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U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Use Programs
Registration Division (H75050)
401 M Street, S.W.
Washington, D.C. 20460

EPA Reg.
Number:

5905-532

Date of Issuance:

DEC 1 1998

Term of Issuance:

Conditional

Name of Pesticide Product:

Trifluralin HFP

NOTICE OF PESTICIDE:

☒ Registration
☐ Reregistration

(under FIFRA, as amended)

Name and Address of Registrant (Include ZIP Code):

Helena Chemical Company
6075 Poplar Ave., Suite 500
Memphis, TN 38119

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration in no way is to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.

2. Make the following label changes:

a. Revise the EPA Registration Number to read, "EPA Reg. No. 5905-532".

3. Submit two (2) copies of the revised final printed label for the record.

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

Signature of Approving Official:

Date:

DEC 1 1998

M. H. WARD

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If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

On April 30, 1996, the Agency issued a Reregistration Eligibility Decision (RED) for the active ingredient, trifluralin. This product registration relies on acute toxicology and product chemistry data for a trifluralin product (Treflan HFP; EPA Reg. No. 62719-250) which is undergoing reregistration. Depending on the outcome of the Agency's review of these data, you may be required to submit additional data and/or revise the product label to support the continued registration of this product.

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

Enclosure

3059

(Base Label):

(logo) Helena Chemical Company

Trifluralin HFP

A selective herbicide for the preemergence control of annual grasses and broadleaf weeds.

Active Ingredient:

trifluralin: a,a,a-trifluoro-2,6-dinitro-N, N-dipropyl-p-toluidine.....	43%
Inert Ingredients	57%
Total	100%

Contains petroleum distillates.

Contains 4 pounds active ingredient per gallon.

Manufactured using the processes of U.S. Patents 4,120,905 and 4,225,789

Keep Out of Reach of Children

CAUTION

Precautionary Statements

Hazards to Humans and Domestic Animals

Causes Moderate Eye Irritation • Harmful If Swallowed • Avoid contact with eyes, skin, or clothing • This Product May Cause Skin Sensitization Reactions In Some People

Personal Protective Equipment (PPE)

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 selections chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Nitrile, Butyl, Neoprene, or Barrier Laminate
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

ACCEPTED
with COMMENTS
in EPA Letter Dated

DEC 1 1998

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

5905-232

40459

Engineering Controls Statements

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

User Safety Recommendations

Users should:

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

First Aid

If in eyes: Flush eyes with plenty of water. Call a physician if irritation persists.

If swallowed: Call a physician or Poison Control Center. Do not induce vomiting. Do not give anything by mouth to an unconscious person. Avoid alcohol.

If on skin: Wash with plenty of soap and water. Get medical attention if irritation persists.

If inhaled: Remove individual to fresh air. If breathing difficulty occurs, get medical attention. If not breathing, provide cardiopulmonary resuscitation assistance (mouth-to-mouth) and call a physician. May pose an aspiration pneumonia hazard.

Environmental Hazards

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

Agricultural Use Requirements

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

Refer to label booklet for additional precautionary information including Personal Protective Equipment (PPE), User Safety Recommendations and Directions for Use including Storage and Disposal.

Notice: Read the entire label. Use only according to label directions. Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies" inside label booklet.

In case of spill or transport emergency, call CHEMTREC 1-800-424-9300.

In case of people exposure, call National Pesticide Telecommunications Network 1-800-858-7378.

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

Avoid Freezing -- Store Above 40°F

EPA Reg. No. 5905-532

EPA Est. 5905-IA-01

Helena Chemical Company • Memphis, Tennessee 38119 U.S.A.

Herbicide

Net Contents XXX

(Datapack cover):

(logo) Helena Chemical Company

Trifluralin HFP

A selective herbicide for the preemergence control of annual grasses and broadleaf weeds.

Active Ingredient:

trifluralin: a,a,a-trifluoro-2,6-dinitro-N, N-dipropyl-p-toluidine	43%
Inert Ingredients	57%
Total	100%

Contains petroleum distillates.

Contains 4 pounds active ingredient per gallon.

Manufactured using the processes of U.S. Patents 4,120,905 and 4,226,789

Keep Out of Reach of Children

CAUTION

Agricultural Use Requirements

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

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In case of people exposure, call National Pesticide Telecommunications Network 1-800-858-7378.

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

Avoid Freezing – Store Above 40°F

EPA Reg. No. 5905-532

EPA Est. 5905-IA-01

Helena Chemical Company • Memphis, Tennessee 38119 U.S.A.

Herbicide

Net Contents XXX

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Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION

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Personal Protective Equipment (PPE)

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 selections chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Lamine or Viton
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls Statements

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

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Users should:

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- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
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First Aid

If in eyes: Flush eyes with plenty of water. Call a physician if irritation persists.

If swallowed: Call a physician or Poison Control Center. Do not induce vomiting. Do not give anything by mouth to an unconscious person. Avoid alcohol.

If on skin: Wash with plenty of soap and water. Get medical attention if irritation persists.

If inhaled: Remove individual to fresh air. If breathing difficulty occurs, get medical attention. If not breathing, provide cardiopulmonary resuscitation assistance (mouth-to-mouth) and call a physician. May pose an aspiration pneumonia hazard.

Environmental Hazards

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

Directions for Use

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

Read all Directions for Use carefully before applying.

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

Agricultural Use Requirements

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours. **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
- Shoes plus socks
- Protective eyewear

Storage and Disposal

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

Storage: Store in original container only. Avoid freezing. Store above 40°F. If frozen, poor weed control may result. Do not store near heat or flame. In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.

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

Plastic 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 HFP herbicide is a selective herbicide for the preemergence control of annual grasses and broadleaf weeds. Trifluralin HFP may be applied in liquid sprays of water or liquid fertilizer, or impregnated on dry bulk fertilizer. To reduce loss of herbicidal activity, Trifluralin HFP should be soil incorporated within 24 hours after application unless otherwise specified in specific use directions or supplemental labeling. Trifluralin HFP may be tank mixed or followed by overlay or postemergence treatments with other herbicides to improve the spectrum of weeds controlled. Trifluralin HFP controls weeds by disrupting growth processes during germination. Trifluralin HFP does not control established weeds.

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General Use Precautions

Applied according to directions and under normal growing conditions, Trifluralin HFP will not harm the treated crop. Over-application may result in crop injury or rotational crop damage from herbicide carryover. Uneven application or improper incorporation of Trifluralin HFP 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 HFP. Under these conditions, delayed crop development or reduced yields may result.

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

Do not use Trifluralin HFP on any crop grown in Pecos county or Reeves county, Texas.

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

Chemigation: Trifluralin HFP may be applied by chemigation on 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

Sugar beets, Red beets, and Spinach

In Arizona, Colorado, California, Idaho, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming: Sugar beets, red beets, or spinach should not be planted for 12 months after a spring application or 14 months after a fall application of Trifluralin HFP. Moldboard 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 HFP.

In all other areas: Sugar beets, red beets, and spinach should not be planted for 12 months after a spring application or 14 months after a fall application. Before planting sugar beets, 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 Grass Crops or Grass Mixtures

In Arizona, Colorado, California, Idaho, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming: Unless crop injury is acceptable, 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 HFP 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: Unless crop injury is acceptable, 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 HFP.

In those portions of Kansas, Nebraska, Oklahoma, and Texas that receive less than 20 inches of rainfall and irrigation to produce a crop: Unless crop injury is acceptable, 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 HFP. In sorghum, cool, wet weather conditions during early growth stages may increase the possibility of crop injury.

All other areas receiving more than 20 inches of rainfall and irrigation: Unless crop injury is acceptable, do not plant proso millet, sorghum (milo), oats, and annual or perennial grass crops or grass mixtures for 12 months after a spring application or 14 months after a fall application of Trifluralin HFP.

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Other Crops

Vegetable crops, other than those to which Trifluralin HFP may be applied as a preplant soil incorporated treatment, should not be planted within 5 months after an application of Trifluralin HFP.

Soil Texture Guide for Application Rates

Rate recommendations for incorporated treatments of Trifluralin HFP 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 HFP - Alone**

Trifluralin HFP may be mixed with water or most liquid fertilizer materials. Prior to mixing Trifluralin HFP in liquid fertilizer, refer to the label section entitled "Testing for Compatibility in Liquid Fertilizers" for testing procedures to determine compatibility with the liquid fertilizer product to be used. The combination of Trifluralin HFP 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 HFP and continue agitation while filling tank to required spray volume.

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

Trifluralin HFP in Tank Mix

For broader spectrum weed control, Trifluralin HFP may be applied in tank mix combination with other products registered for use on crops listed in this label unless tank mixing with Treflan (trifluralin) is prohibited by the manufacturer's label. When tank mixing, use the recommended rate of Trifluralin HFP. 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.

Trifluralin HFP may be tank mixed with other products and applied with water or most liquid fertilizer materials. Prior to mixing tank mixes containing Trifluralin HFP 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.

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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 HFP 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/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 to 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 HFP 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. If required, use only a phosphate ester-type surfactant designed for use with liquid fertilizers. Such compatibility agents can be mixed at rates as low as 1.5 to 2.0 pints per ton of liquid fertilizer. Add the compatibility agent just before adding pesticides.

Testing Procedure

1. Add 1 pint of the liquid fertilizer to a quart jar.
2. Add 1 to 4 teaspoons 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 HFP and other EC formulations 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 1 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 1/2 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.

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.

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

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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 HFP 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 as specified for the crop to be treated in the "Approved Crops" section of this label. For band application, adjust herbicide rate and spray volume in proportion to the band width and row width treated.

Aerial Broadcast Application

Apply Trifluralin HFP 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 distance of the outer most nozzles on the boom must not exceed $\frac{3}{4}$ the length of the wingspan or rotor.

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

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 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 $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

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

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

$$\begin{array}{ccccccc} \text{Pints Trifluralin HFP} & & & & 1000 & & \text{Quarts Trifluralin HFP} \\ \text{Per Acre} & & \times & & \text{Pounds Fertilizer} & = & \text{Per Ton of} \\ & & & & \text{Per Acre} & & \text{Fertilizer} \end{array}$$

Limitations: Apply a minimum of 200 lb/acre of dry fertilizer impregnated with Trifluralin HFP at the recommended broadcast rate per acre. Any commonly used dry fertilizer can be used for impregnation with Trifluralin HFP 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 HFP 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. Dry bulk fertilizer impregnated with Trifluralin HFP must be incorporated 2 times. The first incorporation should occur within 24 hours after application. The second incorporation should be delayed a minimum of 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 HFP 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 HFP by this method.

General Chemigation Directions:

Apply this product only through continuously moving center pivot, lateral move, end tow, solid set, or hand move irrigation systems, or certain other systems described in EPA-accepted supplemental labeling.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of chemigation treated water.

If you have questions about calibration you should contact state extension specialists, equipment manufacturers, or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

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 back-flow.
2. The pesticide injection pipeline 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 that pesticide distribution is adversely affected.
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 HFP should be injected continuously throughout the chemigation period. The chemigation metering pump should be checked periodically during application to insure proper operation.
9. The injection metering pump must be calibrated as specified by the manufacturer.
10. Pesticide injection hoses which connect chemigation metering equipment to the sprinkler irrigation system should be of braided reinforced construction with an internal tube made of nylon, cross-linked polyethylene, or high density polyethylene.
11. Trifluralin HFP may cause staining of plastic hoses and tanks.

12. Apply Trifluralin HFP in sprinkler irrigation equal to 1/2 to 1 inch of water.
13. During chemigation, maintain agitation in supply tank at all times.

Chemigation System Calibration:

Sample calculation for use of Trifluralin HFP 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 pt = 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:

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

Chemigation Mixing Directions:

Undiluted Trifluralin HFP: When used alone, the injection of undiluted Trifluralin HFP 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 HFP is added to the system for injection. When injecting undiluted Trifluralin HFP, maintain continuous agitation in the supply tank.

Diluted Trifluralin HFP: Trifluralin HFP 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 HFP required (Do not add water to Trifluralin HFP). Start agitation. Add the required amount of Trifluralin HFP 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 HFP, maintain continuous agitation in supply tank.

Application Timing

Spring Application

Apply and incorporate Trifluralin HFP any time after January 1 when soil can be worked and is in a condition which allows thorough mixing to insure uniform incorporation. See "Approved Crops" section for application timing recommendations for specific crops.

Fall Application

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

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

Ground may be bedded up over winter. On bedded ground, reduce beds to desired height before planting, by moving some treated soil from beds into furrows. Where soil is left flat over winter, care should be taken 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 HFP is not recommended on fields which remain wet or are subject to periods of flooding.

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Preemergence Application Immediately After Planting

Apply and incorporate Trifluralin HFP 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 HFP at the recommended rate to the established crop at or before the last cultivation. Required preharvest intervals for treatments with Trifluralin HFP 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 or existing weeds, can interfere with uniform soil incorporation of Trifluralin HFP. A manageable level of ground cover will allow uniform incorporation into the top 2 to 3 inches of the final seedbed. Ground cover and crop residues, if excessive, should be reduced by appropriate soil tillage prior to application.

Trifluralin HFP must be incorporated within 24 hours after application unless otherwise specified on supplemental labeling. Non-uniform application may result in erratic weed control or crop injury. 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. **Note: Two-pass incorporation is required for all special use programs unless otherwise specified.**

General Soil Conditions: The soil surface should be smooth enough to allow for uniform application and efficient incorporation of Trifluralin HFP. Break up clods using tillage equipment prior to application of Trifluralin HFP. 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: In bedded culture, Trifluralin HFP should be incorporated to a depth of 2 to 3 inches in the final seedbed.

Application Prior to Bedding: Apply Trifluralin HFP and incorporate 1 time 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 Trifluralin HFP. Apply and incorporate Trifluralin HFP with recommended equipment that will conform to the shape of the bed. Do not expose untreated soil.

Cultivation After Planting: Treated crops may be shallowly cultivated without reducing the weed control activity of Trifluralin HFP. Limit depth of cultivation to the zone of treated soil 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 HFP 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 HFP approximately half as deep as the equipment is set to operate. For example, a disc set to cut 4 inches deep will mix most of the Trifluralin HFP 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 when using the following incorporation implements (for single pass incorporation, refer to soil conditions and equipment listed under Single Pass Incorporation Option below):

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

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Rolling Cultivator: Set equipment to cut 2 to 4 inches deep and operate at 6 to 8 mph.

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 2 incorporation passes are required in flat planted culture. The Do-All should be used only on coarse and medium textured soils.

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

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

Conservation Tillage Practices: In reduced or minimum tillage situations, fall or spring application and incorporation of Trifluralin HFP may be combined with tillage operations. The first incorporation may utilize equipment such as a tandem disc, combination implement or bedding equipment that provides good soil mixing but leaves a maximum amount of crop residue on the soil surface. The second incorporation may be accomplished with tillage equipment that provides uniform soil mixing used in conjunction with no-till planters (See specific recommendations for reduced or conservation tillage situations for cotton and soybeans in the "Approved Crops" section).

Single Pass Incorporation Option

Trifluralin HFP may be incorporated in a single pass if incorporation conditions allow for thorough and uniform mixing into the top 2 to 3 inches of the final seedbed. Thorough and uniform incorporation may be achieved if the soil at the time of incorporation is of good tilth with moderate moisture, and is relatively free of clods and crop residue. **The following types of equipment can be used to obtain thorough and uniform soil mixing from a single incorporation pass:**

Finishing Disc with disc blades no greater than 22 inches in diameter, spaced no more than 7 1/2 inches apart. Operate at 4 to 6 mph. Best results are obtained when the disc is equipped with harrow, reel, or basket attachments.

Field Cultivator: Set equipment to cut 3 to 4 inches deep and operate at a minimum of 5 mph. A field cultivator is defined as an implement with 3 to 4 rows of sweeps, spaced at intervals of 7 inches or less with sweeps on successive rows staggered so that no soil is left unturned. Chisel points should not be used. Best results are obtained when the field cultivator is equipped with harrow, reel, or basket attachments.

Combination Implements: These implements are defined as 2 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 successive rows of sweeps staggered so that no soil is left unturned, followed by a spike-tooth or flexline harrow, followed by ground driven reel, basket or incorporator wheels. Combination implements should be set to cut 3 to 4 inches deep and operated at a minimum of 6 mph. Two incorporations are recommended under conditions which prevent optimum soil mixing such as excessive surface residue, roughness, high clay content or soil is too wet or too dry. Combination tools can also be composed of 2 rows of wide crown sweeps that overlap so that the roots of all weeds and plants are severed. This should be followed by 2 gangs of rotating spoked wheels that thoroughly mix Trifluralin HFP into the top 2 to 3 inches of the final seedbed.

P.T.O.-Driven Equipment (tillers, cultivators, hoes): Adjust equipment to incorporate Trifluralin HFP into the top 2 to 3 inches of the final seedbed with rotors spaced to provide a clean sweep of the soil. P.T.O. equipment should not be operated more than 4 mph.

Weeds Controlled by Trifluralin HFP

Grass Weeds

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, citrus, stone fruit, and nut trees and vineyards in the "Approved Crops" section.)	<i>Sorghum halepense</i>
jungerice	<i>Echinochloa colonum</i>
panicum fall panicum (spreading panicgrass - see special instructions for control in cotton and soybeans in the "Approved Crops" section.)	<i>Panicum dichotomiflorum</i>
ryegrass, Italian (annual ryegrass)	<i>Lolium multiflorum</i>
Texas panicum (buffalograss) (Coloradograss)	<i>Panicum texanum</i>
red rice (See special instructions for suppression or partial control in soybeans in the "Approved Crops" section.)	<i>Oryza sativa</i>
sandbur (burgrass)	<i>Cenchrus incertus</i>
sprangletop	<i>Leptochloa filiformis</i>
stinkgrass (lovegrass)	<i>Eragrostis cilianensis</i>
shattercane (wild cane) (See special instructions for control in soybeans in the "Approved Crops" section.)	<i>Sorghum bicolor</i>
woolly cupgrass	<i>Eriochloa villosa</i>

Broadleaf Weeds

Common Name	Scientific Name
carpetweed	<i>Mollugo verticillata</i>
chickweed	<i>Stellaria media</i>
field bindweed (See special instructions for control in citrus, stone fruit, and nut trees and vineyards in the "Approved Crops" section.)	<i>Convolvulus arvensis</i>
goosefoot	<i>Chenopodium hybridum</i>

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henbit	<i>Lamium amplexicaule</i>
knotweed	<i>Polygonum aviculare</i>
kochia	<i>Kochia scoparia</i>
(fireweed)	
(Mexican fireweed)	
lambsquarters, common	<i>Chenopodium album</i>
pigweed	<i>Amaranthus</i> spp.
(carelessweed)	
(Palmer amaranth) ††	
(prostrate pigweed)	
(redroot)	
(rough pigweed)	
(spiny pigweed)	
(See special instructions for control in soybeans in "Approved Crops" section.)	
puncturevine	<i>Tribulus terrestris</i>
(Western U.S. only)	
(caltrop)	
(goatweed)	
purslane, common	<i>Portulaca oleracea</i>
pusley, Florida	<i>Richardia scabra</i>
(Florida purslane)	
(Mexican clover)	
(pusley)	
Russian thistle	<i>Salsola iberica</i>
(tumbleweed)	
stinging nettle	<i>Urtica dioica</i>
(nettle)	

††Suppression only in areas of the Southwest U.S. where tolerance to trifluralin has been observed. Consult your local extension service or Helena Chemical Company representative for information regarding alternative weed control practices.

Special Use Programs

Trifluralin HFP 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

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

Soybeans

- Chemigation
- Weed Control Under Reduced or Conservation Tillage
- Fall Panicum Control
- Pigweed and Seedling Johnsongrass Control
- Additional Weed and Grass Control (Gulf Coast Counties of Texas)
- Itchgrass (Raouigrass) Suppression
- Charcoal Soils in Arkansas, Louisiana, and Mississippi
- Red Rice Control in Arkansas, Louisiana, Mississippi, and Texas
- Rhizome Johnsongrass Control in Eastern United States and the State of Texas
- Wild Cane (Shattercane) Control

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Citrus, Stone Fruit, and Nut Trees and Vineyards

- Rhizome Johnsongrass Control
- Field Bindweed Control

Approved Crops**ALFALFA - ESTABLISHED****Mechanically Incorporated**

Apply Trifluralin HFP 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 insure thorough soil mixing with minimal damage to crop stand.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
Coarse	1.5
Medium	2.0
Fine	2.0

Surface Applications (Chemigation or Water Incorporated)

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

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
All Soil Textures	4.0

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 HFP 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 HFP. 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 HFP may be mechanically incorporated. If mechanically incorporated, use equipment that will insure 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 HFP 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 HFP immediately after a cutting between August 1 and October 1, but prior to weed germination. When fall applied, Trifluralin HFP controls bromegrass and cheat in addition to other labeled weeds that germinate after application.

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

barnyardgrass	crabgrass
bromegrass	cupgrass
(cheatgrass)	foxtail
(downy brome)	junglerice

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(cheat) sandbur
(chess) wildbarley
canarygrass

Precautions:

- Do not cut or graze alfalfa within 21 days after application of Trifluralin HFP.
- Apply no more than 4.0 pints of Trifluralin HFP during any growing season. In the growing season following application of 4.0 pints of Trifluralin HFP to alfalfa, plant only those crops for which Trifluralin HFP is registered as a preplant treatment or crop injury may occur.

Tank Mixing

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

Precautions: 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.

ASPARAGUS - ESTABLISHED

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

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:

	Trifluralin HFP	
	Split Application	Single Application
Soil Texture	Before and After Harvest	Before or After Harvest
	(pints)	(pints)
Coarse	1.0 + 1.0	2.0
Medium	1.5 + 1.5	3.0
Fine	2.0 + 2.0	4.0

- Do not apply more than 2.0 pt/acre on coarse soils, 3.0 pt/acre on medium soils or 4.0 pt/acre on fine soils during any calendar year.

BEANS - ALL DRY AND FRESH BEANS/PEAS (EXCEPT BEANS/PEAS LISTED ELSEWHERE ON THIS LABEL)

Trifluralin HFP - Alone

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

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.0 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to-10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Tank Mixing or Sequential Treatments

For broader spectrum weed control, other products registered for use in dry and fresh beans/peas may be applied in tank mix combination with Trifluralin HFP or as a sequential treatment following application of Trifluralin HFP. When tank mixing, use the recommended rate of Trifluralin HFP. 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.

BEANS - GUAR AND MUNGBEAN

Apply Trifluralin HFP as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.5
Fine	1.5

- All soils with 2% to 5% organic matter - 1.5 pints

BEANS - LIMA BEAN AND SNAP BEAN

Apply Trifluralin HFP as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.0
Fine	1.5

- All soils with 2% to 5% organic matter - 1.5 pints

CARROT

Apply Trifluralin HFP as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

CASTOR BEAN

Apply Trifluralin HFP as a soil incorporated treatment, before or immediately after planting. If applied and incorporated after planting, set equipment so as to not disturb the seed.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

CELERY

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

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

CHICORY (*Cichorium intybus* or *Cichorium endiva*)

Trifluralin HFP may be applied as a preplant incorporated treatment to chicory grown either as a root crop or leafy vegetable as indicated below:

Cichorium intybus, considered to be a root crop, may yield the following:

- Chicory - the dried and processed root used as a coffee substitute.
- Radicchio - green leaves harvested from field grown plantings.
- Belgian Endive - white leaves grown in the dark; growth from field grown rootstalks.

Cichorium endiva, considered to be a leafy vegetable, may yield the following:

- Escarole - curly green leaves from field grown plantings.
- Endive - very curly green leaves from field grown plantings.

Apply Trifluralin HFP as a soil incorporated treatment in spring or early summer prior to planting.

Broadcast Application Rates per Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.5
Fine	2.0

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.0 pints

COLE CROPS - BROCCOLI, BRUSSELS SPROUTS, CABBAGE, AND CAULIFLOWER

Direct Seeded Cole Crops

Apply Trifluralin HFP as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.0
Fine	1.5

- Soils with 2% to 5% organic matter - 1.5 pints

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

Transplanted Cole Crops

Apply and incorporate Trifluralin HFP prior to transplanting.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

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CORN - FIELD CORN ONLY

Postemergence Incorporated Treatment

Apply Trifluralin HFP as a postemergence treatment following cultivation and/or use of a preemergence herbicide. Trifluralin HFP 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

Applications of Trifluralin HFP **must** be mechanically incorporated within 24 hours. Mechanical incorporation may be accomplished with 1 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 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.

Water In Option for Coarse and Medium Textured Soils: On coarse and medium textured soils, Trifluralin HFP may be incorporated by continuous rainfall or sprinkler irrigation amounting to at least 1/2 to 1 inch of water. Best results are obtained if application is made immediately after a cultivation when the soil surface is open and porous. Rainfall or sprinkler irrigation prior to application will tend to consolidate and seal the soil surface and prevent the downward movement of Trifluralin HFP that is expected under porous, open, recently tilled conditions. Supplemental irrigation can be applied through a center pivot, solid set, or hand moved sprinkler system. Do not use furrow irrigation. Mechanically incorporate as described above if the required amount of rainfall or sprinkler irrigation does not occur within 24 hours after application.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	0.75 - 1.0†
Medium	1.25 - 1.5
Fine	1.5 - 2.0

†Apply 1.0 to 1.5 pt/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 to sweet corn, popcorn, or corn grown for seed.
- Do not apply Trifluralin HFP to corn as a preplant or preemergence treatment or crop injury may occur.
- Where corn is planted in a furrow, Trifluralin HFP should be applied only after a cultivation to move soil into the row.

Restriction: Do not apply Trifluralin HFP within 6 weeks prior to harvesting forage, fodder, or silage, or after corn is 30 inches tall.

Chemigation

Trifluralin HFP 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 HFP through any type of irrigation system unless these directions are carefully followed.

Application Timing

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

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
Coarse	1.5 - 2.0
Medium	1.5 - 2.0
Fine	Do not apply Trifluralin HFP by chemigation to fine textured soils.

Precautions:

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

Restriction: Do not apply Trifluralin HFP within 6 weeks prior to harvesting forage, fodder, or silage, or after corn is 30 inches tall.

COTTON**Trifluralin HFP - Alone**

Apply Trifluralin HFP to cotton as a soil incorporated treatment. Trifluralin HFP may be applied before planting, immediately after planting, to the established crop up to layby (See supplemental labeling for postemergence applications), or in the fall in advance of spring planting. 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 HFP after planting, but prior to crop emergence, set equipment so as to not disturb planted seed.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP		
	Spring Application†	Fall Application	
		Eastern U.S. ††	Western U.S. †††
	(pints)	(pints)	(pints)
Coarse	1.0	2.0	1.5
Medium	1.25 - 1.5	2.0	2.0
Fine	1.5 - 2.0	2.5	2.5

†Spring Application:

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.0 to 2.5 pints
- Use lower rate in rate range for areas receiving less than 20 inches of total annual rainfall and irrigation.

††Fall application 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 rates for western cotton producing areas, including: Arizona and California.

For cotton grown in states other than those listed above, fall apply at the highest broadcast rates for each soil texture under spring application.

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.

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Tank Mixing or Sequential Treatments

For broader spectrum weed control, other products registered for use in cotton may be applied in tank mix combination with Trifluralin HFP or as a sequential treatment following application of Trifluralin HFP. When tank mixing, use the recommended rate of Trifluralin HFP. 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.

Special Use Programs

1. Cotton - Chemigation

Trifluralin HFP 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 HFP through any type of irrigation system unless these directions are carefully followed.

Apply Trifluralin HFP 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 HFP must be applied within 2 days after planting prior to crop emergence. Trifluralin HFP does not control established weeds. Soil incorporation is not required when Trifluralin HFP is applied through chemigation systems.

Broadcast Application Rates/Acre for Chemigation Application Where Conventional Tillage Practices are Used: See rates for cotton "Trifluralin HFP - Alone" above. Apply at the maximum recommended rate for spring application for each soil texture class to be treated

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

Broadcast Application Rates/Acre for Chemigation Application Where Minimum Tillage Practices are Used:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0 - 3.0
Medium	1.5 - 4.0
Fine	2.0 - 4.0

Use the lower rate in the rate range when additional sequential applications of Trifluralin HFP are anticipated. Use the higher rate in the rate range when high crop residue levels are present, where dense weed populations are anticipated, or where no additional sequential applications of Trifluralin HFP are to be made.

Rotational Crop Restrictions

- **Conventional Tillage:** Refer to the rotational crop restrictions in the "General Use Precautions" section of this label.
- **Minimum Tillage:** In addition to the rotational crop restrictions listed in the General Use Precautions section of this label, do not plant grain sorghum in the year following the application of Trifluralin HFP.

2. Cotton - Weed Control in Conservation Tillage

This section describes application methods and techniques for weed control with Trifluralin HFP in conservation tillage cotton. Trifluralin HFP may be applied and incorporated in the fall in advance of spring planting, in the spring before planting, after planting prior to crop emergence, or at layby. Single or multiple applications may be made so long as maximum application rates are not exceeded and rotational crop restrictions are followed.

Broadcast Application Rates for Conservation Tillage:

Soil Texture	Trifluralin HFP (pints/A)
Coarse	1.0 - 2.0
Medium	1.5 - 2.0
Fine	2.0 - 4.0

Strip Planting into Small Grain Cover Crops

Fall planted cover crops may be utilized to control wind erosion and protect developing crop seedlings from wind damage. Prior to planting cotton, the cover crop may be treated with a contact herbicide to prevent continued growth and development and prevent competition with crop seedlings for water and soil nutrients. The standing cover crop (now dead) continues to control wind erosion and provide protection to the developing crop until it is well established.

Strip Planting: In strip planting, cotton is seeded into competition-free bands established in the cover crop. Competition-free bands may be established by leaving unseeded drill rows when seeding the cover crop, by tillage, or by use of a contact herbicide to prepare competition-free bands prior to planting.

Fall Application Before Establishing a Cover Crop

Small grain cover crops (wheat, barley or rye) may be established following a preplant incorporated application of Trifluralin HFP. Apply Trifluralin HFP to flat ground at a broadcast rate of 2.0 to 3.0 pints per acre and incorporate once within 24 hours using incorporation implements that can be set to cut no more than 2 to 3 inches deep, such as a springtooth harrow. **Do not incorporate with a tandem disc.** Form beds with disc bedders or other bedding implements that will mix and move most of the treated soil from the furrows to the beds. Phosphate and other fertilizer may be applied as appropriate during incorporation operations. Plant 2 to 4 rows of the small grain cover crop 2 inches deep in the furrows between the beds. To avoid injury to small grain seedlings, place seed below the treated layer of soil. Barley is usually less susceptible to injury than wheat or rye. Soil moisture must be adequate to establish and maintain the cover crop. In late winter (February), apply 2,4-D if necessary for broadleaf weed control.

Spring Application Before or After Planting (Within Competition-Free Bands)

Apply Trifluralin HFP using low pressure ground equipment as a band (within the weed free zone) or as a broadcast treatment. Application and incorporation may occur before planting or after planting prior to crop emergence. If applied after planting, set incorporation equipment so as to not disturb the planted seed (see incorporation instructions).

Incorporation: Equipment should be adapted to the width of the competition-free band. Use equipment that will uniformly mix Trifluralin HFP into the weed germination zone. Weed control resulting from single pass incorporation or with incorporation equipment that does not result in thorough mixing of soil treated with Trifluralin HFP may be reduced compared to conventional double pass incorporation. Implements used to incorporate Trifluralin HFP after planting should be operated so that they do not disturb the planted seed or growing crop.

Use the lower rate in the rate range when additional sequential applications of Trifluralin HFP are anticipated. Use the higher rate in the rate range where high crop residues are present, and where dense weed populations are anticipated.

For band treatments, reduce the application rate in proportion to the row spacing and band width treated. For example, treating a 12-inch band where the row spacing is 36 inches would require 1/3 of the recommended broadcast rate per acre (12 inches divided by 36 inches = 1/3).

Layby Applications

Layby applications may be made in established cotton from the 4 true leaf stage of growth up to layby, but not less than 90 days before harvest. Apply Trifluralin HFP uniformly to the soil surface using drop nozzles if necessary. Soil incorporate using 1 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. Cumulative layby application rate may not exceed the layby application rate shown for each soil texture.

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Broadcast Application Rates:

Soil Texture	Trifluralin HFP (pints/A)
Coarse	1.0
Medium	1.5
Fine	2.0

Repeat, Sequential Applications

Trifluralin HFP may be applied 1 or more times sequentially during the growing season using the rates and methods of application described above for full season weed control. The maximum dosage that can be used for a single application cannot exceed the rates shown for each application method. The maximum cumulative application rate that may be applied within the same growing season (including fall applications) cannot exceed 4.0 pints per acre for Trifluralin HFP (2 pounds active ingredient per acre).

Contact, Overlay, or Postemergence Herbicides

Contact herbicides approved for use in cotton may be used to control existing weeds prior to planting cotton. To control additional weeds, overlay, preemergence, or postemergence applications of other products registered for use on cotton may be applied. Follow the label "Directions for Use" of such products for applicable use instructions including application rates, application timing, weeds controlled, and specific precautions and restrictions of product use.

Rotation Crop Restrictions

Refer to the "General Information" section of this label for specific rotational crop restrictions. When the cumulative application rate exceeds the application rates in the table below, plant only those crops for which Trifluralin HFP can be applied as a preplant incorporated treatment in the season following the application of Trifluralin HFP or crop injury may result.

Soil Texture	Cumulative Application Rate
	Trifluralin HFP (pints/acre)
Coarse	1.5
Medium	1.5
Fine	2.0

Small grain cover crops that will not be grazed or harvested and are intended for prevention of wind erosion in conservation tillage cotton may be planted in the fall following spring applications of up to 4.0 pints per acre of Trifluralin HFP. Injury in the form of reduced stands or delayed emergence and development may result when small grains are planted under these conditions.

3. Cotton - Fall Panicum Control

Apply and incorporate a broadcast rate of 2.0 pt/acre on both coarse and medium soils.

4. Cotton - Pigweed and Seedling Johnsongrass Control

Apply Trifluralin HFP 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 HFP at the following broadcast rates:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0 - 1.5
Medium	1.5 - 2.0
Fine	2.0

(Exception: Louisiana, where 3.0 pt/acre can be applied to fine soils).

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

5. Cotton - Additional Weed and Grass Control In Gulf Coast Counties of Texas

Apply Trifluralin HFP 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 HFP at the following broadcast rates:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.5
Medium	2.0
Fine	3.0

6. Cotton - Rhizome Johnsongrass Control

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

Rhizome johnsongrass control with Trifluralin HFP requires double application rates for 2 consecutive years. Commercially acceptable control cannot be obtained with only 1 year of double rate use of Trifluralin HFP. 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 (2-3 inch) pieces and destroy any recently emerged johnsongrass plants.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	2.0
Medium	3.0
Fine	4.0

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

Fall Application: Apply Trifluralin HFP 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 HFP can be applied as a preplant treatment or crop injury may occur.

COTTONWOOD TREES GROWN FOR PULP

Apply as a soil incorporated treatment to control weeds susceptible to Trifluralin HFP in new and established plantings of cottonwood trees grown for pulp.

Application Before Planting

Apply and incorporate Trifluralin HFP before planting.

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Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- All soils with 2% to 5% organic matter - 1.5 to 2.0 pints
- All soils with 5% to 10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total rainfall and irrigation.

Application to Established Plantings

In established plantings, apply Trifluralin HFP as a directed spray to the soil and use incorporation methods not injurious to the crop.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
All Soil Textures	2.0 - 4.0

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

Johnsongrass Suppression in Established Plantings

Proper soil preparation before application is necessary for satisfactory results. Use a chisel plow or similar implement to bring rhizomes to the soil surface. Then work the soil twice using a tandem disc to cut rhizomes into small (2-3 inch) pieces and to destroy emerged johnsongrass.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
All Soil Textures	4.0

Incorporation: Incorporate twice with tandem disc set to cut 4 to 6 inches deep and operated at 4 to 6 mph.

Cultivation: Some johnsongrass plants will escape. Timely cultivation with tillage implements or spot spraying with effective postemergence herbicides will improve the level of johnsongrass control.

CUCURBITS

Apply Trifluralin HFP after emergence 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.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Restriction: Do not apply within 30 days of harvest, except for Watermelon which has a 60 day pre-harvest interval.

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FLAX (Fall Application Only)

Apply and incorporate Trifluralin HFP 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 1/2 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 HFP (pints)
Coarse	1.0
Medium	1.5
Fine	2.0

GRAIN SORGHUM (MILO)**Postemergence Incorporated Treatment**

Apply Trifluralin HFP as a directed or over-the-top spray when grain sorghum is 8 to 24 inches tall. Drop nozzles should be used if foliage prevents uniform soil coverage.

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

Incorporation Directions: Applications of Trifluralin HFP must be mechanically incorporated within 24 hours after application. Mechanical incorporation may be accomplished with 1 pass of a sweep-type cultivator or properly adjusted rolling cultivator. Sweep-type cultivators should have 3 to 5 sweeps per row middle and be operated at a speed that will 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 HFP (pints)
Coarse	0.75 - 1.0
Medium	1.0 - 1.5
Fine	1.5 - 2.0

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

Precautions:

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

Restriction: Do not apply after grain sorghum is 24 inches tall.

Chemigation

Trifluralin HFP may be applied through properly equipped chemigation systems for weed control in grain sorghum 8 to 24 inches tall. Refer to "Application by Chemigation" section in the "General Information" section of this label for chemigation use directions. Do not apply Trifluralin HFP through any irrigation system unless these directions are carefully followed.

Soil Preparation: Cultivate before application of Trifluralin HFP 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 HFP to grain sorghum in 1/2 to 1 acre inch of overhead sprinkler irrigation as soon as possible after a cultivation when grain sorghum is 8 to 24 inches tall. Trifluralin HFP must be applied prior to weed emergence or after existing weeds are controlled. Trifluralin HFP does not control established weeds.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	0.75 - 1.0
Medium	1.0 - 1.5
Fine	Do not apply Trifluralin HFP by chemigation to fine textured soils.

Restriction: Do not apply after grain sorghum is 24 inches tall.

GREENS - TURNIP GREENS GROWN FOR PROCESSING: COLLARD, KALE, AND MUSTARD GREENS

Apply Trifluralin HFP to greens as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.5
Fine	1.5

- Soils with 2% to 10% organic matter - 1.5 pints

HOPS

Apply and incorporate Trifluralin HFP to established crop during dormancy. Use incorporation equipment that will insure thorough soil mixing with minimal damage to crop stand.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5

- Soils with 2% to 10% organic matter - 1.5 pints

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KENAF

Apply Trifluralin HFP as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
Coarse†	1
Medium	1 - 1.5
Fine	1.5

†Coarse soils with 2% to 5% organic matter - 1.5 pints

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

Precaution: Do not graze or harvest treated crop for livestock forage.

MUSTARD - GROWN FOR SEED OR PROCESSED FOR FOOD

Apply Trifluralin HFP to mustard as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
Coarse	1.0
Medium	1.5
Fine	1.5

- Soils with 2% to 10% organic matter - 1.5 pints

OKRA

Apply Trifluralin HFP as a soil incorporated treatment, before or immediately after planting. If applied and incorporated after planting, set equipment so as to not disturb the seed.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

ONIONS (DRY BULBS ONLY)

Postemergence Layby Application: Apply at layby to the soil between onion rows. Avoid applying directly to the tops or exposed bulbs of onion plants. Emerged weeds should be removed prior to application of Trifluralin HFP. Trifluralin HFP will not control established weeds.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
Coarse	0.75 - 1.0
Medium	1.0 - 1.25

- Apply only to soils containing 3.5% or less organic matter
- **Note:** Use the lower rate in rate range where light weed pressure is anticipated.

Incorporation: Trifluralin HFP should be uniformly incorporated into the soil between the onion rows. Incorporation may be accomplished by operating a sweep-type or rolling cultivator 2 to 4 inches deep at 6 to 8 mph. Two incorporation passes are required with the first occurring within 24 hours after application or erratic weed control may result. Avoid covering onions with treated soil during incorporation as injury to the crop may occur. Care should be taken to avoid mechanical injury to onion roots during incorporation.

Precautions

- **Preharvest interval:** Do not apply within 60 days of harvest.
- Do not apply as a preplant or preemergence treatment.
- Do not apply to muck soils.
- **Note:** Reduced yields may result from use of Trifluralin HFP on onion crops weakened by diseases, improper incorporation depth, excessive moisture, high salt concentration, or drought may weaken the crop and increase the possibility of damage from Trifluralin HFP. Under these conditions reduced yields may result.

PEAS - DRY PEAS AND ENGLISH PEAS**Trifluralin HFP - Alone**

Apply and incorporate Trifluralin HFP in the spring before planting or in the fall in advance of spring planting. Refer to instructions for fall application under "Application Timing" in the "General Information" section of this label.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP	
	Spring Application	Fall Application†
	(pints)	(pints)
Coarse	1.0	1.0
Medium	1.0 - 1.5††	1.25 - 1.5
Fine	1.5	1.5

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

†Trifluralin HFP may be fall applied to dry and English peas in the states of Idaho, Oregon and Washington.

††Medium soils with 3% or greater organic matter - 1.5 pints

Tank Mixing or Sequential Treatments

For broader spectrum weed control, other products registered for use in dry and English peas may be applied in tank mix combination with Trifluralin HFP or as a sequential treatment following application of Trifluralin HFP. When tank mixing, use the recommended rate of Trifluralin HFP. 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.

PEAS - SOUTHERN PEAS

Apply Trifluralin HFP as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- All soils with 5% to 10% organic matter - 2.0 pints
- Use the lower rate in the rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

PEANUTS**Trifluralin HFP - Alone**

(For Use in Texas, Oklahoma, and New Mexico Only)

Apply and incorporate Trifluralin HFP before planting, at planting or immediately after planting. When incorporating after planting, adjust equipment so as to not disturb planted seed.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.5

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 HFP or as a sequential treatment following application of Trifluralin HFP. When tank mixing, use the recommended rate of Trifluralin HFP. 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 HFP prior to transplanting.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

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POTATOES

(Not for Use in the State of Maine)

[Editor's Note: The following text was approved by EPA on 2/09/95.]

Application After Planting

Apply and incorporate Trifluralin HFP herbicide after planting but before emergence, immediately following dragoff, or after potato plants have fully emerged.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.25-1.5
Fine	1.5-2.0

- Coarse and medium soils with 2-5% organic matter - 1.5 pints of Trifluralin HFP,
- Fine soils with 2-5% organic matter - 2.0 pints of Trifluralin HFP,
- Soils with 5-10% organic matter - 2.0 pints of Trifluralin HFP,
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Incorporation Directions: Set incorporation equipment so that the bed and furrow will be 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 HFP after potato plants have fully emerged, do not completely cover the foliage with treated soil. Likewise, do not completely cover foliage at subsequent cultivations. Be careful that incorporation machinery does not damage potato seed pieces or elongating sprouts.

Split Applications Before and After Planting (For use in Idaho, Oregon and Washington)

On all soils apply and incorporate Trifluralin HFP at the rates shown below as split applications before planting and after planting when potato plants have fully emerged. Do not apply to soils containing 2% or more organic matter. Follow incorporation directions provided above for application to potatoes after planting.

Broadcast Application Rates/Acre:

	Trifluralin HFP (pints)
Before Planting	0.75
After Planting	0.75

Trifluralin HFP Plus Eptam herbicide Tank-Mix - Post Plant Preemergence Treatment

(For Use in Kansas, Minnesota, Nebraska, North Dakota, Oklahoma, South Dakota and Texas)

Trifluralin HFP may be tank-mixed with Eptam herbicide 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 drag off. Use application rates for Trifluralin HFP recommended for "Applications After Planting", above. Incorporate immediately.

Precautions: Refer to the label for Eptam for application rates, additional use directions, precautions and limitations before use. Do not graze for feed forage to livestock from fields treated with the Trifluralin HFP plus Eptam tank mix.

Trifluralin HFP Plus Eptam Tank-Mix - Preplant Treatment (For Use in Idaho, Oregon and Washington)

Trifluralin HFP may be tank-mixed with Eptam and applied as a soil incorporated treatment to control additional weeds. Apply before planting and incorporate immediately.

Broadcast Application Rates/Acre:

	Trifluralin HFP
	(pints)
All soil textures	0.75

Precautions: Do not use this tank mix both before and after planting in the same season. Do not graze for feed forage to livestock from fields treated with the Trifluralin HFP plus Eptam tank mix. Refer to the label for Eptam for application rates, additional use directions, precautions and limitations before use.

Chemigation (Trifluralin HFP Only)

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

Apply Trifluralin HFP 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 HFP. Trifluralin HFP does not control established weeds. Incorporation is not necessary when Trifluralin HFP is applied by chemigation.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
Coarse	1.0
Medium	1.5

- Do not apply by chemigation to fine textured soils.

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

RADISH

Apply Trifluralin HFP as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
Coarse	1.0
Medium	1.5
Fine	1.5

RAPESEED (CANOLA) AND CRAMBE

Apply as a soil incorporated treatment in the spring before planting, or in late summer or early fall before a fall planting. Follow soil preparation, application, and incorporation directions for Trifluralin HFP.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP
	(pints)
Coarse	1.0
Medium	1.5
Fine	2.0

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Precautions

- Do not apply to rapeseed (canola) grown in the state of Alaska.
- Where applications are made in late summer or fall, plant as rotation crops in the season following application only those crops to which Trifluralin HFP may be applied as a preplant incorporated treatment or crop injury may occur.
- Do not graze or harvest crambe for livestock forage.

SAFFLOWER

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

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP	
	Spring Application	Fall Application
	(pints)	(pints)
Coarse	1.0	1.5
Medium	1.25 - 1.5	2.0
Fine	1.5 - 2.0	2.5

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.5 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

SMALL GRAINS - BARLEY, DURUM, AND WHEAT**Special Precautions for Use of Trifluralin HFP on Small Grains**

Carefully follow directions for use of Trifluralin HFP on small grains to minimize potential crop stress. Under certain conditions, delayed crop emergence and or stand reduction may occur when Trifluralin HFP 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 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.

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

Do not exceed recommended application rates for Trifluralin HFP. 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 HFP into the upper 1 to 1 1/2 inches of soil. If applied after planting, set equipment so as to not disturb planted seed.

Set drills to place seed at a the depth specified in use directions. A planting depth greater than 2 1/2 inches for spring wheat or durum will result in increased seedling stress and decreased emergence.

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

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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.

Soil characteristics and environmental conditions which may contribute to crop seedling stress that may be accentuated by use of Trifluralin HFP 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 HFP on small grains where a dinitroaniline herbicide such as Trifluralin HFP or Sonalan* herbicide was applied at a rate greater than 0.5 lb ai per acre the previous growing season.

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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 Trifluralin HFP as a preplant incorporated treatment prior to planting spring seeded barley. Trifluralin HFP may be applied to ground that has a manageable level of crop residue or has been fallowed or pre-tilled. The first incorporation is required within 24 hours after application. The second incorporation is required prior to planting to destroy emerged weeds and to insure even distribution of Trifluralin HFP in the soil surface.

Broadcast Application Rates/Acre: Apply at a rate of 1.0 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 1 1/2 inches deep.

Precautions:

- Carefully read and follow "Special Precautions for Use of Trifluralin HFP in Small Grains" before application of Trifluralin HFP.
- 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 Conservation Reserve Program

Apply Trifluralin HFP 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 HFP.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.5
Fine	1.5

Planting Directions: Barley should be seeded approximately 1 1/2 inches deep.

Precautions: Use of this weed control practice may result in slight stand reduction. Follow the most severe grazing restrictions imposed either by the label for Trifluralin HFP or by the USDA Acreage

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Conservation Reserve Program, whichever is longest. Consult the local ASCS office or other state agency to determine the period of USDA grazing restriction.

Winter Wheat -- Preplant Incorporated for Control of Cheatgrass and Other Annual Grasses and Broadleaves (For Use in Idaho, Oregon, and Washington)

Apply Trifluralin HFP 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 HFP. Trifluralin HFP may be applied for up to 3 weeks before planting.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.5
Medium	1.5
Fine	2.0

Incorporation Directions: Incorporate Trifluralin HFP with a flexible tine-tooth harrow (Flexline or Melroe) set to cut 1 to 2 inches deep and operate at 3 to 6 mph. Incorporate once 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 HFP 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 of soil treated with Trifluralin HFP.

Precautions:

- Carefully read and follow "Special Precautions for Use of Trifluralin HFP in Small Grains" before application of Trifluralin HFP.
- 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

Apply and incorporate Trifluralin HFP after planting, but before emergence, to control the following weeds susceptible to Trifluralin HFP 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 HFP (pints)
Coarse	1.0 - 1.5
Medium	1.5

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 HFP 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 than 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 HFP in Small Grains" before application of Trifluralin HFP.
- 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.

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

Trifluralin HFP 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 HFP 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 HFP.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.5
Medium	1.5
Fine	2.0

Incorporation Directions: Incorporate Trifluralin HFP 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 once 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 HFP 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 of soil treated with Trifluralin HFP.

Precautions:

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

**Wheat, Durum and Barley, Spring Seeded - Fall Applied
Preplant Soil Incorporated for Foxtail (Pigeongrass) Control
(For Use in Minnesota, North Dakota and South Dakota)**

Apply Trifluralin HFP herbicide in the fall for foxtail (pigeongrass) control during the following growing season. Incorporate 1 time within 24 hours. Incorporate a second time before planting to destroy existing weeds and insure a uniform distribution of Trifluralin HFP in treated soil. Trifluralin HFP may be applied to ground that has a manageable level of crop residue, or has been fallowed or pre-tilled.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse and Medium	1.0
Fine	1.5

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

Set equipment to place seed approximately 1 1/2 inches deep.

Precautions

Carefully read and follow "Special Precautions for Use of Trifluralin HFP in Small Grains" before application of Trifluralin HFP.

While use of this control practice may result in a stand reduction, slight stand reductions do not normally affect yield.

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

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Apply and incorporate Trifluralin HFP after planting, but before emergence, to control foxtail (pigeongrass) in spring wheat, durum, and barley.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.0
Fine	1.5

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

Incorporation Directions: Incorporate Trifluralin HFP using 2 passes with a flex-tine or diamond harrow operated at least 5 mph. The second incorporation pass should be in a different direction than 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 HFP in Small Grains" before application of Trifluralin HFP.
- Wheat seed in direct contact with treated soil may suffer crop injury in the form of delayed emergence and development.

SOYBEANS

Trifluralin HFP - Alone

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

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP	
	Spring Application	Fall Application†
	(pints)	(pints)
Coarse	1.0	2.0
Medium	1.5	2.0
Fine	2.0	2.5

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.0 to 2.5 pints

†Fall Application Rates for States Including: Alabama, Arkansas, northern Florida, Georgia, Louisiana, Mississippi, southeastern Missouri (Bootheel), North Carolina, Oklahoma, South Carolina, Tennessee, and Texas.

For soybeans grown in states other than those listed above, fall apply Trifluralin HFP at broadcast rates recommended for spring 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 soybean plants which may result in reduced stand, delayed maturity and reduced yield.

Tank Mix Overlay and Postemergence Recommendations

For broader spectrum weed control, other products registered for use in soybeans may be applied in tank mix combination with Trifluralin HFP or as a sequential treatment following application of Trifluralin HFP.

When tank mixing, use the recommended rate of Trifluralin HFP. 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.

Special Use Programs

1. Soybeans - Chemigation

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

Apply Trifluralin HFP in 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 HFP must be applied within 2 days after planting and prior to crop emergence. Trifluralin HFP does not control established weeds. Soil incorporation is not required when Trifluralin HFP is applied through chemigation systems.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.5 - 2.0
Medium	1.5 - 2.0
Fine	2.0 - 2.5

- Soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.0 to 2.5 pints

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

2. Soybeans - Weed Control Under Reduced or Conservation Tillage

Trifluralin HFP can be applied either in the fall or in the spring as a preplant incorporated treatment for weed control in soybeans grown under reduced or conservation tillage conditions. Make only 1 application per crop cycle.

Apply to tilled land or standing or chopped stubble from the previous season's crop. The first incorporation of Trifluralin HFP must occur within 24 hours. For the first incorporation, a tandem disc or combination tool that can thoroughly mix Trifluralin HFP into the top 2 to 3 inches of the final seedbed while leaving the desired amount of plant residue on the soil surface is recommended. For fall or spring application, the second incorporation can occur anytime prior to planting or at planting with tillage equipment that provides uniform soil mixing used in conjunction with no-till planters.

Application With Dry Bulk Fertilizers

Dry bulk fertilizers impregnated or coated with Trifluralin HFP may be applied as a preplant incorporated treatment. See instructions for "Application with Dry Bulk Fertilizer" in the "General Information" section of this label. Under reduced or conservation tillage conditions, uniformly applied dry bulk fertilizers impregnated with Trifluralin HFP provide weed and grass control equal to or better than Trifluralin HFP applied in liquid sprays. Two incorporation passes are required when Trifluralin HFP is applied with dry bulk fertilizer. For best results with spring applications, incorporate once within 24 hours after application and a second time at least 5 days later.

Application Rates/Acre:

Soil Texture	Trifluralin HFP	
	Spring Applied (pints)	Fall Applied (pints)
Coarse	1.0 - 1.5	1.5 - 2.0
Medium	1.5 - 2.0	2.0 - 2.5
Fine	2.0 - 2.5	2.5 - 3.0

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Use the higher rate in the rate range where higher crop residues are present or where dense weed populations are anticipated.

Precautions

To be effective, Trifluralin HFP must be mixed thoroughly in the top 2 to 3 inches of soil in the final seedbed. Weed control may be poor or erratic where soil conditions or heavy crop residues do not permit thorough soil mixing.

3. Soybeans - Fall Panicum Control

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

4. Soybeans - Pigweed and Seedling Johnsongrass Control

Apply Trifluralin HFP 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 HFP at the following broadcast rates:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0 - 1.5
Medium	1.5 - 2.0
Fine	2.0 - 2.5

(Exception: Louisiana, 3.0 pt/acre on fine soils).

5. Soybeans - Additional Weed and Grass Control in Gulf Coast Counties of Texas

Apply Trifluralin HFP 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 HFP at the following broadcast rates:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.5
Medium	2.0
Fine	3.0

6. Soybeans - Itchgrass (Raouigrass) Suppression

Apply Trifluralin HFP 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 to 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 Rates/Acre:

Soil Texture	Trifluralin HFP	
	Preplant Incorporated	Layby Application
	(pints)	(pints)
Medium	3.0	1.0
Fine	3.0	2.0

7. Soybeans - 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 HFP and reduce weed control activity. Under these conditions, higher rates of Trifluralin HFP 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 HFP. In the

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burn row a high level of charcoal is usually present. Consequently, poor weed control may result, even if an increased rate of Trifluralin HFP is used. Follow recommended application and incorporation procedures for Trifluralin HFP.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.5 - 2.5
Medium	2.5
Fine	3.0

8. Soybeans - 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 HFP in the spring before planting. Follow recommended soil preparation and incorporation procedures for Trifluralin HFP.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP	
	Application Year 1	Application Year 2
	(pints)	(pints)
Coarse	2.0	1.0
Medium	3.0	1.5
Fine	4.0	2.0
Coarse Soils with 2-5% organic matter	3.0	1.5
Soils with 5-10% organic matter	4.0	2.0 - 2.5

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

Soil Texture	Trifluralin HFP (pints)
Coarse	1.5 - 2.5
Medium	2.5
Fine	3.0

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

Precaution: 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 HFP at the normal rate indicated for soil texture and charcoal level, plant only those crops for which Trifluralin HFP 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.

9. Soybeans - Rhizome Johnsongrass Control in Eastern United States and the State of Texas

Rhizome johnsongrass control with Trifluralin HFP requires double rate application for 2 consecutive years. Commercially acceptable control cannot be obtained with only 1 year of double rate use of Trifluralin HFP. Carefully follow the special use directions which follow.

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

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Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	2.0
Medium	3.0
Fine	4.0

- Coarse soils with 2% to 5% organic matter - 3.0 pints
- Soils with 5% to 10% organic matter - 4.0 pints

Spring Application: Apply Trifluralin HFP any time before planting in the spring for 2 consecutive years.

Fall Application: Apply Trifluralin HFP after October 15 for 2 consecutive years.

Split Application: Apply Trifluralin HFP at the broadcast rates indicated in the following table both spring and fall for 2 consecutive years.

Soil Texture	Trifluralin HFP Spring + Fall (pints)
Coarse	1.0 + 1.0
Medium	1.5 + 1.5
Fine	2.0 + 2.0
Coarse Soils with 2-5% organic matter	1.5 + 1.5
Soils with 5-10% organic matter	2.0 + 2.0

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 and those crops to which Trifluralin HFP can be applied as a preplant treatment or crop injury may result.

10. Soybeans - Wild Cane (Shattercane) Control

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

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	2.0
Fine	2.5

Incorporation: Deep incorporation with a tandem disc is essential for good wild cane control. Incorporate Trifluralin HFP 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 than the first.

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

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SUGAR BEETS

Trifluralin HFP - Alone

Apply Trifluralin HFP 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 HFP (pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.25 - 1.5

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

Precaution: Exposed beet roots should be covered with soil before application of Trifluralin HFP 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 HFP 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.

Tank Mixing

For broader spectrum weed control, other products registered for use in sugar beets may be applied in tank mix combination with Trifluralin HFP or as a sequential treatment following application of Trifluralin HFP. When tank mixing, use the recommended rate of Trifluralin HFP. 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.

SUGARCANE

Trifluralin HFP - Alone

Apply and incorporate Trifluralin HFP twice a year. Make the first application of Trifluralin HFP in the fall on firmly packed beds immediately after the seed pieces are planted. Make the second application of Trifluralin HFP in the spring before or shortly after the cane emerges. Loosen rain-packed beds 2 to 3 inches deep before the spring application. Take care that incorporation equipment does not damage the seed pieces or emerging shoots.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
All Textures	2.0 - 4.0†

†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 HFP 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 HFP 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 Trifluralin HFP just before anticipated rainfall in non-irrigated and furrow-irrigated sugarcane. Apply 0.5 inch or more irrigation in drip-irrigated or sprinkler-irrigated sugarcane as soon as possible after applying Trifluralin HFP.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
All Textures	6.0 - 8.0

Repeat Applications:

Subsequent germination of grass weeds may occur prior to the development of a full dense canopy of sugarcane. If this occurs, additional grass weed establishment is strongly suppressed. One or two additional applications of Trifluralin HFP can be applied to maintain weed control during the early crop development period. For repeat applications, direct the spray to the soil surface to minimize interception of the herbicide by the crop.

Restrictions:

- Do not apply Trifluralin HFP as a postplant surface applied treatment within 180 days of harvest.

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

Apply and incorporate Trifluralin HFP in spring from shortly before or after cane emergence until layby. Apply after beds have been shaved or false shaved. Loosen rain-packed beds 2 to 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 4 to 6 mph. Two incorporation passes are necessary.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
All Textures	2.0 - 4.0†

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

Itchgrass (Raoulgrass) Control (For Use in Louisiana)

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

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
All Textures	2.0 - 4.0

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SUNFLOWERS

Trifluralin HFP - Alone

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

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2% to 5% organic matter - 1.5 to 2.0 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints.
- Soils with 5% to 10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Tank Mixing

For broader spectrum weed control, other products registered for use in sunflowers may be applied in tank mix combination with Trifluralin HFP or as a sequential treatment following application of Trifluralin HFP. When tank mixing, use the recommended rate of Trifluralin HFP. 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.

TOMATOES

Apply Trifluralin HFP to direct-seeded tomato as a directed spray between rows and beneath plants and incorporate at the time of blocking or thinning. For transplant tomatoes, apply and incorporate before transplanting or apply post-plant as a directed spray to the soil between the rows and beneath plants and incorporate.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2% to 5% organic matter - 1.5 pints
- Fine soils with 2% to 5% organic matter - 2.0 pints
- Soils with 5% to 10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

TREE AND VINE CROPS - CITRUS, STONE FRUIT, AND NUT TREES AND VINEYARDS

New Plantings of Citrus, Stone Fruit, and Nut Trees

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

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Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- All soils with 2% to 5% organic matter - 1.5 to 2.0 pints
- All soils with 5% to 10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total rainfall and irrigation.

New Plantings of Vineyards

Apply and incorporate Trifluralin HFP before transplanting.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0 - 1.5
Medium	1.5 - 3.0
Fine	3.0 - 4.0

- Soils with 2% to 10% organic matter - 4.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total rainfall and irrigation.

Note: Do not use more than 2.0 pt/acre on mist propagated grape rootings.

Established Non-bearing and Bearing Citrus, Stone Fruit, and Nut Trees and Vineyards

Trifluralin HFP 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 Trifluralin HFP as a directed spray to the soil and incorporate using methods not injurious to the crop. Do not apply to vineyards within 60 days of harvest.

Broadcast Application Rates/Acre:

Soil Texture	Trifluralin HFP (pints)
All Soil Textures	2.0 - 4.0

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

Rhizome Johnsongrass Control - Special Two-year Use Program

Trifluralin HFP may be applied for 2 consecutive years in a special use program to control rhizome johnsongrass in established vineyards and in plantings of almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, tangelo, plum, prune, 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 2 consecutive years:

Soil Texture	Trifluralin HFP (pints)
All Soil Textures	4.0

Incorporation: Incorporate Trifluralin HFP 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 HFP.

Precautions: Do not use the 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 HFP has been registered as a preplant incorporated treatment.

Bindweed Control in California

Trifluralin HFP 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 HFP to prevent interference 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 insure application of a uniform horizontal layer.

Application: Apply Trifluralin HFP 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 HFP
	(pints)
All Soil Textures	4.0

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 HFP. 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.

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Warranty Disclaimer

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

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Helena Chemical Company or the seller. All such risks shall be assumed by buyer.

Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Helena Chemical Company' election, one of the following:

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

Helena Chemical Company shall not be liable for losses or damages resulting from handling or use of this product unless Helena Chemical Company is promptly notified of such loss or damage in writing. In no case shall Helena Chemical Company be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer above and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Helena Chemical Company or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

ACCEPTED
with COMMENTS
In EPA Letter Dated

DEC 1 1998

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

5905-532

Supplemental Labeling

Helena Chemical Company

6075 Poplar Ave., Suite 500

Memphis, TN 38119-

Trifluralin HFP

(EPA Reg. No. 5905-532)

(For Distribution and Use Only in the State of Montana)

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

ATTENTION

- 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 HFP before applying. Carefully follow all precautionary statements and applicable use directions.
- Use of Trifluralin HFP according to this supplemental labeling is subject to all use precautions and limitations imposed by the label affixed to the container for Trifluralin HFP.

Directions for Use

Trifluralin HFP herbicide may be spring applied as a preplant incorporated treatment for foxtail (pigeongrass) control in spring seeded barley grown under irrigated conditions in Montana. Trifluralin HFP 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 HFP in treated soil.

Broadcast Application Rate: Apply Trifluralin HFP, 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.

Use Precautions: Carefully follow Special Use Precautions for Small Grains in main product label.

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 HFP. If one of the 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 HFP.

Supplemental Labeling

DEC 1 1998

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.5405-532

Helena Chemical Company

6075 Poplar Ave., Suite 500

Memphis, TN 38119

Trifluralin HFP

(EPA Reg. No. 5905-532)

(For Distribution and Use Only in the State of Montana)

Trifluralin HFP for Weed Control in Rapeseed (Canola), Crambe Safflower and Sunflower

ATTENTION

- 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 HFP before applying. Carefully follow all precautionary statements and applicable use directions.
- Use of Trifluralin HFP according to this supplemental labeling is subject to all use precautions and limitations imposed by the label affixed to the container for Trifluralin HFP.

Directions for Use

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

Broadcast Application Rates Per Acre:

Soil Texture	Trifluralin HFP (pints)
Coarse	1.0
Medium	1.5
Fine	2.0

Use 1.5 to 2.0 pints of Trifluralin HFP 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 HFP. 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 HFP.
- Do not graze or harvest crambe for livestock forage.

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Supplemental Labeling

DEC 1 1998
Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.

5905-532

Helena Chemical Company

6075 Poplar Ave., Suite 500

Memphis, TN 38119

Trifluralin HFP

(EPA Reg. No. 5905-532)

Postemergence Soil Incorporated Application for Weed Control in Cotton

(For Distribution and Use in Texas, Oklahoma and New Mexico)

ATTENTION

- 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 HFP before applying. Carefully follow all precautionary statements and applicable use directions.
- Use of Trifluralin HFP according to this supplemental labeling is subject to all use precautions and limitations imposed by the label affixed to the container for Trifluralin HFP.

Directions for Use

Trifluralin HFP may be applied to cotton as a postemergence incorporated treatment from the 4-true leaf stage up to layby. Apply as a broadcast spray using ground or aerial equipment. A ground applied directed spray is recommended if cotton foliage prevents uniform coverage of the soil surface.

Incorporation Directions: Trifluralin HFP must be mechanically incorporated within 24 hours. 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 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 HFP (pints)
Coarse	0.75 - 1.0
Medium	1.0 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2-5% organic matter - 1.5 pints of Trifluralin HFP
- Fine soils with 2-5% organic matter - 2.0 pints of Trifluralin HFP

Precautions

- Do not apply within 90 days of harvest.
- Treated soil may be shallow cultivated or rotary hoed without loss of herbicidal activity. To avoid bringing untreated soil to the surface and loss of weed control, do not cultivate deeper than the depth of incorporation.