing Directions

Trifluralin 4EC Alone

Trifluralin 4EC may be mixed with water or most liquid fertilizer materials. Prior to mixing Trifluralin 4EC in liquid fertilizer, refer to the label section "Testing for Compatibility in Liquid Fertilizers" for testing procedures to determine compatibility with the liquid fertilizer product to be used. The combination of Trifluralin 4EC with solution and suspension-type fertilizers provides weed and grass control equal to water sprays.

Fill spray tank 1/3 to 1/2 full with clean water or liquid fertilizer. Start agitation. Add correct amount of Trifluralin 4EC and continue agitation while filling tank to required spray volume.

Precautions: Do not allow water or spray mixture to back siphon into a water source.

Trifluralin 4EC in Tank Mix

Trifluralin 4EC may be tank mixed with other products and applied with water or most liquid fertilizer materials. Prior to mixing tank mixes containing Trifluralin 4EC with liquid fertilizer, refer to label section entitled "Testing for Compatibility in Liquid Fertilizers" for testing procedures to determine tank mix compatibility with the liquid fertilizer product to 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. To prevent foaming during filling, keep end of fill pipe below the surface of the liquid in the spray tank.

Mixing Order: Fill the spray tank to 1/4 to 1/3 of the total spray volume required. Start agitation. Add different formulation types in the order indicated below, allowing time for complete mixing and dispersion after addition of each product. Allow extra mixing and dispersion time for dry flowable products.

Add different formulation types in the following order: Dry flowables (DF), wettable powders (WP), aqueous suspensions (AS), flowables (F), and liquids (L).

Maintain agitation and fill spray tank to 3/4 of total spray volume. Add Trifluralin 4EC and other emulsifiable concentrates (EC) and any solutions (S).

Finish filling the spray tank. Maintain continuous agitation during mixing, final filling and throughout application. If spraying and 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.

Precautions:

Read and carefully follow all label instructions for each material added to the spray tank. Do not allow water or spray mixture to back siphon into a water source.

Premixing: Dry and flowable formulations may be premixed with water (slurried) and added to the spray tank through a 20-35 mesh screen. This procedure assures good initial dispersion of these products in liquid fertilizer or water.

Line screens in the spray tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

Testing for Compatibility in Liquid Fertilizers

Trifluralin 4EC alone or in tank mix combination with dry flowables (DF), wettable powders (WP), aqueous suspensions (AS), flowables (F), liquids (L), or solutions (S) may not combine properly with some liquid fertilizer materials. Small quantities should always be tested before full scale mixing. Follow the testing procedure below to determine if a compatibility agent is needed and which one works best in your herbicide/fertilizer mixture. The seven compatibility agents listed at the end of this section have been thoroughly tested. Other surfactants commercially available may or may not be suitable for use with liquid fertilizers.

Testing Procedure

1. Add 1 pint of the liquid fertilizer to a quart jar.
2. Add 1 to 4 teaspoon(s) of the DF, WP, AS, F, or L formulation (depending on mixing ratio required) to the liquid fertilizer. Close the jar and agitate until the materials are evenly dispersed in the liquid fertilizer. If the materials do not disperse well, it may be necessary to slurry the chemicals in water before adding to the fertilizer.
3. After dispersing the materials (step 2), add 3 to 4 teaspoons of Trifluralin 4EC to the jar and shake well. Add solution herbicides to the mixture last and agitate. Observe the jar for about 10 minutes. If materials rise to the surface and form a thick layer (oily curds) that will not redisperse when agitated, a compatibility agent is needed. If the mixture is easily redispersed with slight agitation, a compatibility agent is not required. Good agitation, however, must be provided to maintain dispersion in the spray tank.
4. If the need for a compatibility agent is demonstrated (step 3), the following procedure is recommended: Using a clean quart jar, repeat step one above and add 1/2 teaspoon of the compatibility agent to the liquid fertilizer. Mix well and then repeat steps 2 and 3.

An effective compatibility agent will cause the mixture to remain uniformly dispersed with little or no separation (oil rising to the surface) for one half hour or longer. If slight separation occurs, 2 to 3 inversions of the jar should be sufficient to uniformly redisperse the mixture. If oily curds form and will not redisperse, additional compatibility agent or an alternative compatibility agent should be tried.

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Use a clean jar for each test. A compatible mixture will have a uniform appearance and will be relatively easy to redisperse with gentle agitation of the jar.

Compatibility Agents

The phosphate ester-type surfactants listed below are designed for use with liquid fertilizers and can be mixed at rates as low as 1 1/2 to 2 pints per ton of liquid fertilizer. Add the compatibility agent just before adding pesticides.

1. Sponto 168D (Witco Chemicals Co., Chicago, IL)
2. Compat (Farm Chemicals, Inc., Aberdeen NC)(Not for use in California)
3. Unite (Hopkins Ag Chemical, Madison, WI)
4. T-Mulz 734-2 (Thompson-Hayward Chemical Co., Kansas City, MO)(Not for use in California)
5. Rigo Compatibility Agent (Rigo Company, Buckner, KY)
6. Amoco Spray Mate (Amoco Oil Co., Chicago, IL)(Not for use in California)
7. Kem-Link (Universal Coop, Minneapolis, MN)

Compliance with state regulations relating to liquid fertilizer mixing, registration, labeling and application are the responsibility of the individual and/or company offering the fertilizer or chemical mixture for sale.

Precautions:

Do not use the compatibility agents listed above for tank mixes in plain water. Read the compatibility agent label for use directions and precautions before use.

Application Methods

General

As spray volume decreases, the importance of accurate calibration and uniform application increases. Check calibration and uniformity of spray application daily. To avoid spray drift, do not apply when winds are gusting or when wind speed is greater than 15 mph.

Ground Broadcast Application

Apply Trifluralin 4EC in 5 to 40 gallons of liquid carrier per acre (broadcast basis), using any properly calibrated, low pressure herbicide sprayer that will apply the spray uniformly. The carrier may be water or liquid fertilizer. For band application, adjust herbicide rate and spray volume in proportion to the band width and row width treated.

Aerial Broadcast Application

Apply Trifluralin 4EC in 5 to 10 gallons of water per acre. Adjust pump pressure, nozzle arrangements, speed and application height to provide uniform application to the soil surface. Use swath markers or flaggers to assure proper swath width interval.

~~Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.~~

~~The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.~~

1. ~~The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wing span or rotor.~~

2. Nozzles must always point backward parallel with the air stream and never be pointed downward more than 45 degrees.

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

Aerial Drift Reduction Advisory Information

Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see **Wind, Temperature and Humidity, and Temperature Inversions**).

Controlling Droplet Size

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

Pressure—Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of Nozzles—Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation—Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

Nozzle Type—Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided

below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified 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.

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 habitats for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

Application with Dry Bulk Fertilizer

Dry bulk fertilizers impregnated or coated with Trifluralin 4EC may be applied as a preplant incorporated treatment on approved crops. All label recommendations for Trifluralin 4EC regarding application rates, incorporation directions, special instructions and precautions should be followed. Read and follow all label instructions below concerning use of Trifluralin 4EC with dry bulk fertilizer. Properly applied dry bulk fertilizers impregnated with Trifluralin 4EC provides weed and grass control equal to water sprays.

Use the following formula to calculate the amount of Trifluralin 4EC required to impregnate a ton of dry bulk fertilizer.

$$\begin{array}{rcccl} \text{Pints Trifluralin 4EC} & & \frac{1000}{\text{Pounds Fertilizer}} & = & \text{Qts. Trifluralin 4EC} \\ \text{Per Acre} & \times & \text{Per Acre} & & \text{Per Ton of} \\ & & & & \text{Fertilizer} \end{array}$$

Limitations: Apply a minimum of 200 lbs per acre of dry fertilizer impregnated with Trifluralin 4EC at the recommended broadcast rate per acre. Any commonly used dry fertilizer can be used for impregnation of Trifluralin 4EC except coated ammonium nitrate and pure limestone. These materials will not absorb the herbicide. Blends containing mixtures of these materials can be impregnated.

Impregnation: Use any closed drum, belt, ribbon or other commonly used dry bulk fertilizer blender. Nozzles used to apply Trifluralin 4EC to dry bulk fertilizer should be placed to provide uniform spray coverage.

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Application and Incorporation: Spread the fertilizer/chemical mixture with properly calibrated application equipment. Be certain the material is applied uniformly to the soil surface. Trifluralin 4EC should be incorporated 2 times when impregnated on dry bulk fertilizer. The first incorporation should occur within 24 hours after application. The second incorporation should be delayed 3 to 5 days after the first and be completed prior to planting.

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

Application by Chemigation.

Trifluralin 4EC may be applied through properly equipped chemigation systems for weed control in certain crops as specified in "Approved Crops" section of this label. Read and follow all label instructions outlined below concerning chemigation before applying Trifluralin 4EC by this method.

GENERAL CHEMIGATION DIRECTIONS

Apply this product only through continuously moving center pivot, lateral move, or end tow sprinkler irrigation systems equipped for chemigation. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues can result from nonuniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

SPRINKLER CHEMIGATION DIRECTIONS

The following directions must be followed for all recommended sprinkler irrigation systems (center pivot, lateral move or end tow):

- (1) The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- (2) All pesticide injection pipelines must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- (3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- (4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- (5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

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(6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

(7) Do not apply when wind speed favors drift beyond the area intended for treatment.

(8) Trifluralin 4EC should be injected continuously throughout the chemigation period. The chemigation metering pump should be checked periodically during application to ensure proper operation.

(9) The injection metering pump must be calibrated as specified by the manufacturer.

(10) During chemigation, maintain agitation in supply tank at all times.

(11) Trifluralin 4EC may cause some staining of plastic hoses and tanks.

(12) Apply Trifluralin 4EC in sprinkler irrigation equal to 1/2 to 1 inch of water.

Chemigation System Calibration

Sample calculation for use of Trifluralin 4EC in a chemigation system:

- Assume, in this example, 133 acres are to be covered by a chemigation treatment.
- Product required, assuming 1.5 pints per acre is 199.5 pints (133 acres x 1.5 pt./acre = 199.5 pts. = 25 gallons).
- Add 25 gallons of product directly to the injection supply tank.
- Adjust the injection system to deliver 25 gallons during the time required to apply 1 inch of water to 133 acres.

If the irrigation system requires 20 hours to apply 1 inch of water to 133 acres, the injection rate is 1.25 gal./hr. and is calculated as follows:

- $25 \text{ gal.} \div 20 \text{ hr.} = 1.25 \text{ gal./hr.}$
 $1.25 \text{ gal./hr.} = 160 \text{ fl. oz./hr.}$

Proper calibration requires the injection pump to be adjusted to deliver 2.7 fl. oz./min. and is calculated as follows:

- $160 \text{ fl. oz./hr.} \div 60 \text{ min./hr.} = 2.7 \text{ fl. oz./min.}$

Chemigation Mixing Directions:

Undiluted Trifluralin 4EC: When used alone, the injection of undiluted Trifluralin 4EC is recommended in chemigation systems. For undiluted use, the metering pump, supply tank, and any associated equipment must be thoroughly clean and dry before Trifluralin 4EC is added to the system for injection. When injecting undiluted Trifluralin 4EC, maintain continuous agitation in the supply tank.

Diluted Trifluralin 4EC: Trifluralin 4EC may be diluted if required to achieve accurate calibration for existing equipment. Partially fill the injection supply tank with a volume of water equal to the amount of Trifluralin 4EC required (Do not add water to Trifluralin 4EC). Start agitation. Add the required amount of Trifluralin 4EC to water in the supply tank and continue mixing while filling the tank to the final volume required by the injection pump calibration. When injecting diluted Trifluralin 4EC, maintain continuous agitation in supply tank.

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Application Timing

Spring Application

Apply and incorporate Trifluralin 4EC any time after January 1 when soil can be worked and is in condition suitable for good incorporation. See "Approved Crops" section for recommendations on specific crops.

Fall Application

Fall application can be used for all crops for which Trifluralin 4EC is recommended as a preplant incorporated treatment. Refer to "Approved Crops" section for any crop specific fall application instructions.

In California, Minnesota, North Dakota and South Dakota, apply Trifluralin 4EC and incorporate any time between September 1 and December 31. In all other states, fall apply Trifluralin 4EC any time between October 15 and December 31.

Ground may be bedded-up over winter. On bedded ground, knock beds down to desired height before planting, by moving some treated soil from beds into furrows. Where soil is left flat over winter, be careful not to turn up untreated soil during spring bedding operations. Destroy established weeds during seedbed preparation. Weeds established in furrows as a result of exposing untreated soil should be destroyed before planting. Fall application of Trifluralin 4EC is not recommended on fields which remain wet or are subject to periods of flooding.

Preemergence Application Immediately After Planting

Apply and incorporate Trifluralin 4EC immediately after planting and prior to crop germination. Adjust incorporation equipment so as to not disturb planted seed. Refer to the "Approved Crops" section of this label for crop specific instructions.

Postemergence and Layby Application

Apply and incorporate Trifluralin 4EC at the recommended rate to the established crop at or before the last cultivation. Required preharvest intervals for treatments with Trifluralin 4EC for certain crops are specified in the "Approved Crops" section of this label. Crop cover may prevent uniform soil coverage from over-the-top sprays. To avoid this problem, use drop nozzles or directed sprays to achieve uniform soil coverage.

Incorporation Directions

Soil Preparation and Incorporation

Ground cover, such as crop residues or existing weeds, can interfere with uniform soil incorporation of Trifluralin 4EC. A manageable level of ground cover will allow uniform incorporation into the top 2 to 3 inches of soil. Ground cover and crop residues, if excessive, should be reduced by appropriate soil tillage prior to application.

Break up clods using tillage equipment prior to application of Trifluralin 4EC. Trifluralin 4EC must be incorporated within 24 hours after application. With most equipment and methods of application, a second incorporation is required and may occur any time before planting. The second incorporation should be in a different direction, and to avoid bringing untreated soil to the surface, should not be deeper than the first.

General Soil Conditions: The soil surface should be smooth enough to allow for uniform application and efficient incorporation of Trifluralin 4EC. Apply when soil moisture is sufficient to allow the

breakup of large clods and uniform mixing during the incorporation process. Soil compaction and/or non-uniform incorporation may occur if soil is excessively moist.

Incorporation in Bedded Culture

For optimum weed control, Trifluralin 4EC should be incorporated into the top 2 to 3 inches of the final seedbed.

Application Prior to Bedding

Apply and make first incorporation with recommended equipment. The bedding operation serves as the second incorporation. Do not expose untreated soil during post-bedding operations such as planting since removal of treated soil during planting can allow weed germination and establishment in the drill row.

Application after Bedding

Knock off beds to planting height before applying. Apply Trifluralin 4EC and incorporate with recommended equipment that will conform to the bed shape. Do not leave untreated soil exposed.

Cultivation After Planting

Areas treated with Trifluralin 4EC may be shallowly cultivated without loss of weed control activity. Limit depth of cultivation to the zone of treated soil (2 to 3 inches) to avoid moving untreated soil to the surface. Exposure of untreated soil may cause loss of weed control.

Incorporation Equipment

Use incorporation equipment capable of mixing Trifluralin 4EC uniformly into the top 2 to 3 inches of the final seedbed. Use of inappropriate equipment or improper use of recommended equipment may result in erratic weed control and/or crop injury. Incorporation equipment such as a tandem disc will mix Trifluralin 4EC approximately half as deep as the equipment is set to operate. For example, a disc set to cut four inches deep will mix most of the Trifluralin 4EC within the top 2 inches of soil. Any recommended incorporation implement may be used alone or in combination with any other recommended implement. Two incorporation passes are required unless otherwise specified.

Tandem Disc: Set to cut 4 to 6 inches deep and operate at 4 to 6 mph.

Field Cultivator: Set equipment to cut 3 to 4 inches deep and operate at 5 or more mph. A field cultivator is defined as an implement with 3 to 4 rows of sweeps, spaced at intervals of 7 inches or less and staggered so that no soil is left unturned. Chisel points should not be used.

Combination Seedbed Conditioners: These implements are defined as three or more tillage devices combined to operate as a single tillage unit. For example, 2 to 3 rows of field cultivator C- or S-shaped shanks with an effective sweep spacing of 6 to 9 inches (staggered so that no soil is left unturned), followed by a spike-tooth or flextine harrow, followed by a ground driven reel or basket. Combination implements should be set to cut 3 to 4 inches deep and operated at a minimum speed of 6 mph. Trifluralin 4EC can be incorporated with one pass when using a combination seedbed conditioner. Two incorporations are required under conditions which prevent optimum soil mixing such as excessive trash, roughness, high clay content or soil moisture.

Rolling Cultivator: Set to cut 2 to 4 inches deep and operate at 6 to 8 mph. Generally, rolling cultivators are adequate for use on coarse and medium textured soils only. In sugarcane the rolling cultivator may be used on fine textured soils.

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Bed Conditioner (Do-All): Set equipment to cut 2 to 4 inches deep and operate at 4 to 6 mph. One incorporation pass is adequate in bedded culture, while two incorporation passes are required in flat planted culture. The do-all should be used only on coarse and medium textured soils.

Mulch Treader (other similar disc-type implements): Set to cut 3-4 inches deep and operate at 5 to 8 mph.

P.T.O. Driven Equipment (tillers, cultivators, hoes): Adjust to incorporate Trifluralin 4EC into the top 2 to 3 inches of the seedbed with rotors spaced to provide a clean sweep of the soil. Only one incorporation is necessary. P.T.O. driven equipment should not be operated at a speed greater than 4 mph.

Other Equipment: Other implements including a flexible tine-tooth harrow (Flextine or Melroe), are recommended, but only for certain uses defined in the "Approved Crops" section of this label.

Weeds Controlled by Trifluralin 4EC

Grasses

Common Name	Scientific Name
annual bluegrass	<i>Poa annua</i>
barnyardgrass (watergrass)	<i>Echinochloa crus-galli</i>
brachiaria (signalgrass)	<i>Brachiaria</i> spp.
bromegrass (cheatgrass, downy brome)	<i>Bromus tectorum</i>
cheat (chess)	<i>Bromus secalinus</i>
crabgrass (large crabgrass, smooth crabgrass)	<i>Digitaria</i> spp.
foxtail (bottlegrass, bristlegrass, giant foxtail, green foxtail, foxtail millet, pigeongrass, robust foxtail, yellow foxtail)	<i>Setaria</i> spp.
guineagrass (See special instructions for control in sugarcane in the "Approved Crops" section).	<i>Panicum maximum</i>
itchgrass (raoulgrass) (See special instructions for control in sugarcane in the "Approved Crops" section).	<i>Rottboellia exaltata</i>
johnsongrass (from seed) (rhizome--see special instructions for control in cotton, soybeans, fruit and nut crops and vineyards in the "Approved Crops" section).	<i>Sorghum halepense</i>
jungerice	<i>Echinochloa colonum</i>
oats, wild†	<i>Avena fatua</i>
panicum fall panicum (spreading panicgrass--see special instructions for control in cotton and soybeans in the "Approved Crops" section).	<i>Panicum dichotomiflorum</i>
red rice (See special instructions for suppression or partial control in soybeans in the "Approved Crops" section).	<i>Oryza sativa</i>
ryegrass, Italian (annual ryegrass)	<i>Lolium multiflorum</i>
sandbur (burgrass)	<i>Cenchrus incertus</i>

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sprangletop	<i>Leptochloa filiformis</i>
stinkgrass (lovegrass)	<i>Eragrostis cilianensis</i>
shattercane (wild cane)	<i>Sorghum bicolor</i>
(See special instructions for control in soybeans in the "Approved Crops" section).	
Texas panicum	<i>Panicum texanum</i>
(buffalograss, Coloradograss)	
woolly cupgrass	<i>Eriochloa villosa</i>

†When applied as a preplant incorporated treatment, Trifluralin 4EC controls wild oats that germinate in the treated zone. Wild oat control is not claimed for incorporated uses in small grains.

Broadleaf Weeds

Common Name	Scientific Name
carpetweed	<i>Mollugo verticillata</i>
chickweed	<i>Stellaria media</i>
field bindweed	<i>Convolvulus arvensis</i>
(See special instructions for control in fruit and nut crops and vineyards in the "Approved Crops" section).	
goosefoot	<i>Chenopodium hybridum</i>
henbit	<i>Lamium amplexicaule</i>
knotweed	<i>Polygonum aviculare</i>
kochia (fireweed, Mexican fireweed)	<i>Kochia scoparia</i>
lambsquarters, common	<i>Chenopodium album</i>
pigweed (carelessweed, prostrate pigweed, redroot, rough pigweed, spiny pigweed)	<i>Amaranthus</i> spp.
(See special instructions for control in soybeans in "Approved Crops" section).	
puncturevine (western U.S. only)	<i>Tribulus terrestris</i>
(caltrop, goathead)	
purslane, common	<i>Portulaca oleracea</i>
pusley, Florida (Florida purslane, Mexican clover, pusley)	<i>Richardia scabra</i>
Russian thistle (tumbleweed)	<i>Salsola iberica</i>
stinging nettle (nettle)	<i>Urtica dioica</i>

Special Use Programs

Trifluralin 4EC is approved for the following special use programs. Refer to "Approved Crops" section of this label for details on soil preparation, use rates, application, soil incorporation, and precautions for each type or program.

Cotton

- Fall Panicum Control
- Pigweed and Seedling Johnsongrass Control
- Additional Weed and Grass Control (Gulf Coast Counties of Texas)
- Rhizome Johnsongrass Control

Soybean

- Fall Panicum Control
- Pigweed and Seedling Johnsongrass Control
- Additional Weed and Grass Control (Gulf Coast Counties of Texas)
- Rhizome Johnsongrass Control
- Charcoal Soils in Arkansas, Louisiana and Mississippi

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- Red Rice Control in Arkansas, Louisiana, Mississippi and Texas
- Wild Cane (shattercane) Control
- Trifluralin 4EC plus Sencor or Lexone for Rhizome Johnsongrass Control

Fruit and Nut Crops and Vineyards

- Rhizome Johnsongrass Control
- Field Bindweed Control

APPROVED CROPS

ALFALFA, ESTABLISHED

Mechanically Incorporated

Apply Trifluralin 4EC with ground or aerial equipment and mechanically incorporate prior to weed emergence to control weeds listed in the "General Information" section of this label. Use mechanical incorporation equipment that will ensure thorough soil mixing and minimal damage to crop stand.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1.5 pts.
Medium	2 pts.
Fine	2 pts.

Surface Applications (Chemigation or Water Incorporated)

Trifluralin 4EC may be surface applied for annual grass control in established alfalfa by chemigation, or ground or aerial broadcast application equipment.

Chemigation

Refer to "Application by Chemigation" section in the "General Information" section of this label for use directions for chemigation.

Surface Applications Activated by Rainfall or Irrigation

Broadcast surface applications of Trifluralin 4EC to established alfalfa may be activated by rainfall, sprinkler, flood or furrow irrigation. Rainfall or a single overhead sprinkler irrigation of 0.5 acre inch or more is required to activate Trifluralin 4EC. If activated by furrow irrigation, care should be taken to thoroughly wet beds between furrows. If rainfall or irrigation has not occurred within 3 days after application, Trifluralin 4EC may be mechanically incorporated. If mechanically incorporated, use equipment that will ensure thorough soil mixing with minimum damage to the established alfalfa.

Application Timing and Weeds Controlled

Applications to established alfalfa for annual grass control can be made during dormancy or semi-dormancy, or during the growing season immediately after a cutting. Because Trifluralin 4EC does not control established weeds, application must be made prior to the expected time of weed germination. Bromegrass and cheat begin to germinate in the fall with the onset of cooler weather. To control these weeds, apply Trifluralin 4EC immediately after a cutting between August 1 and October 1, but prior to weed germination. When fall applied, Trifluralin 4EC controls bromegrass and cheat in addition to other labeled weeds that germinate after application.

The following weeds are controlled when Trifluralin 4EC is applied by chemigation or surface applied and incorporated by rainfall or irrigation:

barnyardgrass
bromegrass

crabgrass
cupgrass

(cheatgrass)	foxtail
(downy brome)	junglerice
(cheat)	sandbur
(chess)	wild barley
canarygrass	

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
All soil textures	4 pts.

Precautions:

- Do not cut or graze alfalfa forage within 21 days after application, or within 20 days for alfalfa hay, of Trifluralin 4EC.
- Apply no more than 4 pts. of Trifluralin 4EC during any growing season. In the growing season following application of 4 pts. of Trifluralin 4EC to alfalfa, plant only those crops for which Trifluralin 4EC is registered as a preplant treatment or crop injury may occur.

Tank Mix Combinations

Other products registered for use on established alfalfa may be ground broadcast in tank mix combination with Trifluralin 4EC or applied as sequential treatments following application of Trifluralin 4EC. Tank mixes containing Trifluralin 4EC must be applied when alfalfa is dormant or semi-dormant, or immediately after a cutting.

Precautions: Refer to the tank mix product label for application rates, weeds controlled, additional use directions, precautions and limitations before use.

ASPARAGUS, ESTABLISHED: Apply Trifluralin 4EC to established asparagus as a single or split application. Trifluralin 4EC will suppress volunteer seedling asparagus and field bindweed when applied as directed. Follow recommended soil preparation, application and incorporation procedures for Trifluralin 4EC.

Application Timing: Make applications to dormant asparagus in winter or early spring after mature ferns have been removed. Do not apply after new spears begin to emerge. Apply post-harvest applications immediately after harvest in late spring or early summer just before ferns are allowed to develop.

Broadcast Application Rates/Acre

Soil Texture	Split Application Before and After Harvest	Single Application Before or After Harvest
Coarse	1 + 1 pt.	2 pts.
Medium	1.5 + 1.5 pts.	3 pts.
Fine	2 + 2 pts.	4 pts.

- Do not apply more than 2 pts. per acre on coarse soils, 3 pts. per acre on medium soils, or 4 pts. per acre on fine soils during the calendar year.

BEANS, DRY: Apply and incorporate Trifluralin 4EC in the spring before planting or in the fall. See instructions for fall application of Trifluralin 4EC under the heading "Application Timing" in the "General Information" section of this label.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25-1.5 pts.
Fine	1.5-2 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- All soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Trifluralin 4EC plus Eptam Tank Mix

Trifluralin 4EC may be tank mixed with Eptam 7E and applied as a preplant incorporated treatment to control additional weeds. Use application rates recommended for dry beans above. Refer to the label for Eptam for application rates, additional use directions, precautions and limitations before use.

BEANS, GUAR AND MUNGBEAN: Apply Trifluralin 4EC as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.5 pts.
Fine	1.5 pts.

BEANS, LIMA AND SNAP: Apply Trifluralin 4EC as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1 pt.
Fine	1.5 pts.

CARROT: Apply Trifluralin 4EC as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25-1.5 pts.
Fine	1.5-2.0 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- Soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

CASTOR BEAN: Apply Trifluralin 4EC as soil incorporated treatment, before or immediately after planting. If applied and incorporated after planting, set equipment so as not to disturb the seed.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25-1.5 pts.
Fine	1.5-2 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- Soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

CELERY: Apply as a soil incorporated treatment. Trifluralin 4EC may be applied to direct seeded or transplant celery before planting, at planting or immediately after planting.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25-1.5 pts.
Fine	1.5-2 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- Soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

CHICORY/ENDIVE: Apply Trifluralin 4EC as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.5 pts.
Fine	2 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- Soils with 5-10% organic matter--2 pts.

COLE CROPS (BROCCOLI, BRUSSELS SPROUTS, CABBAGE, AND CAULIFLOWER)

Direct Seeded Cole Crops--Apply Trifluralin 4EC as a preplant incorporated treatment.

Broadcast Application Rates/Acre

Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1 pt.
Fine	1.5 pts.

- Soils with 2-5% organic matter--1.5 pts.

Precautions: Direct seeded cole crops exhibit marginal tolerance to higher than recommended rates of Trifluralin 4EC. Stunting or reduced stands may occur.

Transplanted Cole Crops--Apply and incorporate Trifluralin 4EC before transplanting.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt
Medium	1.25-1.5 pts.
Fine	1.5-2 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- Soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

CORN--FIELD CORN ONLY

Postemergence Incorporated Treatment

Apply Trifluralin 4EC as a postemergence treatment following cultivation or use of a preemergence herbicide. Trifluralin 4EC does not control established weeds. Apply when crop is well established (2 true leaf stage or taller). Apply as an over-the-top spray or as a directed spray using drop nozzles if foliage prevents uniform coverage of the soil surface.

Incorporation Directions: Trifluralin 4EC should be mechanically incorporated within 24 hours after application. Mechanical incorporation may be accomplished with one pass of a sweep-type cultivator or properly adjusted rolling cultivator. The sweep-type cultivator should have 3 to 5 sweeps per row middle and be operated at a speed that will provide maximum soil movement. Set middle sweeps so as to avoid exposing untreated soil. Adjust incorporation equipment so as to avoid mechanical injury to the crop.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	0.75-1 pt.†
Medium	1-1.5 pts.
Fine	1.5-2 pts.

†Apply 1 to 1.5 pts. per acre on coarse soils in Alabama, Florida, Georgia, North Carolina, South Carolina, and Virginia to control fall panicum and Texas panicum.

- Apply lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Precautions

- Do not apply Trifluralin 4EC to sweet corn or corn grown for seed.
- Do not apply Trifluralin 4EC as a preplant or preemergence treatment or crop injury may occur.
- Where corn is planted in a furrow, Trifluralin 4EC should be applied only after a cultivation to move soil into the row.

Chemigation

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Trifluralin 4EC may be applied through properly equipped chemigation systems for weed control in field corn. Refer to "Application by Chemigation" section in the "General Information section of this label for chemigation use directions. Do not apply Trifluralin 4EC through any type of irrigation system unless these directions are carefully followed.

Application Timing

Apply Trifluralin 4EC in 0.5 to 1 acre inch of sprinkler irrigation when field corn is at the 2 true leaf stage of growth or taller. Apply Trifluralin 4EC prior to weed emergence or after existing weeds have been controlled with herbicides or cultivation. Trifluralin 4EC does not control established weeds.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1.5-2 pts.
Medium	1.5-2 pts.
Fine	Do not apply by chemigation.

Precautions:

- Do not apply Trifluralin 4EC by chemigation to sweet corn or corn grown for seed.
- Where corn is planted in a furrow, Trifluralin 4EC should be applied only after a cultivation to move soil into the row.
- Do not apply Trifluralin 4EC to corn as a preplant or preemergence treatment as crop injury may occur.

Trifluralin 4EC plus Atrazine Tank Mix

Trifluralin 4EC may be applied in tank mix combination with atrazine plus an emulsifiable oil or oil concentrate when corn is at the 2-leaf stage of growth or taller and weeds are no more than 1-1/2 inches in height. A period of 24 to 48 hours is required to obtain atrazine postemergence activity after which the preemergence activity of the Trifluralin 4EC plus atrazine combination may be activated by 0.5 inch or more of rainfall or overhead sprinkler irrigation or mechanical incorporation. Use the application rates and incorporation methods for Trifluralin 4EC recommended under "Postemergence Incorporated Treatment" in the "Corn-Field Corn Only" section of this label.

Precautions:

- Where corn is planted in a furrow, Trifluralin 4EC should be applied only after a cultivation to move soil into the row.
- Refer to the product label for atrazine for application rates, additional use directions, precautions, precautions and limitations before use.

COTTON

Trifluralin 4EC - Alone

Apply Trifluralin 4EC to cotton as a soil incorporated treatment. Trifluralin 4EC may be applied before planting, immediately after planting, to the established crop up to layby, or in the fall. Refer to instructions for fall application under "Application Timing" in the "General Information" section of this label. Follow recommended soil preparation, application and incorporation procedures in the "General Information" section of this label. When incorporating Trifluralin 4EC after planting, but prior to crop emergence, set equipment so as to not disturb planted seed. Postemergence application of Trifluralin 4EC may be made from the 4 true leaf stage of growth up to layby, but not less than 90 days before harvest. Apply postemergence treatments as a directed spray beneath cotton plants to soil between the rows. Use the same application rates for preplant, preemergence and layby treatments.

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Broadcast Application Rates/Acre

Fall Application

Soil Texture	Fall Application		
	Spring† Application	Eastern U.S.††	Western U.S.†††
Coarse	1 pt.	2 pts.	1.5 pts.
Medium	1.25-1.5 pts.	2 pts.	2 pts.
Fine	1.5-2 pts.	2.5 pts.	2.5 pts.

†Spring Application:

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- Soils with 5-10% organic matter--2-2.5 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

††Fall Application: Use rates for eastern cotton producing areas including: Alabama, Arkansas, northern Florida, Georgia, Louisiana, Mississippi, southeastern Missouri (Bootheel), North Carolina, New Mexico, Oklahoma, South Carolina, Tennessee, and Texas.

†††Fall Application: Use rates for western cotton producing areas including: Arizona, California and Nevada.

For cotton grown in areas other than those listed above, fall apply Trifluralin 4EC at broadcast rates recommended for areas receiving greater than 20 inches of annual rainfall and irrigation.

Precautions: Cotton should be planted after early season adverse weather conditions have passed, especially when using higher rate programs. Cool, wet weather early in the growth cycle causes additional stress to the cotton plant. This may result in reduced stand, delayed maturity and reduced yields. Do not apply within 90 days of harvest. Do not apply more than 2.0 lb/A a.i. per application and do not apply more than 2 lbs a.i. per crop year (either fall application thru lay-by application or pre-plant plus post-plant thru lay-by).

Layby Treatment: Apply and incorporate Trifluralin 4EC in established cotton from the 4 true leaf stage of growth up to layby, but not less than 90 days before harvest. Apply uniformly to the soil surface, using drop nozzles if necessary. Use the application rates recommended above for preplant incorporated treatments. Soil incorporate using one pass of a sweep-type cultivator or properly adjusted rolling cultivator. Operate cultivation equipment at speeds sufficient to provide vigorous soil mixing and exercise care to avoid mechanical injury to the crop.

Chemigation

Trifluralin 4EC may be applied through properly equipped chemigation systems for weed control in cotton. Refer to "Application by Chemigation" in the "General Information" section of this label for use directions for chemigation. Do not apply Trifluralin 4EC through any type of irrigation system unless these directions are carefully followed.

Apply Trifluralin 4EC in overhead sprinkler irrigation equal to 1/2 to 1 inch of water. Planting and application should occur as soon as possible after the last tillage operation. Trifluralin 4EC must be applied within 2 days after planting prior to crop emergence. Trifluralin 4EC does not control established weeds. Soil incorporation is not required when Trifluralin 4EC is applied through chemigation systems.

Broadcast Application Rates/Acre: See rates for cotton "Trifluralin 4EC Alone" above. Apply at the maximum recommended rate for each soil texture class to be treated.

Cultivation: Soil treated by chemigation with Trifluralin 4EC may be shallow cultivated without reducing weed control activity.

Special Use Programs

Fall Panicum Control

Apply and incorporate a broadcast rate of 2 pts. per acre on both coarse and medium soils.

Pigweed and Seedling Johnsongrass Control

Apply Trifluralin 4EC as a preplant incorporated treatment.

Broadcast Application Rates/Acre: In Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, southeastern Missouri (Bootheel), North Carolina, South Carolina, Tennessee and southern Virginia, apply Trifluralin 4EC at the following broadcast rates:

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1-1.5 pts.
Medium	1.5-2 pts.
Fine	2 pts.

(Exception: Louisiana, where 3 pts./acre can be applied to fine soils).

- Use higher rates in the rate range where high weed populations are anticipated.

Additional Weed and Grass Control (Gulf Coast Counties of Texas)

Apply Trifluralin 4EC as a preplant incorporated treatment up to 2 weeks before planting.

Broadcast Application Rates/Acre: For cotton grown in Brazoria, Calhoun, Chambers, Fort Bend, Galveston, Harris, Jackson, Jefferson, Liberty, Matagorda, Orange, Victoria, Waller and Wharton counties of the Texas Gulf Coast, Apply Trifluralin 4EC at the following broadcast rates:

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1.5 pts.
Medium	2 pts.
Fine	3 pts.

Rhizome Johnsongrass Control

(For use in all cotton producing states except Arizona and California.)

Rhizome johnsongrass control with Trifluralin 4EC requires double application rates for 2 consecutive years. Commercially acceptable control cannot be obtained with only one year of double rate use of Trifluralin 4EC. Carefully follow all special use directions.

Soil Preparation: Satisfactory results are dependent upon proper preparation of soil prior to application. Chisel plow to bring rhizomes to the soil surface. Disc twice before application to chop rhizomes into small (2 to 3 inch) pieces and destroy any recently emerged johnsongrass plants.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
All soil textures	2 pts.

Spring Application: Apply Trifluralin 4EC any time before planting in the spring for 2 years in succession.

Fall Application: Apply Trifluralin 4EC between October 15 and December 31 for 2 years in succession.

Incorporation: Deep incorporation with a tandem disc is essential for good results. Set disc to operate 4 to 6 inches deep and operate at 4 to 6 mph. Two incorporation passes are necessary and the second should be in a different direction than the first.

Cultivation: Some johnsongrass plants will not be controlled. Timely cultivation during the crop season is necessary to remove escaped plants and maintain commercially acceptable control.

Precautions: In the season following a double rate treatment, plant only rice or those crops for which Trifluralin 4EC can be applied as a preplant treatment or crop injury may occur.

TANK MIXES, OVERLAY, AND POSTEMERGENCE TREATMENTS

Trifluralin 4EC in Tank Mix

Trifluralin 4EC may be tank mixed with Caparol, Cotoran, and other products registered for use on cotton as a preplant incorporated treatment to control additional weeds. Use the application rates for Trifluralin 4EC recommended for cotton "Trifluralin 4EC Alone."

Precautions: Refer to the tank mix product label for additional weeds controlled, application rates, additional use directions, precautions and limitations before use.

Trifluralin 4EC - Preplant Incorporated Followed by Overlay Treatments

Apply Trifluralin 4EC as a preplant incorporated treatment. Additional weeds tolerant to Trifluralin 4EC may be controlled using overlay preemergence applications of Cotoran, Karmex, or other products registered for use on cotton. Such applications may be made unless use following a Trifluralin 4EC application is specifically prohibited by the product label. Consult the overlay product label for additional weeds controlled, directions for use, cautions and limitations before use.

Trifluralin 4EC - Preplant Incorporated Followed by Postemergence Treatments

Apply Trifluralin 4EC as a preplant incorporated treatment. Additional weeds tolerant to Trifluralin 4EC may be controlled using postemergence applications of products registered for use on cotton. Such treatments may be made unless use following a Trifluralin 4EC application is specifically prohibited by the product label. Consult the postemergence product label for additional weeds controlled, directions for use, cautions and limitations before use.

CUCURBITS (CANTALOUPE, CUCUMBER AND WATERMELON)

Postemergence Application Only: Apply and incorporate Trifluralin 4EC when plants have reached the 3 to 4 true leaf stage of growth. Apply as a directed spray to soil between the rows. Avoid foliage contact as slight crop injury may occur. Set incorporation equipment to move treated soil around the base of plants during incorporation.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.

Medium	1.25-1.5 pts.
Fine	1.5-2 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- Soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

FLAX (Fall Application Only): Apply and incorporate Trifluralin 4EC in the fall for weed control in spring-seeded flax. Incorporate once within 24 hours after application. The second incorporation may be performed in the spring prior to planting.

Special Instructions for Flax

1. Incorporation operations or other tillage practices performed in the spring prior to seeding should be relatively shallow so as to maintain a firm seedbed, and the seedbed should be packed prior to seeding.
2. Seeding should be done with a press drill or hoe drill. Seed into moist seedbed and plant no more than 1.5 inches deep.
3. Delay seeding until soil has warmed sufficiently to allow rapid germination and establishment.
4. Refer to "General Use Precautions" in the "General Information" section of this label for information on growing conditions that can lead to crop injury or yield reduction.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.5 pts.
Fine	2 pts.

GRAIN SORGHUM (MILO)

Postemergence Incorporated Treatment

Apply Trifluralin 4EC as a directed or over-the-top spray when grain sorghum is 8 inches tall or taller. Drop nozzles should be used if foliage prevents uniform soil coverage.

Soil Preparation: Cultivate before application to remove established weeds and cover the base of plants with soil. Set cultivation equipment to add approximately one inch of soil to the base of sorghum plants.

Incorporation Directions: Trifluralin 4EC should be mechanically incorporated within 24 hours after application. Mechanical incorporation may be accomplished with one pass of a sweep-type cultivator or properly adjusted rolling cultivator. The sweep-type cultivator should have 3 to 5 sweeps per row middle and be operated at a speed sufficient to provide vigorous soil mixing. Set middle sweeps so as to avoid exposing untreated soil. Adjust incorporation equipment so as to avoid mechanical injury to the crop.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	0.75-1 pt.
Medium	1-1.5 pts.
Fine	1.5-2 pts.

- Apply lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Chemigation

Trifluralin 4EC may be applied through properly equipped chemigation systems for weed control in grain sorghum 8 inches tall or taller. Refer to "Application by Chemigation" section in the "General Information" section of this label for chemigation use directions. Do not apply Trifluralin 4EC through any irrigation system unless these directions are carefully followed.

Soil Preparation: Cultivate before application of Trifluralin 4EC to destroy existing weeds and cover the base of the grain sorghum plants with soil. Cultivation equipment should be set to add approximately 1 inch of soil to the base of sorghum plants.

Application Timing: Apply Trifluralin 4EC to grain sorghum in 0.5 to 1 acre inch of overhead sprinkler irrigation as soon as possible after a cultivation when grain sorghum is at least 8 inches tall. Trifluralin 4EC must be applied prior to weed emergence or after existing weeds are controlled. Trifluralin 4EC does not control established weeds.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	0.75-1 pt.
Medium	1-1.5 pts.
Fine	Do not apply by chemigation.

Precautions

- Do not apply Trifluralin 4EC to grain sorghum as a preplant or preemergence treatment or crop injury will occur.
- Over-application may result in injury to grain sorghum.

Trifluralin 4EC plus Atrazine Tank Mix

Trifluralin 4EC may be applied in tank mix combination with atrazine plus an emulsifiable oil or oil concentrate when grain sorghum is 8 inches tall or taller and weeds are no more than 1-1/2 inches in height. A period of 24 to 48 hours is required to obtain postemergence activity of atrazine after which the preemergence activity of the Trifluralin 4EC plus atrazine combination may be activated by 0.5 inch or more of sprinkler irrigation or mechanical incorporation. Use application rates and incorporation methods for Trifluralin 4EC recommended under "Postemergence Incorporated Treatment" in the "Grain Sorghum (Milo)" section of this label.

Precautions

- Where grain sorghum is planted in a furrow, Trifluralin 4EC should be applied only after a cultivation to move soil into the row.
- Refer to the product label for atrazine for application rates, additional use directions, precautions and limitations before use.

GREENS (TURNIP GREENS GROWN FOR PROCESSING--COLLARD, KALE AND MUSTARD GREENS): Apply to greens as a preplant incorporated treatment.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.5 pts.

Fine	1.5 pts.
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- Soils with 2-10% organic matter--1.5 pts.

HOPS: Apply and incorporate Trifluralin 4EC to established crops during dormancy. Incorporate once using incorporation equipment that will ensure thorough soil mixing with minimal damage to crop stand.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25-1.5 pts.
Fine	1.5 pts.

- Soils with 2-10% organic matter--1.5 pts.

MINT (ESTABLISHED PEPPERMINT AND SPEARMINT): Apply at a rate of 1 pint per acre on coarse soils; 1 1/4 pints on medium soils; and 1 1/2 pints on fine soils. Use incorporation equipment that will ensure thorough soil mixing with minimum damage to the crop.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25 pts.
Fine	1.5 pts.

MUSTARD--GROWN FOR SEED OR PROCESSING FOR FOOD: Apply Trifluralin 4EC to mustard as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.5 pts.
Fine	1.5 pts.

- Soils with 2-10% organic matter--1.5 pts.

OKRA: Apply and incorporate Trifluralin 4EC before or immediately after planting. If applied and incorporated after planting, set equipment so as not to disturb the seed.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25-1.5 pts.
Fine	1.5-2 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- Soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

ONIONS--GROWN FOR DRY BULBS ONLY

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Apply Trifluralin 4EC to established onions as a soil incorporated treatment. Apply as a directed spray to soil between onion rows. Spray shields should be used to avoid injury to foliage or exposed bulbs. Do not apply within 60 days of harvest.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	0.75-1 pt.
Medium	1-1.25 pts.

- Use lower rate in rate range in areas receiving less than 20 inches total rainfall and irrigation or when light weed pressure is anticipated.

Incorporation

Incorporate with 1 pass of a sweep-type or rolling cultivator. Set equipment to cut 2 to 4 inches deep and operate at 6 to 8 mph. Avoid covering exposed onion bulbs with treated soil during incorporation as crop injury may occur. Avoid injury to crop roots during incorporation.

Precautions: When applied according to directions under normal growing conditions, Trifluralin 4EC will not adversely affect onions. Diseases, improper incorporation depth, excessive moisture, high salt concentration or drought may weaken the crop and increase the possibility of damage from Trifluralin 4EC. Under these conditions, delayed crop development or reduced yields may result.

PEAS (DRY PEA AND ENGLISH PEAS): Apply and incorporate Trifluralin 4EC alone in the spring before planting or in the fall. Refer to instructions for fall application under "Application Timing" in the "General Information" section of this label.

Broadcast Application Rates/Acre

Soil Texture	Spring Application	Fall† Application
Coarse	1 pt.	1 pt.
Medium	1 pt.	1.25-1.5 pts.
Fine	1.5 pts.	1.5 pts.

- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

†Trifluralin 4EC may be fall applied to Dry and English Peas in the states of Idaho, Oregon, and Washington.

**Trifluralin 4EC plus Far-Go Tank Mix
(For Use in Idaho, Oregon and Washington)**

Trifluralin 4EC may be tank mixed with Far-Go and applied as a preplant soil incorporated treatment to control wild oats in dry and English peas. Use application rates recommended for dry and English peas above. Refer to the label for Far-Go for application rates, additional use directions, precautions and limitations before use.

PEAS (SOUTHERN PEAS): Apply and incorporate Trifluralin 4EC before planting.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.

Medium	1.25-1.5 pts.
Fine	1.5-2 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- All soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

PEANUTS--For Use in Texas, Oklahoma, and New Mexico: Apply and incorporate Trifluralin 4EC alone before planting, at planting or immediately after planting. When incorporating after planting, adjust equipment so as not to disturb the seed.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.5 pts.

Tank Mixing or Sequential Treatments

For broader spectrum weed control, other products registered for use in peanuts may be applied in tank mix combination with Trifluralin 4EC or as a sequential treatment following application of Trifluralin 4EC. When tank mixing use the recommended rate of Trifluralin 4EC. Follow the label "Directions for Use" of each tank mix partner for applicable use instructions including application rate, application timing, weeds controlled, and specific precautions and restrictions of product use. See detailed information for tank mixing in the "General Information" section of this label.

PEPPER (Transplant Only): Apply and incorporate Trifluralin 4EC prior to transplanting. Do not apply after transplanting.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25-1.5 pts.
Fine	1.5-2 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- All soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

POTATOES (Not for Use in Maine)

Trifluralin 4EC Alone: Apply and incorporate Trifluralin 4EC alone after planting prior to crop emergence, immediately following dragoff, or after potato plants have fully emerged.

Incorporation: Set incorporation equipment so that the bed and furrow are uniformly covered with a layer of treated soil. If the layer of treated soil is not uniform and the herbicide is concentrated over the bed, potato emergence may be retarded and stem brittleness can occur. When applying and incorporating Trifluralin 4EC after potato plants have fully emerged, do not completely cover the foliage with treated soil. Likewise, do not completely cover plants during subsequent cultivations. Be careful that incorporation equipment does not damage seed pieces or elongating sprouts.

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Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25-1.5 pts.
Fine	1.5-2 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- Soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Chemigation

Trifluralin 4EC may be applied through properly equipped chemigation systems for weed control in potatoes. Refer to "Application by Chemigation" section in the "General Information" section of this label. Do not apply Trifluralin 4EC through any type of irrigation system unless these directions are carefully followed.

Apply Trifluralin 4EC to potatoes in 0.5 to 1 acre inch of overhead sprinkler irrigation after planting, before emergence, or immediately following dragoff or after the potato plants have fully emerged. Existing weeds must be destroyed by tillage or cultivation prior to application of Trifluralin 4EC. Trifluralin 4EC does not control established weeds. Incorporation is not necessary when Trifluralin 4EC is applied by chemigation.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.5 pts.
Fine	Do not apply by chemigation

Precautions:

- If cultivation is required after treatment with Trifluralin 4EC, avoid completely covering potato plants with treated soil.
- Erratic weed control may result if cultivation exposes untreated soil between rows.

Trifluralin 4EC in Tank Mix with Eptam--Post Plant Preemergence Treatment

Trifluralin 4EC may be tank mixed with Eptam and applied as a soil incorporated treatment to control additional weeds. Apply after planting, but before crop emergence. In areas where potatoes are normally dragged off, apply and incorporate up to or immediately following dragoff. Use application rate recommended for potatoes above. Refer to the label for Eptam for application rates, additional use directions, precautions and limitations before use.

RADISH: Apply Trifluralin 4EC as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.5 pts.
Fine	1.5 pts.

RAPSEED (Canola): Apply and incorporate Trifluralin 4EC in the spring before planting or in fall. See instructions for fall application under "Application Timing" in the "General Information" section of this label.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.5 pts.
Fine	2 pts.

Precaution: Do not apply Trifluralin 4EC to rapeseed (canola) grown in the state of Alaska.

SAFFLOWER: Apply and incorporate Trifluralin 4EC in the spring before planting or in the fall. See instructions for fall application under "Application Timing" in the "General Information" section of this label.

Broadcast Application Rates/Acre

Soil Texture	Spring Application	Fall Application†
Coarse	1 pt.	1.5 pts.
Medium	1.25-1.5 pts.	2 pts.
Fine	1.5-2 pts.	2.5 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- All soils with 5-10% organic matter--2.5 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

†Trifluralin 4EC may be fall applied to safflower in Arizona, California, Idaho, Nevada, Oregon, Utah, Washington, and Wyoming.

SMALL GRAINS (BARLEY, DURUM AND WHEAT)

Special Precautions for Use of Trifluralin 4EC on Small Grains

Carefully follow directions for use of Trifluralin 4EC on small grains to minimize potential crop stress. Under certain conditions, delayed crop emergence and/or stand reduction may occur when Trifluralin 4EC is applied to barley, durum or wheat. The combined effect of certain cultural practices and unfavorable soil or environmental conditions may cause excessive crop seedling stress resulting in retarded crop growth, stand reduction and possible reduced yield.

For best results, observe the following cultural practices or precautions:

Use tillage methods that provide a uniformly firm seedbed and time tillage operations to conserve moisture.

Irrigate prior to planting or after germination and emergence. Moisture received between planting and emergence may cause crusting, especially on loose, friable seedbeds.

Do not exceed recommended application rates for Trifluralin 4EC. This is particularly important on coarse textured or low organic matter soils.

Carefully follow incorporation directions. When applying preplant incorporated treatments, operate equipment at recommended depth and speed to place Trifluralin 4EC into the upper 1 to 1.5 inches of soil. If applied after planting, set equipment so as to not disturb planted seed.

Set drills to place seed at the depth specified in use directions. A planting depth greater than 2.5 inches for spring wheat or durum will result in increased seedling stress and decreased emergence.

Use only high quality seed where Trifluralin 4EC is to be applied (avoid use of small seed with low starch reserves).

If seed treatments are used, apply at the correct rate and uniformly across all seeds. Misapplication may result in reduced germination and/or seedling vigor.

Avoid use of seed varieties known to have poor seedling (emergence) vigor.

Do not fall apply Trifluralin 4EC in combination with any other preplant incorporated herbicide.

Soil characteristics and environmental conditions which may contribute to crop seedling stress that may be accentuated by use of Trifluralin 4EC include:

Soil related: High salinity, eroded knolls/hilltops, loose dry soils and compaction.

Weather related: Cold and/or wet soils, excessively hot soils, excessive moisture, drought, and soil crusting from heavy rainfall.

Note: Do not apply Trifluralin 4EC on small grains where a dinitroaniline herbicide such as Trifluralin 4EC was applied at a rate recommended for row crops (oil seeds) during the previous growing season.

Application Directions for Small Grains

Barley, Spring Seeded--Spring Application Preplant Incorporated for Foxtail (Pigeongrass) Control (For Use in Minnesota, North Dakota, and South Dakota)

Apply in the spring as a preplant incorporated treatment for foxtail (pigeongrass) control in spring seeded barley. Trifluralin 4EC may be applied to ground that has a manageable trash level or has been fallowed or pre-tilled. Incorporate one time within 24 hours after application. Incorporate a second time before planting to destroy existing weeds and ensure uniform distribution of Trifluralin 4EC in soil surface. For best weed control results, the second incorporation should occur at least 7 days after the first.

Broadcast Application Rates/Acre: Apply at a rate of 1 pint per acre for all soil textures regardless of organic matter content.

Incorporation: Recommended incorporation tools include the chisel plow (first incorporation pass only), tandem disc, and field cultivator. Refer to "Incorporation Equipment" in "General Information" section of this label for details on operation of incorporation equipment.

Planting Directions: Barley should be seeded approximately 2 inches deep.

Precautions:

- Carefully read and follow "Special Precautions for Use of Trifluralin 4EC on Small Grains" before application of Trifluralin 4EC.
- While use of this weed control practice may result in a stand reduction, slight stand reductions do not normally affect yield.

Barley, Spring Seeded--Spring Application Preplant Incorporated for Foxtail (Pigeongrass) Control in Barley Used as a Cover Crop or in the Acreage Conservation Reserve Program

Apply in the spring as a preplant incorporated treatment prior to planting spring seeded barley on land enrolled in acreage conservation reserve programs. Follow recommended soil preparation, application and incorporation procedures for Trifluralin 4EC.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.5 pts.
Fine	1.5 pts.

Planting Directions: Barley should be seeded approximately 2 inches deep.

Precautions: Use of this practice may result in a slight stand reduction. Follow the most severe grazing restrictions imposed by either the label for Trifluralin 4EC or the USDA Acreage Conservation Reserve Program, whichever is longer. Consult the local ASCS office or other state agency to determine the period of the USDA grazing restriction.

Winter Wheat--Preplant Incorporated for Control of Cheatgrass and Other Annual Grasses and Broadleaves

(For Use in Colorado, Idaho, Kansas, Montana, Nebraska, Oregon, Washington, and Wyoming)

Apply Trifluralin 4EC as a preplant incorporated treatment for control of downy brome (cheatgrass), annual ryegrass, annual bluegrass, pacific meadow foxtail (blackgrass), henbit and fiddleneck (tarweed). The growth, development and yield of winter wheat will not be adversely affected, provided the seed is placed below the zone of soil treated with Trifluralin 4EC. Trifluralin 4EC may be applied up to 3 weeks before planting.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1.5 pts.
Medium	1.5 pts.
Fine	2 pts.

Incorporation Directions: Incorporate Trifluralin 4EC with a flexible tine-tooth harrow (Flextine or Melroe), set to cut 1 to 2 inches deep and operate at 3 to 6 mph. Incorporate 1 time within 24 hours after application and a second time in a different direction from the first prior to planting. Do not till the soil with a disc after Trifluralin 4EC has been incorporated with a flexible tine harrow.

Planting Directions: Use only a deep furrow or semi-deep furrow drill that will place the seed below the zone into which Trifluralin 4EC has been incorporated.

Precautions:

- Carefully read and follow "Special Precautions for use of Trifluralin 4EC in Small Grains" before application of Trifluralin 4EC.
- Wheat planted in direct contact with treated soil may suffer crop injury in the form of delayed emergence and development.

**Winter Wheat--Post Plant Incorporated Treatment
(For Use in Idaho, Oregon, and Washington)**

Apply and incorporate Trifluralin 4EC after planting, but before emergence, to control the following weeds susceptible to Trifluralin 4EC in winter wheat: annual ryegrass, annual bluegrass, downy brome (cheatgrass), pacific meadow foxtail (blackgrass), fiddleneck (tarweed) and henbit.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1-1.5 pts.
Medium	1.5 pts.

Planting Directions: Plant wheat 2 to 3 inches deep in a well-tilled seedbed. Do not use a deep or semi-deep furrow drill.

Incorporation Directions: Incorporate Trifluralin 4EC using 2 passes with a flex-tine or spike-tooth harrow operated at least 5 mph. The second incorporation pass should be in a different direction from the first. Set equipment to cut 1 to 1-1/2 inches deep and avoid disturbing seed. Application and first incorporation should be done in the same operation if possible. Both incorporations must be done within 24 hours.

Precautions:

- Carefully read and follow "Special Precautions for Use of Trifluralin 4EC in Small Grains" before application of Trifluralin 4EC.
- Wheat seed in direct contact with treated soil may suffer crop injury in the form of delayed emergence and development.
- If less than 20 inches of rainfall plus irrigation was received between planting and harvest, refer to rotation crop restrictions before planting sorghum or oats.

**Winter Wheat--Fallow Soil Application Prior to Planting
(For Use in Idaho, Oregon and Washington)**

Trifluralin 4EC may be applied and shallowly incorporated into fallow soil up to 4 months before planting wheat to control cheatgrass and certain annual grasses and broadleaf weeds. Apply Trifluralin 4EC any time from May to September prior to fall planting of winter wheat. Wheat growth, development and yield will not be adversely affected so long as the seed is placed below the zone of soil treated with Trifluralin 4EC.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1.5 pts.
Medium	1.5 pts.
Fine	2 pts.

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Incorporation Directions: Incorporate Trifluralin 4EC with a flexible tine-tooth harrow (Flextine or Melroe), set to cut 1 to 2 inches deep and operate at 3 to 6 mph. Incorporate 1 time within 24 hours after application and a second time in a different direction from the first prior to planting. Do not till the soil with a disc after Trifluralin 4EC has been incorporated with a flexible tine harrow.

Planting Directions: Use only a deep furrow or semi-deep furrow drill that will place the seed below the zone into which Trifluralin 4EC has been incorporated.

Precautions:

- Carefully read and follow "Special Precautions for use of Trifluralin 4EC in Small Grains" before application of Trifluralin 4EC.
- Wheat planted in direct contact with treated soil may suffer crop injury in the form of delayed emergence and development.

Spring Wheat, Durum and Barley--Postplant incorporated for Foxtail (Pigeongrass) Control

Apply and incorporate Trifluralin 4EC after planting, but before emergence, to control foxtail (pigeongrass) in spring wheat, durum and barley. Trifluralin 4EC may be tank mixed with Far-Go to control wild oats. Refer to the label for Far-Go for application rates, additional use directions, precautions and limitations before use.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1 pt.
Fine	1.5 pts.

Planting Directions: Plant wheat 2 to 3 inches deep in a well-tilled seedbed.

Incorporation Directions: Incorporate Trifluralin 4EC with a flexible tine or diamond harrow operated at least 5 mph. The second incorporation pass should be in a different direction from the first. Set equipment to cut 1 to 1.5 inches deep and avoid disturbing seed. Application and first incorporation should be done in the same operation if possible. Both incorporations must be done within 24 hours.

Precautions:

- Carefully read and follow "Special Precautions for use of Trifluralin 4EC in Small Grains" before application of Trifluralin 4EC.
- Wheat seed in direct contact with treated soil may suffer crop injury in the form of delayed emergence and development.

SOYBEANS: Apply Trifluralin 4EC as a preplant soil incorporated treatment. Trifluralin 4EC can also be applied in the fall. See instructions for fall application under "Application Timing" in the "General Information" section of this label.

Broadcast Application Rates/Acre

Soil Texture	Spring Application	Fall† Application
Coarse	1 pt.	2 pts.
Medium	1.5 pts.	2 pts.
Fine	2 pts.	2.5 pts.

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- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- All soils with 5-10% organic matter--2-2.5 pts.

†Fall application use rates for soybeans grown in Alabama, Arkansas, northern Florida, Georgia, Louisiana, Mississippi, southeastern Missouri (Bootheel), North Carolina, Oklahoma, South Carolina, Tennessee, and Texas.

For soybeans grown in areas other than those listed above, fall apply Trifluralin 4EC at broadcast rates recommended for normal preplant incorporated treatment.

Precautions: Soybeans should be planted after early season adverse weather conditions have passed, especially when using higher rate programs. Cool, wet weather early in the growth cycle causes additional stress on the soybean plant which may result in reduced stand, delayed maturity and reduced yield.

Chemigation

Trifluralin 4EC may be applied through properly equipped chemigation systems for weed control in soybeans. Refer to "Application by Chemigation" section in the "General Information" section of this label. Do not apply Trifluralin 4EC through any type of irrigation system unless these directions are carefully followed.

Apply Trifluralin 4EC in sprinkler irrigation equal to 0.5 to 1 inch of water. Planting and application should occur as soon as possible after the last tillage operation. Trifluralin 4EC must be applied within 2 days after planting and prior to crop emergence. Trifluralin 4EC does not control established weeds. Incorporation is not necessary when Trifluralin 4EC is applied by chemigation.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1.5-2 pts.
Medium	1.5-2 pts.
Fine	2-2.5 pts.

- Soil with 2-5% organic matter - 2 pints
- Soils with 5-10% organic matter - 2 to 2.5 pints

Cultivation: Soil treated by chemigation with Trifluralin 4EC may be shallow cultivated without reducing weed control activity.

Special Use Programs

Fall Panicum Control

Apply Trifluralin 4EC as a preplant incorporated treatment at a broadcast rate of 2.0 pt/acre on coarse and medium soils.

Pigweed and Seedling Johnsongrass Control

Apply Trifluralin 4EC as a preplant incorporated treatment.

Broadcast Application Rates/Acre: In Alabama, Arkansas, Florida, Georgia, Kansas, Louisiana, Mississippi, Missouri, Nebraska, North Carolina, Oklahoma, South Carolina, Tennessee, and southern Virginia, apply Trifluralin 4EC at the following broadcast rates:

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1-1.5 pts.
Medium	1.5-2 pts.
Fine	2-2.5 pts.

(Exception: Louisiana, 3 pts/acre on fine soils).

Additional Weed and Grass Control (Gulf Coast Counties of Texas)

Apply Trifluralin 4EC as a preplant incorporated treatment up to 2 weeks before planting.

Broadcast Application Rates/Acre: For soybeans grown in Brazoria, Calhoun, Chambers, Fort Bend, Galveston, Harris, Jackson, Jefferson, Liberty, Matagorda, Orange, Victoria, Waller and Wharton counties of the Texas Gulf Coast, apply Trifluralin 4EC at the following broadcast rates:

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1.5 pts.
Medium	2 pts.
Fine	3 pts.

Itchgrass (Raoulgrass) Suppression

Apply Trifluralin 4EC as a preplant incorporated treatment or at layby.

Layby Treatment: Cultivate to remove existing weeds and treat when soybeans are well established (10 inches tall). Apply as a directed spray to the soil surface and incorporate using a rolling cultivator set to cut 2-4 inches deep or sweep-type cultivator with 3 to 5 sweeps per row middle operated 2 to 3 inches deep. Set incorporation equipment to throw treated soil to the row.

Broadcast Application Rate/Acre

Trifluralin 4EC		
Soil Texture	Preplant Incorporated	Layby Application
Medium	3 pts.	1 pt.
Fine	3 pts.	2 pts.

Charcoal Soils in Arkansas, Louisiana and Mississippi

Newly cleared land often contains high organic matter (5-10%) and charcoal from burning debris. Charcoal and organic matter tends to bind Trifluralin 4EC and reduce weed control activity. Under these conditions, higher rates of Trifluralin 4EC are necessary for weed control. Increased rates, however, can cause crop injury if charcoal or organic matter is not present to bind some of the Trifluralin 4EC. In the burn row a high level of charcoal is usually present. Consequently, poor weed control may result, even if an increased rate of Trifluralin 4EC is used. Follow recommended application and incorporation procedures for Trifluralin 4EC.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1.5-2.5 pts.
Medium	2.5 pts.
Fine	3 pts.

Red Rice Control in Arkansas, Louisiana, Mississippi, and Texas Only

Suppression or partial control of red rice can be obtained from a 2-year treatment program which consists of a double rate application the first year followed by application in the second year at normal rates indicated for soil texture, organic matter or charcoal content. Apply and incorporate Trifluralin 4EC in the spring before planting. Follow recommended soil preparation and incorporation procedures for Trifluralin 4EC.

Broadcast Application Rates/Acre**Trifluralin 4EC**

Soil Texture	Application - Year 1	Application - Year 2
Coarse	2 pts.	1 pt.
Medium	3 pts.	1.5 pts.
Fine	4 pts.	2 pts.
Coarse soils with 2-5% organic matter	3 pts.	1.5 pts.
Soils with 5-10% organic matter	4 pts.	2-2.5 pts.

In Arkansas, Louisiana and Mississippi, if a combination of high soil organic matter (5-10%) and charcoal are present, apply Trifluralin 4EC at the following broadcast rates:

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1.5-2.5 pts.
Medium	2.5 pts.
Fine	3 pts.

For more information on charcoal soils see discussion in preceding section.

Precautions: Crop Rotation: The recommendation for red rice control in soybeans is a 2-year program. In the first year following a double rate application, plant only soybeans. During the second year, after applying Trifluralin 4EC at the normal rate indicated for soil texture and charcoal level, plant only those crops for which Trifluralin 4EC is registered as a preplant treatment or crop injury may result. Rice may be planted during the third year following application of normal use rates in year two.

Rhizome Johnsongrass Control in Eastern United States and the State of Texas

Rhizome johnsongrass control with Trifluralin 4EC requires double rate application for two consecutive years. Commercially acceptable control cannot be obtained with only one year of double rate use of Trifluralin 4EC. Carefully follow the special use directions which follow.

Soil Preparation: Satisfactory results are dependent upon proper soil preparation prior to application. Chisel plow to bring rhizomes to the soil surface. Disc twice before application to chop rhizomes into small (2 to 3 inch) pieces and destroy any recently emerged johnsongrass plants.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	2 pts.
Medium	3 pts.
Fine	4 pts.

- Coarse soils with 2-5% organic matter -- 3 pints
- Soils with 5-10% organic matter -- 4 pints

Spring Application: Apply Trifluralin 4EC any time before planting in the spring for two consecutive years.

Fall Application: Apply Trifluralin 4EC after October 15 for two consecutive years.

Split Application: Apply Trifluralin 4EC at the broadcast rates indicated in the following table both spring and fall for two consecutive years.

Broadcast Application Rates/Acre

Trifluralin 4EC	
Soil Texture	Spring + Fall
Coarse	1 + 1 pts.
Medium	1.5 + 1.5 pts.
Fine	2 + 2 pts.
Coarse soils with 2-5% organic matter	1.5-1.5 pts.
Soils with 5-10% organic matter	2 + 2 pts.

Incorporation: Deep incorporation with a tandem disc is essential for good results. Set disc to operate 4 to 6 inches deep and operate at 4 to 6 mph. Two incorporation passes are necessary and the second should be in a different direction from the first.

Cultivation: Some johnsongrass plants will not be controlled. Timely cultivation during the crop season is necessary to remove escaped plants and maintain commercially acceptable control.

Precautions: In the season following a double rate treatment, plant only rice and those crops to which Trifluralin 4EC can be applied as a preplant treatment or crop injury may result.

Rhizome Johnsongrass Control with Trifluralin 4EC plus Sencor or Trifluralin 4EC plus Lexone Tank Mix

Rhizome johnsongrass control with Trifluralin 4EC plus Sencor or Lexone requires application for two consecutive years. Apply Trifluralin 4EC plus Sencor or Lexone as a preplant incorporated treatment up to two weeks before planting. This tank mix controls weed susceptible to Trifluralin 4EC plus additional weeds listed on the label for Sencor or Lexone.

Application Rates: See rate recommendations above for "Rhizome Johnsongrass Control in eastern U.S. and the state of Texas." Use application rates for soybeans in the label for Sencor or Lexone.

Precautions: Refer to the label for Sencor or Lexone for application rates, additional use directions, precautions and limitations prior to applying Trifluralin 4 EC plus Sencor or Lexone tank mix. Carefully follow all use precautions on the labels for Sencor or Lexone.

Wild Cane (Shattercane) Control

Follow recommended soil preparation and application procedures for Trifluralin 4EC. Wild cane (shattercane) can germinate throughout the growing season and from greater soil depth than most other weed seeds. Commercially acceptable control can be obtained by using increased rates of Trifluralin 4EC.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	2 pts.
Fine	2.5 pts.

Incorporation: Deep incorporation with a tandem disc is essential for good wild cane control. Incorporate Trifluralin 4EC thoroughly with a disc set to cut 4 to 6 inches deep and operate at 4 to 6 mph. Two incorporation passes are necessary with the second in a different direction from the first.

Cultivation: Cultivation during the growing season will improve shattercane control.

Tank Mix, Overlay and Postemergence Recommendations

Trifluralin 4EC in Tank Mix

Trifluralin 4EC may be tank mixed with Sencor, Lexone, Canopy, Lasso, Dual, Preview or Vernam and applied as a preplant soil incorporated treatment to control additional weeds in soybeans. Refer to the tank mix product label for weeds controlled, application rates, additional use directions, precautions, and limitations before use.

Trifluralin 4EC plus Command (Reduced Rate) and Trifluralin 4EC plus Command and Lexone or Trifluralin 4EC plus Command and Sencor Tank Mixes (Not For Use in California): Trifluralin 4EC may be tank mixed with Command, Command plus Lexone or Command plus Sencor. Apply the tank mix as a preplant incorporated treatment up to 3 weeks before planting.

Note: The use of an agriculturally approved drift reducing additive is required at finished spray volumes of 10-15 gals/acre. Use nozzles suitable for broadcast boom application of herbicides. Coarse sprays are less likely to drift out of the target area than fine sprays. Application to overly moist or wet soils will increase the potential for off-site movement of Command vapors and may result in poor soil incorporation and unsatisfactory weed control. These directions must be followed to reduce the potential for off-site movement of Command vapors and potential injury to desirable vegetation including adjacent crops, trees, and ornamentals.

Incorporation: Tank mixes containing Command must be incorporated immediately after application. Follow other soil preparation, application and incorporation procedures for Trifluralin 4EC.

Trifluralin 4EC plus Command: Use the Trifluralin 4EC plus Command tank mix to control velvet leaf and weeds susceptible to Trifluralin 4EC.

Control of jimsonweed, annual morningglory, prickly sida, common ragweed, smartweed and venice mallow may be erratic, ranging from poor to excellent depending upon soil temperature, time of weed germination, depth of weed seed in the soil and the amount and timing of soil moisture. Control may be improved with timely cultivation.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC	Command 4EC
Coarse	1 pt.	0.75 pt.
Medium	1.5 pts.	1.12 pts.
Fine	2 pts.	1.5 pts.

Trifluralin 4EC plus Command and Lexone or Trifluralin 4EC plus Command and Sencor: Use the Trifluralin 4EC plus Command and Lexone or Sencor tank mix to control weeds susceptible to Trifluralin 4EC plus additional weeds listed on the labels for Command and Lexone or Sencor.

Trifluralin 4EC plus Command and Lexone or Sencor also provides partial control or suppression of cocklebur, annual morningglory and giant ragweed. Control of these weeds may be erratic, ranging from poor to excellent depending upon soil temperature, time of weed seed germination, depth of weed seed in the soil and the amount and timing of soil moisture. Control may be improved with timely cultivation.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC	Command 4EC	Lexone 4Lor Sencor 4	Lexone or Sencor DF
Coarse	1 pt.	0.5 pt.	0.33-0.5† pt	0.25-0.33† lb.
Medium	1.5 pts.	0.75 pt.	0.5-0.75 pt.	0.33-0.5 lb.
Fine	2 pts.	1.12 pts.	0.75-1 pt.	0.5-0.67 lb.

†Use the higher rate range in areas where weed populations are dense, for control of venice mallow and wild mustard, and for best control of common cocklebur, annual morningglory and giant ragweed.

Precautions:

- Off-site movement of spray drift or vapors of Command can cause foliar whitening or yellowing of adjacent crops, trees and ornamental plants which is usually temporary in nature but can result in permanent injury or death of the plants if the exposure is excessive. Prior to making application of this product, read and strictly follow all precautions, rotational crop guidelines and application instructions on the label for Command.
- Refer to the labels for Lexone and Sencor for additional use directions, precautions and limitations before applying Trifluralin 4EC plus Lexone or Trifluralin 4EC plus Sencor tank mix.

Preplant Incorporated Followed by Overlay Treatments (Not for Use in California)

Apply Trifluralin 4EC as a preplant incorporated treatment. Additional weeds tolerant to Trifluralin 4EC may be controlled using overlay preemergence applications of Canopy, Dual, Gemini, Lasso, Lexone, Lorox, Lorox Plus, Preview, Pursuit†, Scepter††, Sencor, or other products registered for preemergence use on soybeans. Such treatments may be made, unless use following a Trifluralin 4EC application is specifically prohibited by the product label. Consult the overlay product label for additional weeds controlled, directions for use, cautions and limitations before use.

†The use of Pursuit is limited to certain states. Use Pursuit as an overlay treatment following Trifluralin 4EC only in states specified on the Pursuit label.

††Use of Scepter is limited to certain states. Do not use Scepter as a preemergence overlay application following a Trifluralin 4EC preplant incorporated treatment in the "Northern Use Area" as defined by the Scepter label.

Preplant Incorporated Followed by Postemergence Treatments (Not for Use in California)

Apply Trifluralin 4EC as a preplant incorporated treatment. Additional weeds tolerant to Trifluralin 4EC may be controlled using postemergence applications of Basagran, Blazer, Classic, Cobra, Galaxy, Pinnacle, Pursuit†, Reflex, Scepter††, Storm, Tackle, or other products registered for postemergence use on soybeans, unless use following a Trifluralin 4EC application is specifically prohibited by the product label. Consult the postemergence product label for additional weeds controlled, directions for use, precautions, and limitations before use.

†The use of Pursuit is limited to certain states. Use Pursuit as a postemergence treatment following Trifluralin 4EC only in states specified on the Pursuit label.

††Use of Scepter is limited to certain states. Do not use Scepter as a postemergence application following a Trifluralin 4EC preplant incorporated treatment in the "Northern Use Area" as defined by the Scepter label.

SUGAR BEETS

Apply Trifluralin 4EC as an over-the-top spray and incorporate. Apply from the time the first true leaves have formed until plants are 6 inches tall.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25-1.5 pts.
Fine	1.25-1.5 pts.

Incorporation: Set incorporation equipment to move treated soil around the plants in the row. Avoid damage to the sugar beet taproot from incorporation equipment.

Precautions: Exposed sugar beet roots should be covered with soil before application of Trifluralin 4EC to reduce the possibility of girdling.

Incorporation with a Tine-Tooth Harrow

(For Use in California, Colorado, Idaho, Nebraska, Oregon, Texas, Utah, Washington and Wyoming)

A tine-tooth harrow (Flextine or Melroe) can be used to incorporate Trifluralin 4EC in sugar beets.

Incorporation with tine-tooth harrow requires 2 passes in opposite directions over the same set of rows. Set the harrow to cut 1 to 2 inches deep and operate at 3 to 6 mph. Set incorporation equipment carefully to avoid damage to sugar beet tap root. Use application procedures and broadcast application rates recommended in preceding section.

Trifluralin 4EC plus Eptam Tank Mix

Trifluralin 4EC may be tank mixed with Eptam and applied as an over the top spray followed by incorporation to control additional weeds. Use application rates recommended for sugar beets above. Refer to the Eptam label for weeds controlled, application rates, additional use directions, precautions and limitations before use.

SUGARCANE

Apply and incorporate Trifluralin 4EC twice a year. Make the first application in the fall on firmly packed beds immediately after the seed pieces are planted. Make a second application in the spring

before or shortly after the cane emerges. Loosen rain-packed beds 2-3 inches deep before spring application. Take care that incorporation equipment does not damage the seed pieces or emerging shoots.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
All soil textures	2-4 pts.†

†Application rate within rate range may be adjusted according to weed pressure.

**Postplant Application for Control of Most Annual Grasses, Including Guineagrass
(For Use in Hawaii)**

Surface apply Trifluralin 4EC after planting (for plant cane) or after harvesting (for ratoon cane). For best results in plant cane, the soil surface should be smooth and finely tilled. Apply Trifluralin 4EC as soon as possible after tillage and planting before germination and emergence of grass weeds. For optimum efficacy in ratoon cane, minimize surface residue from previous crop before applying. Apply just before anticipated rainfall in non-irrigated and furrow-irrigated sugarcane. Irrigate as soon as possible after applying drip-irrigated or sprinkle-irrigated sugarcane to activate Trifluralin 4EC.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
All soil textures	6-8 pts.†

†Application rate within rate range may be adjusted according to weed pressure.

**Applications Up to Layby for Plant Cane or Ratoon Cane
(For Use in Louisiana and Texas)**

Apply and incorporate Trifluralin 4EC in the spring from shortly before or after cane emergence until layby. Apply after beds have been shaved or false shaved. Loosen rain-packed beds 2-3 inches deep before application. Avoid incorporation equipment damage to seed pieces or emerging shoots. Incorporate with a rolling cultivator or bed chopper for all soil textures. Set rolling cultivator to cut 2 to 4 inches deep and operate at 6 to 8 mph. Set bed chopper to cut 3 to 4 inches deep and operate at 4 to 6 mph. Two incorporation passes are necessary.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
All soil textures	2-4 pts.†

†Application rate within rate range may be adjusted according to weed pressure.

**Itchgrass (Raoulgrass) Control
(For Use in Louisiana)**

Apply and incorporate Trifluralin 4EC on plant or ratoon cane. Follow use directions in preceding section for layby application.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
All soil textures	2-4 pts.

SUNFLOWER

Trifluralin 4 EC Alone

Apply and incorporate Trifluralin 4EC in the spring before planting or in the fall. See instructions for fall application under "Application Timing" in the "General Information" section of this label.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25-1.5 pts.
Fine	1.5-2 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 to 2 pts.
- Fine soils with 2-5% organic matter--2 pts.
- Soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Trifluralin 4EC plus Eptam Tank Mix

Trifluralin 4EC may be tank mixed with Eptam and applied as a preplant incorporated treatment to control additional weeds in sunflowers in Minnesota, North Dakota and South Dakota. Refer to the Eptam label for application rates, additional use directions, precautions and limitations before use.

TOMATO

For direct seeded tomato, apply Trifluralin 4EC as a directed spray between rows and beneath plants and incorporate at the time of blocking or thinning. For transplant tomato, apply and incorporate before transplanting. Do not apply after transplanting.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25-1.5 pts.
Fine	1.5-2 pts.

- Coarse and medium soils with 2-5% organic matter--1.5 pts.
- Fine soils with 2-5% organic matter--2 pts.
- All soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

TREE AND VINE CROPS--CITRUS, FRUIT AND NUT CROPS AND VINEYARDS**Application to New Plantings of Citrus, Fruit and Nut Crops**

For new plantings of almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, plum, prune, tangelo, tangerine and walnut trees, apply and incorporate Trifluralin 4EC before planting.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.25-1.5 pts.
Fine	1.5-2 pts.

- All soils with 2-5% organic matter--1.5-2 pts.

- All soils with 5-10% organic matter--2 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Application to New Plantings of Vineyards

For new plantings of vineyards, apply and incorporate Trifluralin 4EC before planting.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1-1.5 pts.
Medium	1.5-3 pts.
Fine	3-4 pts.

- All soils with 2-10% organic matter--4 pts.
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Note: Do not use more than 2 pts. per acre on heat treated grape rootings.

Application to Established Non-Bearing and Bearing Citrus, Fruit and Nut Crops and Vineyards

Trifluralin 4EC may be applied in established non-bearing and bearing vineyards and plantings of almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, plum, prune, tangelo, tangerine and walnut trees. In established plantings, apply as a directed spray to the soil surface and use incorporation methods not injurious to the crop. Do not apply to vineyards within 60 days of harvest.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
All soil textures	2-4 pts.†

†Application rate within the rate range may be adjusted according to weed pressure.

Rhizome Johnsongrass Control - Special Two-year Use Program

Trifluralin 4EC may be applied for two consecutive years in a special use program to control rhizome johnsongrass in established vineyards and plantings of almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, tangelo, tangerine and walnut trees. Do not apply to vineyards within 60 days of harvest.

Soil Preparation: Work the soil thoroughly to move rhizomes near the soil surface and cut them into smaller pieces.

Broadcast Application Rates/Acre:

The following application rate must be applied for two consecutive years.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
All soil textures	4 pts.

Incorporation: Incorporate Trifluralin 4EC thoroughly with a disc set to cut 4 to 6 inches deep and operate 4 to 6 mph. Two incorporation passes are necessary, with a second pass in a different direction from the first.

Cultivation: Some johnsongrass plants will escape. Timely cultivations are necessary to obtain commercially acceptable control. Commercially acceptable control cannot be obtained with only a single year use of Trifluralin 4EC.

Precautions: Do not use 4 pint rate on new plantings or crop injury may result. Do not interplant orchards or vineyards with other crops. If treated vineyards and orchards are diverted to other crop uses, then in the next cropping season plant only those crops for which Trifluralin 4EC has been registered as a preplant incorporated treatment.

Bindweed Control in California

Trifluralin 4EC can be applied using a specially equipped spray blade for the control of field bindweed in vineyards and in plantings of almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, tangelo, tangerine and walnut trees.

Soil Preparation: Destroy existing weeds with soil tillage before applying Trifluralin 4EC. Thorough tillage is necessary to prevent trash from interfering with operation of the spray blade.

Equipment: Application requires a spray blade capable of operation at 4 to 6 inches below the soil surface. The blade should be equipped with nozzles located under the blade and directed so as to allow spray to be trapped in a thin layer as the blade is pulled through the soil. Use a nozzle spacing sufficient to ensure application of a uniform horizontal layer.

Application: Apply Trifluralin 4EC in 40 to 80 gallons of water per acre. Operate blade at a depth of 4 to 6 inches.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
All soil textures	4 pts.

Precautions: Some soils may develop cracks as they dry after rainfall or irrigation. Field bindweed may emerge if the cracks extend through the layer of Trifluralin 4EC. Prevent or eliminate cracks by shallow discing or other tillage. Avoid deep tillage which disturbs the subsurface layer. Cultivation or tillage also aids the control of germinating seeds.

CONDITIONS OF SALE AND WARRANTY

The DIRECTIONS FOR USE of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of ALBAUGH, INC., its Supplemental Distributors, or the Seller. All such risks shall be assumed by the Buyer.

ALBAUGH, INC., its Supplemental Distributors and the Seller warrant that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use subject to the inherent risks referred to above. NEITHER ALBAUGH, INC. NOR ITS SUPPLEMENTAL DISTRIBUTORS MAKE ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR OF MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. THIS WARRANTY DOES NOT EXTEND TO, AND THE

BUYER SHALL BE SOLELY RESPONSIBLE FOR, ANY AND ALL LOSS OR DAMAGE WHICH RESULTS FROM THE USE OF THIS PRODUCT IN ANY MANNER WHICH IS INCONSISTENT WITH THE LABEL DIRECTIONS.

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No employee or agent of ALBAUGH, INC., its Supplemental Distributor, or the Seller is authorized to vary or exceed the terms of this Warranty in any other manner.

WARRANTY LIMITATIONS AND DISCLAIMER

~~Seller 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 FOR USE when used under normal conditions. THIS IS THE ONLY WARRANTY MADE ON THIS PRODUCT. NO OTHER EXPRESS AND NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE OUTSIDE OF THIS LABEL. Therefore, neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), under abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes, etc.) or under conditions not reasonably foreseeable to or beyond the control of seller.~~

When buyer or user suffers losses or damages resulting from the use or handling of this product (including claims based on contract, negligence, strict liability, or other legal theories), buyer or user must promptly notify seller, in writing, of any claims to be eligible to receive either remedy given below. The EXCLUSIVE REMEDY OF THE BUYER OR USER and the LIMIT OF LIABILITY of seller will be one of the following, at the election of the seller:

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

The seller will not be liable for consequential or incidental damages or losses.

The terms of this Warranty Limitations and Disclaimer cannot be varied by any written or verbal statements or agreements. Any employee or sales agent of the seller is not authorized to vary or exceed the terms of this Warranty Limitations and Disclaimer in any manner.

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SUPPLEMENTAL LABELING

ALBAUGH

TRIFLURALIN 4EC

EPA Reg. No. 42750-32

**For Distribution and Use Only in Montana
Trifluralin 4EC for Weed Control in Rapeseed (Canola), Safflower and Sunflower**

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 this label, find someone to explain it to you in detail.)

- It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
- This labeling must be in the possession of the user at the time of application.
- Read the label affixed to the container for Trifluralin 4EC before applying. Carefully follow all precautionary statements and applicable use directions.
- Use of Trifluralin 4EC according to this supplemental labeling is subject to all use precautions and limitations imposed by the label affixed to the container for Trifluralin 4EC.

Directions for Use

Apply and incorporate Trifluralin 4EC in the fall after September 1 or in the spring before planting. Make only one application per crop cycle. Follow soil preparation, application and incorporation instructions in the Trifluralin 4EC product label.

Broadcast Application Rates/Acre

Soil Texture	Trifluralin 4EC
Coarse	1 pt.
Medium	1.5 pts.
Fine	2 pts.

Use 1.5 to 2 pts of Trifluralin 4EC per acre on coarse and medium soils with 2-5% organic matter.

Precautions

Rotational Crop Planting Restriction: Plant only spring seeded barley (grown under irrigated conditions), rapeseed, safflower or sunflower as rotational crops in the crop year following the crop treated with Trifluralin 4EC. If one of these specified crops is not planted, the land should be left idle or fallow for the entire crop year following the crop treated with Trifluralin 4EC.

Albaugh, Inc.
121 NE 18th Street
Ankeny, IA 50021

SUPPLEMENTAL LABELING

ALBAUGH

TRIFLURALIN 4EC

EPA Reg. No. 42750-32

For Distribution and Use Only in Montana

Spring Applied Trifluralin 4EC for Foxtail (Pigeongrass) Control in Spring Seeded Barley Grown Under Irrigation

KEEP OUT OF REACH OF CHILDREN

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Directions for Use

Trifluralin may be spring applied as a preplant incorporated treatment for foxtail (Pigeongrass) control in spring seeded barley grown under irrigated conditions in Montana. Trifluralin may be applied to ground that has a manageable trash level or has been fallowed or pretilled. The first incorporation is required within 24 hours after application. The second incorporation is required prior to planting to destroy emerged weeds and to ensure even distribution of trifluralin in treated soil.

Broadcast Application Rate: Apply Trifluralin 4EC at a rate of 1 pint per acre regardless of soil texture or soil organic matter content. Do not exceed this application rate as crop injury may occur.

Incorporation Directions

The following tools are recommended for soil incorporation:

1. **Chisel Plow alone or Chisel Plow with a Rod Weeder attached:** A chisel plow alone should be used for the first incorporation pass only. With rod weeder attached, the chisel plow may be used for both incorporation passes. Operate 4 to 5 inches deep and at 4 to 6 mph. A chisel plow is defined as having three rows of up to 18 inch sweeps on no greater than 12 inch centers. Stagger successive rows of sweeps to ensure that no soil is left unturned.
2. **Tandem Disc:** Operate 3 to 4 inches deep and at 4 to 6 mph.
3. **Field Cultivator:** Operate 3 to 4 inches deep and at 5 or more mph. A field cultivator is defined as having 3 to 4 rows of sweeps with "C" or "S" shaped shanks spaced at intervals of 7 inches or less. Stagger successive rows of sweeps to ensure that no soil is left unturned.

Planting Directions

Plant barley 1 to 2 inches deep. Planting greater than 2 inches deep will result in increased seedling stress and decreased emergence.

Irrigation Directions

Irrigate prior to planting, or after crop emergence only. Irrigation between planting and emergence may cause reduced crop stands or delayed emergence because of soil crusting, especially on loose friable seedbeds.

Precautions

Carefully follow use directions to minimize potential crop stress. Under certain conditions, delayed crop emergence and/or stand reduction may occur when trifluralin is applied to barley. The combined effect of certain cultural practices and unfavorable soil or environmental conditions may cause excessive crop seedling stress resulting in retarded crop growth, stand reduction and possibly reduced yield. For best results, observe the following cultural practices or precautions:

- Use tillage methods that provide a uniformly firm seedbed and time tillage operations to conserve moisture.
- Do not exceed recommended application rates. This is particularly important on coarse textured or low organic matter soils.
- Use only high quality seed where trifluralin is to be applied (avoid use of small seed with low starch reserves).
- If seed treatments are used, apply at the correct rate uniformly across all seeds. Misapplication may result in reduced germination and/or seedling vigor.
- Avoid use of seed varieties known to have poor seedling (emergence) vigor.
- Do not fall apply trifluralin in combination with any other preplant incorporated herbicide.

Soil characteristics and environmental conditions which may contribute to crop seedling stress that may be accentuated by use of trifluralin include:

- **Soil related:** High salinity, eroded knolls/hilltops, loose dry soils and compaction.
- **Weather related:** Cold and/or wet soils, excessively hot soils, excessive moisture, drought, and soil crusting from heavy rainfall.

NOTE: Do not apply trifluralin on small grains where a dinitroaniline herbicide such as trifluralin was applied at a rate recommended for row crops (oil seeds) during the previous growing season.

Rotational Crop Planting Restrictions

Plant only barley (grown under irrigated conditions), rapeseed, safflower or sunflower as a rotational crop in the year following the crop treated with trifluralin. If one of these specified rotational crops is not planted, the land should be left idle or fallow for the entire crop year following the crop treated with trifluralin.

Albaugh, Inc.
121 NE 18th Street
Ankeny, IA 50021

SUPPLEMENTAL LABELING

ALBAUGH

TRIFLURALIN 4EC

EPA Reg. No. 42750-32

**For Distribution and Use Only in Florida
Special Chemigation Directions for Citrus (Florida Citrus Only)**

KEEP OUT OF REACH OF CHILDREN

WARNING -AVISO

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- Read the label affixed to the container for Trifluralin 4EC before applying. Carefully follow all precautionary statements and applicable use directions.
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Directions for Use

Citrus - Ring Drench Application

Apply Trifluralin 4EC to newly planted (non-bearing) citrus as a ring drench treatment at the rate of 2.0 pts product broadcast per acre. Make only one application per year. Consult the following table for the ounces of Trifluralin 4EC to add to a 500 gallon water tank for various diameter rings.

Ounces of Trifluralin 4EC per 500 Gals. for Ring Drench Application

	Diameter of Ring		
	3 ft.	4 ft.	5 ft.
3 gals/tree (167 trees/tank)	0.8	1.5	2.4
5 gals/tree (100 trees/tank)	0.5	0.9	1.4
7 gals/tree (71 trees/tank)	0.4	0.7	1.0
10 gals/tree (50 trees/tank)	0.3	0.5	0.7

Citrus - Chemigation (Florida Citrus Crops Only)

Low Volume Sprinkler: 4 to 50 gallons per hour (gph) per emitter, drip - 0.5 to 3 gph per emitter. Point of application should be above ground.

Irrigation system should run a sufficient amount of time prior to Trifluralin 4EC injection to have all emitters functioning properly. After system is operating properly, length of injection should be such that at one period of time during the injection, the first and last emitters in the system contain Trifluralin 4EC treated water. Add Trifluralin 4EC to the supply tank already filled with the volume of water required for the injection period (this should be at least twenty (20) gallons for each pint of Trifluralin 4EC used). Maintain proper agitation in Trifluralin 4EC injection tank. Trifluralin 4EC should be mixed in clean water and injected down-line from filters. Following Trifluralin 4EC injection, system should be flushed for a period of time sufficient to clear the line of Trifluralin 4EC. If Trifluralin 4EC application is made during a normal irrigation cycle, injection should be made during the late stage.

Apply this product only through low volume sprinkler (micro sprinkler) and drip (trickle) irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. Do not connect an irrigation system used for pesticide application to a public water system unless the prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation, under the supervision of the responsible person, must shut the system down and make necessary adjustments should the need arise.

Application of Trifluralin 4EC through irrigation systems should be used as a supplemental weed control practice. The addition of Trifluralin 4EC through irrigation systems will help prevent weed escapes at the irrigation point when the application is made before weed seeds germinate.

Chemigation Calibration (Citrus Crops Only)

Calculation of use rates is based on wetted area around emitters, NOT on tree acres. To determine the correct amount of Trifluralin 4EC, use the following formula:

1. Treated area per each emitter = A

$$A = 3.14 \times (\text{radius} \times \text{radius})$$

Example: If the average distance from the emitter to the perimeter of the wetted area measured one inch below soil surface is 13 inches, then

$$A = 3.14 \times (13'' \times 13'')$$

$$A = 3.14 \times 169''$$

$$A = 530.7 \text{ square inches}$$

2. The area in square feet wet in each acre = B

$$B = \frac{A \times \text{emitters/acre}}{144}$$

Example: If there are 300 emitters per acre, then

$$B = \frac{530.7 \times 300}{144} = B = 1105.6 \text{ square feet wetted per acre.}$$

3. The total area (in square feet) wet by your system = C

$$C = B \times \text{acres covered by system}$$

Example: If the system covers 20 acres, then

$$C = 1105.6 \text{ square feet per acre} \times 20 \text{ acres}$$

$$C = 22,112 \text{ square feet wetted by system}$$

4. Amount of Trifluralin 4EC to inject = S

Rate per treated acre of Trifluralin 4EC = R

$$S = \frac{C}{43,560} \times R = \text{pints Trifluralin 4EC}$$

Example: If the desired application rate per treated acre is 2.0 pints of Trifluralin 4EC, then

$$S = \frac{22,112}{43,560} \times 2.0 = S = 1.0 \text{ pt of Trifluralin 4EC should be injected into the system.}$$

Note: Select the proper rate (R) based on soil texture, weeds to control, and length of control required. The total amount of Trifluralin 4EC applied in a season from broadcast, ring drench and/or supplemental chemigation applications cannot exceed the maximum rate stated above.)

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