PM 23 9779-303 1/41

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JUL 24 1991

Beverly Neale
Riverside/Terra Corporation
P.O. Box 171376
Memphis, TN 38187

Dear Ms. Neale:

Subject: Revised Label Text
Trifluralin 4EC
EPA Registration No. 9779-303
Your Submission Dated June 13, 1991

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable with the following provisions:

1) Due to new EPA policy, part of the Environmental Hazards section has been changed. To comply, change the sentence "Do not apply to water or wetlands (swamps, bogs, or marshes)" to read "Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark."

2) Under the Liquid Fertilizer Mixing Instructions, add a statement to show that the compatibility agents Compat, T-Mulz 734-2, and Amoco Spray Mate are not to be used in California.

3) Under the Trifluralin 4EC/Amiben Tank Mix section for Soybeans, add the statement "Do not use on muck or charcoal soils."

A stamped copy is enclosed for your records. Please submit five (5) final printed copies for the referenced label, incorporating the above changes.

Sincerely yours,

Joanne I. Miller
Product Manager (23)
Fungicide-Herbicide Branch
Registration Division (H7505C)

Enclosure

CONCURRENCES								
SYMBOL	H7505C							
SURNAME	D. KENNY							
DATE	7/22/91							

EPA Form 1320-1 (12-70) *U.S.GPO:1989-624-485/10186 OFFICIAL FILE COPY

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Trifluralin 4EC

For the pre-emergence control of annual grasses and broadleaf weeds

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ACTIVE INGREDIENT	
Trifluralin (alpha, alpha, alpha,-trifluoro-2,6-dinitro-N, N-dipropyl-p-toluidine).....	46.0%
INERT INGREDIENTS*.....	54.0%
TOTAL	100.0%

Contains 4 pounds of active ingredient per gallon.

*Contains xylene range aromatic petroleum solvent.

STOP--READ LABEL BEFORE USING.

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Call a physician. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.
IF INHALED: Remove victim to fresh air. Get medical attention.
IF IN EYES: Immediately flush with plenty of water. Get medical attention.
IF ON SKIN: Wash with plenty of soap and water.

See page 3 for additional PRECAUTIONARY STATEMENTS.

EPA Reg. No. 9779-303 EPA Est. No. 9779-AR-13

Manufactured For
RIVERSIDE/TERRA CORPORATION
Terra Centre, 600 Fourth Street, Sioux City, Iowa 51101
Riverside Serves Agriculture. Agriculture Serves Everyone.

NET CONTENTS
____ GALS.

ACCEPTED
with COMMENTS
In EPA Letter Dated:
JUL 24 1991

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PRECAUTIONARY STATEMENTS
CAUTION
HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. When handling or applying, wear protective clothing such as goggles or face shield and rubber gloves. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not apply directly to water or wetlands (swamps, bogs, or marshes). Drift or runoff from treatment areas may be hazardous to aquatic organisms in neighboring aquatic sites. Do not contaminate water when disposing of equipment washwaters.

PHYSICAL AND CHEMICAL HAZARDS

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

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

STORAGE AND DISPOSAL
DO NOT CONTAMINATE WATER, FOOD OR FEED BY STORAGE OR DISPOSAL.

STORAGE

Store in a dry location away from children, animals, foods, feeds, seeds, and other agricultural chemicals. Keep storage area locked when not in use. Keep container closed when not using. Do not allow water into container as this may cause deterioration of product. Handle in accordance with information given under PRECAUTIONARY STATEMENTS.

Avoid freezing. Do not store below 40°F. If frozen, poor weed control may result.

In the event of spillage or leakage, soak up material with absorbent clay, sand, sawdust, or other absorbent material. Scrape up and dispose of in accordance with information given under PESTICIDE DISPOSAL. Repackage and relabel useable product in a sound container. In case of fire or other emergency, report at once by toll-free telephone to 800-424-9300.

DISPOSAL

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
CONTAINER DISPOSAL: Do not reuse empty containers. 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.

GENERAL INFORMATION

Trifluralin 4EC is a pre-emergence herbicide which is incorporated into the soil to provide long-lasting control of annual grasses and broadleaf weeds; it controls weeds by killing their seeds as they germinate. It does not control established weeds. Incorporation of Trifluralin 4EC assures effective control regardless of weather conditions and permits shallow cultivation, rotary hoeing and hand hoeing without reducing its weed control activity.

SPECIAL PRECAUTIONS

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

In Arizona, Colorado, California, Idaho, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming, sugarbeets, red beets or spinach should not be planted for 12 months after a spring application or for 14 months after a fall application of Trifluralin 4EC. Plow the land to a depth of 12 inches prior to planting sugar beets to prevent the possibility of crop injury. Sorghum (milo), proso millet, corn, oats, and annual or perennial grass crops or grass mixtures should not be planted for 14 months after a spring application or for 16 months after a fall application to avoid crop injury. If land has not been irrigated; do not plant any of these crops for 18 months after a spring application or 20 months after a fall application.

In those portions of Kansas, Nebraska, North Dakota, Oklahoma, South Dakota, and Texas where at least 20 inches of irrigation and/or rainfall (total) was used to produce the crop, sorghum, oats, and annual or perennial grass crops or grass mixtures should not be planted for 12 months after an application of Trifluralin 4EC.

If less than 20 inches of total water was used to produce the crop, do not plant sorghum, proso millet, oats and annual or perennial grass crops or grass mixtures for 18 months after an application of Trifluralin 4EC. Cool, wet weather conditions during the early stage of growth may increase the possibility of injury to sorghum.

In all other areas receiving greater than 20" rainfall per year, moldboard plow before planting sugar beets where a spring application of Trifluralin 4EC was made the previous year.

Vegetable crops other than those listed on this label should not be planted within 5 months following the application of Trifluralin 4EC.

Do not use Trifluralin 4EC on any crop grown in Pecos county or Reeves county, Texas or in the state of Montana.

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WEEDS AND GRASSES CONTROLLED

GRASSES

Annual bluegrass	Poa annua
Barnyardgrass (Watergrass)	Echinochloa sp.
Brachiaria (Signalgrass)	Brachiaria sp.
Bromegrass (Cheatgrass, Downy brome)	Bromus tectorum
Cheat (Chess)	Bromus secalinus
Crabgrass (Large crabgrass, Smooth crabgrass)	Digitaria sp.
Fall panicum	Panicum dichotom.
Foxtails (Bottlegrass, Bristlegrass, Foxtail millet, Giant foxtail, Green foxtail, Pigeongrass, Robust foxtail, Yellow foxtail)	Setaria spp.
Goosegrass (Silver crabgrass, Silvergrass, Wiregrass, Yardgrass)	Eleusine indica
Guineagrass	Panicum maximum
Johnsongrass (Seedling and Rhizome)	Sorghum halapense
Junglerice	Echinochloa col.
Raoulgrass (Itchgrass)	Rottoboellia exalt.
Sandbur (Burgrass)	Cenchrus incertus
Sprangletop	Leptochloa filifor
Stinkgrass (Lovegrass)	Eragrostis cilian.
Texas panicum (Buffalograss, Coloradogress)	Panicum texanum
Wild cane (Shattercane)	Sorghum bicolor
Wooly cupgrass	Eriochloa villosa

Carpetweed	Mollugo verticillata
Chickweed	Stellaria media
Field Bindweed	Convolvulus arvensis
Florida pusley (Florida purslane, Mexican clover, Pusley)	Richardia scabra
Goosefoot	Chenopodium hybridum
Henbit (fall application only)	Lamium amplexicaule
Knotweed	Polygonum aviculare
Kochia (Fireweed, Mexican fireweed)	Kochia scoparia
Lambsquarters	Chenopodium album
Pigweed (Carelessweed, Prostrate pigweed, Redroot, Rough pigweed, Spiny pigweed)	Amaranthus spp.
Puncturevine (Western U.S. only) (Caltrop, Goathead)	Tribulus terrestris
Purslane	Portulaca oleracea
Russian thistle (Tumbleweed)	Salsola kali
Stinging nettle (Nettle)	Urtica dioica

Triflurlain 4EC alone will not control certain resistant weeds such as cocklebur, jimsonweed, ragweed, velvetleaf, and nutsedge.

TANK MIXES

Trifluralin 4EC, in tank mixture with other products, will control the following additional weeds:

Trifluralin 4EC/Sencor® or Lexone® Tank-Mix
(see Soybean section for instructions)

In soybean:

Jimsonweed	Datura stramonium
Mallow, Venice (Flower-of-an-hour)	Hibiscum trionum
Mustard, wild (Charlock, Field Mustard)	Brassica kaber
Prickly sida (Teaweed, Spiny sida)	Sida spinosa
Ragweed, common	Ambrosia artemisiifolia
Sesbania, hemp (Coffeebean, Indigo)	Sesbania exaltata
Smartweed (Pennsylvania)	Polygonum pensylvanicum
Velvetleaf (Butterprint, Buttonweed, Cottonweed, Elephant's ear, Indian mallow, Piermarker)	Abutilon theophrasti

Control of cocklebur, morningglory and giant ragweed may be erratic ranging from poor to excellent depending upon soil temperature, time of weed germination, depth of weed seed in the soil and amount and timing of soil moisture. Control may be improved with timely cultivation. Where cocklebur is a serious problem, an overlay of Sencor or Lexone may be preferred to the Trifluralin 4EC/Sencor or Trifluralin 4EC/Lexone tank mix.

Trifluralin 4EC/Canopy® Tank-Mix (Do not use in California)
(See Soybean section for instructions)

In soybean:

Controlled

- Cocklebur, common
- Florida beggarweed
- Hemp sesbania
- Hophornbeam copperleaf
- Jimsonweed
- Morningglory
  - (Entireleaf)
  - (Ivyleaf)
  - (Pitted)
  - (Smallflower)
  - (Tall)
- Prickly sida (Teaweed)
- Ragweed
  - (Common)
  - (Giant)
- Sicklepod
- Smartweed
- Spotted spurge
- Sunflower
- Velvetleaf

Partially Controlled

- Purple nutsedge
- Yellow nutsedge

Large seeded weeds, germinating deep in the soil, such as morningglory, sicklepod, cocklebur, and giant ragweed or weeds with subsequent flushes may require a cultivation or an application of a postemergence herbicide for season-long control.

Trifluralin 4EC/Preview® Tank-Mix (Do not use in California)
(See Soybean section for instructions)

In soybean:

Controlled

- Cocklebur, common
- Hophornbeam copperleaf
- Jimsonweed
- Mustards
- Pigweed
  - (Palmer amaranth)
  - (Smooth)
  - (Tall waterhemp)
- Prickly sida (Teaweed)
- Ragweed, common
- Smartweed, annual
- Spotted spurge
- Sunflower

Partially Controlled

- Burcucumber
- Eastern black nightshade
- Morningglory
  - (Tall)
  - (Ivyleaf)
  - (Pitted)
  - (Entireleaf)
  - (Pitted)
- Nutsedge species
- Ragweed, giant

Large seeded weeds, germinating deep in the soil, such as morningglory, sicklepod, cocklebur, and giant ragweed or weeds with subsequent flushes may require a cultivation or an application of a postemergence herbicide for season-long control.

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Trifluralin 4EC/Eptam® Tank-Mix
(see Dry bean and Potato sections for instructions)

In dry bean and potato:	
Henbit	Lamium amplexicale
Nightshade, black	Solanum nigrum
Nightshade, hairy	Solanum sarrachoides
Nutsedge	Cyperus sp.
Ragweed, common	Ambrosia artemisiifolia
Smartweed, Pennsylvania	Polygonum pensylvanicum
Velvetleaf (Buttonweed)	Abutilon theophrasti
Wild Oat	Avena fatua

Trifluralin 4EC/Amiben® Tank-Mix and Overlay
(see Soybean and Sunflower sections for instructions)

In soybean and sunflower:	
Coffeeweed	Sesbania exaltata
Mustard, wild	Brassica kaber
Nightshade, black	Solanum nigrum
Prickly sida (Teaweed)	Sida spinosa
Ragweed, common	Ambrosia artemisiifolia
Spurge, annual	Euphorbia maculata
Smartweed, Pennsylvania	Polygonum pensylvanicum
Stinkgrass	Eragrostis cilianensis
Velvetleaf (Buttonweed)	Abutilon theophrasti

Trifluralin 4EC/Caparol® Tank Mix
(see Cotton section for instructions)

In cotton:	
Annual morningglory	Ipomoea sp.
Groundcherry, annual	Physalis sp.
Malva	Malva sp.
Mustard, wild	Brassica kaber
Prickly sida (Teaweed)	Sida spinosa
Ragweed	Ambrosia artemisiifolia
Smartweed	Polygonum pensylvanicum
Wild oat	Avena fatua

The tank-mix also controls shallow germinating seedlings of cocklebur and coffeeweed.

Trifluralin 4EC/Cotoran® Tank-Mix or Overlay
(see Cotton section for instructions)

In cotton:	
Cocklebur	Xanthium strumarium
Groundcherry, Wright	Physalis sp.
Jimsonweed	Datura stramonium
Morningglory, annual	Ipomoea sp.
Prickly sida (Teaweed)	Sida spinosa
Ragweed	Ambrosia artemisiifolia
Ryegrass	Lolium sp.
Sesbania	Sesbania Exaltata
Sicklepod	Cassia obtusifolia
Smartweed	Polygonum pensylvanicum
Tumbleweed	Amaranthus albus
Velvetleaf (Buttonweed)	Abutilon theophrasti

Trifluralin 4EC Preplant Followed by Karmex® Overlay
(see Cotton section for instructions)

In cotton:	
Dogfennel	Eupatorium capillifolium
Groundcherry, annual	Physalis sp.
Morningglory, annual	Ipomoea sp.
Pennycress	Thlaspi sp.
Ragweed	Ambrosia artemisiifolia
Sheperdspurse	Capsella bursa pastoris
Velvetgrass	Hulcus lanatus
Wild lettuce	Lactuca sp.
Wild mustard	Brassica kaber

Trifluralin 4EC/Vernam® Tank-Mix
(see Soybean and Peanut sections for instructions)

In soybean and peanut:	
Morningglory, annual	Ipomoea sp.
Coffeeweed	Sesbania exaltata
Purple nutsedge	Cyperus rotundus
Velvetleaf	Abutilon theophrasti
Yellow nutsedge	Cyperus esculentus

SOIL PREPARATION

Good soil preparation is essential for best results. Destroy existing weeds before herbicide application. Chop and thoroughly mix crop residue into the soil to a depth of at least 4 to 6 inches by deep plowing or discing before application. Use machinery that breaks up large clods.

Before application determine soil texture in order to apply the correct rate. Rates given in this booklet refer to the following soil texture groups:

Coarse soils: sand, loamy sand, sandy loam
Medium soils: loam, silty clay loam, silt loam, silt, sandy clay loam
Fine 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 predominatly sand or silt, they are usually classified as medium textured soils. If they are predominantly clay, they are usually classified as fine textured soils.

APPLICATION DIRECTIONS

Trifluralin 4EC is an emulsifiable concentrate which must be mixed with water and applied as a spray before or in the same operation as soil incorporation.

APPLICATION AND CALIBRATION TECHNIQUES FOR SPRINKLER IRRIGATION

Trifluralin 4EC may be applied through properly equipped chemigation systems for weed control in alfalfa, corn, cotton, grain sorghum (milo), potatoes, and soybeans. See crops for specific chemigation instructions. Apply this product only through the irrigation systems described below. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water. If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system. 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.

Continuously Moving Center Pivot, Lateral Move, or End Tow Irrigation Equipment: Trifluralin 4EC should be injected continuously throughout the chemigation period. The chemigation metering pump should be checked periodically during application to ensure proper operation. The injection metering pump must be calibrated as specified by the manufacturer. During chemigation, maintain agitation in supply tank at all times. Trifluralin 4EC may stain plastic hoses and tanks. Apply Trifluralin 4EC in sprinkler irrigation equal to 1/2-1 inch of water.

CALIBRATION

A sample calculation for use of Trifluralin 4EC follows:

1. Assume 133 acres are to be covered by a chemigation treatment.
2. Product required is 199.5 pints (25 gallons) assuming 1.5 pints per acre.
3. Add 25 gallons of product directly to the injection supply tank.
4. Adjust the injection system to deliver 25 gallons during the time required to apply 1 inch of water to 133 acres.
5. If the irrigation system requires 20 hours to apply 1 inch of water to 133 acres, the injection rate is 1.28 gallons per hour and is calculated as follows:

   25 gallons ÷ 20 hours = 1.25 gallons per hour
   1.25 gallons = 160 fluid ounces

   Proper calibration requires the injection pump to be adjusted to deliver 2.7 fluid ounces per minute and is calculated as follows:

   160 fl. oz. per hr. ÷ 60 min. per hr. = 2.7 fl. oz. per min.

SAFETY DEVICES

(1) The systems designated above must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. (2) All pesticide injection pipelines must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. (3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn fr

supply tank when the irrigation system is either automatically or manually shut down. (4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. (5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. (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.

MIXING DIRECTIONS

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

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

GROUND APPLICATION

Apply in 5 to 40 gallons of water/acre (broadcast basis) using any properly calibrated low-pressure sprayer that will uniformly apply the spray. Pour the recommended amount of product into the spray tank during the filling operation and mix thoroughly before spraying. As the amount of water decreases, the importance of acccurate calibration and uniform application increases. Check the sprayer daily. Do not apply the herbicide to soils which are wet or in poor condition or to soils which are subject to prolonged periods of flooding.

AERIAL APPLICATION

For best results apply to a dry soil surface at a spray volume of from 5 to 10 gallons/acre. Adjust pump pressure, nozzle arrangements, flying speed and height to provide uniform application. Use markers or flagmen to assure proper application spray widths. Do not apply when the wind is blowing at a velocity of 5 mph or greater.

INCORPORATION

Before planting.
For best results the herbicide must be incorporated within 24 hours after application. A second incorporation is required at any time prior to planting using the equipment in a different direction from the first. Incorporation should place the product into the top 2 or 3 inches of the final seedbed. Variable weed control may result from delayed incorporation if the herbicide is applied to a wet, warm soil surface or if the wind velocity is 10 mph or higher

After planting.
When incorporating after planting (check crops approved for incorporation after planting), use P.T.O.-driven equipment or Rolling Cultivators and adjust to till the soil over the seed or throw treated soil toward the crop. Avoid disturbing the seed or mechanically damaging the crop.

In bedded culture.
For effective weed control in bedded culture the product should be incorporated into the top 2 to 3 inches of the final seedbed. When applying prior to bedding, apply and incorporate one time. The bedding operation serves as the second incorporation. When applying after bedding, knock off beds to planting height before application and incorporation on bedded ground. Avoid removal of treated soil from the seedbed before or during the planting operation. This will expose untreated soil and allow weeds to germinate in the drill row.

Equipment.
For incorporation use machinery which pulverizes large clods and mixes the herbicide thoroughly with the soil. Thorough incorporation may be achieved with the following: Disc, set to cut 4 to 6 inches deep and operated in two different directions at 4 to 6 mph; Field Cultivator, set to cut 3 to 4 inches deep and operated at 5 mph or more; Rolling Cultivator, set to cut 2 to 4 inches deep and operated two times at 6 to 8 mph (adequate for use on coarse and medium textured soils only); Bed Conditioner, set to cut 2 to 4 inches deep and operated one time at 4 to 6 mph (adequate for use on coarse and medium textured soils only); Mulch Treader and other similar disc-type implements, set to cut 3 to 4 inches deep and operated at 5 to 8 mph in two different directions; P.T.O.-driven equipment (tillers, cultivators, hoes), set to cut 2 to 3 inches deep with rotors spaced to provide a clean sweep of the soil and operated one time (they should not be operated at a speed greater than 4 mph).

APPLICATION WITH LIQUID FERTILIZERS

Trifluralin 4EC may be mixed with most liquid fertilizer materials. The combination of Trifluralin 4EC with solutions and suspension-type fertilizers provides weed and grass control equal to the same rates of Trifluralin 4EC applied in water. Follow Trifluralin 4EC label recommendations regarding rates per acre, crops, incorporation directions, special instructions, cautions and special precautions.

Individual state regulations relating to liquid fertilizer mixing, registration, labeling and applications are the responsibility of the individual and/or company selling the fertilizer and chemical mixture.

Testing for Tank Mix Compatibility in Liquid Fertilizers: Trifluralin 4EC alone or in tank mixture with dry flowables, wettable powders (WP), aqueous suspensions (AS), flowables (F), liquids (L), or solutions (S) may not combine properly with some fluid fertilizer materials. Small quantities should always be tested before full-scale mixing. This will determine whether a compatibility agent is needed, and which agent does the best job. The eight agents listed on the following page have been thoroughly tested. There are many other surfactants on the market which were not designed for use with liquid fertilizers. Use the following test to select the correct agent for your mixture.

1. Put 1 pint of the liquid fertilizer in a quart jar.
2. Add 1 to 4 teaspoon(s) of the dry flowable, WP, AS, F or L formulation (depending on the recommended rate per acre) to the liquid fertilizer. Close jar and agitate until the materials are dispersed evenly in the fertilizer. If the materials do not disperse well, it may be necessary to slurry the chemicals in water before adding to the fertilizer.

3. After dispersing the materials (Step 2), add 3 to 4 teaspoons of Trifluralin 4EC to the jar and shake well. Add solution herbicides to the mixture last and agitate. Observe the jar for about 10 minutes. If the materials rise to the surface and form a thick layer (oily curds) which will not redisperse when agitated, a compatibility agent is needed. If the mixture is easily redispersed to its original state with slight agitation, no agent is needed but good agitation must be provided in the fertilizer spray tank.
4. If the need for a compatibility agent is shown in Step 3: Using a clean quart jar, start at Step 1 above, add 1/2 teaspoon of the compatibility agent to the liquid fertilizer, mix well, then repeat Steps 2 and 3.

An effective compatibility agent will cause the mixture to remain uniformly mixed with little or no separating or oil rising to the surface for one half hour or longer. Riverside Combine has been thoroughly tested and approved as an effective compatibility agent. If slight separation does occur, 2 to 3 inversions of the jar should give a uniform remix. If oily curds form which will not redisperse, more Riverside Combine or another agent should be tried.

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

LIQUID FERTILIZER MIXING INSTRUCTIONS

General - Emulsifiable concentrates, such as Trifluralin 4EC, can be mixed with liquid fertilizers. In all cases, continuous agitation is required to prevent the Trifluralin 4EC from rising to the surface as an oily layer. When necessary, (see Testing for Tank Mix Compatibility in Liquid Fertilizers) a compatibility agent can be used to cause the Trifluralin 4EC to emulsify properly (i.e., have a milky appearance rather than an oily layer). The use of compatibility agents is especially important when tank mixing emulsifiable concentrates (E.C.) with dry flowables, wettable powders (WP), aqueous suspensions (AS), flowables (F), liquids (L), or solutions (S) in liquid fertilizer. If the emulsion is not properly formed and the Trifluralin 4EC rises to the surface of the fertilizer as an oil ("oils out"), the oil may combine with the wettable powder, flowable, or suspension to form oily curds (viscous phase) which are difficult to redisperse. Any one of the compatibility agents listed below is helpful in causing liquid concentrates to form non-oiling mixtures with liquid fertilizers. These compatibility agents can be used at rates as low as 1-1/2 to 2 pints per ton of liquid fertilizer and should be mixed well with the fertilizer before adding the liquid concentrate. Read the label on the compatibiity agent and follow the directions.

1. Sponto 168D (Witco Chemical Co., Chicago, IL)
2. Compat (Farm Chemicals, Inc., Aberdeen, NC)
3. Unite (Hopkins Ag Chemical, Madison, WI)
4. T-Mulz 734-2 (Thompson-Hayward Chemical Co., Kansas City, MO)
5. Rigo Compatibility Agent (Rigo Company, Buckner, KY)
6. Amoco Spray Mate™ (Amoco Oil Co., Chicago, IL)
7. Kem-Link (Universal Coop, Minneapolis, MN)
8. Combine (Riverside/Terra Corp., Sioux City, IA)

All of the above are phosphate ester-type surfactants designed to be used with liquid fertilizers. They usually do not work as compatibility agents in tank mixtures in plain water.

Application - Spread the fertilizer/pesticide mixture with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.

Incorporation - Follow normal Trifluralin 4EC incorporation procedures.

APPLICATION WITH DRY BULK FERTILIZERS

Dry bulk fertilizers may be impregnated or coated with Trifluralin 4EC. Application of dry bulk fertilizers impregnated with Trifluralin 4EC has provided weed and grass control equal to the same rates of Trifluralin 4EC applied in water.

All Trifluralin 4EC label recommendations regarding rates/acre, approved crops, incorporation, special instructions, cautions and special precautions must be followed. All individual state regulations relating to dry bulk fertilizer blending, registration, labeling and application are the responsibility of the individual and/or company selling the fertilizer and chemical mixture.

Limitations.
Apply a minimum of 200 pounds/acre of dry fertilizer impregnated with Trifluralin 4EC at the recommended rates. Any commonly used dry fertilizer can be used for Trifluralin 4EC impregnation except coated ammonium nitrate and straight 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. Provide uniform spray coverage of Trifluralin 4EC onto the fertilizer.

Rates.
Check the crop section to determine the rate of Trifluralin 4EC/acre. See the rate table which follows to determine amount of Trifluralin 4EC to be impregnated on a ton of dry bulk fertilizer based on the amount of fertilizer which will be applied/acre.

Application.
Spread the fertilizer/chemical mixture normally with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.

Incorporation.
Follow the normal incorporation procedures.

RATE CHART FOR IMPREGNATING FERTILIZER
(Trifluralin 4EC added to a ton of fertilizer)

Fertilizer Rates Per Acre	1 Pint	1 1/2 Pints	2 Pints	3 Pints	4 Pints
200 lbs.	5 qts/ton	7 1/2 qts/ton	10 qts/ton	15 qts/ton	20 qts/ton
250 lbs.	4 qts/ton	6 qts/ton	8 qts/ton	12 qts/ton	16 qts/ton
300 lbs.	3 1/3 qts/ton	5 qts/ton	6 2/3 qts/ton	10 qts/ton	13 1/3 qts/ton
350 lbs.	2 3/4 qts/ton	4 1/4 qts/ton	5 1/4 qts/ton	8 1/2 qts/ton	11 1/2 qts/ton
400 lbs.	2 1/2 qts/ton	3 3/4 qts/ton	5 qts/ton	7 1/2 qts/ton	10 qts/ton
450 lbs.	2 1/4 qts/ton	3 1/3 qts/ton	4 1/2 qts/ton	6 2/3 qts/ton	9 qts/ton

For rates other than those listed above, use the following formula to calculate the amount of Trifluralin 4EC to be impregnated on a ton of dry bulk fertilizer:

$$\text{Pints of Trifluralin 4EC per acre} \times \frac{1000}{\text{Lbs. Fertilizer/acre}} = \text{Quarts Trifluralin 4EC/Ton of Fertilizer}$$

CROP RECOMMENDATIONS

Where applicable, rates are given for eastern United States and western United States. The dividing line between eastern and western states is the point where the average rainfall/year is a minimum of 20 to 25 inches.

Rates are given for broadcast application; for band application use proportionally less amount of product.

ALFALFA (Established)

In areas receiving less than 20" average rainfall per year, apply to established alfalfa stands at a broadcast rate/acre of 1 1/2 pts. on coarse soil and 2 pts. on medium and fine soils. Use incorporation equipment that will ensure thorough soil mixing with a minimum of damage to the established alfalfa.

Chemigation Instructions: Trifluralin 4EC may be applied through properly equipped chemigation systems for weed control in alfalfa. Refer to APPLICATION AND CALIBRATION TECHNIQUES FOR SPRINKLER IRRIGATION for use directions.

Trifluralin 4EC applications should be made to established alfalfa during dormancy or semidormancy or throughout the growing season immediately after a cutting. Do not cut or graze alfalfa within 21 days after a Trifluralin 4EC application. Application must be made prior to the expected time of weed germination since Trifluralin 4EC does not control established weeds.

Trifluralin 4EC controls bromegrass and cheat in addition to other labeled weeds when applied in the fall. Bromegrass and cheat begin to germinate in the fall with the onset of cooler weather. To control these weeds, apply Trifluralin 4EC immediately after cutting between August 1 and October 1, but prior to weed germination.

Broadcast 2 quarts per acre to all soil textures.

Precaution: Apply no more than 2 quarts during any growing season. In the growing season following application of 2 quarts of Trifluralin 4EC to alfalfa, plant only those crops for which trifluralin can be applied as a preplant treatment or injury will occur.

ASPARAGUS (Established)

Follow recommended soil preparation, application and incorporation procedures for Trifluralin 4EC.

Trifluralin 4EC can be applied to established asparagus as a single or as a split application. In the winter or early spring, apply Trifluralin 4EC to asparagus after ferns are removed but before spears emerge. Or, apply after harvest in the late spring or early summer before ferning begins. Trifluralin 4EC will suppress volunteer seedling asparagus and field bindweed if the following recommended rates and application schedules are used.

Follow recommended soil preparation, application and incorporation procedures for Trifluralin 4EC.

Broadcast Rates Per Acre

Soil Texture	Trifluralin* 4EC					
	Split Application			Single Application		
	Before Harvest	+	After Harvest	Before Harvest	or	After Harvest
	(pints)			(pints)		
Coarse	1	+	1	2	or	2
Medium	1 1/2	+	1 1/2	3	or	3
Fine	2	+	2	4	or	4

*In any single calendar year, the maximum Trifluralin 4EC to apply is 2 pints per acre on coarse soils; 3 pints on medium soils; and 4 pints on fine soils.

BARLEY-TRIFLURALIN 4EC ALONE

Trifluralin 4EC is recommended as a postplant incorporated treatment to control foxtail (pigeongrass).

Apply Trifluralin 4EC at a broadcast rate of 1 pint per acre on coarse and medium soils and 1 1/2 pints on fine soils.

Plant 2 to 3 inches deep in a well-tilled seedbed. Apply Trifluralin 4EC after seeding but before the crop emerges. To incorporate, use flex-tine or diamond harrows operated two times in different directions, at speeds of at least 5 mph. Incorporate by operating equipment 1 to 1 1/2 inches deep. Application and the first incorporation should be done in the same operation if possible. Both incorporations must be done within 24 hours.

BARLEY (FALL APPLICATION)-FOXTAIL/PIGEONGRASS CONTROL

Trifluralin 4EC may be fall applied for foxtail/pigeongrass control in barley planted the following spring. Trifluralin 4EC may be applied to ground that has a manageable trash level, has been fallowed or pre-tilled. The first incorporation is required within 24 hours after application. A second incorporation is required prior to planting to destroy emerged weeds and to ensure an even distribution of Trifluralin 4EC treated soil.

Apply Trifluralin 4EC at a broadcast rate of 1 pt. per acre on coarse and medium soils and 1 1/2 pints on fine soils.

BARLEY (ACREAGE CONSERVATION RESERVE PROGRAM) - FOXTAIL CONTROL

Trifluralin 4EC may be applied in the spring as a preplant soil incorporated treatment for foxtail control in spring seeded barley grown on land used in acreage conservation reserve programs.

Trifluralin 4EC should be applied at the rate of 1 pt. per acre on coarse-textured soils and 1 1/2 pts. per acre on medium- and fine-textured soils. Do not exceed this rate or crop injury may occur.

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

Precaution--Use of this practice may result in a slight stand reduction. Follow the most severe grazing restrictions imposed either by the pesticide label or by the USDA Acreage Conservation Reserve Program, whichever is longer. Consult the local ASC office or other state agency to determine the period of the USDA grazing restriction.

BARLEY--TRIFLURALIN 4EC/FAR-GO TANK M

Trifluralin 4EC/Far-Go applied as a postplant incorporated treatment will control foxtail (pigeongrass) and wild oat.

Plant 2 to 3 inches deep in a well-tilled seedbed. Apply Trifluralin 4EC/Far-Go after seeding but before crop emerges. To incorporate, use flex-tine or diamond harrows two times, operated in different directions, at speeds of at least 5 mph. Incorporate by operating equipment 1 to 1 1/2 inches deep. Application and the first incorporation should be done in the same operation if possible. If not, incorporate immediately after application.

Broadcast Rates Per Acre

Soil Texture	Trifluralin 4EC	Far-Go
Coarse	1 pt.	2-1/2 pts.
Medium	1 pt.	2-1/2 pts.
Fine	1-1/2 pts.	2-1/2 pts.

Precaution: Overapplication may result in crop injury. Read the Far-Go label carefully be ore using.

BEANS

DRY BEANS AND CASTOR BEANS

Apply and incorporate before planting at the following:

Broadcast rate/acre

Soil Texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1-1/2 pts.	1 1/4-1 1/2 pts.
Fine	2 pts.	1-1/2 pts.
2 to 5% organic matter	1 1/2-2 pts.	1 1/2-2 pts.
5.1 to 10% organic matter	2 pts.	2 pts.

For dry beans grown in Idaho, Oregon, Washington only, apply any time between October 15 and December 31 at a broadcast rate/acre of 1 pt. on coarse soil, 1 1/4-1 1/2 pts. on medium soil, 1 1/2 pts. on fine soil.

DRY BEANS-TRIFLURALIN 4EC/EPTAM® TANK-MIX

Apply from two days before planting (up to planting in the eastern US) at the following:

Broadcast rate/acre

Soil Texture	TRIFLURALIN 4EC		EPTAM 7E
	Eastern US	Western US	
Coarse	1 pt.	1 pt.	2 1/2-3 1/2 pts.
Medium	1 1/2 pts.	1 1/4-1 1/2 pts.	2 1/2-3 1/2 pts.
Fine	2 pts.	1 1/2 pts.	2 1/2-3 1/2 pts.
2 to 5% organic matter	1 1/2-2 pts.	1 1/2-2 pts.	2 1/2-3 1/2 pts.
5.1 to 10% organic matter	2 pts.	2 pts.	2 1/2-3 1/2 pts.

Precautions: This combination should not be used on soybean, black-eyed peas (beans), lima beans and other flatpodded beans except Romano. Do not use the foliage from a crop treated with this tank-mix for feed or for grazing.

Observe all directions, precautions and limitations on both products' labeling.

GUAR BEANS, MUNGBEANS, LIMA BEANS, SNAP BEANS

Apply and incorporate before planting at a broadcast rate/acre of 1 pt. on coarse soil and 1 1/2 pts. on medium and fine soils.

CARROTS

Apply and incorporate before planting at the following:

	Broadcast rate/acre	
Soil Texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 1/2 pts.	1 1/4-1 1/2 pts.
Fine	2 pts.	1 1/2 pts.
2 to 5% organic matter	1 1/2-2 pts.	1 1/2-2 pts.
5.1 to 10% organic matter	2 pts.	2 pts.

CELERY

Both direct-seeded and transplant.

Apply and incorporate before planting or transplanting at the following:

	Broadcast rate/acre
Soil Texture	Western US only
Coarse	1 pt.
Medium	1 1/4-1 1/2 pts.
Fine	1 1/2 pts.
2 to 5% organic matter	1 1/2-2 pts.
5.1 to 10% organic matter	2 pts.

COLE CROPS

BROCCOLI, BRUSSELS SPROUTS, CABBAGE, CAULIFLOWER

For transplants, apply and incorporate before transplanting at the following:

	Broadcast rate/acre	
Soil Texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 1/2 pts.	1 1/4-1 1/2 pts.
Fine	2 pts.	1 1/2 pts.
2 to 5% organic matter	1 1/2-2 pts.	1 1/2-2 pts.
5.1 to 10% organic matter	2 pts.	2 pts.

For direct-seeded, apply and incorporate before planting at the following:

	Broadcast rate/acre	
Soil Texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 pt.	1 pt.
Fine	1 1/2 pts.	1 pt.
2 to 5% organic matter	1 1/2 pts.	-
5.1 to 10% organic matter	-	1 1/2 pts.

Direct-seeded cole crops have exhibited marginal tolerance to recommended rates. Stunting or reduced stands may occur.

CORN (FIELD CORN) AND GRAIN SORGHUM (MILO)

Apply Trifluralin 4EC to field corn (8 inches or taller) as an over-the-top or directed spray to effectively control weeds listed for Trifluralin 4EC.

Soil Preparation--Cultivate before a Trifluralin 4EC application to insure loose, friable soil, to remove established weeds, and to cover the base of plants with soil.

Application Directions--Trifluralin 4EC should be applied and incorporated at the recommended rates for the soil texture when the crop is well established (8 inches or taller). Trifluralin 4EC may be applied either as an over-the-top spray or as a directed spray. Drop nozzles should be used if foliage prevents uniform coverage of soil surface. Soil incorporation may be accomplished with only one pass of a sweep-type cultivator or a properly adjusted rolling cultivator.

The sweep-type cultivator should have 3 to 5 sweeps per row middle and be operated at 6 to 8 mph. Set the middle sweeps so as to avoid exposing untreated soil. Adjust the incorporation tools to prevent crop injury.

	Broadcast rate/acre
Soil Texture	Trifluralin 4EC
Coarse	3/4-1 pt.*
Medium	1-1 1/2 pts.
Fine	1 1/2-2 pts.

Use the lower rates when light weed pressure is anticipated and the higher rates when heavy weed pressure is anticipated.

*Apply 1 to 1 1/2 pints per acre in Alabama, Florida, Georgia, North Carolina, South Carolina and Virginia to control fall panicum and Texas panicum.

Chemigation Instructions: Trifluralin 4EC may be applied through properly equipped chemigation systems for weed control in field corn and grain sorghum. Refer to APPLICATION AND CALIBRATION TECHNIQUES FOR SPRINKLER IRRIGATION for use directions.

Corn - Apply Trifluralin 4EC to corn from the 2 leaf stage of growth up to a height of 30 inches. Trifluralin 4EC must be applied prior to weed emergence or after existing weeds are controlled. Trifluralin 4EC does not control established weeds. Broadcast 1 1/2 to 2 pints per acre to coarse and medium soil textures.

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

Grain Sorghum - Cultivate before Trifluralin application to destroy existing weeds, provide a loose, friable soil surface condition and to cover the base of sorghum plants with soil. Cultivation equipment should be set to add approximately one inch of soil to the base of sorghum plants. The soil surface should be well prepared, free of any existing weeds, trash or clods before Trifluralin application.

Apply Trifluralin 4EC in 1/2 to 1 acre inch of irrigation water as soon as possible after a cultivation when grain sorghum is at least eight (8) inches tall. Trifluralin 4EC must be applied postplant prior to weed emergence or after existing weeds are controlled. Trifluralin 4EC does not control established weeds. Broadcast 3/4 to 1 pint per acre to coarse soil and 1 to 1 1/2 pints per acre to medium soil textures.

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

COTTON

Pre-emergence application.

Apply and incorporate before planting, at planting, immediately after planting, at the following:

	Broadcast rate/acre	
Soil texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 1/2 pts.	1 1/4-1 1/2 pts.
Fine	2 pts.	1 1/2 pts.
2 to 5% organic matter	1 1/2 pts.	1 1/2-2 pts.
5.1 to 10% organic matter	2-2 1/2 pts.	2 pts.

When incorporating after planting, care must be taken not to disturb the seed.

Post-emergence or layby application.

Apply any time up to layby but not less than 90 days before harvest. Direct layby applications to the soil between the rows and beneath emerged cotton plants. Use the same rates as for pre-emergence application.

Fall application.

Apply and incorporate any time from October 15 to December 31. The ground may be left flat or bedded-up over winter. On bedded ground, knock beds down to desired height before planting, moving some treated soil from beds into furrows. Where soil is left flat over winter, be careful not to turn up untreated soil during spring bedding operations. Destroy established weeds during seedbed preparation. If weeds become established in furrows due to uncovering of untreated soil during bedding, destroy these weeds before planting. In the fall, do not apply Trifluralin 4EC to soils which are wet or subject to prolonged periods of flooding.

In Alabama, Arkansas, Northern Florida, Georgia, Louisiana, Mississippi, SE Missouri bootheel, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, apply and incorporate at a broadcast rate/acre of 2 pts. on coarse and medium soils and 2 1/2 pts. on fine soil.

In Arizona, California, Nevada, apply and incorporate at a broadcast rate/acre of 1 1/2 pts. on coarse soil, 2 pts. on medium soil, 2 1/2 pts. on fine soil.

In states other than those listed above, apply and incorporate at a broadcast rate/acre of 1 pt. on coarse soil, 1 1/2 pts. on medium soil, 2 pts. on fine soil, 1 1/2 pts. on soils with 2 to 5% organic matter, 2 to 2 1/2 pts. on soils with 5.1 to 10% organic matter.

Incorporation with Bedding Implements.

Bedding implements (listers and hippers) may be used to soil incorporate Trifluralin 4EC for weed control in cotton. Because bedding implements do not provide thorough soil mixing under all conditions, follow use directions to optimize weed control. Weed control resulting from single pass incorporation with bedding equipment will be reduced compared to conventional double pass incorporation. Use the application rate recommended above for the soil texture to be treated.

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

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

Use Directions for Bedding Equipment.
A lister or disk bedder may be used to incorporate Trifluralin 4EC. Operate the implement according to the manufacturer's use directions in order to produce beds of the desired height. A ripper shank, sweep or chisel shank should be mounted on the bedder in a position behind the spray nozzles but ahead of the bedder tool to help distribute Trifluralin 4EC in the center of the bed. The use of bed tillage equipment such as rolling cultivators, P.T.O. driven rod weeders or bed conditioners after the bedding operation will provide additional soil mixing. Avoid deep tillage which might bring untreated soil to the surface resulting in loss of weed control. Weather conditions, cultural practices, bed tillage and planting procedures can affect the distribution of Trifluralin 4EC treated soil. Weed control obtained will be dependent upon how uniformly Trifluralin 4EC treated soil is distributed over the soil surface at the time of planting.

If trifluralin treated soil is moved exposing untreated soil during bed tillage or planting, a band application of Trifluralin 4EC at planting or a postemergence application may be required to restore uniform weed control.

Precautions.
Do not incorporate with the bedding equipment if the soil is too wet for uniform soil mixing.

Special applications.
For the control of Fall Panicum apply and incorporate at a broadcast rate/acre of 2 pts. on both coarse and medium soils.

For the control of Rhizome Johnsongrass in all cotton producing states except Arizona and California, apply a double-rate Trifluralin 4EC program for 2 years in a row.

Applications can be made in spring, any time before planting for two years in a row or between October 15 and December 31 for two years in a row at a broadcast rate/acre of 2 pts. on coarse soil, 3 pts. on medium soil and 4 pts. on fine soil. Proper preparation of the soil before application and deep incorporation is essential for best results. Some Johnsongrass plants may escape; timely cultivation during the crop season is necessary. In the season following a double-rate treatment, plant only rice and those crops for which Trifluralin 4EC can be applied as a pre-plant treatment or injury may result.

For the control of Pigweed and Seedling Johnsongrass in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, SE Missouri, North and South Carolina, Tennessee and Southern Virginia, apply Trifluralin 4EC, preplant, at a broadcast rate/acre of 1 to 1 1/2 pts. on coarse soil, 1 1/2 to 2 pts. on medium soil, 2 pts. on fine soil (3 pts. in Louisiana).

For a more complete control of all listed grasses and weeds in counties along the Texas Gulf Coast (limited to Brazoria, Calhoun, Chambers, Fort Bend, Galveston, Harris, Jackson, Jefferson, Liberty, Matagorda, Orange, Victoria, Waller and Wharton), apply up to 2 weeks before planting at a broadcast rate/acre of 1 1/2 pts. on coarse soil, 2 pts. on medium soil, 3 pts. on fine soil.

Chemigation Instructions: Trifluralin 4EC may be applied through properly equipped chemigation systems for weed control in cotton. Refer to APPLICATION AND CALIBRATION TECHNIQUES FOR SPRINKLER IRRIGATION for use directions.

Apply Trifluralin 4EC in sprinkler irrigation equal to 1/2 to 1 inch of water. TRIFLURALIN 4EC must be applied within 2 days after planting prior to crop emergence. Trifluralin 4EC does not control established weeds. Soil incorporation is not required when applied through chemigation systems. Soil treated with Trifluralin 4EC may be shallow-cultivated without reducing weed control activity.

In minimum-till situations an overlay herbicide is recommended in addition to the use of Trifluralin 4EC.

Broadcast Application Rate Per Acre--Conventional-Till Cotton

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

Use 1 1/2 pints per acre on coarse soils and medium soils and 2 pints on fine soils with 2-5% organic matter. Use 2 to 2 1/2 pints on all soils with 5.1-10% organic matter.

Broadcast Application Rates Per Acre--Minimum-Till Cotton

Single Application:

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

Use higher rate in rate range where heavy weed pressure is anticipated or where there is significant crop residue.

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 stands, delayed maturity, and reduced yields.

TRIFLURALIN 4EC/CAPAROL® 80W TANK-MIX

For cotton grown in California, Arizona, New Mexico and Texas, apply to the flat soil surface before discing at the following:

	Broadcast rate/acre	
Soil Texture	Trifluralin 4EC	Caparol 80W
Coarse	1 pt.	2 lbs.*
Medium	1 1/2 pts.	2 1/2 lbs.
Fine	2 pts.	2 1/2 lbs.

*Do not use on sand and loamy sand soils. For band application the user should apply proportionally less.

Carefully follow the procedures on the Caparol label for making a slurry and adding it to a partially filled tank of water. After the Caparol is well mixed, add the Trifluralin 4EC and agitate continuously.

Precautions: Do not use this tank-mix on the cut areas of newly leveled fields, in areas of excess salt and where flooding over the beds is likely to happen. Do not plant cotton in tractor wheel depressions. These conditions may cause crop injury. On mulch-planted cotton, water back only after cotton seedlings are well established.

Crop rotation: Cabbage, okra, onion, peas may be planted in the fall after a spring application of the mixture. Winter barley, winter rye and winter wheat can be planted in the fall if they are plowed down and not used for food or feed.

Observe all directions, precautions and limitations on both products' labeling.

TRIFLURALIN 4EC/COTORAN® 80W TANK-MIX

Except in Arizona and California.

Apply and incorporate at the following:

	Broadcast rate/acre	
Soil texture	Trifluralin 4EC	Cotoran 80W
Coarse	1 pt.	1 1/4 lbs.
Medium	1 1/2 pts.	2 lbs.
Fine	2 pts.	2 1/2 lbs.

Use 15-40 gallons of clean water/acre.

Carefully follow the procedures on the Cotoran label for making a slurry and adding it to a partially filled tank of water. After the Cotoran is well mixed, add the Trifluralin 4EC and agitate continuously.

Precautions: Do not plant crops other than cotton on the treated land within 6 months after application of this tank-mix or crop injury may result. Do not feed foliage from treated cotton plant or gin trash to livestock. Do not mix with liquid fertilizers.

In West Texas do not use on sandy, loamy sand or fine sandy loam soils. Do not use on cotton planted in furrows.

In Arkansas, Louisiana, Mississippi, use 1 lb. of Cotoran in tank-mix with Trifluralin 4EC on sandy loam soils low in organic matter.

In New Mexico, do not plant treated land with crops other than cotton until one year after the last application. Do not use on sandy loam soils with less than 1 percent organic matter.

Observe all directions, precautions and limitations on both products' labeling.

COTORAN OVERLAY: Apply Trifluralin 4EC as recommended and then Cotoran 80W as a pre-emergence surface treatment at 1 1/4 to 2 1/2 lbs./acre. On light soil and sandy soils low in organic matter, use the lower rate. Refer to Cotoran label for cautions, precautions and instructions.

TRIFLURALIN 4EC PREPLANT FOLLOWED BY KARMEX® 80W OVERLAY

For cotton grown east of the Mississippi River, Arkansas, SE Missouri, Louisiana, eastern Texas, apply and incorporate Trifluralin 4EC before planting at usual rates. Then make a pre-emergence application of Karmex 80W at 1/3 lb. for coarse soils, 2/3 lb. for medium soils, and 1 lb. for fine soils.

Precautions: Do not use Karmex on sandy or low organic soils. Do not allow grazing on cotton treated with Karmex. Refer to Karmex 80W label for additional instructions, cautions and precautions.

CUCURBITS

CANTALOUPES, CUCUMBERS, WATERMELONS

sses restricted to Western US including Texas.

anc ly in post-plant emerged at the following:

l texture	Broadcast rate/acre
rse	1 pt.
ium	1 1/4-1 1/2 pts.
e	1 1/2 pts.
o 5% organic matter	1 1/2-2 pts.
to 10% anic matter	2 pts.

ng. the higher rate in areas receiving more than 20" average annual rainfall.
of ly as directed spray to the soil between the rows and beneath the plants
r ch are in the 3 to 4 true-leaf stage. Care should be taken that incor-
on ation machinery does not damage the plants.

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ng.

FORAGE LEGUMES

ifluralin 4EC can be used as a preplant incorporated broadcast applied treat-
it for preemergence control of many annual grasses and broadleaf weeds in
rect seeded forage legumes used as a cover crop in the acreage conservation
serve program.

ply and incorporate Trifluralin 4EC following recommended procedures in the
bel. Apply Trifluralin 4EC at the following:

il texture	Broadcast rate/acre
arse	1 pt.
dium	1-1 1/2 pts.
ne	1 1/2 pts.

llow the more severe grazing restrictions imposed either by the pesticide
bel or by the USDA Conservation Use Program, whichever is longer. Consult
e local ASC committee or other State Agency to determine the period of the
DA grazing restriction.

ecautions: Some stand reductions may occur with this use; however, excellent
ed control will allow time for establishment of a quality stand.

GREENS

JRNIP GREENS (for processing), COLLARDS, KALE, MUSTARD GREENS

pply and incorporate before planting at a broadcast rate/acre of 1 pt. on
oarse soils and 1 1/2 pts. on medium and fine soils.

USTARD

or mustard grown for seed or processing in Minnesota and North Dakota, see
Greens" above.

HOPS

Apply and incorporate while the crop is dormant at a broadcast rate/acre of 1 pt. on coarse soil, 1 1/4-1 1/2 pts. on medium soil, 1 1/2 pts. on fine soil and soils with 2 to 10% organic matter.

MINT

Established Peppermint and Spearmint.

Apply at a rate of 1 pt. on coarse soil, 1 1/4 pts. on medium soil and 1 1/2 pts. on fine soil during dormant period.

Use incorporation equipment that will insure thorough soil mixing with minimum damage to the crop.

OKRA

Apply and incorporate before planting, at planting or immediately after planting at the following:

	Broadcast rate/acre	
Soil texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 1/2 pts.	1 1/4-1 1/2 pts.
Fine	2 pts.	1 1/2 pts.
2 to 5% organic matter	1 1/2-2 pts.	1 1/2-2 pts.
5.1 to 10% organic matter	2 pts.	2 pts.

PEANUTS

Spanish peanuts grown in Texas and Oklahoma only.

Apply and incorporate before planting, at planting or immediately after planting at a broadcast rate/acre of 1 pt. on coarse soil. Care should be taken not to disturb the seed when incorporating after planting.

Trifluralin 4EC/Vernam® Tank-Mix

Apply up to 10 days prior to planting, incorporate immediately after application at a broadcast rate/acre of 1 pt. of Trifluralin 4EC and 2 1/3 pts. of Vernam 7E.

Observe all directions, precautions and limitations on both products' labeling.

PEAS

ENGLISH PEAS, DRY PEAS

Apply and incorporate before planting at a broadcast rate/acre of 1 pt. on coarse and medium soils and 1 1/2 pts. on fine soil.

TRIFLURALIN 4EC/FAR-GO TANK MIX

In Idaho, Oregon and Washington, the tank mix combination of Trifluralin 4EC plus Far-Go will provide control of wild oat in addition to other annual grasses and broadleaf weeds controlled by trifluralin.

Application Rates: Broadcast 3/4 pint of Trifluralin 4EC per acre on coarse and medium soils; 1 pint of Trifluralin 4EC on fine soils. Use 1 1/4 quarts of Far-Go per acre for all soil textures.

Incorporation Directions: Apply and incorporate up to 3 weeks before planting. Follow recommended incorporation procedures for Trifluralin 4EC.

Precautions: Do not apply to lentils. Leaf crinkling and delayed maturity of peas may occur, particularly on clay points in the Northwest; this is usually more than offset by a reduction of wild oat. Do not use foliage from treated peas for feed or forage. Refer to the cautions, precautions, and directions on the Far-Go label.

Fall application.
For dry and English peas grown in Idaho, Oregon and Washington only, apply and incorporate any time between October 15 and December 31 at a broadcast rate/acre of 1 pt. on coarse soil, 1 1/4-1 1/2 pts. on medium soil and 1 1/2 pts. on fine soil. Destroy established weeds during seedbed preparation. Do not apply in the fall to soils which are wet or are subject to prolonged periods of flooding.

SOUTHERN PEAS

Apply and incorporate before planting at the following:

	Broadcast rate/acre	
Soil texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 1/2 pts.	1 1/4-1 1/2 pts.
Fine	2 pts.	1 1/2 pts.
2 to 5% organic matter	1 1/2-2 pts.	1 1/2-2 pts.
5.1 to 10% organic matter	2 pts.	2 pts.

PEPPERS

Apply and incorporate before transplanting at the following:

	Broadcast rate/acre	
Soil texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 1/2 pt.	1 1/4-1 1/2 pts.
Fine	2 pts.	1 1/2 pts.
2 to 5% organic matter	1 1/2 pts.	1 1/2-2 pts.
5.1 to 10% organic matter	2 pts.	2 pts.

Do not apply after transplanting.

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POTATOES

Not recommended for use in the state of Maine.

Apply after planting, before emergence or immediately following drag off or after the potato plants have fully emerged.

	Broadcast rate/acre	
Soil texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 1/2 pts.	1 1/4-1 1/2 pts.
Fine	2 pts.	1 1/2 pts.
2 to 5% organic matter	1 1/2 pts.	1 1/2-2 pts.
5.1 to 10% organic matter	2 pts.	2 pts.

Care should be taken so that incorporation machinery does not damage potato seed pieces or elongating sprouts. Set incorporation equipment so that bed and furrow will be uniformly covered by the product. If the layer of Trifluralin 4EC treated soil is not uniform, potato emergence may be retarded and stem brittleness can occur. When applying and incorporating after potato plants have fully emerged, do not completely cover the foliage with treated soil.

Split application in Idaho, Oregon, Washington.
On all soils apply and incorporate 3/4 pt. before planting and 3/4 pt. after planting when potato plants have fully emerged.

Precautions: Do not apply to soil containing 2% or more organic matter.

Chemigation Instructions: Trifluralin 4EC may be applied through properly equipped chemigation systems for weed control in potatoes. Refer to APPLICATION AND CALIBRATION TECHNIQUES FOR SPRINKER IRRIGATION for use directions.

Apply Trifluralin 4EC in 1/2 to 1 acre inch of irrigation water 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 Trifluralin 4EC application. Trifluralin 4EC does not control weeds that have emerged at the time of application. Broadcast 1 pt. per acre to coarse soils and 1 1/2 pts. per acre to medium soil textures. Use 1 1/2 pts. on coarse and medium soils with 2-5% organic matter; use 2 pts. on all soils with 5.1-10% organic matter.

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

TRIFLURALIN 4EC/EPTAM® TANK-MIX

For potatoes grown in Kansas, Minnesota, Nebraska, North Dakota, Oklahoma, South Dakota, Texas, apply after planting, but prior to crop emergence. In areas where potatoes are normally dragged off the mixture should be applied and incorporated up to or immediately following drag off.

Soil texture	Broadcast rate/acre		
	Trifluralin 4EC		Eptam 7E
	Eastern US	Western US	
Coarse	1 pt.	1 pt.	1 3/4-7 pts.*
Medium	1-1 1/2 pts.	1-1 1/2 pts.	1 3/4-7 pts.*
Fine	1-2 pts.	1-1 1/2 pts.	1 3/4-7 pts.*
2 to 5% organic matter	1 1/2 pts.	1 1/2 pts.	1 3/4-7 pts.*
5.1 to 10% organic matter	2 pts.	2 pts.	1 3/4-7 pts.*

*Use higher rates for nutsedge control.

Precautions: Do not graze or feed forage to livestock from fields treated with this mixture.

For potatoes grown in Washington, Idaho, Oregon, apply and incorporate before planting at a broadcast rate of 3/4 pt. of Trifluralin 4EC/acre and 3 1/2 pts. of Eptam 7E/acre on all soils.

Precautions: Do not use this tank-mixture both before and after planting in the same season. Do not use foliage from treated crops for feed or forage. Observe all directions, precautions and limitations on both products' labeling.

RAPE

For use in all states except Alaska. Trifluralin 4EC may be applied in the fall or early spring prior to seeding. Set incorporation equipment to incorporate to a depth of 3 to 4 inches. Apply 1 pint on coarse soil, 1-1/2 pints on medium soil, and 2 pints on fine soil.

SAFFLOWER

Apply and incorporate in the spring before planting or in the fall between October 15 and December 31 at the following:

Soil texture	Broadcast rate/acre	
	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 1/2 pts.	1 1/4-1 1/2 pts.
Fine	2 pts.	1 1/2 pts.
2 to 5% organic matter	1 1/2 pts.	1 1/2 pts.
5.1 to 10% organic matter	2-2 1/2 pts.	2-2 1/2 pts.

Fall application.

For safflower grown in Arizona, California, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming: Apply and incorporate anytime between October 15 and December 31 at a broadcast rate/acre of 1 1/2 pts. on coarse soil, 2 pts. on medium soil, 2 1/2 pts. on fine soil. Ground may be left flat or bedded-up over winter. On bedded ground, knock beds down to desired height before planting, moving some treated soil from tops into furrows. Where soil is left flat over winter, take care during spring bedding operations to prevent turning up untreated soil. Destroy established weeds during seedbed preparation. If weeds become established in furrows due to uncovering of untreated soil during listing, destroy these weeds before planting.

Precautions: Do not apply in the fall to soils which are wet or are subject to prolonged periods of flooding.

SOYBEAN

Apply and incorporate before planting at the following:

	Broadcast rate/acre	
Soil texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 1/2 pts.	1 1/4-1 1/2 pts.
Fine	2 pts.	1 1/2 pts.
2 to 5% organic matter	1 1/2 pts.	1 1/2-2 pts.
5.1 to 10% organic matter	2-2 1/2 pts.*	2 pts.

*Except charcoal soils in Arkansas, Louisiana and Mississippi (see below).

Chemigation Instructions: Trifluralin 4EC may be applied through properly equipped chemigation systems for weed control in soybeans. Refer to APPLICATION AND CALIBRATION TECHNIQUES FOR SPRINKLER IRRIGATION for use directions.

Apply Trifluralin 4EC 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 4EC must be applied within 2 days after planting prior to crop or weed emergence. Trifluralin 4EC does not control established weeds. Soil incorporation is not required when Trifluralin 4EC is applied through chemigation systems. Broadcast 1 1/2 to 2 pts. per acre to coarse and medium soils; 2 to 2 1/2 pts. per acre on fine soils. Use 2 pts. per acre on fine soils with 2-5% organic matter. Use 2 to 2 1/2 pts. per acre on all soil textures with 5.1-10% organic matter. Soil treated with Trifluralin 4EC may be shallow-cultivated without reducing weed control activity.

Charcoal soils in Arkansas, Louisiana and Mississippi.
Newly cleared land often contains high organic matter (5 to 10%) and charcoal which results from burning debris. This tends to bind TRIFLURALIN 4EC reducing its weed control activity. Higher rates are therefore necessary, but increased rates can cause crop injury if charcoal or organic matter is not present. In the burn row a high level of charcoal is present; consequently, poor weed control may result even with an increased rate. Apply and incorporate at a broadcast rate/acre of 1 1/2-2 1/2 pts. on coarse soil, 2 1/2 pts. on medium soil, 3 pts. on fine soil.

Fall application.

Apply anytime between October 15 and December 31. Ground may be left flat or bedded-up over winter. On bedded ground, knock beds down to desired height before planting, moving some treated soil from tops into furrows. Where soil is left flat over winter, take care during spring bedding operations to prevent turning up untreated soil. Destroy established weeds during seedbed preparation. If weeds become established in furrows due to uncovering of untreated soil during listing, destroy these weeds before planting.

In Alabama, Arkansas, northern Florida, Georgia, Louisiana, Mississippi, Missouri bootheel, North Carolina, Oklahoma, South Carolina, Tennessee, Texas: Apply and incorporate at a broadcast rate/acre of 2 pts. on coarse and medium soils and 2 1/2 pts. on fine soil.

In states other than those listed above: Apply and incorporate at a broadcast rate/acre of 1 pt. on coarse soil, 1 1/2 pts. on medium soil and 2 pts. on fine soil, 1 1/2 pts. on coarse soil with 2 to 5% organic matter, 2 to 2 1/2 pts. on soils with 5.1 to 10% organic matter.

Precautions: Do not apply to soils which are wet or subject to prolonged periods of flooding or where rice was grown the previous year.

Special applications.

For the control of Fall Panicum, apply at a broadcast rate/acre of 2 pts. on both coarse and medium soils.

For more complete control of Pigweed and Seedling Johnsongrass in Alabama, Arkansas, Florida, Georgia, Kansas, Louisiana, Mississippi, Missouri, Nebraska, North Carolina, Oklahoma, South Carolina, Tennessee, S. Virginia: Apply at a broadcast rate/acre of 1-1 1/2 pts. on coarse soil, 1 1/2-2 pts. on medium soil, 2 pts. on fine soil (3 pts. in the state of Louisiana are recommended if the soil is fine).

For more complete weed control in the Texas Gulf Coast (limited to Brazoria, Calhoun, Chambers, Fort Bend, Galveston, Harris, Jackson, Jefferson, Liberty, Matagorda, Orange, Victoria, Waller and Wharton counties): Apply up to 2 weeks before planting at a broadcast rate/acre of 1 1/2 pints on coarse soil, 2 pts. on medium soil, 3 pts. on fine soil.

For suppression or partial control of Red Rice in Arkansas, Louisiana, Mississippi, Texas: Apply as directed at double the normal rate the first year and at the normal rate the second year. Apply and incorporate anytime in the spring before planting at the following:

	Broadcast rate/acre	
Soil texture	1st Year	2nd Year
Coarse	2 pts.	1 pt.
Medium	3 pts.	1 1/2 pts.
Fine	4 pts.	2 pts.
2 to 5% organic matter	3 pts.	1 1/2 pts.
5.1 to 10% organic matter	4 pts.	2-2 1/2 pts.

If a combination of high organic matter and charcoal are present, apply in the second year the rates labeled for charcoal soils in Louisiana, Arkansas and Mississippi (1 1/2 to 2 1/2 pts. on coarse soil, 2 1/2 pts. on medium soil, 3 pts. on fine soil).

Crop rotation: The second year plant only those crops for which Trifluralin 4EC has been registered as a preplant treatment, or crop injury may result.

Precautions: Do not plant rice the second year. Rice may be planted the third year.

For the control of Rhizome Johnsongrass in eastern United States and Texas: Apply in a row for two consecutive years according to the program that best fits your cultural practices: As spring application, anytime in spring before planting; as fall application, between October 15 and December 31; or split application, directed under both spring and fall applications.

	Broadcast rate/acre	
Soil texture	Spring or Fall	Split Spring and Fall
Coarse	2 pts.	1 pt.
Medium	3 pts.	1 1/2 pts.
Fine	4 pts.	2 pts.
2 to 5% organic matter	3 pts.	1 1/2 pts.
5.1 to 10% organic matter	4 pts.	2 pts.

Proper preparation of the soil before application and deep incorporation are very important for best results. Use a chisel plow or similar implement to bring rhizomes to the top of the soil. Then follow with a disc two times before application to cut the rhizomes into small (2 to 3 inch) pieces and to destroy any emerged johnsongrass.

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

Cultivation--Some Johnsongrass plants will escape. Timely cultivations during the crop season to remove escaped plants are necessary to obtain commercially acceptable control.

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

For the control of Wild Cane (Shattercane).

Wild Cane can germinate from greater soil depth than most other weed seeds. Several "flushes" or germinating times are common in one season. Commercially acceptable control of Wild Cane can be obtained with increased rates of Trifluralin 4EC.

Land preparation. Work the soil to destroy existing grasses and weeds. Thoroughly mix crop residues into the soil to a depth of 4 to 6 inches.

Application. Apply before planting at a broadcast rate/acre of 1 pt. on coarse soil, 2 pts. on medium soil, 2 1/2 pts. on fine soil.

Incorporation. Deep incorporation is essential to good Wild Cane control. Incorporate thoroughly with a disc set to cut 4 to 6 inches deep and operate in 2 different directions at 4 to 6 mph. Cultivations during the crop season will also contribute to control.

Precautions: Plant soybeans after early season adverse weather conditions have passed; do not plant soybeans deeper than 2 inches. Crop injury in the form of delayed growth may occur under adverse cool, wet weather conditions early in the season when Trifluralin 4EC is used according to these recommendations.

TRIFLURALIN 4EC/SENCOR® OR LEXONE® TANK-MIX

Trifluralin 4EC/Sencor or Lexone controls grasses and weeds controlled by Trifluralin 4EC alone plus additional weeds listed for the mixture. The tank mix can be applied from two weeks before planting up to planting.

Soil texture	Trifluralin 4EC	Broadcast rate/acre: Sencor 50WP/4 or Lexone 50WP/4L	Sencor DF or Lexon DF
Coarse	1 pt.	1/2 lb./pt.	1/3 lb.
Medium	1 1/2 pts.	3/4 lb./pt.	1/2 lb.
Fine	2 pts.	1 lb./pt.	2/3 lb.

Do not use on coarse soils with less than 1% organic matter.

Precautions: Do not plant any crop other than soybeans within 4 months after treatment. Over application, uneven application or improper soil incorporation can result in erratic weed control or crop injury. Seedling disease, cold weather, deep planting, excessive moisture, soil pH over 7.5, high salt concentration or drought may weaken crop seedlings and increase possibility of damage from the application of this tank-mix. These additional factors may also delay crop development or reduce yields when Sencor or Lexone is applied. Observe all cautions and limitations on the Sencor and Lexone labels. Do not use the foliage from soybeans treated with the Trifluralin 4EC/Sencor or Trifluralin 4EC/Lexone tank mix for feed or forage.

Additional Sencor and Lexone precuations: Do not use Sencor or Lexone on Tracy, Semmes, Altona, Vansoy, or Coker 102 soybeans. These varieties are sensitive to Sencor or Lexone and crop injury may result. Seed must be planted at least 1 1/2 inches but not more than 2 inches below the soil surface before a Sencor or Lexone application. Do not apply Sencor or Lexone at these rates more than once per season. Do not replant areas treated with Sencor or Lexone with any crop other than soybeans within 4 months after treatment. Injury to soybeans may occur if Sencor or Lexone is used on soils having a calcareous surface or pH of 7.5 or higher, or if used in conjunction with soil-applied organic phosphate pesticides.

For the control of Rhizome Johnsongrass.

Apply up to two weeks before planting for two consecutive years at the following:

Soil texture	Trifluralin 4EC	Broadcast rate/acre: Sencor 50WP/4 or Lexone 50WP/4L	Sencor DF or Lexon DF
Coarse	2 pts.	1/2 lb./pt.	1/3 lb.
Medium	3 pts.	3/4 lb./pt.	1/2 lb.
Fine	4 pts.	1 lb./pt.	2/3 lb.

Do not use on coarse soils with less than 1% organic matter.

Read and follow all additional precautions listed for Trifluralin 4EC/Sencor or Lexone tank mix above.

TRIFLURALIN 4EC/CANOPY® TANK MIX (Do Not Use in California)

Apply Trifluralin 4EC/Canopy as a preplant incorporated tank-mix treatment. Follow recommended soil preparation, application and incorporation procedures for Trifluralin 4EC. Plant soybeans within two (2) weeks after application.

Soil Texture	Broadcast rate/acre: Trifluralin 4EC	Canopy Dispersible Granules 0.5-3% O.M. or 3-5% O.M.	
Coarse	1 pt.	6-8 oz.	8-10 oz.
Medium	1 1/2 pts.	8-10 oz.	10-12 oz.
Fine	1 2/3 pts.	10-12 oz.	12-14 oz.

Do not apply Canopy to soil with less than 1/2% organic matter.

Use higher rates of Canopy on soils with higher organic matter or heavy pressure from large deep germinating weed seeds.

Where Canopy is applied, plant soybean seed 1 1/2 to 2" deep on a flat or raised seedbed only, or crop injury may occur.

Soybean injury may occur where Canopy is applied if excessive rainfall occurs after application but before soybeans germinate.

Precautions: Read the Canopy label carefully for cautions and precautions relating to environmental hazards, planting of rotation crops, sprayer contamination and cleanup, soil pH, organic matter and soil texture use restrictions, soybean variety planting restrictions, restrictions where Atrazine or Scepter were used the previous year, restrictions concerning use with organic phosphate pesticides, grazing restrictions, and other directions, precautions and limitations before applying the Trifluralin 4EC/Canopy tank-mix.

TRIFLURALIN 4EC/PREVIEW® TANK-MIX (Do Not Use in California)

Apply Trifluralin 4EC/Preview as a preplant incorporated tank-mix treatment. Follow recommended soil preparation, application, and incorporation procedures for Trifluralin 4EC. Plant soybeans within two (2) weeks after application.

Soil Texture	Broadcast rate/acre: Trifluralin 4EC	Preview Dispersible Granules 0.5-3% O.M. or 3-5% O.M.	
Coarse	1 pt.	6 oz.	7 oz.
Medium	1 1/2 pts.	7 oz.	8 oz.
Fine	1 2/3 pts.	8 oz.	9-10 oz.

Do not apply Preview to soil with less than 1/2% organic matter.

Use higher rates of Preview on soils with higher organic matter or heavy pressure from large deep germinating weed seeds.

Where Preview is applied, plant soybean seed 1 1/2 to 2" deep on a flat or raised seedbed only, or crop injury may occur.

Soybean injury may occur where Preview is applied if excessive rainfall occurs after application but before soybeans germinate.

Precautions: Read the Preview label carefully for cautions and precautions relating to environmental hazards, planting of rotation crops, sprayer contamination and cleanup, soil pH, organic matter and soil texture use restrictions, soybean variety planting restrictions, restrictions where Atrazine or Scepter were used the previous year, restrictions concerning use with organic phosphate pesticides, grazing restrictions, and other directions, precautions and limitations before applying the Trifluralin 4EC/Preview tank-mix.

Apply as a spring preplant incorporated treatment.

	Broadcast rate/acre		
Soil texture	Trifluralin 4EC	Amiben 2S or	Amiben DS
Coarse	1 pt.	4-6 qts.	2.4-3.6 lbs.
Medium	1 1/2 pts.	4-6 qts.	2.4-3.6 lbs.
Fine	2 pts.	4-6 qts.	2.4-3.6 lbs.

Use the higher rates of Amiben where you expect heavy populations of smartweed, velvetleaf, ragweed, wild mustard and black nightshade. Observe all directions, precautions and limitations on both producs' labeling.

TRIFLURALIN 4EC/AMIBEN/SENCOR OR LEXONE TANK-MIX

The Trifluralin 4EC/Amiben/Sencor or Lexone tank mix effectively controls all weeds listed for Trifluralin 4EC/Amiben and Trifluralin 4EC/Sencor or Lexone tank mixes.

Follow recommended soil preparation, application, and incorporation procedures for Trifluralin 4EC. The Trifluralin 4EC/Amiben/Sencor or Lexone mix may be applied from several days prior to planting up to planting in 10 to 40 gallons of water per acre. Use screens no finer than 50 mesh.

Apply the Trifluralin 4EC/Amiben/Sencor or Lexone tank mix at the following:

	Broadcast rates/acre			
Soil Texture	Trifluralin 4EC	Amiben 2S	Lexone 50WP/4L or Sencor 50WP/4	Lexone DF or Sencor DF
Coarse[a]	1 pt.	3-4 qts.[b]	1/2 lbs./pts.	1/3 lb.
Medium	1 1/2 pts.	3-4 qts.[b]	1/2-3/4 lbs/pts.[c]	1/3-1/2 lbs.[c]
Fine	2 pts.	4-5 qts.	3/4 lbs./pts.[c]	1/2 lb.[c]

[a]Do not use Sencor or Lexone on coarse soils with less than 1% organic matter.
[b]Use the higher rate of Amiben when velvetleaf or black nightshade is a problem.
[c]On Clarion/Webster soils in Minnesota and Iowa or on similar alkaline (calcareous) soils with a pH of 7.5 or above, apply Sencor or Lexone at the rates listed below:

	Lexone 50WP/4L or Sencor WP/4	Lexone DF or Sencor DF
Soil Texture		
Medium	1/2 lbs./pts.	1/3 lb.
Fine	1/2-3/4 lbs/pts.[d]	1/3-1/2 lb.[d]

[d]Use the higher rate only where soil pH is less than 7.5 and where weed pressure is heavy.

Additional precautions: The Trifluralin 4EC/Amiben/Sencor or Lexone tank mix will not harm the treated crop when applied according to directions and under normal growing conditions. However, overapplication, uneven application or improper soil incorporation of the tank mix can result in erratic weed control or crop injury. Additional stress factors are seedling disease, cold weather, deep planting, excessive moisture, soil pH over 7.5, high salt concentration, or drought. These additional factors may weaken crop seedlings, increase the possibility of damage from the tank mix, and may also delay crop development or reduce yields. Observe all cautions and limitations of all products used in mixtures. Do not use the foliage from soybeans treated with the Trifluralin 4EC/Amiben/Sencor or Lexone tank mix for feed or forage.

TRIFLURALIN 4EC/VERNAM® TANK-MIX

Apply up to 10 days prior to planting at the following:

	Broadcast rate/acre	
Soil texture	Trifluralin 4EC	Vernam 7E
Coarse	1 pt.	1 3/4-2 1/3 pts.
Medium	1 1/2 pts.	2 1/3-3 pts.*
Fine	2 pts.	3-3 1/2 pts.

*Use higher rates for nutsedge, wild cane and velvetleaf control. Observe all directions, precautions and limitations on both products' labeling.

TRIFLURALIN 4EC PREPLANT INCORPORATED FOLLOWED BY OVERLAY TREATMENTS (Do Not Use in California)

Apply Trifluralin 4EC as a preplant incorporated treatment. Additional weeds tolerant to trifluralin may be controlled by using overlay preemergence applications of Amiben, Canopy, Dual, Gemini, Lasso, Lexone, Lorox Plus, Preview, Scepter or Sencor. Consult these product labels for additional weeds controlled, application directions and precautions before use.

TRIFLURALIN 4EC PREPLANT INCORPORATED FOLLOWED BY POST-EMERGENCE TREATMENTS (Do Not Use in California)

Apply Trifluralin 4EC as a preplant incorporated treatment. Additional weeds tolerant to trifluralin may be controlled by using post-emergence applications of Basagran, Blazer, Classic, Scepter or Tackle. Consult these product labels for additional weeds controlled, application directions and precautions before use.

SUGAR BEETS

Apply as a broadcast, over-the-top spray to plants immediately after blocking or thinning when plants are between 2 and 6 inches tall. Exposed beet roots should be covered with soil prior to application to reduce possibilities of girdling. Care should be taken that incorporation machinery does not damage the taproot.

	Broadcast rate/acre	
Soil texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 1/2 pts.	1 1/4-1 1/2 pts.
Fine	1 1/2 pts.	1 1/2 pts.

Special application.

Incorporation with a tine-tooth harrow in California, Colorado, Idaho, Kansas, Montana, Nebraska, Oregon, Texas, Utah, Washington, Wyoming. A properly operated tine-tooth harrow can provide adequate incorporation of the herbicide for effective weed control in sugar beets. Operate the tine-tooth harrow two times over the field in opposite directions at a speed of 3 to 6 mph and set the harrow to cut 1 to 2 inches deep. Care should be taken to insure that the tine-tooth harrow does not damage the sugar beet taproot.

SUGARCANE

Use restricted to eastern United States.

Plant Cane

Apply and incorporate twice a year at a broadcast rate/acre of 2 to 4 pts. for all soil textures. Make the first application in the fall on firmly packed beds immediately after the seed pieces are planted.

Make the second application in the spring before or shortly after the cane emerges. Loosen rain-packed beds 2 to 3 inches deep before the spring application. Care should be taken so that incorporation machinery does not damage the seed pieces or emerging shoots.

Plant and Ratoon Cane (grown in Louisiana and Texas only).

Apply and incorporate at a broadcast rate/acre of 2 to 4 pts. for all soil textures. Make application in the spring from before or shortly after the cane emerges up to layby. Make application after the beds have been shaved or false shaved. Loosen rain-packed bed 2 to 3 inches deep before application. Care should be taken so that incorporation machinery does not damage seed pieces or emerging roots.

Post-plant in Hawaii (only for control of most annual grasses including guineagrass).

Apply to surface after planting (for plant cane) or after harvesting (for ratoon cane) before weeds and cane emerge at a broadcast rate/acre of 6 to 8 pts. for all soil textures. In plant cane the beds should be formed or rolled before application. In ratoon cane, the crop residue should be removed before application. If large amounts of crop residues are present, Trifluralin 4EC will not be effective. Apply just before anticipated rainfall or sprinkle irrigate immediately after application.

Itchgrass control (in Louisiana only).

Apply and incorporate on either plant or ratoon cane at a broadcast rate/acre of 4 pts. for all soil textures. Apply in the spring from before or shortly after the cane emerges up to layby. Follow directions above for sugarcane layby application in Louisiana and Texas.

SUNFLOWER

Apply and incorporate in the spring or in the fall between October 15 and December 31 at the following:

	Broadcast rate/acre	
Soil texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 1/2 pts.	1 1/4-1 1/2 pts.
Fine	2 pts.	1 1/2 pts.
2 to 5% organic matter	1 1/2-2 pts.	1 1/2-2 pts.
5.1 to 10% organic matter	2 pts.	2 pts.

TRIFLURALIN 4EC/AMIBEN® TANK-MIX OR OVERLAY

Tank-mix: Apply and incorporate prior to planting.

Overlay: Apply Amiben 2S in band or broadcast over sunflowers at planting in fields where Trifluralin 4EC has been incorporated prior to planting.

	Broadcast rate/acre	
Soil texture	Trifluralin 4EC	Amiben 2S
Coarse	1 pt.	4 qts.
Medium	1 1/2 pts.	4-6 qts.*
Fine	2 pts.	4-6 qts.*

*Use higher rates for best control of Mustard, Common Ragweed or Black Nightshade.

If sufficient rain does not fall within 7 days after a pre-emergence application of Amiben, but there is enough soil moisture, a light cultivation with a rotary hoe or similar tool will uproot these small broadleaf weeds and grasses.
In coarse soil heavy rains may move incorporated Amiben below the weed seed germinating zone; erratic weed control may result.

TOMATOES

For direct-seeded tomatoes, apply at blocking or thinning as a directed spray to soil between the rows and beneath the plants, and incorporate.

For transplant, apply and incorporate before transplanting. Do not apply after transplanting.

	Broadcast rate/acre	
Soil texture	Eastern US	Western US
Coarse	1 pt.	1 pt.
Medium	1 1/2 pts.	1 1/4-1 1/2 pts.
Fine	2 pts.	1 1/2 pts.
2 to 5% organic matter	1 1/2 pts.	1 1/2-2 pts.
5.1 to 10% organic matter	2 pts.	2 pts.

TREES AND VINEYARDS

EASTERN US
For new planting of vineyards, citrus and pecan trees, apply and incorporate before planting at the following:

	Broadcast rate/acre
Soil texture	
Coarse	1 pt.
Medium	1 1/2 pts.
Fine	2 pts.
2 to 5% organic matter	1 1/2 pts.
5.1 to 10% organic matter	2 pts.

For non-bearing established plantings of citrus and pecan trees and bearing plantings of grapefruit, lemon, orange, pecan, tangelo, tangerine trees, apply at a broadcast rate/acre of 2 to 4 pts. for all soil textures. Apply as a directed spray to soil around the trees and use incorporation methods not injurious to the trees. For continued weed control in citrus area, apply twice a year at an interval of approximately 4 to 6 months.

WESTERN US
For new plantings of almond, apricot, citrus, nectarine, peach, pecan, walnut trees, apply and incorporate before planting at the following:

Soil texture	Broadcast rate/acre
Coarse	1 pt.
Medium	1 1/4-1 1/2 pts.
Fine	1 1/2 pts.
2 to 5% organic matter	1-1 1/2 pts.
5.1 to 10% organic matter	2 pts.

For new plantings of vineyards, apply before planting at the following:

Soil texture	Broadcast rate/acre
Coarse	1-1 1/2 pts.
Medium	1 1/2-3 pts.
Fine	3-4 pts.
2 to 10% organic matter	3-4 pts.

Do not use more than 2 pts./acre on heat-treated grape rootings.

For post-plant applications on bearing and non-bearing established plantings of vineyards, almonds, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, plum, prune, tangelo, tangerine and walnut trees, apply at a broadcast rate/acre of 2 to 4 pts. for all soil textures. Apply as a directed spray to the soil around the trees or vines and use incorporation methods not injurious to the trees or vines. Do not apply to vineyards within 60 days of harvest. For continued weed control in citrus trees, apply twice a year at an interval of about 4 to 6 months.

Special application.

For Rhizome Johnsongrass control (Western US only).
Commercially acceptable control of Rhizome Johnsongrass can be obtained with post-plant applications in bearing and non-bearing established plantings of vineyards, almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, tangelo, tangerines, and walnut trees. Work the soil thoroughly to bring the rhizomes nearer the surface. Apply for two years in a row at a broadcast rate/acre of 4 pts. on all soil textures each year. Incorporate thoroughly with a disc set to cut 4 to 6 inches deep and operate 2 times at 4 to 6 mph. Some Johnsongrass plants will escape. Timely cultivations are necessary.

Precautions: Do not use the 2 qt. rate on new plantings; do not apply to vineyards within 6 months of harvest; do not interplant orchards or vineyards with other crops; if the Trifluralin 4EC treated vineyards and orchards are diverted to other crop uses, plant only those crops for which Trifluralin 4EC has been registered as a preplant treatment.

For Field Bindweed control in vineyards, almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, tangelo, tangerine, walnut trees in California only.

Apply in the spring with a specially designed spray blade which applies at a soil depth of 4 to 6 inches at a broadcast rate/acre of 4 pts. on all soil textures in 40-80 gallons of water/acre. Destroy all weeds and grasses with soil tillage before applying.

Precautions: Some soils develop cracks as they dry after rainfall or irrigation and Field Bindweed may emerge. Prevent or eliminate cracks by shallow discing or other tillage.

WHEAT

WHEAT (WINTER) grown in Idaho, Oregon and Washington.

Apply any time during a period from 3 weeks up to immediately prior to planting at a broadcast rate/acre of 1 1/2 pts. on coarse and medium soils and 2 pts. on fine soils. Incorporate, with a flexible tine-tooth harrow set to cut 1 to 2 inches deep and operate at 3 to 6 mph, one time within 24 hours after application and a second time, in a different direction, prior to planting. Do not till the soil with a disc after the material has been incorporated with a flexible tine harrow.

Precaution: Wheat planted in direct contact with treated soil may suffer crop injury in the form of delayed emergence and development. Use deep or semi-deep furrow drills.

WHEAT (WINTER) fallow soil application in Washington and Oregon.

Apply any time from May to September prior to the fall planting at a broadcast rate/acre of 1 1/2 pts. on coarse and medium soils and 2 pts. on fine soil. Incorporate, with a flexible tine-tooth harrow set to cut 1 to 2 inches deep and operate at 3 to 6 mph, one time within 24 hours after application and a second time, in a different direction, prior to planting. Do not till the soil with a disc after the material has been incorporate with a flexible tine harrow.

Precaution: Wheat planted in direct contact with treated soil may suffer crop injury in the form of delayed emergence and development. Use deep or semi-deep furrow drills.

WHEAT (SPRING AND DURUM)

Trifluralin 4EC is recommended as a postplant incorporated treatment to control foxtail (pigeongrass).

Apply Trifluralin 4EC at a broadcast rate of 1 pint per acre on coarse and medium soils and 1 1/2 pts. on fine soils.

Plant 2 to 3 inches deep in a well-tilled seedbed. Apply Trifluralin 4EC after seeding but before the crop emerges. To incorporate, use flex-tine or diamond harrows operated two times in different directions, at speeds of at least 5 mph. Incorporate by operating equipment 1 to 1 1/2 inches deep. Application and the first incorporation should be done in the same operation if possible. Both incorporations must be done within 24 hours.