



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

JAN 14 1994

**OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES**

**Bethany Hulcy
GOWAN COMPANY
BOX 5569
YUMA, AZ 85366**

**Subject: Label Amendment Submission of 08/10/93 in Response to PR Notice 93-7
EPA Reg. No. 10163-101
GOWAN TRIFLURALIN 4**

Dear Registrant:

The labeling cited above and submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is accepted subject to the comments reflected on the enclosed sheet. A copy of your proposed labeling stamped "ACCEPTED WITH COMMENTS" is enclosed.

WHAT THIS ACCEPTANCE MEANS:

Based on your certification, the Agency has accepted the labeling changes that are necessary to comply with the Worker Protection Standard (WPS) labeling requirements of 40 CFR part 156, subpart K, described in PR Notices 93-7 and 93-11. Any other labeling changes submitted in connection with this amendment application but not directly related to compliance with the WPS have not been reviewed or accepted by the Agency. If you wish to make such changes, you must submit a separate amendment application proposing them. If your product is currently suspended, the acceptance of this labeling amendment does not affect the suspension in any way.

WHAT YOU NEED TO DO NEXT:

By the next label printing make all the specified changes to your labeling. Send to EPA one (1) copy of the final printed labeling:

- BEFORE selling or distributing any product bearing the final printed labeling
- AND
- WITHIN one year from date of this acceptance.



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

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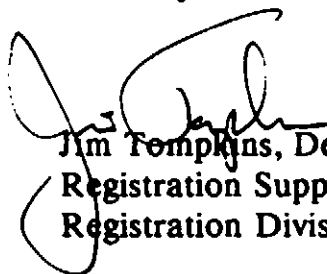
Submit the final printed labeling via the U.S. Postal Service to:

Document Processing Desk (FIN-LABEL)
Office of Pesticide Programs (7505C)
U.S. Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460-0001

Hand or courier deliveries of final printed labeling may be made to:

Document Processing Desk (FIN-LABEL)
Office of Pesticide Programs
Room 266A, Crystal Mall 2
1921 Jefferson Davis Highway
Arlington, VA 22202

Sincerely,



Jim Tompkins, Deputy Chief
Registration Support Branch
Registration Division (7505W)

Attachment

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division

Bethany Hulcy
GOWAN COMPANY
BOX 5569
YUMA AZ 85366

Subject: Label Amendment Submission of 08/10/93
to Comply with WPS Labeling Requirements
EPA Reg Nr. 10163-101
GOWAN TRIFLURALIN 4

The following specific comments pertain to your
WPS labeling submission concerning the product
cited above:

There is a typographical error(s) in the Agricultural Use
Requirements box.

There is a typographical error(s) in the Spanish language
text.

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ACCEPTED
with COMMENTS
In EPA Letter Dated

JAN 14 1994

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
10163-101

GOWAN TRIFLURALIN 4

HERBICIDE

ACTIVE INGREDIENT:	% BY WT.
Trifluralin (alpha, alpha, alpha-trifluoro-2, 6-dinitro-N, N-dipropyl-p-toluidine)	44.5%
INERT INGREDIENTS:	55.5%
	TOTAL 100.0%

Contains 4 lbs. Trifluralin per gallon. Contains petroleum distillates.

KEEP OUT OF REACH OF CHILDREN WARNING AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand 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.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS WARNING

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.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

Applicators and other handlers must wear:

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

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

NET CONTENTS _____ GALLONS

EPA Reg. No. 10163-101
EPA Est. No. 10163-AZ-1

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

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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.

ENVIRONMENTAL HAZARDS

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

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

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

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

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

STORAGE AND DISPOSAL

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

STORAGE: Avoid freezing. Store above 40° F. If frozen, poor weed control may result. Do not store near heat or flame.

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

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

CHEMIGATION Refer to supplemental labeling entitled CHEMIGATION USE INSTRUCTIONS for use directions on chemigation. Do not apply this product through any type of irrigation system unless the supplemental labeling on chemigation is followed.

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ALFALFA-ESTABLISHED: APPLIED THROUGH CHEMIGATION SYSTEMS FOR WEED CONTROL

Gowan Trifluralin 4 can be applied through properly equipped chemigation systems for weed control in alfalfa. Refer to supplemental labeling entitled "Gowan Trifluralin 4 Chemigation Instructions" for use directions for chemigation. Do not apply Gowan Trifluralin 4 through any irrigation system unless the supplemental labeling on chemigation is followed.

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

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

Broadcast Rates Per Acre

Soil Textures	Gowan Trifluralin 4
All soil textures	2 quarts

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

GOWAN TRIFLURALIN 4 CHEMIGATION INSTRUCTIONS

Read and follow all label instructions outlined below concerning chemigation before applying Gowan Trifluralin 4.

General Chemigation Directions

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

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

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

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

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Sprinkler Chemigation Directions

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

1. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injections pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point that pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.
8. Gowan Trifluralin 4 should be injected continuously throughout the chemigation period. The chemigation metering pump should be checked periodically during application to ensure proper operation.
9. The injections metering pump must be calibrated as specified by the manufacturer.
10. During chemigation, maintain agitation in supply tank at all times.
11. Gowan Trifluralin 4 may cause some staining of plastic hoses and tanks.
12. Apply Gowan Trifluralin 4 in sprinkler irrigation equal to 1/2 to 1 inch of water.

Chemigation System Calibration

The following is a sample calculation for use of Gowan Trifluralin 4.

- Assume, in this example, 133 acres are to be covered by a chemigation treatment.
- Product required, assuming 1.5 pints per acre is 199.5 pints. (25 gallons)
- Add 25 gallons of product directly to the injection supply tank.
- Adjust the injection system to deliver 25 gallons during the time required to apply 1 inch of water to 133 acres.
- If the irrigation system requires 20 hours to apply 1 inch of water to 133 acres, the injection rate is 1.28 gallons per hour and is calculated as follows:
 25 gallons divided by 20 hours is 1.25 gallons per hour.
 1.25 gallons is 160 fluid ounces.

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

160 fl. oz. per hour divided by 60 min. per hour equals 2.7 fl. oz. per min.

Mixing Directions

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

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

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DIRECTIONS FOR USE

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

WEEDS AND GRASSES CONTROLLED BY GOWAN TRIFLURALIN

GRASSES	
Annual bluegrass	(Poa annua)
Barnyardgrass	(Echinochloa sp.)
Watergrass	
Brachiaria	(Brachiaria sp.)
(Signalgrass)	
Bromegrass	(Bromus tectorum)
(Chenopgrass)	
(Downy brom)	
Cheat	(Bromus sectinalis)
(Chess)	
Cratgrass	(Digitaria sp.)
(Large crabgrass)	
(Smooth crabgrass)	
Foxtail	(Setaria spp.)
(Soft)	
(Hard)	
(Giant)	
(Green)	
(Foxtail millet)	
(Barnyard)	
(Robust)	
(Yellow)	
Snowgrass	(Eleusine indica)
(Silver crabgrass)	
(Silvergrass)	
(Wedgegrass)	
(Yardgrass)	
Johnsongrass (from seed)	(Sorghum holopogon)
(Rhizome — see cotton and soybean sections for special instructions)	
Junglerice	(Echinochloa colonum)
Panicum	
Fan panicum	(Panicum dichotomiflorum)
(Spreading panicgrass — see cotton and soybean sections for special instructions)	
Guineagrass	(Panicum maximum)
(See sugarcane section for special instructions)	
Texas panicum	(Panicum texanum)
(Buffalograss)	
(Colorado)	
Richgrass	(Pectis pteris)
(Ranigrass)	
(See sugarcane section for special instructions)	
Rice	(Oryza sativa)
(See soybean section for suppression or partial control directions)	
Sanibar	(Cenchrus incertus)
(Bigrass)	
Springtoe	(Leptochloa filiformis)
Stinkgrass	(Eragrostis ciliaris)
(Lopgrass)	
Wild cane	(Sorghum bicolor)
(Shattercane)	
(See soybean section for special instructions)	
Wild oat	(Avena fatua)
(Preplant only. Not for fall applications for spring seeded cereals.)	
White cupgrass	Echinochloa villosa
BROADLEAF WEEDS	
Carpetweed	(Mollis verticillata)
Chickweed	(Stellaria media)
Fine fennelweed	(Conyza bonariensis)
(See fruit and nut crops and vineyard section for special instructions)	

Florida pusley	(Richardia scabra)
(Texas pusley)	
(Mexican clover)	
(Pusley)	
Goosefoot	(Chenopodium hybridum)
Henbit (fall application only)	(Lamium amplexicaule)
Kingweed	(Polygonum aviculare)
Kocha	(Macha scoparia)
(Newseed)	
(American Newseed)	
Lambquarters	(Chenopodium album)
Pigweed	(Amaranthus spp.)
(Cresswood)	
(Prostrate pigweed)	
(Redroot)	
(Rough pigweed)	
(Spike pigweed)	
Puncturevine (Western U.S. only)	(Tropaeum terrestris)
(Caltrop)	
(Goosefoot)	
Purslane	(Portulaca oleracea)
Russian thistle	(Salsola salina)
(Tumbleweed)	
Stinging nettle	(Urtica dioica)
(Nettle)	

SOIL PREPARATION

Crop Residues or Existing Weeds. Ground cover, such as crop residues or existing weeds, can interfere with the incorporation of Gowan Trifluralin into the soil. A manageable level of such ground cover will allow the Gowan Trifluralin 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 the 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 insure 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 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 group 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**, silt clay, sandy clay, sandy clay loam*

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

MIXING AND APPLICATION DIRECTIONS

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

Gowan Trifluralin Tank Mix in Water: Vigorous, continuous agitation is required for all tank mixes. (Sparger type agitators generally provide the best agitation in spray tanks.) Avoid stirring or splashing air into the mixture during mixing 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 splash back into the water source.

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Mixing Order: Fill the tank 1/4 to 1/3 full with clean water. Start the agitation. Add dry flowables, wettable powders, oily aqueous suspensions (AS), flowables (F), and liquids (L) to the water and agitate until the products 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, mix thoroughly. Then add the solution (S) formulations, agitate and flush tank. 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 settling 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 liquid formulations with water (shut-offs) 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 insure proper calibration and uniform application. Do not apply Gowan Trifluralin if the wind can cause drifting of spray particles which can result in non-uniform application. Gowan Trifluralin 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 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 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.

INCORPORATION DIRECTIONS

Incorporation Equipment—General Directions

Use incorporation equipment that mixes Gowan Trifluralin into the top 2 to 3 inches of the final seedbed or at least 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 within the top 2 inches of soil.

Incorporation Before Planting

Gowan Trifluralin must be incorporated one time within 24 hours after application. Then any time prior to planting a second incorporation is necessary. The time running the equipment in a different direction from the first. You should incorporate the Gowan Trifluralin 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 needs to be incorporated into the top 2 to 3 inches of the final seedbed.

Application prior to bedding: Apply Gowan Trifluralin 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. Apply and incorporate it with recommended equipment that will conform to the bed shape. Do not leave treated soil exposed.

* Avoid removal of treated soil from the seedbed 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 tines, spaced at intervals of 7 inches or less and staggered so that no soil is left untilled. Chain gangs should not be used.

Combination Seeded Conditions: Set to cut 3 to 4 inches deep and operate at a speed of at least 5 mph. These movements 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 8 to 9 inches (staggered so that no soil is left untilled), followed by a subsoiler or flexing harrow, followed by a ground driven roll or basket. Gowan Trifluralin can be incorporated with one pass when using combination seeded conditions 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 incorporation passes.

Rotary Cultivator: Set to cut 2 to 4 inches deep and operate at 6 to 8 mph. Rotary cultivators are adequate for use on coarse and medium textured soils only, except when used in sugarcane where the rotary 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 (or similar disc-type implement): Set to cut 3 to 4 inches deep and operate at 5 to 8 mph.

P.T.O. Driven Equipment (tillers, cultivators, harrows): adjust to incorporate into the top 2 to 3 inches of the seedbed with rollers 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 (if tested), listed, is also recommended but only for the special programs for which it is specified in the label.

CULTIVATION AFTER PLANTING

Soil treated with Gowan Trifluralin 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 is recommended as a pre-emergence application, use the rates listed for spring application. Do not apply Gowan Trifluralin in the fall for sugarcane, potatoes, and direct seeded tomatoes.

In most states apply and incorporate Gowan Trifluralin any time 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 seed bed 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 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 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 should not be used on soils containing more than 10% organic matter.

COTTON—GOWAN TRIFLURALIN ALONE

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

COTTON—Pre-emergence

Broadcast Rates per Acre

Soil Texture	Average annual rainfall*	
	Areas receiving less than 20"	Areas receiving more than 20"
Coarse	1 Pint	1 Pint
Medium	1 1/2 - 1 3/4 Pints	1 1/2 Pints
Fine	1 3/4 Pints	2 Pints

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

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12 of 22

Incorporation with Bedding Implements

Bedding implements (rollers and hoppers) may be used to incorporate Gowen Trifluralin 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 Gowen Trifluralin recommended in the label.

Soil Preparation See general soil preparation.

Bedder Use Directions Either a roller 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 roller shank, sweep or chisel shank should be mounted on the bedder behind the spray nozzles and ahead of the bedder head to help distribute Gowen Trifluralin in the center of the bed. The use of bed tillage equipment such as rolling cultivators, PTO driven weeders or disc cultivators 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 Gowen Trifluralin in the soil. Weed control obtained will be dependent upon location of the Gowen Trifluralin at the time of planting.

If Gowen Trifluralin is moved during bed tillage or planting, a band application of Gowen Trifluralin at planting or a post-emergence application of Gowen Trifluralin may be required to ensure good weed control. Do not incorporate with the bedder if the soil is too wet for good mixing.

COTTON—Postplant

When incorporating Gowen Trifluralin after planting (postplant), be careful not to disturb the seed.

COTTON—Postemergence

Directions for Use

Gowen Trifluralin can be used as a post-emergence soil incorporated application in cotton. Gowen Trifluralin may be applied after final bed preparation any time from the four true leaf stage up to layby, but not less than 50 days before harvest.

Application Directions

Gowen Trifluralin 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 Gowen Trifluralin label for ground and aerial application directions.

Application Rates

Apply Gowen Trifluralin to cotton at the following broadcast rates per acre:

Soil Texture	Gowen Trifluralin 4
Coarse	1/4 - 1 Pint
Medium	1 - 1 1/2 Pints
Fine	1 1/2 - 2 Pints

Incorporation Directions

Final beds should be established before the Gowen Trifluralin application is made. The soil surface should be free of existing weeds and excessive trash or clods. Gowen Trifluralin 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 made and be operated at 6 to 8 mph. Set sweeps to provide maximum soil mixture and to insure 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 insure movement of treated soil into the crop row. The rolling cultivator should be operated at 6 to 8 mph. Care should be taken to insure 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 Gowen Trifluralin 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 Gowen Trifluralin any time between October 15 and December 31. The ground may be left flat or bedded up over winter. On bedded ground, back beds down to desired height before planting, moving some treated soil from beds into furrows. Where soil is left flat over winter, be careful not to turn up untreated soil during spring bedding operations. Destroy established weeds during seedbed preparation. If weeds become established in furrows due to uncovering of untreated soil during bedding, destroy these weeds before planting in the fall. Do not apply Gowen Trifluralin 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, northern North Carolina, New Mexico, Oklahoma, South Carolina, Tennessee, and Texas, apply and incorporate at a broadcast rate of 2 pints per acre on coarse and medium and 2 1/2 pints on fine soils.

In Arizona, California, and Nevada, apply and incorporate Gowen Trifluralin at a broadcast rate of 1 1/2 pints per acre on coarse soils; 2 pints on medium soils; and 2 1/2 pints on fine soils. For cotton grown in other states, apply and incorporate at a broadcast rate of 1 pint per acre on coarse soils, 1 1/2 pints on medium soils, 2 pints on fine soils, 1 1/2 pints on coarse soils with 2-5% organic matter, and 2 to 2 1/2 pints on soils with 5-10% organic matter.

COTTON—SPECIAL USE DIRECTIONS

COTTON—Fall preplant

Apply and incorporate Gowen Trifluralin at the broadcast rate of 2 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 Gowen Trifluralin any time before planting in the spring for 2 years in a row. Use a broadcast rate of 2 pints per acre on coarse soils, 3 pints on medium soils, and 4 pints on fine soils.

OR

Fall Application—Apply Gowen Trifluralin 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 Gowen Trifluralin 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 clumps will escape timely cultivations during the crop season to remove escaped plants are necessary. 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 Gowen Trifluralin 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, Gowen Trifluralin may be applied preplant at a broadcast rate of 1 to 1 1/2 pints per acre on coarse soils; 1 1/2 to 2 pints on medium soils, and 2 pints on fine soils. Exception in the State of Louisiana, 3 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, Walker and Wharton, Gowen Trifluralin may be applied up to 2 weeks before planting at a broadcast rate of 1 1/2 pints per acre on coarse soils, 2 pints on medium soils, and 3 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 Gowen Trifluralin.

COTTON—Gowen Trifluralin/Zenith Tank Mix

A tank mix combination of Gowen Trifluralin and Zenith is recommended as a preplant soil incorporated treatment for broad spectrum control of grass and broadleaf weeds in cotton. Gowen Trifluralin/Zenith may also be tank mixed and incorporated using one-half the recommended rate of Zenith with the remaining one-half rate of Zenith surface applied after planting. Gowen Trifluralin/Zenith will effectively control/suppress the following weeds in addition to those controlled by Gowen Trifluralin alone:

Control	Cocklebur*	Mimimgony*	Pennsylvania smartweed	Prickly sida
	Sickle pod	Scoutd sponge	Sourod weeds	Velvetleaf
Suppression	Barnyardgrass	Johnsongrass (hybrid)	Cocklebur	Ham seedling
	Mimimgony	Mulberry	Ragweed	Other smartweeds

*Controlled by Zenith soil application only.

Application: Follow soil preparation procedures normally used with Gowen Trifluralin. The tank mix of Gowen Trifluralin/Zenith may be applied up to 30 days before planting using any properly calibrated, low pressure herbicide applicator.

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13 of 22

icide sprays that will apply the spray uniformly. Fill the spray tank three-fourths full with clean water and start agitation. Premix the required amount of Zenal with a small amount of water and add to the spray tank. Continue agitation and add the required amount of Gowan Trifluralin to the spray tank. Agitate continuously during filling and throughout the spraying operation. Agitation, such as a sparger system, should be used to sweep bottom contents of the tank up into the main body of the spray mixture for thorough mixing and uniform suspension. If a bypass line is used, discharge at the bottom of the tank to minimize foaming. Apply in from 10-20 gallons of water per acre with a sprayer equipped with herbicide legs and screens sized 50 mesh or larger. Do not allow the spray mixture to remain in the tank overnight as settling could occur and resuspension would be difficult.

Apply Gowan Trifluralin/Zenal at the following broadcast rates per acre:

Soil Texture	Gowan Trifluralin 4	Zenal 80 WP**
Coarse	1 Pint	125 Pounds
Medium	1 1/2 Pints	19 Pounds
Fine	2 Pints	25 Pounds

**Sprink application — Apply and incorporate the full rate of Gowan Trifluralin with half the recommended rate of Zenal. Surface apply the remaining half rate of Zenal pre-emergence.
Incorporation Directions: Incorporate Gowan Trifluralin plus Zenal one time within 24 hours after application. A second incorporation is required with most equipment. Consult the complete label for Gowan Trifluralin for recommendations regarding specific incorporation tools. Refer to the Zenal label for all cautions, precautions, etc. regardless of the procedure.

COTTON—Gowan Trifluralin/Caporal Tank Mix (for cotton grown in California, Arizona, New Mexico, and west Texas)

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

Smartweed	Groundcherry (annual)	Mustard	Melva
Wild Oat	Pitchy side (two-leaf)	Annual morningglory	Ragweed

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

Soil Texture	Broadcast Rates Per Acre	
	Gowan Trifluralin 4	Caporal 80W
Coarse	1 Pint	2 Pounds*
Medium	1 1/2 Pints	2 1/2 Pounds
Fine	2 Pints	3 Pounds

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

Mixing Directions: Carefully follow the procedures on the Caporal 80W label for making a slurry and adding it to a partially filled tank of water. After the Caporal is thoroughly mixed with the partially filled tank of water, add the Gowan Trifluralin 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.

Additional Precautions: The combination of Gowan Trifluralin/Caporal 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 much planted cotton, water back only after cotton seedlings are well established.

Crop Rotations: Cabbage, oats, onions and peas may be planted in the fall after a spring application of Gowan Trifluralin plus Caporal. 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 Caporal label for directions, cautions and precautions.

COTTON—Gowan Trifluralin/Cotolan Tank Mix (except in Arizona and California)

Follow recommended soil preparation and incorporation procedures for Gowan Trifluralin. The Gowan Trifluralin/Cotolan tank mix effectively controls all the annual grasses and broadleaf weeds listed for Gowan Trifluralin alone plus these additional weeds:

Ryegrass	Galtonweed	Cocklebur	Groundcherry (night)
Jimsonweed	Morningglory	Pitchy side (two-leaf)	Ragweed
Sesbania	Sicklepod	Smartweed	Tumbleweed

Soil Texture	Broadcast Rates Per Acre	
	Gowan Trifluralin 4	Cotolan 80W
Coarse	1 Pint	1 1/2 Pounds
Medium	1 1/2 Pints	2 Pounds
Fine	2 Pints	2 1/2 Pounds

Mixing Directions: Carefully follow the procedures on the Cotolan label for making a Cotolan slurry and adding it to a partially filled tank of water. After the Cotolan is thoroughly mixed with the partially filled tank of water, add the Gowan Trifluralin 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 plus Cotolan, or crop injury may result. Do not load forage from treated cotton plants or gin trash to livestock. Do not mix Gowan Trifluralin plus Cotolan with liquid fertilizer.
West Texas Only: Do not use the tank mix of Gowan Trifluralin plus Cotolan 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 Cotolan 80W in tank mix with Gowan Trifluralin 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 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 pre-emergence application of Karmex. This will effectively control all the weeds controlled by Gowan Trifluralin alone plus these additional weeds:

Ragweed	Annual groundcherry	Cogongrass	Pennycress	Wild mustard
Annual morningglory	Shepherdspurse	Yellowgrass	Wild lettuce	

Soil Texture	Broadcast Rate Per Acre	
	Gowan Trifluralin 4	Karmex 80W
Coarse	1 Pint	1 1/2 Pound
Medium	1 1/2 Pints	2 1/2 Pound
Fine	2 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.

SOYBEAN—GOWAN TRIFLURALIN ALONE

SOYBEAN—Pre-emergence:
Follow recommended soil preparation, application, and incorporation procedures for Gowan Trifluralin.

Soil Texture	Broadcast Rates Per Acre	
	Gowan Trifluralin 4	
Coarse	1 Pint	
Medium	1 1/2 Pints	
Fine	2 Pints	

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

SOYBEAN—Fall Application:
Apply and incorporate anytime between October 15 and December 31. Ground may be left flat or bedded-up over winter. On bedded ground, track beds down to desired height before planting, moving some treated soil from less into lumps. 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 working, 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, north- 1 Florida, Georgia, Louisiana, Mississippi, southeastern Missouri, North Carolina, Oklahoma, South Carolina, Tennessee and Texas, apply and incorporate at a broadcast rate of 2 pints per acre on coarse and medium soils and 2 1/2 pints on fine soils.
For soybeans grown in states other than those listed above, apply and incorporate at a broadcast rate of 1 pint per acre on coarse soils, 1 1/2 pints on medium soils, 2 pints on fine soils, 1 1/2 pints on coarse soils with 2-5% organic matter, and 2 to 2 1/2 pints on soils with 5-10% organic matter.

SOYBEAN—SPECIAL USE DIRECTIONS

SOYBEAN—Fall panicum:
Apply Gowan Trifluralin at the broadcast rate of 2 pints per acre on both coarse and medium soils.



14
11

SOYBEAN—Pigeon and seedling johnsongrass

In Alabama, Arkansas, Florida, Georgia, Kansas, Louisiana, Mississippi, southeastern Missouri, North Carolina, Oklahoma, South Carolina, Tennessee and southern Virginia, Gowan Trifluralin may be applied at a broadcast rate of 1 to 1½ pints per acre on coarse soils, 1½ to 2 pints on medium soils, and 2 pints on fine soils. A special rate in the state of Louisiana, 3 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 may be applied up to 2 weeks before planting at a broadcast rate of 1½ pints per acre on coarse soils, 2 pints on medium soils, and 3 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 and reduce its weed control activity. Under these conditions, higher rates of Gowan Trifluralin 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. 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.

Apply at the broadcast rate of 1½ to 2½ pints per acre on coarse soils, 2½ pints on medium soils, and 3 pints on fine textured soils. Follow recommended soil preparation, application and incorporation procedures for Gowan Trifluralin.

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 at the following recommended rates. Follow recommended soil preparation and incorporation procedures for Gowan Trifluralin. Apply and incorporate in the spring before planting.

Soil Texture	Broadcast Rates Per Acre	
	Gowan Trifluralin 4	
Coarse	Year One 2 Pints	Year Two 1 Pint
Medium	3 Pints	1½ Pints
Fine	4 Pints	2 Pints
Coarse soils with 2-5% organic matter	3 Pints	1½ Pints
Soils with 5-10% organic matter	4 Pints	2 to 2½ Pints

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

Soil Texture	Gowan Trifluralin 4
Coarse	1½ to 2½ Pints
Medium	2½ Pints
Fine	3 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 has been registered as preplant treatment, or crop injury may result. Do not plant rice the second year. Rice may be planted 1 to 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 anytime in the spring before planting for 2 years in a row. Use a broadcast rate of 2 pints per acre on coarse soils, 3 pints on medium soils, 4 pints on fine soils, 3 pints on coarse soils with 2—5% organic matter, and 4 pints on soils with 5—10% organic matter.

OR

Fall Application—Apply Gowan Trifluralin 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 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 4
Coarse	Spring and Fall 1 Pint
Medium	1½ Pints
Fine	2 Pints
Coarse soils with 2—5% organic matter	1½ Pints
Soils with 5—10% organic matter	2 Pints

Incorporation—Deep incorporation is essential for good rhizome johnsongrass control. Incorporate Gowan Trifluralin 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 can be applied as a preplant treatment or injury may result.

SOYBEAN—Rhizome johnsongrass—Gowan Trifluralin/Sencor or Gowan Trifluralin/Lesene tank mix

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

Apply Gowan Trifluralin/Sencor or Lesene up to two weeks before planting for two consecutive years at the following broadcast rates per acre:

Soil Texture	Gowan Trifluralin 4	Lesene 50WP/PT or Sencor 50WP/PT	Lesene (dry flowable) or Sencor (dry flowable)
Coarse*	2 Pints	1/2 Pound/PT	1/2 Pound
Medium	3 Pints	3/4 Pound/PT	1/2 Pound
Fine	4 Pints	1 Pound/PT	2/3 Pound

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

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

SOYBEAN—Wild cane (shattercane)

Follow recommended soil preparation and application procedures for Gowan Trifluralin. 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. Apply at the broadcast rate of 1 pint per acre on a coarse soil, 2 pints on a medium soil, and 2½ pints on a fine textured soil.

Incorporation—Deep incorporation is essential for good wild cane control. Incorporate Gowan Trifluralin 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—Cultivations 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/Sencor or Gowan Trifluralin/Lesene Tank Mix:

The Gowan Trifluralin/Sencor or Gowan Trifluralin/Lesene tank mix effectively controls the annual grasses and broadleaf weeds controlled by Gowan Trifluralin plus these additional weeds:

Jimsonweed	Mallow	Vernice (flower of an hour)	Smartweed	Pennsylvania
Mustard weed	Pitchy sida	Ragweed, common	Soybean	Worm
				Vernateal

Control of cocklebur, marestail and giant ragweed (parthenocarp) may be erratic. Control may be improved with timely cultivation. Where cocklebur is a serious problem, an overlay of Sencor or Lesene may be preferred to the Gowan Trifluralin/Sencor or Lesene tank mix.

Follow recommended procedures for soil preparation, incorporation, and cultivation of Gowan Trifluralin. Mix according to instructions under general mixing and application directions. The tank mix can be applied from 2 weeks before planting up to planting.

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Broadcast Rates Per Acre

Soil Texture	Gowen Trifluralin 4	Lesone (dry Rowboat) or Sencor (dry Rowboat)	
		Lesone (dry Rowboat) or Sencor (dry Rowboat)	Lesone (dry Rowboat) or Sencor (dry Rowboat)
Coarse**	1 Pint	12 Pound/Pint	12 Pound
Medium	1 1/2 Pints	36 Pound/Pint	12 Pound
Fine	2 Pints	1 Pound/Pint	20 Pound

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

Additional Precautions: Do not plant any crop other than soybeans within 4 months after treatment. Overapplication, 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 (not 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 Lesone is applied. Observe all cautions and limitations on the Sencor and Lesone labels. Do not use the foliage from soybeans treated with the tank mix for feed or forage.

SOYBEAN—Gowen Trifluralin preplant followed by Sencor or Lesone as an overlay. Apply Gowen Trifluralin as a preplant incorporated herbicide. As a separate operation, make a single application of Sencor or Lesone 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 Lesone over the top of emerged soybeans, or crop injury may result.

Use Directions—Follow directions on the Sencor or Lesone labels for specific instructions regarding each herbicide.

POSTPLANT/EMERGENCE

Soil Texture	Gowen Trifluralin 4	Lesone (dry Rowboat) or Sencor (dry Rowboat)	
		Lesone (dry Rowboat) or Sencor (dry Rowboat)	Lesone (dry Rowboat) or Sencor (dry Rowboat)
Coarse**	1 pint	34 or 34—1 receipt	1/2 or 1/2—1/2 lbs
Medium	1 1/2 pints	34—1 or 34—1 1/4 receipts	1/2—2/3 or 1/2—1 lbs
Fine	2 pints	1 or 1—1 1/4 receipts	2/3 or 2/3—1 1/4 lbs

* Lesone rates are given first, followed by Sencor rates.

** Do not apply Lesone to sand or soils with less than 1/2% organic matter. Do not apply Sencor to coarse soils (sandy loam and loamy sand) containing less than 2% organic matter.

Additional Sencor and Lesone precautions: Do not use Lesone or Sencor on Tracy, Semmes, Arona, Vansoy or Colar 102 soybeans. These varieties are sensitive to Lesone or Sencor and crop injury may result. Seed must be planted at least 1 1/2 inches but not more than 2 inches below the soil surface before a Sencor or Lesone application. Do not apply Sencor or Lesone at these rates more than once per season. Do not replant areas treated with Sencor or Lesone with any crop other than soybeans within 4 months after treatment. Injury to soybeans may occur if you use Lesone or Sencor on soils having a calcareous surface or 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—Gowen Trifluralin/Lesone Tank Mix Preplant Incorporated or Gowen Trifluralin Preplant Incorporated with Lesone Surface Applied. Apply Gowen Trifluralin/Lesone tank mix and Gowen Trifluralin preplant incorporated followed by Lesone surface applied control those weeds listed on the Gowen Trifluralin label plus these additional weeds:

Gehnsoga	Rice red**	Poplar Florida
Nightshade black*	Witchgrass	Nutsedge yellow**
Nightshade hairy*		

Additional weeds commonly controlled by this combination include: Ragweed, Florida, Smartweed, common, and Lesone, spiny reedweed, Smartweed.

* or ** Check rate label for additional information.
 For Gowen Trifluralin/Lesone tank mix: Follow recommended soil preparation recommendations for Gowen Trifluralin. Apply Gowen Trifluralin/Lesone in a minimum of 15 gallons of water or liquid fertilizer per acre. Set incorporation equipment to cut the soil no deeper than four inches. Apply the tank mix eight to seven days prior to planting.

For Gowen Trifluralin preplant incorporated followed by Lesone surface applied: Apply and incorporate Gowen Trifluralin according to recommended soil preparation application and incorporation procedures. Refer to the Lesone label for additional application directions, cautions, and precautions prior to use.

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Broadcast Rates Per Acre

Soil Texture	Gowen Trifluralin 4		Lesone
	Gowen Trifluralin 4	Lesone	
Coarse	1 Pint	< 3% OM	2 1/2 Quarts
Medium	1 1/2 Pints	2 Quarts	3—3 1/2 Quarts
Fine	2 Pints	3 Quarts	3 1/2—4 Quarts

Soil Texture	Gowen Trifluralin 4		Lesone
	Gowen Trifluralin 4	Lesone	
Coarse	1 Pint	< 3% OM	2 1/2 Quarts
Medium	1 1/2 Pints	2 Quarts	3—3 1/2 Quarts
Fine	2 Pints	3 Quarts	3 1/2—4 Quarts

* Use a minimum of two and one-half quarts of Lesone to control these weeds.
 ** Use three to four quarts of Lesone per acre applied along or on medium and fine textured soils, in tank mix combination preplant incorporated only for control of these weeds.

SOYBEAN—Gowen Trifluralin/Dual Tank Mix Preplant Incorporated and Gowen Trifluralin Preplant Incorporated with Dual Surface Applied. Apply Gowen Trifluralin/Dual effectively controls those weeds listed on the label for Gowen Trifluralin plus these additional weeds:

Black nightshade	Red rice	Yellow nutsedge
Prickly cupgrass <td>Southwestern cudgrass</td> <td></td>	Southwestern cudgrass	

Additional weeds partially controlled by this combination include: Hairy nightshade, Volunteer sorghum. Follow recommended soil preparation and incorporation procedures for Gowen Trifluralin. Apply Gowen Trifluralin/Dual in 10-20 gallons of water per acre with conventional low pressure sprayers and in a minimum of 5 gallons of water per acre by air. Gowen Trifluralin/Dual tank mix can also be applied preplant incorporated and followed by Dual at planting or after planting as a band or broadcast application.

Broadcast Rates Per Acre

Soil Texture	Gowen Trifluralin 4	3% O.M.	Dual SE	
			3% O.M.	3% O.M.
Coarse	1 Pint	1 1/2 Pints	2 Pints	2 Pints
Medium	1 1/2 Pints	2—2 1/2 Pints	2—2 1/2 Pints	2—2 1/2 Pints
Fine	2 Pints	2—2 1/2 Pints	2 1/2—3 Pints	2 1/2—3 Pints

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

SOYBEAN—Gowen Trifluralin/Amibon Tank Mix or Overlay.

Tank Mix—Amibon may be applied several days prior to planting as a broadcast tank mix with Gowen Trifluralin. Weeds controlled by this tank mix, in addition to those controlled by Gowen Trifluralin alone, are smartweed, velvetleaf, and ragweed. The tank mixture should be used as a spring preplant incorporated treatment.

Overlay—Amibon may be applied broadcast or in a band over the soybean row at planting time in fields where Gowen Trifluralin has been preplant incorporated. Weeds controlled by Amibon when surface applied, in addition to those controlled by Gowen Trifluralin alone, are:

Coleseed (Sesbania)	Mustard, wild	Nightshade black
Prickly sida (Tee-weed)	Ragweed, common	Sauge, annual
Smartweed, Pennsylvania	Sanagras	Velvetleaf

Apply Gowen Trifluralin as a tank mix with Amibon, or apply and incorporate Gowen Trifluralin alone followed by an overlay application of Amibon at these rates:

Broadcast Rates per Acre

Soil Texture	Gowen Trifluralin 4	Amibon 2S
Coarse	1 Pint	4—6 Quarts*
Medium	1 1/2 Pints	4—6 Quarts
Fine	2 Pints	4—6 Quarts

* Use the higher rate where you expect heavy populations of smartweed, velvetleaf, ragweed, wild mustard, or black nightshade. Do not use on much or cherted soils. Read and observe all directions and cautions on the Amibon label.

SOYBEAN—Gowen Trifluralin/Amibon/Sencor or Lesone Tank Mix: The Gowen Trifluralin/Amibon/Sencor or Lesone tank mix effectively controls all weeds listed for Gowen Trifluralin/Amibon and Gowen Trifluralin/Sencor or Lesone tank mixes.

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

Apply the tank mix at the following broadcast rate per acre:

Soil Texture	Gowan Trifluralin 4		Ambion 2S		Lexone SFWPH or Sencor SFWPH		Lexone (dry flowable) or Sencor (dry flowable)	
	1 pint	3-4 quarts**	3-4 quarts**	1/2 lb/acre	1/2 lb/acre	1/2 lb/acre	1/2 lb/acre	
Coarse	1 pint	3-4 quarts**	3-4 quarts**	1/2 lb/acre	1/2 lb/acre	1/2 lb/acre	1/2 lb/acre	
Medium	1 1/2 pints	3-4 quarts**	3-4 quarts**	1/2 lb/acre	1/2 lb/acre	1/2 lb/acre	1/2 lb/acre	
Fine	2 pints	4-5 quarts	4-5 quarts	1/2 lb/acre	1/2 lb/acre	1/2 lb/acre	1/2 lb/acre	

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

** Use the higher rate of Ambion when velvetleaf or black nightshade is a problem.

*** On Clarion/Webster soils in Minnesota and Iowa or on similar alkaline (calcareous) soils with a pH of 7.5 or above, apply Sencor or Lexone at the rates listed below:

Soil Texture	Lexone SFWPH or Sencor SFWPH		Lexone (dry flowable) or Sencor (dry flowable)	
	1/2 pound/acre	1/2 pound/acre	1/2 pound/acre	1/2 pound/acre
Medium	1/2 pound/acre	1/2 pound/acre	1/2 pound/acre	1/2 pound/acre
Fine	1/2 pound/acre	1/2 pound/acre	1/2 pound/acre	1/2 pound/acre

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

Additional precautions: The Gowan Trifluralin/Ambion/Sencor or Lexone tank mix will not harm the treated crop when you apply it according to directions and under normal growing conditions. However, overapplication, uneven application, or improper soil incorporation of the tank mix can result in erratic weed control or crop injury.

Additional stress factors are seedling disease, cold weather, deep planting, excessive moisture, soil pH over 7.5, high salt concentration, or drought. These additional factors may weaken crop seedlings and increase the possibility of damage from the tank mix. These additional factors may also delay crop development or reduce yields. Observe all cautions and limitations of all products used in mixtures. Do not use the foliage from soy beans treated with the Gowan Trifluralin/Ambion/Sencor or Lexone tank mix for food or forage.

SOYBEAN—Gowan Trifluralin/Vernam Tank Mix:

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

Purple Nutsedge (nutgrass)	Yellow Nutsedge (nutgrass)	Velvetleaf
Galiumweed	Annual morningglory	

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

Broadcast Rates Per Acre

Soil Texture	Gowan Trifluralin 4		Vernam 7E	
	Coarse	1 Pint	1 1/2 - 2 1/2 Pints	1 1/2 - 2 1/2 Pints
Medium	1 1/2 Pints	2 - 3 Pints	2 - 3 Pints	2 - 3 Pints
Fine	2 Pints	3 - 3 1/2 Pints	3 - 3 1/2 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.

ALFALFA—ESTABLISHED

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

ASPARAGUS—ESTABLISHED

Follow recommended soil preparation, application, and incorporation procedures for Gowan Trifluralin. Gowan Trifluralin 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 tender emergence. Or, apply after harvest in the late spring or early summer before ferning begins. Gowan Trifluralin will suppress volunteer seedling asparagus and field asparagus if you use the following recommended rates and application schedules:

Broadcast Rates Per Acre

GOWAN TRIFLURALIN 4

Soil Texture	SPLIT APPLICATION		SINGLE APPLICATION	
	Before Harvest	After Harvest	Before Harvest	After Harvest
Coarse	1 Pint	1 Pint	2 Pints	2 Pints
Medium	1 1/2 Pints	1 1/2 Pints	3 Pints	3 Pints
Fine	2 Pints	2 Pints	4 Pints	4 Pints

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

FOR THE FOLLOWING CROP GROUPING, USE THE RATE TABLE ON THE FOLLOWING PAGE

CARROT

CASTOR BEAN

CELERY—Direct seeded and transplanted in areas receiving less than 20" average annual rainfall

COLE CROPS—TRANSPLANT

Apply and incorporate prior to transplanting only (Brussels Sprout, Broccoli, Cauliflower and Cauliflower). See next section for direct seeded.

OKRA

PEPPER—TRANSPLANT

Apply and incorporate prior to transplanting only.

SOUTHERN PEA

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

Broadcast Rates Per Acre

GOWAN TRIFLURALIN 4

Soil Texture	Areas Receiving Less Than 20" Average Annual Rainfall*		Areas Receiving More Than 20" Average Annual Rainfall*	
	Coarse	1 Pint	1 Pint	1 Pint
Medium	1 1/2 - 1 1/2 Pints	1 1/2 Pints	1 1/2 Pints	1 1/2 Pints
Fine	1 1/2 Pints	1 1/2 Pints	2 Pints	2 Pints

* Use 1 1/2 pints per acre on coarse and medium textured soils and 2 pints on fine soils with 2-5% organic matter, use 2 pints on all soils with 5-10% organic matter.

COLE CROPS—DIRECT SEEDING (Brussels Sprout, Broccoli, Cauliflower and Cauliflower). See above section for transplant.

For direct seeded cole crops, apply and incorporate Gowan Trifluralin before planting at a broadcast rate of 1 pint per acre on coarse and medium soils and 1 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. Stunting or reduced stands may occur.

CUCURBITS—POSTPLANT EMERGED (Cantaloupe, Cucumber, and Watermelon)

Western United States including Texas: Apply as a directed spray to the soil between the rows and between plants which are in the 3 to 4 true leaf stage.

Broadcast Rates Per Acre

GOWAN TRIFLURALIN 4

Soil Texture	Areas Receiving Less Than 20" Average Annual Rainfall*		Areas Receiving More Than 20" Average Annual Rainfall*	
	Coarse	1 Pint	1 Pint	1 Pint
Medium	1 1/2 - 1 1/2 Pints	1 1/2 Pints	1 1/2 Pints	1 1/2 Pints
Fine	1 1/2 Pints	1 1/2 Pints	2 Pints	2 Pints

* Use 1 1/2 pints on coarse and medium textured soils and 2 pints on fine soils with 2-5% organic matter, use 2 pints on all soils with 5-10% organic matter.

Soil incorporation equipment to show mixed soil around the plants during incorporation.

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DRY BEAN—GOWAN TRIFLURALIN ALONE

Apply and incorporate before planting using the following rates:

Broadcast Rates per Acre

GOWAN TRIFLURALIN 4

Soil Texture	Areas Receiving Less Than 20" Average Annual Rainfall*	Areas Receiving More Than 20" Average Annual Rainfall**
	Coarse	1 Pint
Medium	1 1/2 Pints	1 1/2 Pints
Fine	1 1/2 Pints	2 Pints

* Use 1 1/2 pints per acre on coarse and medium textured soils and 2 pints on fine soils with 2—5% organic matter, use 2 pints on all soils with 5—10% organic matter.

DRY BEAN—Gowan Trifluralin/Eptam Tank Mix

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

- Hemp (Spring application)
- Nightshade, Black
- Nightshade, Hairy
- Ragweed common
- Nutsedge
- Old world Smartweed, Pennsylvania
- Valerian (Butterweed)

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

Broadcast Rates Per Acre

GOWAN TRIFLURALIN 4

Soil Texture	Areas Receiving Less Than 20" Average Annual Rainfall*	Areas Receiving More Than 20" Average Annual Rainfall**	EPTAM 7E
	Coarse	1 pint	
Medium	1 1/2 - 1 3/4 pints	1 1/2 pints	2 1/2 3/4 pts.
Fine	1 1/2 pints	2 pints	2 1/2 3/4 pts.

* Use 1 1/2 pints per acre on coarse and medium textured soils and 2 pints on fine soils with 2—5% organic matter, use 2 pints on all soils with 5—10% organic matter.

** Use Eptam 7E at a rate of 2 1/2 pints per acre to control annual grasses, 3 1/2 pints to control nutsedge and additional broadcast weeds.

Precaution: Read the Eptam label before using. Observe all cautions and limitations of all products used in this tank mix. The combination of Gowan Trifluralin and Eptam should not be used on soybeans, black-eyed peas, beans, lima beans and other leguminous 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 any time between October 15 and December 31 at a broadcast rate of 1 pint per acre on coarse soils, 1 1/2 to 1 3/4 pints on medium soils, and 1 1/2 pints on fine soils. Destroy established weeds during seedbed preparation.

FOR THE FOLLOWING CROP GROUPING, USE THE RATE LISTED BELOW

BEANS—Guar and Mungbean

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

MUSTARD—Green for seed or processing for feed in Minnesota, Montana and North Dakota. Apply and incorporate Gowan Trifluralin before planting at 1 pint per acre on coarse soils and 1 1/2 pints on medium and fine soils.

BEANS—Lima Bean and Snap Bean. Apply and incorporate before planting at a broadcast rate of 1 pint per acre on coarse and medium soils and 1 1/2 pints on fine soils.

CORN (Field Corn) and **GRASSY SORGHUM** (Wheat). Apply Gowan Trifluralin to field corn or grassy sorghum 4 inches or later as an over the top or directed spray to effectively control weeds listed for Gowan Trifluralin.



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

Application Directions—Gowan Trifluralin should be applied and incorporated at the recommended rates for the soil texture when the crop is well established 4 inches or later. Gowan Trifluralin may be applied either as an over the top spray or as a directed spray. Deep nozzles should be used if foliage prevents uniform coverage of soil surface. Soil incorporation may be accomplished with any one pass of a disc-type cultivator or a properly adjusted rotary cultivator. The sweep type cultivator should have 3 to 5 sweeps per row and be operated at 5 to 8 mph. Set the machine sweeps so as to avoid exposing untreated soil. Adjust the incorporation tools to prevent crop injury.

Broadcast Rates per Acre

Soil Texture	Gowan Trifluralin 4
Coarse	1 1/2 - 1 Pint
Medium	1 - 1 1/2 Pints
Fine	1 1/2 - 2 Pints

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

*Corn Only: Apply 1 to 1 1/2 pints per acre in Alabama, Florida, Georgia, North Carolina, South Carolina and Virginia to control Fall panicum and Tennesse panicum.

CORNGRAIN SORGHUM—Gowan Trifluralin for shattercane control and Gowan Trifluralin/Atrazine tank mix for additional weed control. Gowan Trifluralin 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. Use rates listed on previous page.

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

Broadcast Rates Per Acre

Soil Texture	Gowan Trifluralin 4	Atrazine 4L*
Coarse (Sandy Loam Only)	1 1/2 - 1 Pint	2.4 Pints
Medium	1 - 1 1/2 Pints	4.75 Pints
Fine	1 1/2 - 2 Pints	8.8 Pints

* When using Atrazine 4L, use the rates listed above. For other Atrazine formulations, use equivalent rates. When using Atrazine 80W, 1 pint of 4L = 0.56 pounds of 80W. One pint of 4L equals 0.62 pounds of Atrazine 80W. Apply and incorporate the Gowan Trifluralin/Atrazine tank mix as directed on the Gowan Trifluralin 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 to corn grown for seed. Do not apply to corn or sorghum as a preplant or preemergence treatment, or crop injury may occur.

HOPS

Apply and incorporate Gowan Trifluralin while the crop is dormant. Use a broadcast rate of 1 pint per acre on coarse soils, 1 1/2 to 1 3/4 pints on medium soils, and 1 1/2 pints on fine soils and soils with 2—10% organic matter.

MINT—(Established Peppermint and Spearmint)

Apply at a rate of 1 pint per acre on coarse soils, 1 1/2 pints on medium soils, and 1 1/2 pints on fine soils. Use mechanical or chemical equipment that will insure thorough soil mixing with minimum damage to the crop.

PEA—(Dry and English)—Gowan Trifluralin Alone

Apply and incorporate before planting at a rate of 1 pint per acre on coarse and medium soils and 1 1/2 pints on fine soils.

PEA—Gowan Trifluralin/FarGo Tank Mix for use in Idaho, Oregon, and Washington

The tank mix combination of Gowan Trifluralin plus FarGo will provide control of and soil in addition to other on-row grasses and broadcast weeds controlled by Gowan Trifluralin.

Application Rates—Broadcast 1/2 pint of Gowan Trifluralin per acre on coarse and medium soils, 1 pint on fine soils. Use 1 1/4 quarts of FarGo per acre for all soil textures.

Incorporation Directions—Apply and incorporate up to 3 weeks before planting. Follow recommended incorporation procedures for Gowan Trifluralin.

18 9 22

Precaution: Do not apply to lands. Loss, crusting and delayed maturity of peas may occur, particularly on clay soils in the northeast. But this is offset, more than offset by a reduction of weed cost. Do not use forage 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 any time between October 15 and December 31 at a broadcast rate of 1 pint per acre on coarse soils, 1 1/4 to 1 1/2 pints on medium soils, and 1 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.

PEANUT—(Spanish Peanut in Texas and Oklahoma) Apply and incorporate Gowen Trifluralin before planting, at planting or immediately after planting at a broadcast rate of 1 pint per acre on coarse soils. When incorporating after planting, take care not to disturb the seed.

PEANUT—Gowen Trifluralin/Eptam Tank Mix (Spanish Peanut in Texas and Oklahoma) Gowen Trifluralin/Eptam tank mix effectively controls those weeds listed for Gowen Trifluralin alone plus these additional weeds:

Coleseed	Veronica	Annual morningglory
Purple nutsedge (nutgrass)	Yellow nutsedge (nutgrass)	

Follow recommended soil preparation procedures for Gowen Trifluralin. 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	Gowen Trifluralin 4	Eptam 7E
Coarse	1 Pint	2 1/2 Pints

POTATO—(All states except Maine) Apply and incorporate Gowen Trifluralin after planting, before emergence or immediately following drag or after the potato plants have fully emerged.

Broadcast Rates Per Acre

Soil Texture	GOWEN TRIFLURALIN 4	
	Areas Receiving Less Than 20" Average Annual Rainfall*	Areas Receiving More Than 20" Average Annual Rainfall**
Coarse	1 Pint	1 Pint
Medium	1 1/4 - 1 1/2 Pints	1 1/2 Pints
Fine	1 1/2 Pints	2 Pints

* Use 1 1/4 pints per acre on coarse and medium soils with 2-5% organic matter, use 2 pints on all soils with 5-10% organic matter.

Soil 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 Gowen Trifluralin 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 emerging tubers.

POTATO—Soil application in Idaho, Oregon and Washington. On all soils, apply and incorporate 1/2 pint of Gowen Trifluralin per acre before planting and 1/2 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—Gowen Trifluralin/Eptam Tank Mix for potatoes grown in Kansas, Minnesota, Nebraska, North Dakota, Oklahoma, South Dakota and Texas. The Gowen Trifluralin/Eptam tank mix effectively controls the following weeds in addition to those weeds controlled by Gowen Trifluralin:

Hardtail (Spring application)	Smartweed	Pennycuik	Op. weed	Veronica (Butterweed)
Nutsedge	Regweed	Common	Rightseed	Black
				Highseed
				Heavy

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

Broadcast Rates Per Acre

GOWEN TRIFLURALIN 4

Soil Texture	Areas Receiving Less Than 20" Average Annual Rainfall*		Areas Receiving More Than 20" Average Annual Rainfall**		EPTAM 7E 1 1/2 - 7 Pints**
	Coarse	1 Pint	1 Pint	1 Pint	
Medium	1 1/4 - 1 1/2 Pints	1 1/2 Pints	1 1/2 Pints	1 1/2 Pints	
Fine	1 1/2 Pints	2 Pints	2 Pints	2 Pints	

* Use 1 1/4 pints per acre on coarse and medium soils with 2-5% organic matter, use 2 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 Gowen Trifluralin/Eptam tank mix.

POTATO—Gowen Trifluralin/Eptam application before planting in Washington, Idaho and Oregon. Gowen Trifluralin/Eptam may be applied before planting at a broadcast rate of 1/2 pint of Gowen Trifluralin per acre and 3/4 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 forage from treated crops for feed or forage.

SAFFLOWER

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

Broadcast Rates Per Acre

GOWEN TRIFLURALIN 4

Soil Texture	Areas Receiving Less Than 20" Average Annual Rainfall*		Areas Receiving More Than 20" Average Annual Rainfall**	
	Coarse	1 Pint	1 Pint	1 Pint
Medium	1 1/4 - 1 1/2 Pints	1 1/2 Pints	1 1/2 Pints	1 1/2 Pints
Fine	1 1/2 Pints	2 Pints	2 Pints	2 Pints

* Use 1 1/4 pints per acre on coarse and medium textured soils and 2 pints on fine soils with 2-5% organic matter, use 2 to 2 1/2 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 Gowen Trifluralin any time 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 top into furrow. Where soil is left flat over winter, take care during spring bedding operation 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 bedding. Destroy these weeds before planting. Apply and incorporate at a broadcast rate of 1 1/4 pints per acre on coarse soils, 2 pints on medium soils, and 2 1/2 pints on fine soils.

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

SUGAR BEET

Apply Gowen Trifluralin as a broadcast, starting spray when plants are between 2 and 6 inches tall at a rate of 1 pint per acre on coarse soils and 1 1/4 to 1 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 to reduce the possibility of injury.

SUGAR BEET—Incorporation with a two-beam harrow in California, Colorado, Idaho, Montana, Nebraska, Oregon, Texas, Utah, Washington and Wyoming.

A properly operated two-beam harrow (Rayburn or Model) can incorporate Gowen Trifluralin for effective weed control in sugar beet. Operate the two-beam harrow 2 times over the field in opposite directions at a depth of 3 to 6 inch. Set the harrow to cut 1 or 2 inches deep. Be careful that the two-beam harrow does not damage the sugar beet taproot. Follow recommended application procedures and broadcast rates per acre for sugar beet. (See preceding paragraph.)

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SUGAR BEET — Gowan Trifluralin/Eptam tank mix applied as an overhead spray and incorporated. Gowan Trifluralin may be tank mixed with Eptam and used as an overhead spray and incorporated for weed control in sugar beets. Apply the tank mix anytime after the first true leaves have formed until the beets are six inches tall.

Soil Texture	Broadcast Rates Per Acre	
	Gowan Trifluralin	Eptam 7E**
Coarse	1 Pint	2 1/4 - 3 1/4 Pints
Medium/Fine	1 1/4 - 1 1/2 Pints*	2 1/4 - 3 1/4 Pints

* Use the higher rate of Gowan Trifluralin for medium and fine soils in areas receiving more than 20" average annual rainfall.
** Check the Eptam label for proper rate for your area.

SUGARCANE—(Plant Cane)

Apply and incorporate Gowan Trifluralin twice a year at a broadcast rate of 2 to 4 pints per acre for all soil textures. Make the first application in the fall on newly packed beds immediately after the seed pieces are planted and the cane emerges. Use a broadcast rate of 6 to 8 pints per acre for all soil textures in plant cane, the beds should be formed or tilled before application. In ratoon cane, the crop residue should be removed before application. If large amounts of crop residues are present, Gowan Trifluralin will not be effective. Apply just before anticipated rainfall or sprains irrigate immediately after application.

SUGARCANE — Postplant in Hawaii for control of most Annual grasses including guineagrass. Surface apply Gowan Trifluralin after planting (for plant cane) or after harvesting (for ratoon cane), before weeds and cane emerge. Use a broadcast rate of 6 to 8 pints per acre for all soil textures in plant cane, the beds should be formed or tilled before application. In ratoon cane, the crop residue should be removed before application. If large amounts of crop residues are present, Gowan Trifluralin will not be effective. Apply just before anticipated rainfall or sprains irrigate immediately after application.

SUGARCANE — Applications up to layby for plant cane or ratoon cane grown in Louisiana or Texas. Apply and incorporate Gowan Trifluralin at a broadcast rate of 2 to 4 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 after the beds have been shaved or raze shaved. Loosen rain packed beds 2 to 3 inches deep before application. Be careful that no chopper 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 — Hoegrass (Rougegrass) control in Louisiana. Apply and incorporate on either plant or ratoon cane at a broadcast rate of 4 pints per acre for all soil textures. Follow the directions above for sugarcane layby application in Louisiana and Texas.

SUNFLOWER—GOWAN TRIFLURALIN ALONE

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

Broadcast Rates per Acre

Soil Texture	Areas Receiving Less Than 20" Average Annual Rainfall*		Areas Receiving More Than 20" Average Annual Rainfall*	
	Coarse	1 Pint	1 Pint	1 Pint
Medium	1 1/4 - 1 1/2 Pints	1 1/2 Pints	1 1/2 Pints	2 Pints
Fine	1 1/2 Pints	2 Pints	2 Pints	2 Pints

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

SUNFLOWER — Gowan Trifluralin/Amben tank mix or similar. Follow recommended soil preparation, application and incorporation procedures for Gowan Trifluralin. Amben may be applied in a band or broadcast over sunflowers at planting in fields where Gowan Trifluralin has been incorporated prior to planting. Or the tank mix may be incorporated prior to planting. The tank mix controls annual grasses, mustard, smartweed, volunteer and ragweed control in addition to those weeds controlled by Gowan Trifluralin alone.

Apply Gowan Trifluralin/Amben or Gowan Trifluralin with an Amben spray at the following broadcast rates per acre:

Soil Texture	Gowan Trifluralin 4	Amben 2S
Coarse	1 Pint	4 Quarts
Medium	1 1/2 Pints	4 - 6 Quarts*
Fine	2 Pints	4 - 6 Quarts*

* For best control of mustard, Common ragweed or black nightshade, use the 6 quart rate.

In coarse textured soils, heavy rains on the incorporated Amben may move it below the weed seed germination zone, and erratic weed control may result. If sufficient rain does not fall within 7 days after a preemergence application of Amben, but there is enough soil moisture to germinate weeds and grasses, a light cultivation with a rotary hoe or similar tool will control those small broadleaf weeds and grasses. The shallow mixing of Amben in the surface soil will not interfere with the action of Amben when rains come.

SUNFLOWER — Gowan Trifluralin/Eptam tank mix for weed control in sunflower in the states of Minnesota, North Dakota and South Dakota.

Gowan Trifluralin/Eptam (EPTC) may be tank mixed and applied incorporated for weed control in sunflower. The tank mix controls the following annual and perennial weeds in addition to those controlled by Gowan Trifluralin alone:

Annual Weeds	Yield aids	Eriosema
Ryegrass (Hairy)	Yield aids	Nuttall's goosefoot
Bermudagrass (seedling)	Mammillary, Annual	Shepherdspurse
Ryegrass	Nightshade, black	Bigseed tumble
Volunteer grain (barley, oats, wheat)	Nightshade, hairy	
	Sourgrass	
Perennial Weeds		
Bermudagrass	Neesledge, purple and yellow	

Follow recommended soil preparation, application and incorporation procedure for Gowan Trifluralin. Apply and immediately incorporate the tank mix prior to planting in the spring. The tank mix may also be applied in the fall before the ground freezes.

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	1 Pint	1 Pint	3 1/4 Pints	4 1/2 Pints	4 1/2 Pints
Medium	1 1/4 - 1 1/2 Pints	1 1/2 Pints	3 1/2 Pints	3 1/2 Pints	5 1/2 Pints	5 1/2 Pints
Fine	1 1/2 Pints	2 Pints	3 1/2 Pints	3 1/2 Pints	5 1/2 Pints	5 1/2 Pints

Refer to the Eptam label for all cautions, precautions, etc. regarding use of the product.

TOMATO

For direct seeded tomato, apply Gowan Trifluralin at backing or thinning as a directed spray to the soil between rows and beneath the plants, and incorporate. For transplanted tomato, apply and incorporate before transplanting. Do not apply after transplanting.

Broadcast Rates Per Acre

Soil Texture	Areas Receiving Less Than 20" Average Annual Rainfall*		Areas Receiving More Than 20" Average Annual Rainfall*	
	Coarse	1 Pint	1 Pint	1 Pint
Medium	1 1/4 - 1 1/2 Pints	1 1/2 Pints	1 1/2 Pints	2 Pints
Fine	1 1/2 Pints	2 Pints	2 Pints	2 Pints

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

FRUIT AND NUT CROPS AND VINEYARDS

For areas receiving more than 20" average annual rainfall. For new plantings of vineyards, citrus and peach trees, apply and incorporate Gowan Trifluralin before planting at a broadcast rate of 1 pint per acre on coarse soils, 1 1/2 pints on medium soils, 2 pints on fine soils, 1 1/2 pints on fine soils with 2-5% organic matter, and 2 pints on soils with 5 - 10% organic matter. For non-bearing established plantings of citrus and peach trees and bearing plantings of grapefruit, lemon, orange, peach, tangerine and tangelo trees, apply at a broadcast rate of 2 to 4 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, apricot and walnut trees, apply and incorporate before planting at a broadcast rate of 1 pint per acre on coarse soils, 1 1/2 to 1 1/2 pints on medium soils, 1 1/2 pints on fine soils, 1 1/2 to 2 pints on soils with 2 - 5% organic matter, and 2 pints on soils with 5 - 10% organic matter.

For new plantings of vineyards, apply and incorporate before planting at a broadcast rate of 1 to 1 1/2 pints per acre on coarse soils, 1 1/2 to 2 pints on medium soils, and 2 to 3 pints on fine soils or soils with 2 - 10% organic matter. Do not use more than 2 pints per acre on heat treated grass seedings.

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For postplant application on bearing or non-bearing, established plantings of vineyards and almond, apricot, grapefruit, lemon, nectarine, orange, peach, plum, prune, tangelo, tangerine and walnut trees, apply at a broadcast rate of 2 to 4 pints per acre for all soil textures. Do not apply to vineyards within 60 days of harvest. In established plantings, apply Gowan Trifluralin 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, tangelo, tangerine and walnut trees with a Gowan Trifluralin 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 at a broadcast rate of 2 quarts 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 use.

Precautions—Do not use the 2 quart 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 has been registered as a preplant treatment for the next cropping season.

FRUIT AND NUT CROPS AND VINEYARDS—Biennial control in California

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

Land Preparation—Destroy all weeds and grasses with soil tillage before spraying. The tillage is necessary to prevent wash 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 recessed under the blade and directed so that the spray will be applied 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 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 Trifl. rain layer. Prevent or minimize 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.

WHEAT (WINTER)

(Idaho, Montana, Oregon and Washington)

Gowan Trifluralin may be applied for preplant or preemergence control of cheatgrass and other annual grasses and broadleaf weeds controlled by Gowan Trifluralin. 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.

Apply any time during a period from 3 weeks up to immediately prior to planting. Broadcast at a rate of 1 1/2 pints per acre on coarse soils and medium soils and 2 pints on fine soils.

Incorporation Directions—Incorporate into the soil with a flexible two-tooth harrow if testing. Mohr 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 has been incorporated with a flexible two-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 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 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. Use deep or semi-deep furrow drills.

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Broadcast rates are 1 1/2 pints per acre on coarse and medium soils and 2 pints on fine soils. Apply any time from May to September prior to the fall planting of winter wheat.

Incorporation—Incorporate with a flexible two-tooth harrow if testing or Mohr set to cut 1 to 2 inches deep and operate 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 has been applied with a flexible two-tooth harrow.

Precaution—Use only deep furrow or semi-deep furrow drills. Place seed below the zone of soil into which Gowan Trifluralin 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 ALONE

Gowan Trifluralin is recommended as a postplant incorporated treatment to control forest johnsongrass. Apply at a broadcast rate of 1 pint per acre on coarse and medium soils and 1 1/2 pints on fine soils.

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

WHEAT (SPRING), DURUM, BARLEY (FALL APPLICATIONS)—Forest johnsongrass control

Gowan Trifluralin may be fall applied for forest johnsongrass control in spring wheat, durum and barley planted the following spring. Gowan Trifluralin may be applied to ground that has a manageable trash level, has been fallowed or is 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 4
Coarse	1 Pint
Medium	1 Pint
Fine	1 1/2 Pints

Incorporation Directions—Any of the following tools are recommended for the 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. **Cheer Plow**—May be used for the first pass only. Operate at 4-5 inches deep at 4-6 mph. A cheer plow is defined as having 3 rows of up to 16-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/Far-Go Tank Mix

Gowan Trifluralin/Far-Go applied as a postplant incorporated treatment will control forest johnsongrass and wild oat.

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

Broadcast Rates Per Acre

Soil Texture	GOWAN TRIFLURALIN 4		FAR GO	
	Barley/Durum/Spring wheat	Barley/Wheat	Barley	Barley
Coarse	1 pint	2 1/2 pints	2 pints	2 pints
Medium	1 pint	2 1/2 pints	2 pints	2 pints
Fine	1 1/2 pints	2 1/2 pints	2 pints	2 pints

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Precaution Overapplication may result in crop injury. Read the For-Go label carefully before using.

FLAX—FALL APPLICATION

Gowex Trifluralin 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 at the broadcast rates per acre of 1 pint for coarse soils, 1 1/2 pints for medium soils, and 2 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 flax. The incorporation operations should result in a thorough mixing of Gowex Trifluralin with the soil. Otherwise, erratic weed control may result.

Incorporation Equipment—Use machinery that mixes Gowex Trifluralin thoroughly with the soil. Recommended equipment includes:

Disc—Set to cut 3.4 inches deep and operate in 2 different directions at 4 to 8 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 untreated. Cheat points should not be used. Much 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.

ONIONS (Grown for Dry Bulbs Only)

Application Directions—Apply Gowex Trifluralin 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	Gowex Trifluralin 4
Coarse	1 1/2 Pints
Medium	2 Pints

For band applications, use proportionately less Gowex Trifluralin. 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 Gowex Trifluralin 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.

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

RAPESEED

Gowex Trifluralin 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 Gowex Trifluralin. Gowex Trifluralin 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	Gowex Trifluralin 4
Coarse	1 Pint
Medium	1 1/2 Pints
Fine	2 Pints

FERTILIZER USE DIRECTIONS APPLICATION WITH LIQUID FERTILIZERS

Gowex Trifluralin 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 Gowex Trifluralin applied in water. Follow Gowex Trifluralin 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

Gowex Trifluralin alone or in tank mixture with dry flowables, wettable powders (WP), slurry suspensions (SS), flowables (FL), 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 teaspoonful 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 stir the mixture in water before adding to the fertilizer.
3. After dispersing the materials close jar, add 2 to 4 teaspoonful of Gowex Trifluralin 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 (oil curtain) which will not reabsorb when agitated, a compatibility agent is needed. If the mixture is evenly reabsorbed 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 and 1/2 teaspoon of the compatibility agent to the liquid fertilizer, mix well, then repeat Steps 2 and 3.

An effective compatibility agent will cause the mixture to remain uniformly mixed with little or no separating or oil rising to the surface for one half hour or longer. If slight separation does occur 2 to 3 inversions of the jar should give a uniform result. If oily curds form which will not reabsorb, 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

Gowex Trifluralin 4 in Liquid Fertilizer

Emulsifiable concentrates, such as Gowex Trifluralin, can be mixed with liquid fertilizers in all cases. Continuous agitation is required to prevent the Gowex Trifluralin from rising to the surface as an oily layer. When necessary (see Testing for Tank Mix Compatibility in Liquid Fertilizers) a compatibility agent can be used to cause the Gowex Trifluralin to disperse properly in a homogeneous appearance rather than an oily layer. The use of compatibility agents is especially important when tank mixing emulsifiable concentrates (EC) with flowables, wettable powders (WP), slurry suspensions (SS), flowables (FL), liquids (L) or solutions (S) in liquid fertilizer. If the emulsion is not properly formed and the Gowex Trifluralin rises to the surface of the fertilizer as

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It can (1) mix but (2) it may combine with the wettable powder, flowable, or suspension to form oily emulsions which is difficult to redispense. Any one of the compatibility agents listed below is helpful in causing heavy concentrates to form non-oiling mixtures with liquid fertilizers. These compatibility agents can be used at rates as low as 1% to 2 parts 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. Spanex 1000 (Witco Chemicals Co., Chicago, Ill.)
2. Control (Farm Chemicals, Inc., Aberdeen, Md.)
3. Mito (Monsanto Ag. Chemical, Madison, Wis.)
4. T-100 (Thurman Howard Chemical Co.)
5. Nigo Compatibility Agent (Pope-Carr, Inc., Rochester, N.Y.)
6. Ameco Spray Mate™ (Ameco Oil Co., Chicago, Ill.)
7. Rain Link Universal Soap, Minneapolis, Minn.

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—Spray the fertilizers/pesticide mixture with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.

INCORPORATION—Follow normal Gowan Trifluralin incorporation procedures.

GOWAN TRIFLURALIN 4 APPLICATION WITH DRY BULK FERTILIZERS

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

All Gowan Trifluralin 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 at the recommended rates. Any commonly used dry fertilizers can be used for Gowan Trifluralin 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 ball mill or other commonly used dry bulk fertilizer blender. Apply Gowan Trifluralin uniformly to the fertilizer.

Rates—Check specific crop recommendations for the rate of Gowan Trifluralin per acre. See the rate table which follows to determine the amount of Gowan Trifluralin 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—Spray the fertilizers/chemical mixture with a properly calibrated applicator. Be certain the material is applied uniformly to the soil surface.

Incorporation—Follow Gowan Trifluralin incorporation procedures.

RATE CHART FOR IMPREGNATING FERTILIZER WITH GOWAN TRIFLURALIN 4
(Gowan Trifluralin Added To a TON OF Fertilizer)

FERTILIZER Rate Per Acre	GOWAN TRIFLURALIN Rate Per Acre			
	1 Place	1 1/2 Places	2 Places	3 Places
200 pounds	5 qts per ton	7 1/2 qts per ton	10 qts per ton	15 qts per ton
250 pounds	4 qts per ton	6 qts per ton	8 qts per ton	12 qts per ton
300 pounds	3 1/2 qts per ton	5 qts per ton	6 1/2 qts per ton	10 qts per ton
350 pounds	3 qts per ton	4 1/2 qts per ton	6 qts per ton	9 qts per ton
400 pounds	2 1/2 qts per ton	3 1/2 qts per ton	5 qts per ton	7 1/2 qts per ton
450 pounds	2 qts per ton	3 qts per ton	4 1/2 qts per ton	6 1/2 qts per ton

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

$$\frac{\text{Parts Gowan Trifluralin Per Acre} \times 1000}{\text{Lbs. Fertilizer Per Acre}} = \text{Ounces Gowan Trifluralin Per Ton Of Fertilizer}$$

All individual state regulations relating to dry bulk fertilizer blending, registration, labeling and application are the responsibility of the individual order company adding the fertilizer and chemical mixture.

SPECIAL PRECAUTIONS

Applied according to directions and under normal growing conditions, Gowan Trifluralin will not harm the treated crop. Overapplication may result in crop injury or a soil residue. Unusual application or improper soil incorporation of Gowan Trifluralin can result in erratic weed control or crop injury. Seeding, excessive, cold weather, deep plowing, excessive moisture, high soil concentration or drought may weaken crop seedlings and increase the possibility of damage from Gowan Trifluralin. 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, sorghum, red betts or sorghum should not be planted for 12 months after a spring application or for 18 months after a fall application. Plant the crop to a depth of 12 inches prior to planting sugar beets to prevent the possibility of crop injury. Sorghum millet, proso millet, corn or oats should not be planted for 12 months after a spring application or for 18 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 water (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 stages of growth may increase the possibility of injury to sorghum.

In all other areas receiving greater than 20 inches of rainfall per year.

Moisture may be present before planting sugar beets when a spring application of Gowan Trifluralin was made the previous season. Also note planting restrictions listed in the section on control of rhizomes, 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.

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.

- Ameco® — chemagro, Union Carbide Agricultural Products Co., Inc.
- Cobaron® — prometryn, Ciba-Geigy Corporation
- Coleran® — fluometuron, Ciba-Geigy Corporation
- Eglen® — EPTC, Squaler Chemical Company
- Fal-G® — imazate, Monsanto Agricultural Products Company
- Karmex® — duralin, E. I. duPont de Nemours and Company
- Lexone® — metribush, E. I. duPont de Nemours and Company
- Sencor® — metribush, Bayer, GmbH
- Yaman® — verhexate, Stauffer Chemical Company

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