

PM 23

10163-99

9/18/98

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

Ms. Carolyn A. Collins  
Gowan Company  
P.O. Box 5569  
Yuma, AZ 85366-5569

SEP 18 1998

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Dear Ms. Collins:

**SUBJECT:** Amended Labels  
Gowan Trifluralin 5  
EPA Registration No. 10163-99 and  
Gowan Trifluralin 4  
EPA Registration No. 10163-101  
Submissions Dated April 13, 1998

The labels referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, are accepted with the following provisions.

1. Delete Pistachio Use Directions from the labels. According to CFR 40 Section 180.41, pistachios is not listed as one of the approved Crop Group 14 commodities listed in Crop Group 14.

Please submit one copy of your final printed labels incorporating the above changes before you release these product for shipment.

Sincerely yours,

Joanne I. Miller  
Product Manager (23)  
Herbicide Branch  
Registration Division (75057C)

Enclosure

McCoake  
9/18/98



Recycled/Recyclable  
Printed with Soy/Canola Ink on paper that  
contains at least 50% recycled fiber

2921

ACCEPTED  
with COMMENTS  
in EPA Letter Dated

SEP 18 1998

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
amended, for the pesticide  
registered under EPA Reg. No.  
10163-99

# GOWAN TRIFLURALIN 5 HERBICIDE

<b>ACTIVE INGREDIENT:</b>		<b>% BY WT.</b>
Trifluralin $\alpha, \alpha, \alpha$ -trifluoro-2, 6-dinitro-N, N-dipropyl-p-toluidine)	.....	50.3%
<b>INERT INGREDIENTS</b>	.....	49.2%
		<b>TOTAL 100.0%</b>

Contains 5 pounds of Trifluralin per gallon.

## KEEP OUT OF REACH OF CHILDREN WARNING AVISO

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

### STATEMENT OF PRACTICAL TREATMENT

**IF SWALLOWED:** Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering syrup of ipecac. Do not induce vomiting or give anything by mouth to an unconscious person.

**IF INHALED:** Remove victim to fresh air. Apply artificial respiration if indicated.

**IF IN EYES:** Flush eyes with plenty of clear water for at least 15 minutes. Get medical attention.

**IF ON SKIN:** Wash with soap and water.

**FOR EMERGENCY MEDICAL RESPONSE AND HAZARD COMMUNICATIONS ONLY,  
CALL HAZARD INFORMATION SERVICES 1-800-228-5635 EXT. 283.**

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS WARNING - AVISO

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Harmful if swallowed, absorbed through skin, or inhaled. Avoid breathing spray mist. This product may cause skin sensitization reactions in some people.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as Barrier Laminate or Viton  $\geq$  14 mils
- Shoes plus socks
- Protective eyewear

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

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

### USER SAFETY RECOMMENDATIONS

Users should:

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

### ENVIRONMENTAL HAZARDS

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

### PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

NET CONTENTS \_\_\_\_\_ GALLONS



EPA Reg. No. 10163-99  
EPA Est. No. 67545-AZ-1

Gowan Company  
P.O. Box 5569  
Yuma, AZ 85366-5569

**DIRECTIONS FOR USE**

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

**AGRICULTURAL USE REQUIREMENTS**

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

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours. Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Chemical-resistant gloves, such as Barrier Laminate or Viton  $\geq 14$  mils
- Shoes plus socks
- Protective eyewear

Gowan Trifluralin 5 is a preemergence herbicide which is incorporated into the soil to provide long-lasting control of many annual grasses and broadleaf weeds. Gowan Trifluralin 5 controls weeds as they germinate. Gowan Trifluralin 5 will not control established weeds.

**WEEDS AND GRASSES CONTROLLED BY GOWAN TRIFLURALIN 5**

**GRASSES**

- Annual bluegrass
- Barnyardgrass (Watergrass)
- Brachiaria (Signalgrass)
- Bromegrass (Cheatgrass) (Downy brome)
- Cheat (Chess)
- Crabgrass (Large crabgrass) (Smooth crabgrass)
- Foxtail (Bottlegrass) (Bristlegrass) (Giant foxtail) (Green foxtail) \*\* (Foxtail millet) \*\* (Pigeongrass) \*\* (Robust foxtail) (Yellow foxtail)
- Goosegrass (Silver crabgrass) (Silvergrass) (Wiregrass) (Yardgrass)

- Poa annua*
- Echinochloa* sp.
- Brachiaria* sp.
- Bromus tectorum*
- Bromus secalinus*
- Digitaria* spp.
- Setaria* spp.
- Eleusine indica*

- Johnsongrass (from seed) (Rhizome—see COTTON and SOYBEAN sections for special instructions)
- Jungle rice
- Panicum (Fall panicum (Spreading panicgrass—see COTTON and SOYBEAN sections for special instructions) Guineagrass (See SUGARCANE section for special instructions) Texas panicum (Buffalograss) (Coloradograss)
- Itchgrass (Raoulgrass) (See SUGARCANE section for special instructions)
- Pandanus (See SOYBEAN section for suppression or partial control directions)
- Sandbur (Burggrass)
- Sprangletop
- Sinkgrass (Lovegrass)
- Wild cane (Shattercane) (See SOYBEAN section for special instructions)
- Wild oat (Preplant only. Not for fall applications for spring seeded cereals.)
- Woolly cupgrass
- Sorghum halepense*
- Echinochloa colonum*
- Panicum dichotomiflorum*
- Panicum maximum*
- Panicum texanum*
- Rottboellia exaltata*
- Oryza sativa*
- Cenchrus incertus*
- Leptochloa filiformis*
- Eragrostis cilianensis*
- Sorghum bicolor*

**BROADLEAF WEEDS**

- Carpetweed
- Chickweed
- Field bindweed (See FRUIT AND NUT CROPS AND VINEYARDS section for special instructions)
- Florida pusley (Florida purslane) (Mexican clover) (Pusley)
- Goosefoot
- Henbit (fall application only)
- Knotweed
- Kochia (Fireweed) (Mexican fireweed)

- Mollugo verticillata*
- Stellaria media*
- Convolvulus arvensis*
- Richardia scabra*
- Chenopodium hybridum*
- Lamium amplexicaule*
- Polygonum aviculare*
- Kochia scoparia*

- Lambsquarters
- Pigweed (Carelessweed) (Prostrate pigweed) (Redroot) (Rough pigweed) (Spiny pigweed)
- Puncturevine (Western U.S. only) (Caltrop) (Goathead)
- Purslane
- Russian thistle (Tumbleweed)
- Stinging nettle (Nettle)
- Chenopodium album*
- Amaranthus* spp.
- Tribulus terrestris*
- Portulaca oleracea*
- Salsola kali*
- Urtica dioica*

\*\* Resistance: In North Dakota, South Dakota, and Minnesota resistance to Trifluralin has been noted in pigeon grass and green foxtail. If you suspect resistance, do not use Trifluralin for control of these weeds in these states. Contact your Gowan Company representative or local authority for information regarding pest resistance.

**SOIL PREPARATION**

**Crop Residues or Existing Weeds:** Ground cover, such as crop residues or existing weeds, can interfere with the incorporation of Gowan Trifluralin 5 into the soil. A manageable level of such ground cover will allow the Gowan Trifluralin 5 to be uniformly incorporated into the top 2 to 3 inches of soil. If the level of the ground cover is such that this cannot be done, you must till the soil prior to application of this product.

**Roughness:** The soil surface should be smooth enough so that you can operate a sprayer and incorporation equipment efficiently and at speeds which ensure uniform application and incorporation.

**General Soil Conditions:** To assure uniform incorporation, soil moisture conditions should be such that large clods can be broken up during the incorporation process.

**SOIL TEXTURE GUIDE**

The amount of Gowan Trifluralin 5 you apply will vary with the soil texture and organic matter. A fine textured soil will require more per acre than a coarse soil. Choose the proper rate for each application based on the following soil texture groups and specific crop recommendations. Do not exceed recommended rates.

Soil Texture	Soil Classification
Coarse Soils (Light)	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 predominately sand or silt, they are usually classified as medium textured soils. If they are predominately clay, they are usually classified as fine textured soils.

**MIXING AND APPLICATION DIRECTIONS**

**Gowan Trifluralin 5 Alone in Water:** Start with a clean spray tank. Fill sprayer 1/2 to 3/4 full with clean water. Start agitation. Add correct quantity of Gowan Trifluralin 5. Continue agitation and finish filling tank.

**Gowan Trifluralin 5 Tank Mix in Water:** Vigorous, continuous agitation is required for all tank mixes. (Sparger pipe agitators generally provide the best agitation in spray tanks.) Avoid stirring or splashing air into the mixture during filling to prevent foaming. To do this, place the end of the fill pipe below the surface of the water in the spray tank. Do not allow the mixture to siphon back into the water source.

**Mixing Order:** Fill the tank 1/4 to 1/2 full with clean water. Start the agitation. Add dry flowables, wettable powders (WP), aqueous suspensions (AS), flowables (F), and liquids (L) to the water and agitate until the product(s) are completely dispersed in the water. Allow additional mixing and dispersion time when using dry flowable products. Continue agitation and fill tank to 3/4 full, add the Gowan Trifluralin 5, mix thoroughly. Then add any solution (S) formulations, agitate and finish filling. Maintain agitation during filling and through application. If spraying and agitation must be stopped before the tank is empty, the materials may settle to the bottom. In this case, it is important to resuspend all of the material in the bottom of the tank before continuing the spray application. A sparger agitator is particularly useful for this purpose. Sometimes it is more difficult to resuspend settled material than it is to suspend it originally.

Read and carefully follow all label instructions for each material added to the tank. Premixing dry and flowable formulations with water (slurrying) and pouring the slurry through a 20 or 35 mesh wetting screen in the top of the tank will help assure good initial dispersion in the tank water. Line screens in the tank should be no finer than 50 mesh (100 mesh is finer than 50 mesh).

If you see a buildup of material on the walls of the spray tank, wash the tank with soapy water between fillings. Rinse and continue the spraying operation. Clean the tank, lines, and screens thoroughly after use.

As the spray volume decreases, the importance of accurate calibration and uniform application increases. Check the sprayer daily to ensure proper calibration and uniform application. Do not apply Gowan Trifluralin 5 when the wind can cause drifting of spray particles which can result in non-uniform application. Gowan Trifluralin 5 should not be applied to soils which are wet or are subject to prolonged periods of flooding as poor weed control may result.

**Ground Application:** Apply Gowan Trifluralin 5 in 5 to 40 gallons of water or liquid fertilizer per acre (broadcast basis), using any properly calibrated, low pressure herbicide sprayer that will apply the spray uniformly.

**Aerial Application:** Apply Gowan Trifluralin 5 in 5 to 10 gallons of water or liquid fertilizer per acre. Adjust pump pressure, nozzle arrangements, speed and height to provide a uniform application to the soil surface. Use swath markers or flagmen to assure proper application spray widths.

**SPRAY DRIFT LABELING**

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outermost nozzles on the boom must not exceed 1/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

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

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

**Information on Droplet Size**

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

**Controlling Droplet Size**

- Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher-rated flows produce larger droplets.
- Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles - Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

**Boom Length**

For some use patterns, reducing the effective boom length to less than 1/2 of the wingspan or rotor length may further reduce drift without reducing swath width.

**Application Height**

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

**Swath Adjustment**

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

**Wind**

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

**Temperature and Humidity**

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

**Temperature Inversions**

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**Sensitive Areas**

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

**INCORPORATION DIRECTIONS**

**Incorporation Equipment—General Directions:** Use incorporation equipment that mixes Gowan Trifluralin 5 into the top 2 to 3 inches of the final seedbed, or erratic weed control and/or crop injury may result. Incorporation equipment such as a disc will mix approximately half as deep as the equipment is set to operate. For example, a disc set to cut 4 inches deep will incorporate most of the Gowan Trifluralin 5 within the top 2 inches of soil.

**Incorporation Before Planting:** Gowan Trifluralin 5 must be incorporated one time within 24 hours after application. Then any time prior to planting, a second incorporation is necessary, this time running the equipment in a different direction from the first. You should incorporate the Gowan Trifluralin 5 uniformly into the top 2 to 3 inches of the final seedbed.

**Incorporation After Planting:** Check specific crop for incorporation directions after planting.

**Incorporation in Bedded Culture:** For effective weed control, Gowan Trifluralin 5 needs to be incorporated into the top 2 to 3 inches of the final seedbed.

**Application prior to bedding:** Apply Gowan Trifluralin 5 and incorporate it one time with recommended equipment. The bedding operation serves as the second incorporation. Do not expose untreated soil during post-bedding operations.\*

**Application after bedding:** Knock off beds to planting height before applying Gowan Trifluralin 5. Apply and incorporate it with recommended equipment that will conform to the bed shape. Do not leave treated soil exposed.\*

\*Avoid removal of untreated soil from the seed bed before or during the planting operation. This would expose untreated soil, allowing weeds to germinate in the drill row.

**Recommended Equipment:** Any recommended incorporation tool may be used alone or in combination with any other recommended tool. Two incorporation passes are required unless specifically stated. The second incorporation should not be deeper than the first.

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

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

**Combination Seedbed Conditioners:** Set to cut 3 to 4 inches deep and operate at a speed of at least 5 mph. These implements are defined as three or more tillage devices combined and used as a single tool. For example, 2 to 3 rows of field cultivator C- or S-shaped shanks with an effective sweep spacing of 6 to 9 inches (staggered so that no soil is left unturned), followed by a spike-tooth or flexline harrow, followed by a ground-driven reel or basket. Gowan Trifluralin 5 can be incorporated with one pass when using combination seedbed conditioners when soil conditions allow for optimum mixing of soil. Soil conditions such as excessive trash, roughness, cloddiness, moisture extremes, or high clay content which prevent optimum soil mixing action will require two incorporations.

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

**Bed Conditioner (Do-All):** Set to cut 2 to 4 inches deep and operate at 4 to 6 mph. The do-all is adequate for use on coarse and medium textured soils only. When using the do-all in bedded culture, only one incorporation pass is required. However, two passes with a do-all are required in flat planted culture.

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

**P.T.O. Driven Equipment (tillers, cultivators, hoes):** Adjust to incorporate into the top 2 to 3 inches of the seedbed with rotors spaced to provide a clean sweep of the soil. Only one incorporation is necessary. P.T.O. driven equipment should not be operated at a speed greater than 4 mph. Other equipment, including the flexible tine-tooth harrow (Flexline, Melroe), is also recommended but only for the special programs for which it is specified in this label.

**CULTIVATION AFTER PLANTING**

Soil treated with Gowan Trifluralin 5 may be shallow cultivated without reducing the product's weed control activity. Do not cultivate deeper than the treated soil since this may bring untreated soil to the surface and poor weed control may result.

## FALL APPLICATION

**General: (Areas receiving more than 20" average annual rainfall)**

See specific crop for recommendations. For all crops for which there are no specific fall application instructions and for which Gowan Trifluralin 5 is recommended as a preemergence application, use the rates listed for spring application. Do not apply Gowan Trifluralin 5 in the fall for sugarbeets, potatoes, and direct-seeded tomatoes.

In most states apply and incorporate Gowan Trifluralin 5 anytime between October 15 and December 31. In Minnesota, Montana, North and South Dakota, and California, apply and incorporate anytime between September 1 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 beds into furrows. Where soil is left 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. Do not apply in the fall to soils which are wet, are subject to prolonged periods of flooding, or where rice was grown the previous year.

### CROP RECOMMENDATIONS

These recommendations are given as the broadcast rates of Gowan Trifluralin 5 per acre. For band applications, decrease the amount in proportion to the amount of surface treated per acre. Apply any time after January 1 when the soil can be worked and is suitable for good incorporation. Gowan Trifluralin 5 can be applied in the fall—see above paragraph and specific crops for recommendations. Where a rate range is shown, use the lower rate for coarser soils or soils with lower organic matter. Gowan Trifluralin 5 should not be used on soils containing more than 10% organic matter.

### COTTON—GOWAN TRIFLURALIN 5 ALONE

Gowan Trifluralin 5 can be applied and incorporated before or at planting, immediately after planting, and from four true leaf stage to layby.

**COTTON—Preemergence:**

**Broadcast Rates per Acre:**

Soil Texture	Areas receiving less than 20" average annual rainfall*	Areas receiving more than 20" average annual rainfall*
Coarse	0.8 Pint	0.8 Pint
Medium	1.0-1.2 Pints	1.2 Pints
Fine	1.2 Pints	1.6 Pints

\*Use 1.2 pints per acre on coarse and medium soils and 1.6 pints on fine soils with 2-5% organic matter; use 1 to 2 pints on all soils with 5-10% organic matter.

**Incorporation with Bedding Implements:** Bedding implements (listers and hippers) may be used to incorporate Gowan Trifluralin 5 into the soil for weed control in cotton. Since bedding equipment does not provide thorough incorporation under all conditions it is important to closely follow the directions below to optimize weed control performance. Weed control resulting from single pass incorporation with bedding implements will be reduced compared to conventional double pass incorporation. Apply the amount of Gowan Trifluralin 5 recommended on the label.

**Soil Preparation:** See general Soil Preparation Section.

**Bedder Use Directions:** Either a lister or disk bedder may be used. Operate the bedder in the manner recommended by the equipment manufacturer in order to bed to the desired height. A ripper shank, sweep or chisel shank should be mounted on the bedder behind the spray nozzles and ahead of the bedder tool to help distribute Gowan Trifluralin 5 in the center of the bed. The use of bed tillage equipment such as rolling cultivators, P.T.O. driven rod weathers or bed conditioners after the bedding operation will provide additional mixing of the soil.

Weather conditions, cultural practices, bed tillage and planting procedures will determine location of the Gowan Trifluralin 5 in the soil. Weed control obtained will be dependent upon location of the Gowan Trifluralin 5 at the time of planting.

If Gowan Trifluralin 5 is moved during bed tillage or planting, a band application of Gowan Trifluralin 5 at planting or a postemergence application of Gowan Trifluralin 5 may be required to ensure good weed control.

**Precautions:** Do not incorporate with the bedder if the soil is too wet for good mixing.

**COTTON—Postplant:** When incorporating Gowan Trifluralin 5 after planting (postplant), be careful not to disturb the seed.

**COTTON—Postemergence:**

**Directions for Use:** Gowan Trifluralin 5 can be used as a post emergence soil incorporated application in cotton. Gowan Trifluralin 5 may be applied after final bed preparation any time from the four true leaf stage up to layby, but not less than 90 days before harvest.

**Application Directions:** Gowan Trifluralin 5 may be applied to cotton from the four true leaf stage as either a broadcast application or as a post directed spray. Drop nozzles should be used if cotton foliage prevents uniform coverage of the soil surface. Refer to the Gowan Trifluralin 5 label for ground and aerial application directions.

**Application Rates:** Apply Gowan Trifluralin 5 to cotton at the following broadcast rates per acre:

Soil Texture	Gowan Trifluralin 5
Coarse	0.6-0.8 Pint
Medium	0.8-1.2 Pints
Fine	1.2-1.6 Pints

**Incorporation Directions:** Final beds should be established before the Gowan Trifluralin 5 application is made. The soil surface should be free of existing weeds and excessive trash or clods. Gowan Trifluralin 5 should be incorporated within 24 hours following application and may be accomplished in one pass with a sweep type or a rolling cultivator. The sweep type cultivator should have 3 to 5 sweeps per row middle and be operated at 6 to 8 mph. Set sweeps to provide maximum soil mixture and to ensure movement of treated soil into the crop row. One pass with the sweep cultivator properly set will provide adequate soil incorporation. The rolling cultivator should be set to provide maximum soil mixing and to ensure movement of treated soil into the crop row. The rolling cultivator should be operated at 6 to 8 mph. Care should be taken to ensure that middle sweeps do not expose untreated soil. One pass with the rolling cultivator properly set will provide adequate incorporation.

**Rotational Crops:** Wheat or barley can be planted in the fall following this application at recommended rates.

**Special Precautions:** Do not apply to cotton before the four true leaf stage or crop injury may result.

Soil treated with Gowan Trifluralin 5 may be shallow cultivated, rotary hoed, or hand hoed without reducing the weed control activity of the product. Do not cultivate deeper than the treated layer of soil (1-2 inches) since this may bring untreated soil to the surface and poor weed control may result.

**COTTON—Fall Application:** Apply and incorporate Gowan Trifluralin 5 any time between October 15 and 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 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 Gowan Trifluralin 5 to soils which are wet or subject to prolonged periods of flooding.

**Broadcast Rates Per Acre—Fall Application Only:** In Alabama, Arkansas, Northern Florida, Georgia, Louisiana, Mississippi, Southeastern Missouri bootheel, North Carolina, New Mexico, Oklahoma, South Carolina, Tennessee and Texas, apply and incorporate at a broadcast rate of 1.6 pints per acre on coarse and medium soils and 2 pints on fine soils.

In Arizona, California, and Nevada, apply and incorporate Gowan Trifluralin 5 at a broadcast rate of 1.2 pints per acre on coarse soils; 1.6 pints on medium soils; and 2 pints on fine soils.

For cotton grown in other states apply and incorporate at a broadcast rate of 0.8 pint per acre on coarse soils; 1.2 pints on medium soils; 1.6 pints on fine soils; 1.2 pints on coarse soils with 2-5% organic matter, and 1.6 to 2 pints on soils with 5-10% organic matter.

**COTTON—SPECIAL USE DIRECTIONS**

**COTTON—Fall panicum:** Apply and incorporate Gowan Trifluralin 5 at the broadcast rate of 1.6 pints per acre on both coarse and medium soils.

**COTTON—Rhizome Johnsongrass:** In all cotton producing states except Arizona and California you can obtain commercially acceptable control of rhizome johnsongrass with a double rate program which you apply for 2 consecutive years in accordance with the following directions.

**Soil Preparation:** Proper preparation of the soil before application is very important for satisfactory 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. This should also destroy any emerged johnsongrass.

**Application:** Choose the one application program that best fits your cultural practices:

**Spring Application—**Apply Gowan Trifluralin 5 any time before planting in the spring for 2 years in a row. Use a broadcast rate of 1.6 pints per acre on coarse soils; 2.4 pints on medium soils; and 3.2 pints on fine soils.

OR

**Fall Application—**Apply Gowan Trifluralin 5 between October 15 and December 31 for 2 years in a row at the same rates as a spring application for the control of rhizome johnsongrass.

**Incorporation:** Deep incorporation is essential for good rhizome johnsongrass control. Incorporate Gowan Trifluralin 5 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. You cannot obtain commercially acceptable control with only 1 year of double rate use.

**Crop Rotation:** In the season following a double rate treatment, plant only rice and those crops for which Gowan Trifluralin 5 can be applied as a preplant treatment or injury may result.

**COTTON—Pigweed and seedling johnsongrass control:** In Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, Southeastern Missouri, North Carolina, South Carolina, Tennessee, and Southern Virginia, Gowan Trifluralin 5 may be applied preplant at a broadcast rate of 0.8 to 1.2 pints per acre on coarse soils; 1.2 to 1.6 pints on medium soils; and, 1.6 pints on fine soils. Exception: In the state of Louisiana 2.4 pints per acre are recommended on fine soils.

**COTTON—Additional weed and grass control (Texas Gulf Coast):** In the Texas Gulf Coast counties of Brazoria, Calhoun, Chambers, Fort Bend, Galveston, Harris, Jackson, Jefferson, Liberty, Matagorda, Orange, Victoria, Waller, and Wharton, Gowan Trifluralin 5 may be applied up to 2 weeks before planting at a broadcast rate of 1.2 pints per acre on coarse soils; 1.6 pints on medium soils; and, 2.4 pints on fine soils.

**COTTON 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.

**COTTON—TANK MIXES AND OVERLAYS**

Follow recommended soil preparation and incorporation procedures for Gowan Trifluralin 5.

**COTTON—Gowan Trifluralin 5/Caparol or Gowan Prometryne 4L Tank Mix** (for cotton grown in California, Arizona, New Mexico and West Texas):

The Gowan Trifluralin 5/Caparol combination will control certain grasses and broadleaf weeds listed for Gowan Trifluralin 5 alone plus the following weeds:

- |           |                        |                     |         |
|-----------|------------------------|---------------------|---------|
| Smartweed | Groundcherry (annual)  | Mustard             | Malva   |
| Wild Oat  | Prickly sida (teaweed) | Annual morningglory | Ragweed |

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

**Broadcast Rates per Acre:**

Soil Texture*	Gowan Trifluralin 5	Gowan Prometryne 4L	Caparol 80W
Coarse	0.8 Pint	2.4-3.2 pints	2 pounds
Medium	1.0-1.2 Pints	4 pints	2 ½ Pounds
Fine	1.6 Pints	4 pints	2 ½ Pounds

\*Do not use on sands and loamy sands. For band applications use proportionately less.

**Mixing Directions:** Carefully follow the procedures on the Caparol 80W label for making a slurry and adding it to a partially filled tank of water. After the Caparol is thoroughly mixed with the partially filled tank of water, add the Gowan Trifluralin 5 and continue filling. Agitate continuously during the filling and spraying operation.

Avoid leaving the spray mixture in the tank without constant agitation. If bypass agitation is used, the bypass line should stop at the bottom of the tank to minimize foaming.

**Note:** Under conditions of very soft water, conduct a compatibility test with Prometryne and Trifluralin before mixing in the spray tank.

**Additional Precautions:** The combination of Gowan Trifluralin 5/Caparol or Prometryne should not be used in the cut areas of newly leveled fields, in areas of excess salt, or 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 Rotations:** Cabbage, okra, onions and peas may be planted in the fall after a spring application of Gowan Trifluralin 5 plus Caparol or Prometryne. Winter barley, winter rye and winter wheat can be planted in the fall also, if they are plowed down and not used for food or feed. Refer to the Caparol or Prometryne label for directions, cautions and precautions.

**COTTON—Gowan Trifluralin 5/Cotoran Tank Mix** (except in Arizona and California):

Follow recommended soil preparation and incorporation procedures for Gowan Trifluralin 5.

The Gowan Trifluralin 5/Cotoran tank mix effectively controls all the annual grasses and broadleaf weeds listed for Gowan Trifluralin 5 alone plus these additional weeds:

Ryegrass	Buttonweed	Cocklebur	Groundcherry (Wright)
Jimsonweed	Morningglory	Prickly sida (teaweed)	Ragweed
Sesbania	Sicklepod	Smartweed	Tumbleweed

**Broadcast Rates per Acre:**

Soil Texture	Gowan Trifluralin 5	Cotoran 80W
Coarse	0.8 Pint	1 1/4 Pounds
Medium	1.2 Pints	2 Pounds
Fine	1.6 Pints	2 1/2 Pounds

**Mixing Directions:** Carefully follow the procedures on the Cotoran label for making a Cotoran slurry and adding it to a partially filled tank of water. After the Cotoran is thoroughly mixed with the partially filled tank of water, add the Gowan Trifluralin 5 and continue filling. Agitate continuously throughout the filling and application operations. Do not leave spray mixture in tank without constant agitation; if bypass agitation is used, the bypass line should stop at the bottom of the tank to minimize foaming. Apply in 15-40 gallons of water per acre.

**Additional Precautions:** Do not plant crops other than cotton on the treated land within 6 months after the application of Gowan Trifluralin 5 plus Cotoran, or crop injury may result. Do not feed foliage from treated cotton plants or gin trash to livestock. Do not mix Gowan Trifluralin 5 plus Cotoran with liquid fertilizer.

**West Texas Only:** Do not use the tank mix of Gowan Trifluralin 5 plus Cotoran on sandy, loamy sand or fine sandy loam soils. Do not use on cotton planted in furrows.

**Arkansas, Louisiana, and Mississippi Only:** Use one pound Cotoran 80W in tank mix with Gowan Trifluralin 5 on sandy loam soils low in organic matter.

**New Mexico:** Do not plant treated land with crops other than cotton until one year after the last application. Do not use on sandy or coarse textured soils of less than 1% organic matter.

**COTTON—Gowan Trifluralin 5 preplant followed by Karmex overlay:** For cotton grown east of the Mississippi River plus Arkansas, Southeastern Missouri, Louisiana and Eastern Texas, incorporate before planting. Then follow with a preemergence application of Karmex. This will effectively control all the weeds controlled by Gowan Trifluralin 5 alone plus these additional weeds:

Ragweed	Annual groundcherry	Cogfennel	Pennycress	
Annual morningglory	Shepherdspurse	Velvetgrass	Wild lettuce	Wild mustard

**Broadcast Rates per Acre:**

Soil Texture	Gowan Trifluralin 5	Karmex 80W
Coarse	0.8 Pint	1/2 Pound
Medium	1.2 Pints	2/3 Pound
Fine	1.6 Pints	1 Pound

**Additional Precautions:** Do not use Karmex on soils with less than 1% organic matter as crop injury may result. Do not allow livestock to graze on cotton treated with Karmex. Consult the Karmex label for additional instructions, cautions and precautions.

**COTTON—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous sections for use on COTTON. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label. For tank mixes containing Gowan Trifluralin 5 follow label directions, restrictions and precautions for both products concerning CHEMIGATION. Do not use tank mixes for chemigation when not permitted on either label.

**SOYBEAN—GOWAN TRIFLURALIN 5 ALONE**

**SOYBEAN—Preemergence:** Follow recommended soil preparation, application, and incorporation procedures for Gowan Trifluralin 5.

**Broadcast Rates per Acre:**

Soil Texture*	Gowan Trifluralin 5
Coarse	0.8 Pint
Medium	1.2 Pints
Fine	1.6 Pints

\*Use 1.2 pints per acre on coarse and medium textured soils and 1.6 pints on fine soils with 2-5% organic matter, use 1.6-2 pints on all soils with 5-10% organic matter.

**SOYBEAN—Fall Application:** Apply and incorporate Gowan Trifluralin 5 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. Do not fall apply to soils which are wet, are subject to prolonged periods of flooding, or where rice was grown the previous year.

For soybeans grown in Alabama, Arkansas, Northern Florida, Georgia, Louisiana, Mississippi, Southeastern Missouri bootheel, North Carolina, Oklahoma, South Carolina, Tennessee and Texas, apply and incorporate at a broadcast rate of 1.6 pints per acre on coarse and medium soils and 2 pints on fine soils.

For soybeans grown in states other than those listed above, apply and incorporate at a broadcast rate of 0.8 pint per acre on coarse soils; 1.2 pints on medium soils; 1.6 pints on fine soils; 1.2 pints on coarse soils with 2-5% organic matter; and 1.6 to 2 pints on soils with 5-10% organic matter.

**SOYBEAN—SPECIAL USE DIRECTIONS**

**SOYBEAN—Fall panicum:** Apply Gowan Trifluralin 5 at the broadcast rate of 1.6 pints per acre on both coarse and medium soils.

**SOYBEAN—Pigweed and seedling johnsongrass:** In Alabama, Arkansas, Florida, Georgia, Kansas, Louisiana, Mississippi, Southeastern Missouri, North Carolina, Oklahoma, South Carolina, Tennessee and Southern Virginia, Gowan Trifluralin 5 may be applied at a broadcast rate of 0.8 to 1.2 pints per acre on coarse soils; 1.2 to 1.6 pints on medium soils; and 1.6 pints on fine soils. Exception: in the state of Louisiana, 2.4 pints per acre are recommended on fine soils.



**SOYBEAN—Additional weed and grass control (Texas Gulf Coast):** In the Texas Gulf Coast counties of Brazoria, Calhoun, Chambers, Fort Bend, Galveston, Harris, Jackson, Jefferson, Liberty, Matagorda, Orange, Victoria, Waller, and Wharton, Gowan Trifluralin 5 may be applied up to 2 weeks before planting at a broadcast rate of 1.2 pints per acre on coarse soils; 1.6 pints on medium soils; and 2.4 pints on fine soils.

**SOYBEAN—Charcoal soils in Arkansas, Louisiana, and Mississippi:** Newly cleared land often contains high organic matter (5-10%) and charcoal from burning debris. This charcoal and/or organic matter tends to bind Gowan Trifluralin 5 and reduce its weed control activity. Under these conditions, higher rates of Gowan Trifluralin 5 are necessary for weed control. Increased rates, however, can cause crop injury if charcoal or organic matter is not present to bind some of the Gowan Trifluralin 5. In the burn row a high level of charcoal is present; consequently, poor weed control may result even with an increased rate of Gowan Trifluralin 5. Apply at the broadcast rate of 1.6 to 2 pints per acre on coarse soils; 2 pints on medium soils; and 2.4 pints on fine textured soils. Follow recommended soil preparation, application, and incorporation procedures for Gowan Trifluralin 5.

**SOYBEAN—Red rice in Arkansas, Louisiana, Mississippi, and Texas only:** You can obtain suppression or partial control of red rice when you apply Gowan Trifluralin 5 at the following recommended rates. Follow recommended soil preparation and incorporation procedures for Gowan Trifluralin 5. Apply and incorporate in the spring before planting.

**Broadcast Rates per Acre:**

Soil Texture	Application Year One	Application Year Two
Coarse	1.6 Pints	0.8 Pint
Medium	2.4 Pints	1.2 Pints
Fine	3.2 Pints	1.6 Pints
Coarse soils with 2-5% organic matter	2.4 Pints	1.2 Pints
Soils with 5-10% organic matter	3.2 Pints	1.6-2 Pints

If a combination of high organic matter (5-10%) and charcoal are present in the soil, apply Gowan Trifluralin 5 the second year at the following rates for charcoal soils in Arkansas, Louisiana and Mississippi:

Soil Texture	Gowan Trifluralin 5
Coarse	1.2 - 2 Pints
Medium	2 Pints
Fine	2.4 Pints

For more information on charcoal soils see above.

**Crop Rotation:** The program for red rice control in soybeans is a 2-year program. Use the rates listed for first year application and plant soybeans. The second year use the normal rates listed for your soil type and charcoal level and plant only those crops for which Gowan Trifluralin 5 has been registered as preplant treatment, or crop injury may result. Do not plant rice the second year. Rice may be planted the third year.

**SOYBEAN—Rhizome Johnsongrass (Eastern U.S. and Texas):** You can obtain commercially acceptable control of rhizome johnsongrass with a double rate program applied for 2 consecutive years in accordance with the following directions.

**Soil Preparation:** Proper preparation of the soil before application is very important for satisfactory 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.

**Application—Choose the one application program that best fits your cultural practices:**

**Spring Application:** Apply Gowan Trifluralin 5 anytime in the spring before planting for 2 years in a row. Use a broadcast rate of 1.6 pints per acre on coarse soils; 2.4 pints on medium soils; 3.2 pints on fine soils; 2.4 pints on coarse soils with 2-5% organic matter; and 3.2 pints on soils with 5-10% organic matter.

OR

**Fall Application:** Apply Gowan Trifluralin 5 between October 15 and December 31 for 2 years in a row at the same rates as a spring application for the control of rhizome johnsongrass.

OR

**Split Application:** Apply Gowan Trifluralin 5 at the same rate in both the spring and fall for 2 years in a row using the rates in the following table.

**Broadcast Rates per Acre:**

Soil Texture	Gowan Trifluralin 5 Spring and Fall
Coarse	0.8 Pint
Medium	1.2 Pints
Fine	1.6 Pints
Coarse soils with 2-5% organic matter	1.2 Pints
Soils with 5-10% organic matter	1.6 Pints

**Incorporation:** Deep incorporation is essential for good rhizome johnsongrass control. Incorporate Gowan Trifluralin 5 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 and those crops for which Gowan Trifluralin 5 can be applied as a preplant treatment or injury may result.

**SOYBEAN—Rhizome johnsongrass—Gowan Trifluralin 5/Sencor or Gowan Trifluralin 5/Lexone tank mix:**

Gowan Trifluralin 5 may be used with Sencor or Lexone for rhizome johnsongrass control and for the control of those weeds listed for Gowan Trifluralin 5 alone. For the additional weeds controlled by Sencor or Lexone in tank mix, (see below). Follow procedures for soil preparation, incorporation and cultivation recommended in the Soybean—Rhizome johnsongrass section.

Apply Gowan Trifluralin 5/Sencor or Lexone up to two weeks before planting for two consecutive years.

**Broadcast Rates per Acre:**

Soil Texture	Gowan Trifluralin 5	Lexone 50WP/4L or Sencor 50WP/4	Lexone (dry flowable) or Sencor (dry flowable)
Coarse*	1.6 Pints	½ Pound/Pint	⅓ Pound
Medium	2.4 Pints	¾ Pound/Pint	½ Pound
Fine	3.2 Pints	1 Pound/Pint	⅔ Pound

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

Read and follow all additional precautions listed for the Gowan Trifluralin 5/Sencor or Lexone tank mix (see below).

**SOYBEAN—Wild cane (shattercane):** Follow recommended soil preparation and application procedures for Gowan Trifluralin 5.

Wild cane (shattercane) can germinate throughout the growing season and from greater soil depth than most other weed seeds. Commercially acceptable control of wild cane can be obtained with the following increased rates of Gowan Trifluralin 5. Apply at the broadcast rate of 0.8 pint per acre on a coarse soil; 1.6 pints on a medium soil; and 2 pints on a fine textured soil.

**Incorporation:** Deep incorporation is essential for good wild cane control. Incorporate Gowan Trifluralin 5 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:** Cultivation during the crop season will also contribute to control.

**SOYBEAN PRECAUTIONS:** Soybeans should be planted after early season adverse weather conditions have passed, especially when using higher rate programs. Cool, wet weather early in the growth cycle causes additional stress to the soybean plant. This may result in reduced stands, delayed maturity, and reduced yields.

**SOYBEAN—TANK MIXES AND OVERLAYS**

**SOYBEAN—Gowan Trifluralin 5/Sencor or Gowan Trifluralin 5/Lexone Tank Mix:** The Gowan Trifluralin 5/Sencor or Gowan Trifluralin 5/Lexone tank mix effectively controls the annual grasses and broadleaf weeds controlled by Gowan Trifluralin 5 plus these additional weeds:

Jimsonweed	Mallow, Venice (Flower-of-an-hour)	Smartweed, Pennsylvania	Velvetleaf
Mustard, wild	Prickly sida	Ragweed, common	Sesbania, hemp

Control of cocklebur, morningglory and giant ragweed (horseweed) may be erratic. Control may be improved with timely cultivation. Where cocklebur is a serious problem, an overlay of Sencor or Lexone may be preferred to the Gowan Trifluralin 5/Sencor or Lexone tank mix. Follow recommended procedures for soil preparation, incorporation, and cultivation of Gowan Trifluralin 5. Mix according to instructions under general mixing and application directions. The tank mix can be applied from 2 weeks before planting up to planting.

**Broadcast Rates per Acre:**

Soil Texture	Gowan Trifluralin 5	Lexone 50WP/4L or Sencor 50WP/4	Lexone (dry flowable) or Sencor (dry flowable)
Coarse*	0.8 Pint	½ Pound/Pint	⅓ Pound
Medium	1.2 Pints	¾ Pound/Pint	½ Pound
Fine	1.6 Pints	1 Pound/Pint	⅔ Pound

\*Do not use Sencor/Lexone on coarse soils with less than 1% organic matter.

**Additional Precautions:** Do not plant any crop other than soybeans within 4 months after treatment. Over application, uneven application, or improper soil incorporation may result in crop injury, herbicide residue, or erratic weed control. Additional stress factors are seedling disease, cold weather, deep planting, excessive moisture, soil pH over 7.5, high salt concentration, or drought. Any of these may weaken crop seedlings and increase possibility of damage from the 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 tank mix for feed or forage.

**SOYBEAN—Gowan Trifluralin 5 preplant followed by Sencor or Lexone as an overlay:** Apply Gowan Trifluralin 5 as a preplant incorporated herbicide. As a separate operation, make a single application of Sencor or Lexone as either a band or broadcast spray during planting or as a separate operation after planting, but before the soybeans emerge. Do not spray Sencor or Lexone over the top of emerged soybeans, or crop injury may result.

**Use Directions:** Follow directions on the Sencor or Lexone labels for specific instructions regarding each herbicide.

**Post Plant/Preemergence**

**Broadcast Rates per Acre:**

Soil Texture	Gowan Trifluralin 5	Lexone 50WP/4L* or Sencor 50WP/4	Lexone (dry flowable)* or Sencor (dry flowable)
Coarse**	0.8 pint	¾ or ¾ - 1 Pound/Pint	½ or ⅓ - ½ Pound
Medium	1.2 pints	¾ - 1 or ¾ - 1 ½ Pounds/Pints	½ - ⅔ or ½ - 1 Pound
Fine	1.6 pints	1 or 1-1¼ Pounds/Pints	⅔ or ⅓ - 1 ⅙ Pound

\*Lexone rates are given first, followed by Sencor rates.

\*\*Do not apply Lexone to sand or soils with less than ½% organic matter. Do not apply Sencor to coarse soils (sandy loam and loamy sand) containing less than 2% organic matter.

**Additional Sencor and Lexone precautions:** Do not use Lexone or Sencor on Tracy, Semmes, Altona, Vansoy or Coker 102 soybeans. These varieties are sensitive to Lexone or Sencor, and crop injury may result. Seed must be planted at least 1½ 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 you use Lexone or Sencor on soils having a calcareous surface or a pH of 7.5 or higher, or if you use them in conjunction with soil-applied organic phosphate pesticides. Do not use the foliage from treated soybeans for feed or forage.

**SOYBEAN—Gowan Trifluralin 5/Vernam Tank Mix:** The Gowan Trifluralin 5/Vernam tank mix effectively controls those weeds listed for Gowan Trifluralin 5 alone plus these additional weeds:

- Purple nutsedge (nutgrass)
- Yellow nutsedge (nutgrass)
- Coffeeweed
- Annual morningglory
- Velvetleaf

Follow recommended soil preparation procedures for Gowan Trifluralin 5. You may apply the tank mix up to 10 days prior to planting. Incorporate the tank mix immediately after application. Apply Gowan Trifluralin 5/Vernam at these rates:

Broadcast Rates Per Acre:

Soil Texture	Gowan Trifluralin 5	Vernam 7E
Coarse	0.8 Pint	1 1/4 - 2 1/2 Pints
Medium	1.2 Pints	2 1/2 - 3 Pints*
Fine	1.6 Pints	3 - 3 1/2 Pints

\*For nutsedge, wild cane and velvetleaf control, use the higher rate of 3 pints per acre on medium textured soils.

**SOYBEANS—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous sections for use on SOYBEANS. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label. For tank mixes containing Gowan Trifluralin 5 follow label directions, restrictions and precautions for both products concerning CHEMIGATION. Do not use tank mixes for chemigation when not permitted on either label.

**ALFALFA—ESTABLISHED**

In areas receiving less than 20" average annual rainfall per year, apply Gowan Trifluralin 5 to established alfalfa stands at a broadcast rate of 1.2 pints per acre on coarse soils and 1.6 pints on medium and fine soils. Use incorporation equipment that will ensure thorough soil mixing with minimum damage to the established alfalfa. Irrigation may be used to incorporate instead of mechanical equipment. If sprinklers are used, apply 1/2-1 inch of water to incorporate. With furrow or flood irrigation be careful to wet the soil thoroughly between beds and furrows. Incorporation by irrigation or rainfall should be complete within 48 hrs. of application or mechanical methods of incorporation must be used.

**ALFALFA—ESTABLISHED—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in section for use on ALFALFA—ESTABLISHED. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

**ASPARAGUS—ESTABLISHED**

Follow recommended soil preparation, application and incorporation procedures for Gowan Trifluralin 5. Gowan Trifluralin 5 can be applied to established asparagus as a single or as a split application. In the winter or early spring, apply to asparagus after ferns are removed but before spear emergence. Or, apply after harvest in the late spring or early summer before ferning begins. Gowan Trifluralin 5 will suppress volunteer seedling asparagus and field bindweed if you use the following recommended rates and application schedules.

Broadcast Rates per Acre:

**GOWAN TRIFLURALIN 5**

Soil* Texture	SPLIT APPLICATION			SINGLE APPLICATION	
	Before Harvest	+	After Harvest	Before Harvest	or After Harvest
Coarse	0.8 Pint	+	0.8 Pint	1.6 Pints	or 1.6 Pints
Medium	1.2 Pints	+	1.2 Pints	2.4 Pints	or 2.4 Pints
Fine	1.6 Pints	+	1.6 Pints	3.2 Pints	or 3.2 Pints

\*In any single calendar year, the maximum Gowan Trifluralin 5 to apply is 1.6 pints per acre on coarse soils; 2.4 pints on medium soils; and 3.2 pints on fine soils.

**ASPARAGUS—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous section for use on ASPARAGUS. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

**FOR THE FOLLOWING CROP GROUPING USE THE RATE TABLE LISTED BELOW**

- CARROT
- CASTOR BEAN
- CELERY

Direct seed or transplant in areas receiving less than 20" average annual rainfall.

**COLE CROPS—TRANSPLANT**

Apply and incorporate Gowan Trifluralin 5 prior to transplanting only. (Broccoli, Brussel Sprout, Cabbage and Cauliflower). See next section for direct seeded.

**OKRA**

**PEPPER—TRANSPLANT**

Apply and incorporate Gowan Trifluralin 5 prior to transplanting only.

**SOUTHERN PEA**

Apply and incorporate Gowan Trifluralin 5 before planting, at planting, or immediately after planting, unless otherwise indicated.

Broadcast Rates per Acre:

**GOWAN TRIFLURALIN 5**

Soil Texture*	Areas Receiving Less Than 20" Average Annual Rainfall and Irrigation	Areas Receiving More Than 20" Average Annual Rainfall and Irrigation
Coarse	0.8 Pint	0.8 Pint
Medium	1.0-1.2 Pints	1.2 Pints
Fine	1.2 Pints	1.6 Pints

\*Use 1.2 pints per acre on coarse and medium textured soils and 1.6 pints on fine soils with 2 - 5% organic matter; use 1.6 pints on all soils with 5-10% organic matter.

**CHEMIGATION:** Carrot, Castor bean, Celery, Cole crops-Transplant, Okra, Pepper-Transplant, Southern pea: For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous sections for use on specified crop grouping. Follow all directions given under **GENERAL CHEMIGATION USE INSTRUCTIONS** section of this label.

**COLE CROPS—DIRECT SEEDED**

(Broccoli, Brussels Sprout, Cabbage and Cauliflower) See above section for transplant.

For direct seeded cole crops, apply and incorporate Gowan Trifluralin 5 before planting at a broadcast rate of 0.8 pint per acre on coarse and medium soils and 1.2 pints on fine soils and soils with 2-5% organic matter. Direct seeded cole crops have exhibited marginal tolerance to recommended rates of Gowan Trifluralin 5. Stunting or reduced stands may occur.

**COLE CROPS-Direct seeded—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous section for use on COLE CROPS-Direct seeded. Follow all directions given under **GENERAL CHEMIGATION USE INSTRUCTIONS** section of this label.

**CUCURBITS—POSTPLANT EMERGED**

(Cantaloupe, Cucumber, and Watermelon) Western United States including Texas: Apply as a directed spray to the soil between the rows and beneath plants which are in the 3 to 4 true leaf stage.

Broadcast Rates per Acre:

GOWAN TRIFLURALIN 5		
Soil Texture*	Areas Receiving Less Than 20" Average Annual Rainfall	Areas Receiving More Than 20" Average Annual Rainfall
Coarse	0.8 Pint	0.8 Pint
Medium	1.0-1.2 Pints	1.2 Pints
Fine	1.2 Pints	1.6 Pints

\*Use 1.2 pints on coarse and medium textured soils and 1.6 pints on fine soils with 2-5% organic matter; use 1.6 pints on all soils with 5-10% organic matter.

Set incorporation equipment to throw treated soil around the plants during incorporation.

**CUCURBITS, Postplant emerged—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous section for use on CUCURBITS-Postplant emerged. Follow all directions given under **GENERAL CHEMIGATION USE INSTRUCTIONS** section of this label.

**DRY BEAN—GOWAN TRIFLURALIN 5 ALONE**

Apply and incorporate before planting using the following rates:

Broadcast Rates per Acre:

GOWAN TRIFLURALIN 5		
Soil Texture*	Areas Receiving Less Than 20" Average Annual Rainfall	Areas Receiving More Than 20" Average Annual Rainfall
Coarse	0.8 Pint	0.8 Pint
Medium	1.0-1.2 Pints	1.2 Pints
Fine	1.2 Pints	1.6 Pints

\*Use 1.2 pints per acre on coarse and medium textured soils and 1.6 pints on fine soils with 2-5% organic matter; use 1.6 pints on all soils with 5-10% organic matter.

**DRY BEAN—Gowan Trifluralin 5/Eptam Tank Mix**

The Gowan Trifluralin 5/Eptam tank mix effectively controls all the following weeds in addition to those weeds listed for Gowan Trifluralin 5:

- |                             |                   |                         |                         |
|-----------------------------|-------------------|-------------------------|-------------------------|
| Henbit (Spring Application) | Nightshade, black | Nightshade, hairy       | Ragweed, common         |
| Nutsedge                    | Oat, wild         | Smartweed, Pennsylvania | Velvetleaf (Buttonweed) |

Follow recommended soil preparation and incorporation procedures for Gowan Trifluralin 5. The tank mix should be applied from 2 days before planting up to planting. Incorporate immediately after application.

Broadcast Rates per Acre:

Soil Texture*	Areas Receiving Less Than 20" Average Annual Rainfall	Areas Receiving More Than 20" Average Annual Rainfall	EPTAM 7E
Coarse	0.8 Pint	0.8 Pint	2 ½ -3 ½ Pints**
Medium	1.0-1.2 Pints	1.2 Pints	2 ½ -3 ½ Pints
Fine	1.2 Pints	1.6 Pints	2 ½ -3 ½ Pints

\*Use 1.2 pints per acre on coarse and medium textured soils and 1.6 pints on fine soils with 2-5% organic matter; use 1.6 pints on all soils with 5-10% organic matter.

\*\*Use Eptam 7E at a rate of 2 ½ pints per acre to control annual grasses; 3 ½ pints to control nutsedge and additional broadleaf weeds.

**Precautions:** Read the Eptam label before using. Observe all cautions and limitations of all products used in mixtures. The combination of Gowan Trifluralin 5 and Eptam should not be used on soybeans, black-eyed peas (beans), lima beans and other flatpoddeds beans, except Romano. Do not use the foliage from a crop treated with this tank mix for feed or for grazing.

**DRY BEAN—Fall application for dry bean grown in Idaho, Oregon, and Washington**

Apply and incorporate Gowan Trifluralin 5 anytime between October 15 and December 31 at a broadcast rate of 0.8 pint per acre on coarse soils; 1 to 1.2 pints on medium soils; and 1.2 pints on fine soils. Destroy established weeds during seedbed preparation.

**DRY BEANS—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous section for use on DRY BEANS. Follow all directions given under **GENERAL CHEMIGATION USE INSTRUCTIONS** section of this label. For tank mixes containing Gowan Trifluralin 5 follow label directions, restrictions, and precautions for both products concerning CHEMIGATION. Do not use tank mixes for chemigation when not permitted on either label.

FOR THE FOLLOWING CROP GROUPING USE THE BROADCAST RATES LISTED BELOW

BEANS—(Guar and Mungbean)

GREENS—(Turnip greens grown for processing, Collard, Kale and Mustard greens)

MUSTARD—Grown for seed or processing for food in Minnesota, Montana and North Dakota

Apply and incorporate Gowan Trifluralin 5 before planting at 0.8 pint per acre on coarse soils and 1.2 pints on medium and fine soils.

BEANS—(Lima Bean and Snap Bean)

Apply and incorporate Gowan Trifluralin 5 before planting at a broadcast rate of 0.8 pint per acre on coarse and medium soils and 1.2 pints on fine soils.

CORN (Field Corn) and GRAIN SORGHUM (Milo)

Apply Gowan Trifluralin 5 to field corn or grain sorghum (8 inches or taller) as an over-the-top or directed spray to effectively control weeds listed for Gowan Trifluralin 5.

Soil Preparation: Cultivate before a Gowan Trifluralin 5 application to ensure loose, friable soil, to remove established weeds, and to cover the base of plants with soil.

Application Directions: Gowan Trifluralin 5 should be applied and incorporated at the recommended rates for the soil texture when the crop is well established (8 inches or taller). Gowan Trifluralin 5 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 Rates per Acre:

Soil Texture	Gowan Trifluralin 5
Coarse	0.6-0.8 Pint*
Medium	0.8-1.2 Pints
Fine	1.2-1.6 Pints

Use the lower rates when you anticipate light weed pressure and the higher rates when you anticipate heavy weed pressure.

\*Corn Only: Apply 0.8 to 1.2 pints per acre in Alabama, Florida, Georgia, North Carolina, South Carolina and Virginia to control Fall panicum and Texas panicum.

CHEMIGATION: Beans (guar and mung), Greens (Turnip greens grown for processing, Collard, Kale and Mustard), Mustard (Grown for seed or processing-Minnesota, Montana, and North Dakota), Beans (lima and snap), Corn (Field corn), and Grain sorghum (milo);

For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous sections for use on SPECIFIED CROP GROUPING. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

CORN/GRAIN SORGHUM

Gowan Trifluralin 5 for shattercane control and Gowan Trifluralin 5/Atrazine tank mix for additional weed control:

Gowan Trifluralin 5 applied as an over-the-top spray or as a directed spray in field corn/grain sorghum will control shattercane in addition to those other weeds listed on the label for Gowan Trifluralin 5. Use rates listed in previous section, Corn (Field Corn) and Grain Sorghum (Milo).

Gowan Trifluralin 5 can be tank mixed with Atrazine for additional weed control in field corn/grain sorghum.

Broadcast Rates per Acre:

Soil Texture	Gowan Trifluralin 5	Atrazine 4L*
Coarse (Sandy Loam Only)	0.6-0.8 Pint	2.4 Pints
Medium	0.8-1.2 Pints	4.75 Pints
Fine	1.2-1.6 Pints	6.0 Pints

\*When using AAtrex 4L, use the rates listed above. For other Atrazine formulations, use equivalent rates. When using AAtrex Nine-0, 1 pint of 4L = 0.55 pound of Nine-0. One pint of 4L equals 0.62 pounds of Atrazine 80W.

Apply and incorporate the Gowan Trifluralin 5/Atrazine tank mix as directed on the Gowan Trifluralin 5 label for field corn and grain sorghum.

Check the Atrazine label for additional directions, cautions, and precautions prior to use.

Precaution: Do not apply Gowan Trifluralin 5 to corn grown for seed. Do not apply to corn or sorghum as a preplant or preemergence treatment, or crop injury may occur.

CORN/GRAIN SORGHUM-CHEMIGATION: For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous section for use on corn/grain sorghum. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label. For tank mixes containing Gowan Trifluralin 5 follow label directions, restrictions, and precautions for both products concerning CHEMIGATION. Do not use tank mixes for chemigation when not permitted on either label.

HOPS

Apply and incorporate Gowan Trifluralin 5 while the crop is dormant. Use a broadcast rate of 0.8 pint per acre on coarse soils; 1 to 1.2 pints on medium soils; and 1.2 pints on fine soils and soils with 2-10% organic matter.

HOPS-CHEMIGATION: For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous section for use on HOPS. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

MINT—(Established Peppermint and Spearmint)

Apply at a rate of 0.8 pint per acre on coarse soils; 1.0 pint on medium soils; and 1.2 pints on fine soils. Use incorporation equipment that will ensure thorough soil mixing with minimum damage to the crop.

MINT-CHEMIGATION: For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous section for use on MINT. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

PEA—(Dry and English)—Gowan Trifluralin 5 Alone

Apply and incorporate Gowan Trifluralin 5 before planting at a rate of 0.8 pint per acre on coarse and medium soils and 1.2 pints on fine soils.

**PEA—Gowan Trifluralin 5/Far-Go Tank Mix for pea in Idaho, Oregon, and Washington**

The tank mix combination of Gowan Trifluralin 5 plus Far-Go will provide control of wild oat in addition to other annual grasses and broadleaf weeds controlled by Gowan Trifluralin 5.  
**Application Rates:** Broadcast 0.6 pint of Gowan Trifluralin 5 per acre on coarse and medium soils; 0.8 pint on fine soils. Use 1¼ quart 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 Gowan Trifluralin 5.  
**Precaution:** Do not apply to lentils. Leaf crinkling and delayed maturity of peas may occur, particularly on clay points in the northwest; but 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.

**PEA—Fall application to dry pea and English pea in Idaho, Oregon, and Washington**

Apply and incorporate Gowan Trifluralin 5 any time between October 15 and December 31 at a broadcast rate of 0.8 pint per acre on coarse soils; 1 to 1.2 pints on medium soils; and 1.2 pints on fine soils. 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.

**PEA, Dry and English—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous sections for use on PEA, Dry and English. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label. For tank mixes containing Gowan Trifluralin 5 follow label directions, restrictions, and precautions for both products concerning CHEMIGATION. Do not use tank mixes for chemigation when not permitted on either label.

**PEANUT—(Spanish Peanut in Texas and Oklahoma)**

Apply and incorporate Gowan Trifluralin 5 before planting, at planting or immediately after planting at a broadcast rate of 0.8 pint per acre on coarse soils. When incorporating after planting, take care not to disturb the seed.

**PEANUT—Gowan Trifluralin 5/Vernam Tank Mix**

(Spanish Peanut in Texas and Oklahoma)

Gowan Trifluralin 5/Vernam tank mix effectively controls those weeds listed for Gowan Trifluralin 5 alone plus these additional weeds:

- |                            |                            |                     |
|----------------------------|----------------------------|---------------------|
| Coffeeweed                 | Velvetleaf                 | Annual morningglory |
| Purple nutsedge (nutgrass) | Yellow nutsedge (nutgrass) |                     |

Follow recommended soil preparation procedures for Gowan Trifluralin 5. You may apply the tank mix up to 10 days prior to planting. Incorporate the tank mix immediately after application.

Apply the tank mix at these rates:

Soil Texture	Gowan Trifluralin 5	Vernam 7E
Coarse	0.8 Pint	2 1/3 Pints

**PEANUT (Spanish Peanut in Texas and Oklahoma)—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous sections for use on PEANUT (Spanish Peanut in Texas and Oklahoma). Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label. For tank mixes containing Gowan Trifluralin 5 follow label directions, restrictions, and precautions for both products concerning CHEMIGATION. Do not use tank mixes for chemigation when not permitted on either label.

**POTATO—(All States except Maine)**

Apply and incorporate Gowan Trifluralin 5 after planting, before emergence, or immediately following dragoff or after the potato plants have fully emerged.

Broadcast Rates per Acre:

**GOWAN TRIFLURALIN 5**

Soil Texture*	Areas Receiving Less Than 20" Average Annual Rainfall	Areas Receiving More Than 20" Average Annual Rainfall
	Coarse	0.8 Pint
Medium	1.0-1.2 Pints	1.2 Pints
Fine	1.2 Pints	1.6 Pints

\*Use 1.2 pints per acre on coarse and medium soils with 2-5% organic matter; use 1.6 pints on all soils with 5-10% organic matter. Set incorporation equipment so that the bed and furrow will be uniformly covered with a layer of treated soil. If the layer of treated soil is not uniform and the herbicide is concentrated over the bed, potato emergence may be retarded, and stem brittleness can occur. When applying and incorporating Gowan Trifluralin 5 after potato plants have fully emerged, do not completely cover the foliage with treated soil. Likewise, do not completely cover foliage at subsequent cultivations. Be careful that incorporation machinery does not damage potato seed pieces or elongating sprouts.

**POTATO—Split application in Idaho, Oregon and Washington**

On all soils, apply and incorporate 0.6 pint of Gowan Trifluralin 5 per acre before planting and 0.6 pint after planting when potato plants have fully emerged. Do not apply to soils containing 2% or more organic matter. Follow incorporation directions listed above for application to potato after planting.

**POTATO—Gowan Trifluralin 5/Eptam Tank Mix for potatoes grown in Kansas, Minnesota, Nebraska, North Dakota, Oklahoma, South Dakota and Texas**

The Gowan Trifluralin 5/Eptam tank mix effectively controls the following weeds in addition to those weeds controlled by Gowan Trifluralin 5:

- |                              |                         |                  |
|------------------------------|-------------------------|------------------|
| Henbit (Spring applications) | Smartweed, Pennsylvania | Oat, wild        |
| Velvetleaf (Buttonweed)      | Nutsedge                | Ragweed (Common) |
| Nightshade, black            | Nightshade, hairy       |                  |

Follow recommended soil preparation and application procedures for Gowan Trifluralin 5. The tank mix may be applied after planting, but prior to crop emergence. In areas where potatoes are normally dragged off, the tank mix should be applied and incorporated up to or immediately following dragoff.

Broadcast Rates per Acre:

GOWAN TRIFLURALIN 5

Soil Texture*	Areas Receiving Less Than 20" Average Annual Rainfall	Areas Receiving More Than 20" Average Annual Rainfall	EPTAM 7E
Coarse	0.8 Pint	0.8 Pint	1 1/4 -7 Pints**
Medium	0.8-1.2 Pints	0.8-1.2 Pints	1 1/4 -7 Pints
Fine	0.8-1.2 Pints	0.8-1.6 Pints	1 1/4 -7 Pints

\*Use 1.2 pints per acre on coarse and medium soils with 2-5% organic matter; use 1.6 pints on all soils with 5-10% organic matter.  
 \*\*Use the higher rate of Eptam 7E for nutsedge control.

Precaution: Read the Eptam label before using. Observe cautions and limitations of products used in mixtures. Do not graze or feed forage to livestock from fields treated with Gowan Trifluralin 5/Eptam tank mix.

POTATO—Gowan Trifluralin 5/Eptam application before planting in Washington, Idaho and Oregon

Gowan Trifluralin 5/Eptam may be applied before planting at a broadcast rate of 0.6 pint of Gowan Trifluralin 5 per acre and 3 1/2 pints of Eptam 7E per acre on all soil textures. Incorporate immediately.

Precaution: Do not use this tank mix both before and after planting in the same season. Read the Eptam label before using. Observe all cautions and limitations on labeling of all products used in mixtures. Do not use foliage from treated crops for feed or forage.

POTATO—CHEMIGATION: For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous section for use on POTATO. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label. For tank mixes containing Gowan Trifluralin 5 follow label directions, restrictions and precautions for both products concerning CHEMIGATION. Do not use tank mixes for chemigation when not permitted on either labels.

RADISHES

Apply Gowan Trifluralin 5 as a preplant soil incorporated treatment.

Broadcast Rates per Acre:

Soil Texture	Gowan Trifluralin 5
Coarse	0.8 pint
Medium	1.2 pints
Fine	1.2 pints

SAFFLOWER

Follow recommended soil preparation, application, and incorporation procedures for Gowan Trifluralin 5. Apply and incorporate in the spring before planting or in the fall between October 15 and December 31.

Broadcast Rates per Acre:

GOWAN TRIFLURALIN 5

Soil Texture*	Areas Receiving Less Than 20" Average Annual Rainfall	Areas Receiving More Than 20" Average Annual Rainfall
Coarse	0.8 Pint	0.8 Pint
Medium	1.0-1.2 Pints	1.0-1.2 Pints
Fine	1.2 Pints	1.6 Pints

\*Use 1.2 pints per acre on coarse and medium textured soils and 1.6 pints on fine soils with 2-5% organic matter; use 1.6 to 2 pints on all soils with 5-10% organic matter.

SAFFLOWER—Fall application in Arizona, California, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming: Apply and incorporate Gowan Trifluralin 5 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. Apply and incorporate at a broadcast rate of 1.2 pints per acre on coarse soils; 1.6 pints on medium soils; and 2 pints on fine soils.

Do not apply Gowan Trifluralin 5 in the fall to soils which are wet or are subject to periods of flooding.

SAFFLOWER—CHEMIGATION: For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous sections for use on SAFFLOWER. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

SUGAR BEET

Apply Gowan Trifluralin 5 as a broadcast, overtop spray when plants are between 2 and 6 inches tall at a rate of 0.8 pint per acre on coarse soils and 1 to 1.2 pints on medium and fine soils. Use the higher rate for medium and fine soils in areas receiving more than 20" average annual rainfall. Set incorporation machinery to throw treated soil toward the plants in the row. Be careful that incorporation machinery does not damage the sugar beet taproot.

Precaution: Exposed beet roots should be covered with soil before an application of Trifluralin 5 to reduce the possibility of girdling.

SUGAR BEET—Incorporation with a tine-tooth harrow in California, Colorado, Idaho, Montana, Nebraska, Oregon, Texas, Utah, Washington, and Wyoming: A properly operated tine-tooth harrow (Flexline or Melroe) can incorporate Gowan Trifluralin 5 for effective weed control in sugar beet. Operate the tine-tooth harrow 2 times over the field in opposing directions at a speed of 3 to 6 mph. Set the harrow to cut 1 or 2 inches deep. Be careful that the tine-tooth harrow does not damage the sugar beet taproot. Follow recommended application procedures and broadcast rates per acre for sugar beet. (See preceding paragraph.)

SUGAR BEET—CHEMIGATION: For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous section for use on SUGAR BEET. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

**SUGARCANE—(Plant Cane)**

Apply and incorporate Gowan Trifluralin 5 twice a year at a broadcast rate of 1.6 to 3.2 pints per acre 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. Take care that incorporation machinery does not damage the seed pieces or emerging shoots.

**SUGARCANE—Postplant in Hawaii for control of most annual grasses, including guineagrass:** Surface apply Gowan Trifluralin 5 after planting (for plant cane) or after harvesting (for ratoon cane), before weeds and cane emerge. Use a broadcast rate of 4.8 to 6.4 pints per acre 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, Gowan Trifluralin 5 will not be effective. Apply just before an anticipated rainfall or sprinkle irrigate immediately after application.

**SUGARCANE—Application up to layby for plant cane or ratoon cane grown in Louisiana or Texas:** Apply and incorporate Gowan Trifluralin 5 at a broadcast rate of 1.6 to 3.2 pints per acre for all soil textures. Do this in the spring from before or shortly after the cane emerges up to layby. Apply the Gowan Trifluralin 5 after the beds have been shaved or false shaved. Loosen rain-packed beds 2 to 3 inches deep before application. Be careful that incorporation machinery does not damage seed pieces or emerging shoots. You may use a rolling cultivator or bed chopper to incorporate layby applications in sugarcane on all soil textures. Follow normal incorporation directions for the rolling cultivator. Set bed chopper to cut 3 to 4 inches deep and operate at 4 to 6 mph. Two incorporation passes are necessary.

**SUGARCANE—Itchgrass (Raouigrass) control in Louisiana:** Apply and incorporate Gowan Trifluralin 5 on either plant or ratoon cane at a broadcast rate of 3.2 pints per acre for all soil textures. Follow the directions above for sugarcane layby application in Louisiana and Texas.

**SUGARCANE—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous sections for use on SUGARCANE. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

**SUNFLOWER—GOWAN TRIFLURALIN 5 ALONE**

Apply and incorporate Gowan Trifluralin 5 in the spring or in the fall between October 15 and December 31. Follow recommended soil preparation, application and incorporation procedures for Gowan Trifluralin 5.

Broadcast Rates per Acre:

GOWAN TRIFLURALIN 5		
Soil Texture*	Areas Receiving Less Than 20" Average Annual Rainfall	Areas Receiving More Than 20" Average Annual Rainfall
Coarse	0.8 Pint	0.8 Pint
Medium	1.0-1.2 Pints	1.2 Pints
Fine	1.2 Pints	1.6 Pints

\*Use 1.2 to 1.6 pints per acre on coarse and medium soils with 2-5% organic matter, and 1.6 pints on all soils with 5-10% organic matter.

**SUNFLOWER—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 4 per acre as described in previous sections for use on SUNFLOWER. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label. For tank mixes containing Gowan Trifluralin 4 follow label directions, restrictions and precautions for both products concerning CHEMIGATION. Do not use tank mixes for chemigation when not permitted on either label.

**TOMATO**

For direct-seeded tomato, apply Gowan Trifluralin 5 at blocking or thinning as a directed spray to the soil between rows and beneath the plants, and incorporate. For transplant tomato apply and incorporate Gowan Trifluralin 5 preplant, postplant or at layby.

Broadcast Rates per Acre:

GOWAN TRIFLURALIN 5		
Soil Texture*	Areas Receiving Less Than 20" Average Annual Rainfall	Areas Receiving More Than 20" Average Annual Rainfall
Coarse	0.8 Pint	0.8 Pint
Medium	1.0-1.2 Pints	1.2 Pints
Fine	1.2 Pints	1.6 Pints

\*Use 1.2 pints per acre on coarse and medium textured soils and 1.6 pints on fine soils with 2-5% organic matter; use 1.6 pints on all soils with 5-10% organic matter.

**TOMATO—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous section for use on TOMATO. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

**FRUIT AND NUT CROPS AND VINEYARDS**

For areas receiving more than 20" average annual rainfall: For new planting of vineyards, citrus and pecan trees, apply and incorporate Gowan Trifluralin 5 before planting at a broadcast rate of 0.8 pint per acre on coarse soils; 1.2 pints on medium soils; 1.5 pints on fine soils; 1.2 pints on soils with 2-5% organic matter, and 1.6 pints on soils with 5-10% organic matter. For non-bearing, established plantings of citrus and pecan trees and bearing plantings of grapefruit, lemon, orange, pecan, tangelo and tangerine trees, apply Gowan Trifluralin 5 at a broadcast rate of 1.6 to 3.2 pints per acre for all soil textures.

For areas receiving less than 20" average annual rainfall: For new plantings of almond, apricot, citrus, nectarine, peach, pecan, pistachio and walnut trees, apply and incorporate Gowan Trifluralin 5 before planting at a broadcast rate of 0.8 pint per acre on coarse soils; 1 to 1.2 pints on medium soils; 1.2 pints on fine soils; 1.2 to 1.6 pints on soils with 2-5% organic matter, and 1.6 pints on soils with 5-10% organic matter. For new planting of vineyards, apply and incorporate before planting at a broadcast rate of 0.8 to 1.2 pints per acre on coarse soils; 1.2 to 2.4 pints on medium soils; and 2.4 to 3.2 pints on fine soils or soils with 2-10% organic matter. Do not use more than 1.6 pints per acre on heat-treated grape rootings. For postplant application on bearing or non-bearing, established plantings of vineyards and almond, apricot, grapefruit, lemon, nectarine, orange, peach, pistachio, plum, prune, tangelo, tangerine and walnut trees, apply at a broadcast rate of 1.6 to 3.2 pints per acre for all soil textures. Do not apply to vineyards within 60 days of harvest. In established plantings, apply Gowan Trifluralin 5 as a directed spray to the soil and use incorporation methods not injurious to the trees or vines.



**FRUIT AND NUT CROPS AND VINEYARDS—Rhizome johnsongrass control:**

For areas receiving less than 20" average annual rainfall: You can obtain commercially acceptable control of rhizome johnsongrass with postplant applications in bearing and non-bearing established plantings of vineyards and almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, pistachio, tangelo, tangerine and walnut trees with a Gowan Trifluralin 5 program when applied for 2 years in a row.

**Soil Preparation:** Work the soil thoroughly to bring the rhizomes nearer the surface.

**Application:** Apply Gowan Trifluralin 5 at a broadcast rate of 3.2 pints per acre on all soil textures each year for 2 years in a row. Do not apply to vineyards within 60 days of harvest.

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

**Cultivation:** Some johnsongrass plants will escape. Timely cultivations are necessary to obtain commercially acceptable control. You cannot obtain commercially acceptable control with only 1 year of Gowan Trifluralin 5 use.

**Precautions:** Do not use the 3.2 pint rate on new plantings, or crop injury may result. Do not interplant orchards or vineyards with other crops. If the treated vineyards and orchards are diverted to other crop uses, plant only those crops for which Gowan Trifluralin 5 has been registered as a preplant treatment for the next cropping season.

**FRUIT AND NUT CROPS AND VINEYARDS—Bindweed control in California:** Gowan Trifluralin 5 can be used for the control of field bindweed in vineyards and for almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, pistachio, tangelo, tangerine and walnut trees. Apply at a broadcast rate of 3.2 pints per acre on all soil textures. Gowan Trifluralin 5 must be applied in the spring with a specially designed spray blade which applies a thin, concentrated layer at a soil depth of 4 to 6 inches. This layer of Gowan Trifluralin 5 prevents bindweed shoots from emerging.

**Land Preparation:** Destroy all weeds and grasses with soil tillage before applying. This tillage is necessary to prevent trash from interfering with the operation of the spray blade.

**Equipment:** This operation requires a spray blade capable of running 4 to 6 inches below the surface of the soil. The spray blade should be equipped with nozzles located under the blade and directed so that the spray will be trapped under the soil which is flowing over the blade as it is pulled through the soil. Use a sufficient number of nozzles with spacing that will uniformly apply the Gowan Trifluralin 5 underground in a thin, horizontal layer.

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

**Precaution:** Some soils develop cracks as they dry after rainfall or irrigation. Field bindweed may emerge if the cracks extend through the Gowan Trifluralin 5 layer. Prevent or eliminate cracks by shallow discing or other tillage. Avoid deep tillage which disturbs the subsurface layer. Cultivation or tillage also aids the control of germinating seeds.

**FRUIT AND NUT CROPS AND VINEYARDS—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous sections for use on FRUIT AND NUT CROPS AND VINEYARDS. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

**WHEAT (WINTER)**

(Idaho, Montana, Oregon, and Washington)

Gowan Trifluralin 5 may be applied for preplant, preemergence control of cheatgrass and other annual grasses and broadleaf weeds controlled by Gowan Trifluralin 5. The growth, development and yield of winter wheat will not be adversely affected, provided the seed is placed below the zone of soil treated with Gowan Trifluralin 5. Apply any time during a period from 3 weeks up to immediately prior to planting. Broadcast at a rate of 1.2 pints per acre on coarse soils and medium soils and 1.6 pints on fine soils.

**Incorporation Directions:** Incorporate into the soil with a flexible tine-tooth harrow (Flextine, Melroe) set to cut 1 to 2 inches deep and operate at 3 to 6 mph. Incorporate one time within 24 hours after application, followed by a second incorporation in a different direction from the first prior to planting. Do not till the soil with a disc after the Gowan Trifluralin 5 has been incorporated with a flexible tine-tooth harrow.

**Seeding Directions:** Use only a deep furrow or semi-deep furrow drill that will place the seed below the zone of soil into which Gowan Trifluralin 5 has been incorporated.

**Precaution:** Wheat planted in direct contact with treated soil may suffer crop injury in the form of delayed emergence and development.

**WHEAT (WINTER)—Fallow soil application in Washington and Oregon:** Gowan Trifluralin 5 applied and shallowly incorporated into fallow soil up to four months ahead of planting will control cheatgrass and certain annual grasses and broadleaf weeds. The growth, development, or yield will not be adversely affected as long as the seed is placed below the zone of soil treated with Gowan Trifluralin 5. Use deep or semi-deep furrow drills.

Broadcast rates are 1.2 pints per acre on coarse and medium soils and 1.6 pints on fine soils. Apply anytime from May to September prior to the fall planting of winter wheat.

**Incorporation:** Incorporate with a flexible tine-tooth harrow (Flextine or Melroe) set to cut 1 to 2 inches deep and operated at 3 to 6 mph. For thorough incorporation, two passes of the equipment in different directions over the field are necessary. Incorporate one time within 24 hours after application followed by a second incorporation prior to seeding. Do not till the soil with a disc after Gowan Trifluralin 5 has been applied with a flexible tine-tooth harrow.

**Precaution:** Use only deep furrow or semi-deep furrow drills. Place seed below the zone of soil into which Gowan Trifluralin 5 has been incorporated. Do not plant wheat directly into the zone of soil treated, injury to the crop or delay in its emergence and development may occur.

**WHEAT (SPRING), DURUM, AND BARLEY—GOWAN TRIFLURALIN 5 ALONE**

Gowan Trifluralin 5 is recommended as a post plant incorporated treatment to control foxtail (pigeongrass). Apply at a broadcast rate of 0.8 pint per acre on coarse and medium soils and 1.2 pints on fine soils. Plant 2 to 3 inches deep in a well-tilled seedbed. Apply Gowan Trifluralin 5 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 1½ inches deep. Application and the first incorporation should be done in the same operation if possible. Both incorporations must be done within 24 hours.

**WHEAT (SPRING), DURUM, BARLEY (FALL APPLICATION)—Foxtail (Pigeongrass) control:** Gowan Trifluralin 5 may be fall applied for foxtail (pigeongrass) control in spring wheat, durum and barley planted the following spring. Gowan Trifluralin 5 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 treated soil.

**Broadcast Rates per Acre:**

Soil Texture	Gowan Trifluralin 5
Coarse	0.8 Pint
Medium	0.8 Pint
Fine	1.2 Pints

**Incorporation Directions:** Any of the following tools are recommended for fall incorporation. The disc or field cultivator may be used for the spring incorporation pass. Care should be taken to operate the tool at a more shallow depth than the fall incorporation.

1. **Chisel Plow:** May be used for the first pass only. Operate at 4-5 inches deep at 4-6 mph. A chisel plow is defined as having 3 rows of up to 18-inch sweeps on no greater than 12-inch centers. Stagger sweeps so that no soil is left unturned.
2. **Tandem Disc:** Operate at 3-4 inches deep at 4-6 mph.
3. **Field Cultivator:** Operate at 3-4 inches deep at 5 mph or more. A field cultivator is defined as having 3 to 4 rows of sweeps with C or S shaped shanks, spaced 7 inches or less and staggered so that no soil is left unturned.

**Planting Directions:** Wheat, durum, or barley should be approximately 2 inches deep.

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

**WHEAT (SPRING), DURUM AND BARLEY—Gowan Trifluralin 5/Far-Go Tank Mix  
(Except CALIFORNIA)**

Gowan Trifluralin 5/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 Gowan Trifluralin 5/Far-Go after seeding but before crop emerges. To incorporate, use flexline 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. Note: Overapplication may result in crop injury. Read the FAR-GO label carefully before using.

**Broadcast Rates Per Acre:**

Soil Texture	GOWAN TRIFLURALIN 5	FAR-GO	
	Barley/Durum/ Spring Wheat	Durum/Spring Wheat	Barley
Coarse	0.8 pint	2 pints	2 1/2 pints
Medium	0.8 pint	2 pints	2 1/2 pints
Fine	1.2 pints	2 pints	2 1/2 pints

**WHEAT—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous sections for use on WHEAT. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label. For tank mixes containing Gowan Trifluralin 5 follow label directions, restrictions and precautions for both products concerning CHEMIGATION. Do not use tank mixes for chemigation when not permitted on either label.

**FLAX—FALL APPLICATION**

Gowan Trifluralin 5 may be applied and incorporated in the fall for weed control in spring seeded flax. Ground cover from existing weeds or previous crop should be at a manageable level so that there is no interference with incorporation.

Apply Gowan Trifluralin 5 at the broadcast rates per acre of 0.8 pint for coarse soils; 1.2 pints for medium soils; and 1.6 pints for fine soils.

**Incorporation Directions:** Incorporate one time within 24 hours after application. The second incorporation should be performed in the spring prior to seeding of flax. The incorporation operations should result in a thorough mixing of Gowan Trifluralin 5 with the soil. Otherwise, erratic weed control may result.

**Incorporation Equipment:** Use machinery that mixes Gowan Trifluralin 5 thoroughly with the soil. Recommended equipment includes:

**Disc:** Set to cut 3-4 inches deep and operated in 2 different directions at 4 to 6 mph. A tandem or double-disc operated one time does not provide adequate incorporation.

**Field Cultivator:** Set to cut 3-4 inches deep and operated at 5 mph or more. The field cultivator used alone or in combination with the double-disc will provide effective incorporation providing the following instructions are used:

1. Two passes over the field with a field cultivator with second pass running at an angle to the first. Do not set cultivator to cut deeper than 4 inches. Be sure a depth of not greater than 4 inches is maintained on the second pass since untreated soil may be turned up.
2. Field cultivator used for the first pass and the double-disc used for the second pass.
3. Double-disc used for the first pass and the field cultivator used for the second pass.

Note: A field cultivator is defined as an implement with 3 to 4 rows of sweeps spaced at intervals of 7 inches or less and staggered so that no soil is left unturned. Chisel points should not be used.

4. **Mulch treader and other similar disc-type implements—**set to cut 3-4 inches deep and operated at 5 to 8 mph in two different directions.

**Special Instructions for Flax:**

1. Incorporation operations or any other tillages performed in the spring prior to seeding should be relatively shallow so as to maintain a firm seedbed, and the seedbed should be packed just prior to seeding.

2. Seeding should be done with a press drill or hoe drill. Seed into a moist seedbed no more than 1.5 inches deep.

3. Flax should not be seeded until the seedbed has warmed up.

4. Refer to the special precautions statement on this label regarding stresses that can lead to crop injury or yield reduction.

Note: Do not delay the first incorporation more than 24 hours after application.

**FLAX—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous sections for use on FLAX. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

**ONION (Grown for Dry Bulb Only)**

**Application Directions:** Apply Gowan Trifluralin 5 as a directed spray to the soil between the onion rows. Avoid spraying the onion tops or exposed bulbs.

**Preharvest Interval:** Do not apply within 60 days of harvest.

**Broadcast Rates per Acre:**

Soil Texture	Gowan Trifluralin 5
Coarse	0.6-0.8 Pint
Medium	0.8-1.0 Pint

For band applications, use proportionately less Gowan Trifluralin 5. Use the lower rates where light weed pressure is anticipated.

**Incorporation Directions:** Soil incorporation may be accomplished by operating sweep-type or rolling cultivators 2 to 4 inches deep at 6 to 8 mph. Incorporation equipment must mix Gowan Trifluralin 5 uniformly into the soil. Incorporate with two passes. The first pass must be within 24 hours of application or erratic weed control may result. Avoid covering exposed onion bulbs with treated soil during incorporation as injury to the crop may occur. Care should be taken to avoid injury to the roots during incorporation.

**Precautions:** Applied according to these directions and under normal growing conditions, Gowan Trifluralin 5 will not adversely affect onions. Diseases, improper incorporation depth, excessive moisture, high salt concentration or drought may weaken the crop and increase the possibility of damage from Gowan Trifluralin 5. Under these conditions, delayed crop development or reduced yields may result.

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**ONION—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous section for use on ONION. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

**RAPESEED**

Gowan Trifluralin 5 as a broadcast application will control certain annual grasses and broadleaf weeds in rapeseed .

For use in all states except Alaska: Follow recommended procedures for soil preparation and application for Gowan Trifluralin 5. Gowan Trifluralin 5 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 with equipment specified in this label.

Broadcast Rates per Acre:

Soil Texture	Gowan Trifluralin 5
Coarse	0.8 Pint
Medium	1.2 Pints
Fine	1.6 Pints

**RAPESEED—CHEMIGATION:** For application by irrigation system, apply specified dosage of Gowan Trifluralin 5 per acre as described in previous section for use on RAPESEED. Follow all directions given under GENERAL CHEMIGATION USE INSTRUCTIONS section of this label.

**GENERAL CHEMIGATION USE INSTRUCTIONS**

If application by chemigation is not specifically listed for a crop, Gowan Trifluralin 5 may not be applied to that crop through irrigation systems. Gowan Trifluralin 5 may be applied through sprinkler (including micro, center pivot, end tow, side (wheel) roll, traveler, solid set, lateral move and hand move), flood (basin) furrow and border chemigation (soil drench uses) or drip (including surface and subsurface) irrigation systems. Do not apply this product through any other type of irrigation system. Do not apply this product in an irrigation system connected to a public water supply. Public water supply means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. 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.

**Irrigation System Requirements:** The system must contain a functional check valve, vacuum relief valve and a low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. 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. Systems must use a metering pump, such as a positive displacement 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.

**Precautions and Use Requirements for All Irrigation Systems:** Do not allow contact with crop foliage or fruit unless allowed in use directions for other application methods).

Do not apply when wind speed favors drift beyond the area intended for treatment, when system connections leak or when emitters do not provide uniform distribution.

Before use, remove scale, pesticide residues and other debris from the mix tank and the pump system. Flush system with clean water.

Calibration and distribution will be more accurately achieved by injecting a larger volume of a more dilute solution over time. If desired, dilute Gowan Trifluralin 5 with water prior to injection and mix solution sufficiently to ensure uniform delivery into the injection system; maintain adequate agitation.

Sprinkler systems should be calibrated to deliver a volume of 4 to 50 gallons per hour (gph) per emitter. Apply Gowan Trifluralin 5 in overhead irrigation equal to 1/2 to 1 inch of water.

Drip systems should be set at 0.1 to 3 gph per emitter. The application interval should be such that at one period of time during the injection, the first and last emitters in the system contain Gowan Trifluralin 5 treated water.

After application is completed, flush equipment with clean water, then continue to irrigate for one to two hours. Mechanical soil incorporation is not required when Gowan Trifluralin 5 is applied through chemigation systems.

**CHEMIGATION APPLICATION INSTRUCTIONS**

**For General Application of Gowan Trifluralin 5 Through Irrigation Systems for Overall Weed Control (Broadcast):** Use sprinkler systems (micro, center pivot, end tow, side (wheel) roll, traveler, solid set, lateral move and hand move) flood (basin) furrow and border chemigation (soil drench uses) to apply to crops which permit application by chemigation on this label. Gowan Trifluralin 5 should be injected continuously throughout the chemigation period. The chemigation metering pump should be checked periodically during the application to ensure proper operation. The injection metering pump must be calibrated as specified by the manufacturer. During chemigation, maintain agitation at all times. Apply label prescribed rates to treated area only. If the irrigation system does not apply treated water to the entire area of the field, adjust the amount of Gowan Trifluralin 5 used to match the actual treated acreage.

(43,560 Sq. Ft. = 1 acre)

**For Control of Break Through Weeds (including foliage, root, rhizome or stolon) at Irrigation (Emitter) Points:**

Use drip systems (surface and subsurface) and sprinkler systems (micro, solid set, and hand move) to apply to crops which permit application by chemigation on this label. In this application, Gowan Trifluralin 5 rates which are listed as broadcast rates should be prorated to treat only the desired soil area. Do not apply Gowan Trifluralin 5 in this manner more than 3 times per calendar year.

**Surface drip and sprinkler applications- (Timing)-** Inject Gowan Trifluralin 5 at the end of the irrigation cycle allowing 1 to 1 1/2 hours of irrigation following the application to flush lines with clear water. (Rate Calculation)-For example, apply 1.6 to 3.2 pints of Gowan Trifluralin 5 per acre to the treated area. A treated acre is defined as the surface area wetted by the irrigation system. To calculate the treated acreage, multiply the number of emitters in an irrigation set by the measured square footage of the wetted area of the average emitter, divided by 43,560.

**Subsurface drip applications- (Timing)-** Charge the irrigation system. Begin application of Gowan Trifluralin 5 immediately after all emitter points are functional. Shut off the irrigation system immediately following completion of the Gowan Trifluralin 5 application, allowing the Gowan Trifluralin 5 to bond to the treated soil. Resume irrigation 4 to 8 hours after the Gowan Trifluralin 5 application. (Rate Calculation)-For example, apply 1.6 to 3.2 pints of Gowan Trifluralin 5 per treated acre. The treated acreage is defined as the square footage area wetted by the irrigation system during the application period. Multiply the number of emitters (for "leaky hose" type of system use the linear feet of

buried line) per irrigation set by the desired square footage to be treated around each emitter and device by 43,560. In this type of application it is usually desirable to treat only 2 to 4 square inches around each irrigation emitter in order to prevent break through weeds.

**NOTE:** Application of Gowan Trifluralin 5 through irrigation systems as a supplemental weed control practice, to suppress break-through weeds, including pest foliage, roots and rhizomes, at irrigation emitters will inhibit the formation of root tissue. Improper use of Gowan Trifluralin 5 may result in yield loss due to weak or deformed root structure in annual and some perennial crops. Make Gowan Trifluralin 5 injections after the majority of the root development has occurred but prior to pest presence in the emitter zone. Visual inspection of the root zone is necessary for proper application timing. Gowan Trifluralin 5 injection should be done separately from normal irrigation practices. For annual crops with "tap" or "bulb" type root structure, bury the drip line off center of the planted row or below the depth of the fully developed tap root or bulb. Gowan Trifluralin 5 injections made early in the crop development or in shallow buried drip lines will result in restricted root development and possible yield loss. Consult your local Farm Advisor, P.C.A., or Gowan Company Representative for proper use of Gowan Trifluralin 5.

### FERTILIZER USE DIRECTIONS APPLICATION WITH LIQUID FERTILIZERS

Gowan Trifluralin 5 may be mixed with most liquid fertilizer materials. The combination with solutions and suspension-type fertilizers has provided weed and grass control equal to the same rates of Gowan Trifluralin 5 applied in water. Follow Gowan Trifluralin 5 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:** Gowan Trifluralin 5 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 liquid 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 seven agents listed on the next 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 teaspoons full 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 full of Gowan Trifluralin 5 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 ½ 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, 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 agent 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

**Gowan Trifluralin 5 in Liquid Fertilizer:** Emulsifiable concentrates, such as Gowan Trifluralin 5, can be mixed with liquid fertilizers. In all cases, continuous agitation is required to prevent the Gowan Trifluralin 5 from rising to the surface as an oily layer. When necessary, (see Testing For Tank Mix Compatibility in Liquid Fertilizers, above) a compatibility agent can be used to cause the Gowan Trifluralin 5 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 (EC) 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 Gowan Trifluralin 5 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 is 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 ½ 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 compatibility agent and follow the directions:

1. Sponto 186D (Witco Chemicals Co., Chicago, IL.)
2. Compat (Farm Chemicals, Inc., Aberdeen, NC) [Not for use in California]
3. Unite (Hopkins Ag Chemical, Madison, WI)
4. T—Mulz 734-2 (Thompson-Hayward Chemical Co.) [Not for use in California]
5. Rigo Compatibility Agent (Rigo Company, Buckner, KY)
6. Amoco Spray Mate U (Amoco Oil Co., Chicago, IL) [Not for use in California]
7. Kem-Link (Universal Coop, Minneapolis, MN)

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 Gowan Trifluralin 5 incorporation procedures.

### GOWAN TRIFLURALIN 5 APPLICATION WITH DRY BULK FERTILIZERS

Dry bulk fertilizers may be impregnated or coated with Gowan Trifluralin 5. Application of dry bulk fertilizers impregnated with Gowan Trifluralin 5 has provided weed and grass control equal to the same rates of Gowan Trifluralin 5 applied in water.

All Gowan Trifluralin 5 label recommendations regarding rates per acre, approved crops, incorporation, special instructions, cautions, and special precautions must be followed. Apply a minimum of 200 pounds per acre of dry fertilizer impregnated with Gowan Trifluralin 5 at the recommended rates. Any commonly used dry fertilizers can be used for Gowan Trifluralin 5 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. Apply Gowan Trifluralin 5 uniformly to the fertilizer.

**Rates:** Check specific crop recommendations for the rate of Gowan Trifluralin 5 per acre. See the rate table which follows to determine the amount of Gowan Trifluralin 5 to be impregnated into a ton of dry bulk fertilizer based on the amount of fertilizer which will be applied per acre (see rate chart below).

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

**Incorporation:** Follow Gowan Trifluralin 5 incorporation procedures.

**RATE CHART FOR IMPREGNATING FERTILIZER WITH GOWAN TRIFLURALIN 5**  
(Gowan Trifluralin 5 Added To A Ton Of Fertilizer)

FERTILIZER Rate Per Acre	GOWAN TRIFLURALIN 5 Rate Per Acre				
	0.8 Pint	1.2 Pints	1.6 Pints	2.4 Pints	3.2 Pints
200 pounds	4 qts. per ton	6 qts. per ton	8 qts. per ton	12 qts. per ton	16 qts. per ton
250 pounds	3.2 qts. per ton	4.8 qts. per ton	6.4 qts. per ton	9.6 qts. per ton	12.8 qts. per ton
300 pounds	2.7 qts. per ton	4 qts. per ton	5.6 qts. per ton	8 qts. per ton	10.8 qts. per ton
350 pounds	2.3 qts. per ton	3.6 qts. per ton	4.8 qts. per ton	6.8 qts. per ton	9.2 qts. per ton
400 pounds	2 qts. per ton	3 qts. per ton	4 qts. per ton	6 qts. per ton	8 qts. per ton
450 pounds	1.8 qts. per ton	2.7 qts. per ton	3.6 qts. per ton	5.4 qts. per ton	7.2 qts. per ton

For rates other than those listed above, use the following formula to calculate the amount of Gowan Trifluralin 5 to be impregnated on a ton of dry bulk fertilizer:

$$\begin{matrix} \text{Pints Gowan} \\ \text{Trifluralin 5} \\ \text{Per Acre} \end{matrix} \times \frac{1000}{\begin{matrix} \text{Lbs. Fertilizer} \\ \text{Per Acre} \end{matrix}} = \begin{matrix} \text{Quarts Gowan} \\ \text{Trifluralin 5 Per} \\ \text{Ton Of Fertilizer} \end{matrix}$$

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.

**SPECIAL PRECAUTIONS**

Applied according to directions and under normal growing conditions, Gowan Trifluralin 5 will not harm the treated crop. Overapplication may result in crop injury or a soil residue. Uneven application or improper soil incorporation of Gowan Trifluralin 5 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 Gowan Trifluralin 5. Under these conditions, delayed crop development or reduced yields may result.

In Arizona, Colorado, California, Idaho, Montana, 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. Plow the land to a depth of 12 inches prior to planting sugarbeets to prevent the possibility of crop injury. Sorghum (milo), proso millet, corn or oats 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 or oats should not be planted for 12 months after an application.

If less than 20 inches of total water was used to produce the crop, do not plant sorghum, proso millet, or oats for 18 months after an application. 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 inches of rainfall per year: Moldboard plow before planting sugar beets where a spring application of Gowan Trifluralin 5 was made the previous season. Also note planting restrictions listed in the section on control of rhizome johnsongrass and other higher rate programs.

**Vegetable Growing Areas:** Vegetable crops other than those listed on this label should not be planted within 5 months following the application of Gowan Trifluralin 5.

**STORAGE AND DISPOSAL**

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

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

**FOR 24-HOUR EMERGENCY ASSISTANCE (SPILL, LEAK, OR FIRE), CALL CHEMTREC® (800) 424-9300.**

For other product information, contact Gowan Company or see Material Safety Data Sheet.

**NOTICE ON CONDITIONS OF SALE**

Our recommendations for use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice. The buyer must assume all responsibility, including injury or damage, resulting from its misuse as such, or in combination with other materials.

Caparok®—prometryn, Novartis Crop Protection Ag Products

Coloran®—fluometuron, Novartis Crop Protection Ag Products

Eptam®—EPTC, Zeneca Ag Products

Far-Go®—triallate, Monsanto Company.

Karmex®—diuron, Du Pont Agricultural Products

Lexone®—metribuzin, Du Pont Agricultural Products

Sencor®—metribuzin, Bayer Corporation

Vernam®—vernolate, Zeneca Ag Products.