

PM 23 10163-181

Page 17 12



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. 10163-181  
GOWAN TRIFLURALIN E.C.

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 SoyCanada Ink on paper that  
contains at least 50% recycled fiber

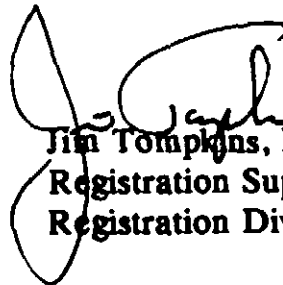
Submit the final printed labeling via the U.S. Postal Service to:

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

3 7 12

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. 10163-181  
GOWAN TRIFLURALIN E.C.

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.

4 7 12

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.  
10163-181

# GOWAN TRIFLURALIN E.C.

## WEED AND GRASS PREVENTOR

A selective, preemergence herbicide for use in ornamentals and vegetable gardens for the control of annual grasses and broadleaf weeds

### ACTIVE INGREDIENT: Trifluralin

(a, a, a-trifluoro-2, 6-dinitro-N, N-dipropyl-p-toluidine) ..... 44.5%

INERT INGREDIENTS: ..... 55.5%

TOTAL 100.0%

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

## KEEP OUT OF REACH OF CHILDREN WARNING AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand 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 meet the specifications 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. 10163-181  
EPA Est. No. 10163-AZ-1

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

**BEST AVAILABLE COPY**

**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, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift or runoff from treatment areas may be hazardous to aquatic organisms in neighboring aquatic sites. Do not contaminate water by disposing of equipment washwaters.

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

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

**STORAGE AND DISPOSAL**

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

**PESTICIDE DISPOSAL:** Do not contaminate water, food or feed by storage or 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.

**BEST AVAILABLE COPY**



# TRIFLURALIN E.C.

WEED AND GRASS PREVENTER

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

EPA Reg. No. 10163-181  
EPA Est. No. 10163-AZ-1

GOWAN TRIFLURALIN E.C. is a selective preemergence herbicide for the control of annual grasses and broadleaf weeds in nursery stock, ornamental trees, ornamental woody shrubs, ornamental ground cover, roses, established flowers, vegetable gardens and under paved surfaces.

### CHEMIGATION STATEMENT

Do not apply this product through any type of irrigation system except as described for use on ornamentals.

### WEEDS AND GRASSES CONTROLLED BY GOWAN TRIFLURALIN E.C.

- |                        |                     |
|------------------------|---------------------|
| <b>Grasses</b>         |                     |
| Annual bluegrass       | Johnsongrass        |
| Barnyardgrass          | (from seed)         |
| (Watergrass)           | Junglece            |
| Brachiaria             | Panicum, Fall       |
| Bromegrass             | Panicum, Texas      |
| Cheat                  | Sandbur             |
| Crabgrasses            | Sprangletop         |
| Foxtail                | Stinkgrass          |
| Goosegrass             | Woolly cupgrass     |
| <b>Broadleaf Weeds</b> |                     |
| Carpetweed             | Pigweed             |
| Chickweed              | Puncturevine        |
| Florida pusley         | (Western U.S. only) |
| Goosefoot              | Purslane            |
| Knotweed               | Russian thistle     |
| Kochia                 | Stinging nettle     |
| Lambsquarters          |                     |

Note: Trifluralin will not control certain resistant weeds such as Cocklebur, Velvetleaf, Jimson weed, Ragweed, Venice Mallow and Nutgrass

### GENERAL DIRECTIONS

Trifluralin is a preemergence herbicide which is incorporated (mixed) into the soil to provide long-lasting control of annual grasses and broadleaf weeds (see list above). Trifluralin controls weeds by killing their seeds as they germinate. It does not control established weeds.

Incorporation of Trifluralin helps assure effective weed control regardless of weather conditions and permits shallow cultivation, rotary hoeing, and hand hoeing without reducing its weed control activity.

Trifluralin is recommended for use on a wide variety of vegetables, ornamental trees, ornamental groundcovers, shrubs, and flowers. The ornamental species on which Trifluralin can be used at recommended rates without damage include those listed in this booklet.

### Application Directions

Trifluralin E.C. is to be mixed with water and applied as a spray, before, or in the same operation as soil incorporation. Apply in 5 to 40 gallons of water per acre (broadcast basis) using any properly calibrated low pressure boom-type herbicide sprayer that will uniformly apply the spray. Pour the recommended amount of Trifluralin for your soil type into the spray tank during the filling operation and mix thoroughly before spraying. Do not apply more than the recommended amount.

### Incorporation Directions

Trifluralin must be incorporated into the soil after application to prevent loss of its activity. Spraying and incorporation should be done in the same operation, if possible. Incorporation may be delayed up to 4 hours after application. Variable weed control may result from delayed incorporation if Trifluralin is applied to a wet, warm soil surface or if the wind velocity is 10 mph or higher.

The machinery used for incorporation should break up large clods and mix Trifluralin thoroughly with the soil. The more thoroughly the Trifluralin is mixed with the soil, the more consistent the weed control will be.

Apply and incorporate Trifluralin prior to planting new nursery stock liners, ornamentals, trees and woody shrubs, and gladioli. (Gladioli corms less than 1 inch in diameter may be injured by pre-plant applications of Trifluralin.) Trifluralin may also be applied to established plantings by using a directed spray to the soil between the rows and beneath the plants.

**Incorporation before planting (pre-plant):** Thorough incorporation may be achieved with the following: *P.T.O.-driven equipment* (tillers, cultivators, hoes) set to cut 2 to 3 inches deep with rotors spaced to provide a clean sweep of the soil; *double disc* (or double disc with spiketooth harrow in tandem) set to cut 3 to 4 inches deep and operated in two different directions (cross disced) at 4 to 6 mph; *mulch treader* and other similar disc-type implements set to cut 3 to 4 inches deep and operated twice at 5 to 8 mph; *rolling cultivators* set to cut 2 to 4 inches deep and operated twice at 6 to 8 mph; or a *bed conditioner (Do-All)* set to cut 2 to 4 inches deep and operate at 4 to 6 mph.

**Incorporation after planting (post-plant):** Incorporation may be achieved around established plants by using *P.T.O.-driven equipment* (tillers, cultivators, hoes) set to cut 2 to 3 inches deep with rotors spaced to provide a clean sweep of the soil; or *rolling cultivators* set to cut 2 to 4 inches deep and operated twice at 6 to 8 mph. When incorporating Trifluralin in transplants, new liners, or established plants, the implement should be adjusted so that treated soil is thrown toward and around the plants in the row.

Clean cultivate area to be treated before application since Trifluralin will not control established weeds.

Shallow incorporation with implements set to cut less than 2 inches deep may result in erratic weed control. Do not use spiketooth or springtooth harrows alone for incorporation.

### Broadcast (Overall) Application Rates for Soil Incorporation Only

Coarse Soils Sand and sandy loam	1 pint per acre (½ pound active)
Medium Soils Loam, silt loam and silt	1½ pints per acre (¾ pound active)
Fine Soils Clay loam, silty clay and clay	2 pints per acre (1 pound active)

Trifluralin is not recommended on muck soils.

For band applications, use the following formula to figure the proportionate amount:

$$\frac{\text{band width in inches}}{\text{row width in inches}} \times \text{recommended broadcast rate} = \text{amount to apply per acre on band}$$

### Surface Application and Water Incorporation to Ornamental Groundcover Plantings

Add Trifluralin to clean water in the spray tank during the filling operation. Agitate thoroughly prior to spraying. Apply in 5 to 40 gallons of water per acre using any properly calibrated low pressure herbicide sprayer that will uniformly apply the spray mixture. A one-half inch rain or its equivalent in sprinkler irrigation must be received within 24 hours or poor weed control will result.

### Application Rates—Groundcovers Only

Apply 1 gallon of Trifluralin E.C. per acre or 3 ounces per 1,000 sq. ft. of groundcover area.

**BEST AVAILABLE COPY**

409 7912

ORNAMENTAL SPECIES

Woody Shrubs

- Andromeda, Japanese
- Arborvitae, American
- Azalea
- Barberry, Japanese
- Barberry, Mento
- Boxwood, Common
- Boxwood, Harlands
- Boxwood, Littleleaf
- Camellia, Japanese
- Camellia, Sasanqua
- Cherry Laurel, American
- Cinquefoil
- Cleyera, Japanese
- Cotoneaster, Cranberry
- Cotoneaster, Zabel
- Deutzia
- Elaeagnus, Silverberry
- Euonymus, Spreading
- Euonymus, Winged
- Euonymus, Wintercreeper
- Firethorn
- Forsythia
- Guava, Pineapple
- Holly
- Honeysuckle
- Indiahawthorn
- Juniper
- Laurel, Mountain
- Lilac, Common
- Mockorange
- Pittosporum, Japanese
- Privet
- Redcedar, Eastern
- Rhododendron
- Spiraea, Vanhoutte
- Viburnum
- Weigela
- Willow
- Yew, Anglojap
- Yew, Japanese
- Yewpine

Trees

- Almond
- Apple, Crabapple
- Apricot
- Ash, White
- Baldcypress
- Birch, European White
- Blackgum
- Cherry
- Chestnut, Chinese
- Cottonwood
- Dogwood, Flowering
- Dogwood, Kousa
- Douglasfir
- Fir, Balsam
- Hemlock, Canada
- Honeylocust
- Larch, Japanese
- Locust, Black
- Maple, Norway
- Maple, Red
- Maple, Silver
- Maple, Sugar
- Oak, Pin
- Oak, Red
- Oak, Scarlet
- Peach
- Pine, Austrian
- Pine, Eastern White
- Pine, Japanese Black
- Pine, Loblolly
- Pine, Red
- Pine, Scotch
- Planetree, London
- Plum
- Redbud, Eastern
- Spruce, Colorado
- Spruce, Norway
- Spruce, White
- Sweetgum
- Sycamore
- Tulptree
- Walnut, Black

Groundcover Plantings

- Aaronsbeard
- Bellflower, Adriatic
- Bellflower, Poscharsky
- Ceanothus
- Coreopsis
- Cotoneaster
- Coyote Brush
- Crown Vetch
- Daisy, Trailing African
- Fern, Asparagus
- Gazania
- Germander
- Ice Plant, Largeleaf
- Ivy, Algerian
- Ivy, English
- Lily-of-the-Nile
- Lilyturf, Bigblue
- Marigold
- Myoporum
- Plumbago, Dwarf
- Rockrose
- Rosemary
- Rupturewort
- Snow-in-Summer
- Speedwell
- St. Johnswort
- Stonecrop (Sedum)
- Strawberry, Beach
- Thrift
- Verbena
- Wirevine, Creeping
- Yarrow, Woolly
- Zoysiagrass

Roses and Other Established Flowers

- African Daisy
- Aster (perennial)
- Balsam
- Blackeyed Susan
- Calendula
- Carnation
- Centaurea, Velvet
- Chrysanthemum
- Coreopsis
- Cornflower
- Cosmos
- Dahlia
- Dianthus
- Dusty Miller
- Floss Flower
- Forget-me-not
- Four O'Clock
- Gaillardia
- Gladiolus
- Golden Glow
- Impatiens
- Ixora
- Lobelia
- Lupine
- Marigold
- Marigold, Cape
- Morningglory
- Nasturtium
- Nicotiana
- Petunia
- Phlox
- Pincushion Flower
- Poppy, California
- Portulaca
- Rose
- Salvia
- Shesta Daisy
- Snapdragon
- Snow-on-the-mountain
- Stock
- Sunflower
- Sweet Alyssum
- Sweet Pea
- Sweet Sultan
- Sweet William
- Vinca
- Yarrow
- Zinnia

## CHEMIGATION USE INSTRUCTIONS ORNAMENTALS

- GOWAN TRIFLURALIN E.C. can be applied through recommended types of irrigation systems to the ornamental species listed on this label. GOWAN TRIFLURALIN E.C. may not be applied through irrigation system to any crop except the ornamental species listed on this label.
- Apply this product only through one or more of the following types of systems: sprinkle (including micro) or drip (including surface or subsurface) irrigation systems. Do not apply this product through any other type of irrigation system.
- Application of GOWAN TRIFLURALIN E.C. through irrigation systems should be used as a supplemental weed control practice, to suppress break-through weeds at irrigation points.
- Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- Do not allow contact with foliage.
- Calibration and distribution will be more accurately achieved by injecting a larger volume of a more dilute solution over time. If desired, dilute GOWAN TRIFLURALIN E.C. with water prior to injection, and mix solution sufficiently to ensure uniform delivery into the injection system. Sprinkler systems should be calibrated to deliver a volume of 4-50 gallons per hour (gph) per emitter. Drip systems should be set at 0.01-3 gph per emitter.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Do not apply when wind speed favors drift beyond the area intended for treatment, when systems connections leak or when emitters do not provide uniform distribution.
- Before use, remove scale, pesticide residues and other debris from the mix tank and pump system. Flush system with clean water.
- The application interval should be such that at one period of time during the injection, the first and last emitters in the system contain GOWAN TRIFLURALIN E.C. treated water.
- Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

### Chemigation Systems Connected To Public Water Systems

- Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.



- Systems must use a metering pump, such as a positive displacement 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.
- Do not apply when wind speed favors drift beyond the area intended for treatment.

**Sprinkler And Drip Irrigation Systems**

- 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.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump such as a positive displacement 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.

**Calculation Of Use Rate For Application Through Chemigation**

- Calculation of use rate is based on wetted area around emitters, NOT on acres or 1000 square feet.
- Apply GOWAN TRIFLURALIN E.C. according to the dosages on this label.
- To determine the correct amount of GOWAN TRIFLURALIN E.C., use one of the following formulas:

**To Calculate Amount Of Product To Injected Into System Based On Rate Per Acre—**

1. Treated area per each emitter = A  
 $A = 3.14 \times (\text{radius} \times \text{radius})$   
 Example: If the average distance from emitter to perimeter of wetted area = 13 inches, then  
 $A = 3.14 \times (13" \times 13") = 530.7 \text{ square inches}$
2. The area in square feet wet in each acre = B  
 $B = A \times (\text{emitter/acre})$   
 Example: If there are 300 emitters per acre, then  
 $B = \frac{530.7 \times 300}{144} = 1105.6 \text{ square feet wetted per acre}$
3. The total area (in square feet) wet by your system = C  
 $C = B \times (\text{acres covered by system})$   
 Example: If the system covers 20 acres, then  
 $C = 1105.6 \times 20 = 22,112 \text{ square feet wetted by system}$
4. The total area (in acres) wet by your system = D  
 $D = \frac{22,112}{43,560} = 0.51 \text{ total acreage wetted by system}$
5. Amount to be injected into system = D x (desired per acre rate)  
 Example: If desired rate is 3.2 pints per acre, then  
 $\underline{2 \text{ pints}} \times 0.51 \text{ acre} = 1.0 \text{ pint TRIFLURALIN E.C. injected into irrigation system acre}$

**To Calculate Amount Of Product To Injected Into System Based On Rate Per 1,000 Square Feet**

1. Treated area per each emitter = A

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

Example: If the average distance from emitter to perimeter of wetted area = 13 inches, then

$$A = 3.14 \times (13" \times 13") = 530.7 \text{ square inches}$$

2. The area in square feet wet in 1,000 square feet = B

$$B = A \times (\text{emitter}/1,000 \text{ square feet})$$

Example: If there are 7 emitters per 1000 square feet, then

$$B = \frac{530.7 \times 7}{144} = 25.8 \text{ square feet wetted per 1,000 sq. ft.}$$

3. The total area wet by your system = C

$$C = B \times (\text{total square feet covered by your system})$$

Example: If the system covers 20,000 square feet, then

$$C = \frac{25.8 \times 20,000}{1,000} = 516 \text{ square feet wetted by system}$$

4. Amount to be injected into system = D x (desired per 1,000 square foot rate)

Example: If desired rate is 3 ounces per 1,000 square feet, then

$$\frac{3 \text{ ounces}}{1,000 \text{ square feet}} \times 516 \text{ square feet} = 1.6 \text{ ounces TRIFLURALIN E.C. injected into irrigation system}$$

**UNDER PAVED SURFACES**

**Directions For Use and Site Preparation**

Trifluralin should be used only where the area to be treated has been prepared according to good construction practices. If rhizomes, stolons, tubers or other vegetative plant parts are present in the site, they should be removed by scalping with a grader blade to a depth sufficient to insure their complete removal.

Applications should be made only when final grade is established or after additions of base rock. Do not move soils following Trifluralin application and do not apply Trifluralin to areas where asphalt is to be laid directly on top of soil.

Paving should follow Trifluralin applications as soon as possible.

**Application Directions**

**Large Areas**—Apply Trifluralin in sufficient water to insure thorough wetting of the soil surface or penetration of the spray solution through the base rock layer. A minimum of 150 gallons per acre is recommended. Apply with any sprayer that will apply the spray uniformly. Add the recommended amount of Trifluralin to clean water in the spray tank during the filling operation. Agitate before spraying.

**Small Areas**—For treating small areas, a tank type hand sprayer or sprinkling can, may be used. Before application determine the amount of water and Trifluralin necessary to uniformly cover the area to be treated. Shake or stir the spray solution prior to application.

**The Proper Amount of Gowan Trifluralin E.C. to Apply**

Ounces Per 1000 Sq. Ft.	Gallons Per Acre
9 to 12 ounces	3 to 4 gallons

**BEST AVAILABLE COPY**

page 12 of 17

**VEGETABLE GARDENS**

**Soil Preparation**

Crop Residues or Existing Weeds: Crop residues or existing weeds can interfere with the mixing of Trifluralin into the soil. A manageable level of such residues would allow the Trifluralin to be uniformly mixed into the top 2 to 3 inches of soil. If the level of the crop residue is such that this cannot be done, you must till the soil prior to the application.

**Soil Texture Guide**

The amount of Trifluralin you apply will vary with the soil texture. A fine textured soil will require more Trifluralin 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.

	Coarse Soils (light)	Medium Soils	Fine Soils (heavy)
Soil Texture	Sands, Loamy sands and sandy loams	Silt or loam	Clay loams, silty clay loams, clays, silty clays.

**Mixing Directions**

Start with a clean spray tank. Fill sprayer 1/2 full with clean water. Add correct quantity of Trifluralin. Close sprayer and shake well to mix Trifluralin. Finish filling sprayer and shake occasionally to keep Trifluralin mixed in the tank.

**Ground Application**

Apply Trifluralin in 1 to 5 gallons of water per 1,000 square feet on a broadcast basis. Spray uniformly over the top of the soil surface to assure satisfactory weed control.

**Incorporation Directions**

Mix Trifluralin thoroughly into the soil with a tool or implement that breaks up large clods and distributes the chemical within the soil. The more thoroughly the Trifluralin is mixed within the soil, the more consistent the weed control.

Thoroughly mix Trifluralin in the top 2 to 3 inches of the final seedbed (when the garden is ready for planting), or erratic weed control and/or crop injury may result. Equipment such as a rototiller or rake should be used to mix Trifluralin to the desired 2 to 3 inch depth.

**Incorporation Before Planting**

Trifluralin must be mixed into the soil within 24 hours after application. You should mix the Trifluralin uniformly into the top 2 to 3 inches of the final seedbed.

**Incorporation After Planting**

Check specific crop incorporation directions after planting.

**Cultivation After Planting**

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

**Crop Recommendations**

These recommendations are given as broadcast rates of Trifluralin per 1,000 square feet. Apply any time after January 1 when soil can be worked and is suitable for good incorporation. Do not use Trifluralin on soils containing more than 10% organic matter. Trifluralin should not be used in areas to be planted with sweet corn or direct seeded cucurbits.

**For the Following Crop Grouping, Use the Rate Listed Below**

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

**Broadcast Rates Per 1,000 Square Feet  
Gowan Trifluralin E.C.**

Soil Texture	Teaspoons
Coarse	2 1/4
Medium	3 1/2
Fine	4 1/2

**Asparagus—Established**

Follow recommended soil preparation, application and incorporation procedures for Trifluralin. Trifluralin can be applied to established asparagus as a single application.

Apply Trifluralin to asparagus after ferns are removed but before spear emergence.

**Carrot**

Apply and incorporate prior to transplanting only. See next section for direct seeded.

**Cole Crops—Transplant (Broccoli, Brussels Sprout, Cabbage and Cauliflower)**

Apply and incorporate prior to transplanting only. See next section for direct seeded.

**Cucurbits—Postplant Emerged (Cantaloupe, Cucumber and Watermelon)**

Apply Trifluralin as a direct spray to the soil between the rows and beneath plants which are in the 3 to 4 true leaf stage. After applying Trifluralin to the soil,

incorporation is necessary to mix the chemical to the 2 to 3 inch desired depth. Optimum weed control will be achieved by moving a portion of the treated soil around the base of the established plants.

**Okra**

**Pepper—Transplant**

Apply and incorporate prior to transplanting only.

**Potato—All states except Maine**

Apply and incorporate Trifluralin after planting, before emergence, or immediately following dragoff or after the potato plants have fully emerged. Mix Trifluralin into the soil so a uniform layer of treated soil covers the bed. Concentrated areas of chemical in the bed may retard potato emergence and cause stem brittleness. If potato plants are already emerged when cultivating, do not totally cover foliage with treated soil. Do not damage potato seed pieces or elongating sprouts with incorporation equipment.

**Southern Pea—Before planting only**

**Tomato—Transplant**

Apply and incorporate prior to transplanting only.

**For the Following Crop Grouping, Use the Rate Listed Below**

Apply and incorporate Trifluralin before planting.

**Broadcast Rate Per 1,000 Square Feet  
Gowan Trifluralin E.C.**

Soil Texture	Teaspoons
Coarse	2 1/4
Medium	3 1/2
Fine	4 1/2

**Beans—(Lima Bean and Snap Bean)**

**Cole Crops—Direct Seeded (Broccoli, Brussels Sprout, Cabbage and Cauliflower)** See above section for transplant.

**Greens—(Turnip Greens, Collard, Kale and Mustard Greens)**

**Green Pea**

**GOWAN TRIFLURALIN E.C. RATE CONVERSION CHART**

Rate Per Thousand Square Feet to Rate Per Acre	
Rate Per 1,000 Square Feet Teaspoons	Rate Per Acre Pnts
2 1/4	1
3 1/2	1 1/2
4 1/2	2

**SMALL SPRAYER CALIBRATION TECHNIQUE**

Small sprayer calibration can be achieved by following these five simple steps

1. Fill the sprayer full of clean water.
2. Spray as you would normally apply chemicals through the sprayer over the area to be treated.
3. When the sprayer is empty, measure the area treated to determine the number of square feet per sprayer load.
4. After you have calculated the number of square feet per sprayer load, calculate the amount of Trifluralin needed to treat that size area.
5. Refer to the Mixing Directions on the Trifluralin product label.

**SPECIAL PRECAUTIONS**

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

**INHERENT RISKS OF USE**

Failure to carefully follow the directions for use of Trifluralin as well as other factors such as seedling disease, cold weather, deep planting, excessive moisture, high salt concentration or drought, may result in unsatisfactory weed control or crop injury. Reduced yields may result under these conditions.

**NOTICE ON CONDITIONS OF SALE**

Our recommendation 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.