

(Booklet)

Treflan MicroActiv Herbicide

GROUP	3	HERBICIDE
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A selective granular herbicide for preplant soil incorporated weed control in many field crops.

AGRICULTURAL

READ THE LABEL AND BOOKLET BEFORE USING
KEEP OUT OF REACH OF CHILDREN

GUARANTEE: trifluralin 10%
Granular

REGISTRATION NO. 21742 PEST CONTROL PRODUCTS ACT

**DANGER: EYE IRRITANT POTENTIAL
SKIN SENSITIZER**

**CAUTION: FAILURE TO FOLLOW LABEL INSTRUCTIONS MAY RESULT IN ERRATIC WEED CONTROL OR
CROP DAMAGE**

NET CONTENTS: 22.7 kg, 454 kg, bulk

Gowan Company, L.L.C.
P.O. Box 5569
Yuma, AZ 85366-5569
United States
1-800-883-1844

PRECAUTIONS
KEEP OUT OF REACH OF CHILDREN
DANGER: EYE IRRITANT
POTENTIAL SKIN SENSITIZER
DO NOT APPLY BY AIR

Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes or clothing. Avoid contamination of foodstuffs, feed and fish ponds.

All handlers must wear a long-sleeved shirt and long pants. In addition, wear chemical-resistant gloves during mixing, loading, repair and clean-up activities.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's web site at www.croplife.ca.

FIRST AID

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

If swallowed: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

TOXICOLOGICAL INFORMATION

No specific antidote. Employ supportive care. Treatment should be based on judgement of the physician in response to reactions of the patient.

AGRICULTURAL CHEMICAL

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

ENVIRONMENTAL HAZARDS

Direct contamination of any body of water with this product may kill fish. Do not contaminate any body of water by direct application, cleaning of equipment or disposal of wastes. To reduce runoff from treated areas into aquatic habitats, avoid application to areas with a moderate to steep slope, compacted soil or clay. Avoid application of the product when heavy rain is forecast. Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

STORAGE

Store in areas not exposed to high temperatures, prolonged, direct sunlight or moisture. Also, do not let product remain in granular applicators under these conditions. After filling the granular applicator, close the lid immediately to avoid prolonged exposure to direct sunlight.

DISPOSAL

Recyclable Containers:

Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.

2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

Returnable Containers:

Do not reuse this container for any purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

GENERAL INFORMATION

Treflan MicroActiv Herbicide is a preemergence herbicide which is mixed (incorporated) into the soil to provide long-lasting control of many annual grasses and broadleaved weeds. Treflan MicroActiv Herbicide controls susceptible weeds by killing seedlings as they germinate. It does not control established weeds or weeds which germinate below the treated soil layer.

- 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.
- Discard clothing or other absorbent materials that have been heaving contaminated with this product. DO NOT reuse them.
- Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- DO NOT apply this product directly to freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs, ditches and wetlands), estuaries or marine habitats.
- DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.
- To minimize the release of trifluralin into the environment due to volatilization, trifluralin should only be applied on cool mornings and evenings when air temperatures are 15°C or lower. To further reduce volatilization to the atmosphere, incorporation into the soil should occur concurrently with application.

INSTRUCTIONS

FAILURE TO FOLLOW LABEL INSTRUCTIONS MAY RESULT IN ERRATIC WEED CONTROL OR CROP DAMAGE. USUAL OR STANDARD SEEDING PRACTICES MAY NOT SUFFICE. READ ALL DIRECTIONS CAREFULLY BEFORE APPLYING.

WARNINGS

Application

- Do not apply Treflan MicroActiv Herbicide to peat or muck soil, or soils which contain more than 15% organic matter.
- Do not apply to fields spread with manure within the last 12 months. After this period, ensure the manure has been thoroughly disintegrated and mixed into the soil to a depth of 10 to 15 cm.
- If the swath or stubble is removed by burning, cultivate once to remove the charcoal layer from the soil surface prior to Treflan MicroActiv Herbicide application.
- Application to soils subject to prolonged periods of flooding may result in accelerated herbicide breakdown. Additionally, application to wet soils or soils in poor working condition could result in reduced weed control. See Land Preparation section of this label for further precautions.
- Do not apply to soils with less than 2% organic matter. Application to eroded knolls or grey-wooded soils with highly variable texture or organic matter may result in reduced crop stand, delayed development or reduced yields in either the treated crop or rotational crop.
- Apply uniformly at the recommended rates. Over-application caused by overlapping, improper calibration or uneven application may reduce crop stands in the treated crop or rotational crop.
- DO NOT APPLY BY AIR.
- To avoid potential injury to future wheat rotational crops, growers should avoid applying trifluralin and/or ethalfluralin on the same land at an oilseed/special crop/barley rate for two consecutive crops.

Crop Year

- Applied and incorporated according to directions, Treflan MicroActiv Herbicide will not harm the treated or rotational crop. However, seedling disease, deep planting, excessive moisture, high salt concentration, soil compaction or drought may weaken crop seedlings and increase the risk of injury, which may result in delayed crop development or reduced yields.
- To reduce the possibility of injury to the treated crop, use good quality certified seed. Seed shallow into a warm, moist firm seedbed using recommended agronomic practices which will promote rapid and even crop germination and emergence.
- Each crop has a specific seeding depth requirement and seeding deeper than recommended can increase the potential risk of damage to the seedling. Refer to industry or government extension published documents which outline recommended seeding practices/depths for each crop.
- **CAUTION:** Do not graze the treated immature crops or cut for hay; there are not sufficient data available to support such use.

Rotational Crop

- Applied and incorporated according to label directions, Treflan MicroActiv Herbicide will not harm rotational crops. However, seedling disease, cold weather, deep planting, excessive moisture, high salt concentrations, soil compaction or drought may weaken seedlings and increase the risk of injury, which may result in delayed crop development or reduced yields.
- As a precaution, oats, sugar beets and small-seeded grasses such as timothy, canaryseed grass and creeping red fescue should not be grown in rotation following a crop treated with Treflan MicroActiv Herbicide.
- The persistence of Treflan MicroActiv Herbicide is influenced by soil moisture and the majority of breakdown occurs during the growing season. If drought or extended dry periods were present in the previous year, higher levels of Treflan MicroActiv Herbicide may be present in the soil. To reduce the possibility of injury to rotational crops, seed shallow into a warm moist seedbed using recommended agronomic practices and seeding depths. As an additional safety precaution seeding rate may be increased slightly (10%).
- Do not seed wheat as a rotational crop if trifluralin and/or ethalfluralin has been used at an oilseed/special crop/barley rate for two consecutive crops.
- Do not direct seed (zero till) a rotational crop into standing stubble on land that has been treated with trifluralin or ethalfluralin for the previous crop. A cultivation prior to seeding of the rotational crop is strongly recommended to help aerate the soil and promote seedbed conditions which will enhance seed germination.

- When seeding a rotational crop, use good quality certified seed. Seed shallow into a warm, moist firm seedbed using recommended agronomic practices which will promote rapid and even crop germination and emergence. Avoid deep seeding, loose seedbeds and seeding into cold soils.

- Each crop has a specific seeding depth requirement and seeding deeper than recommended can increase the potential risk of damage to the seedling. Refer to industry or government extension published documents which outline recommended seeding practices/depths for each crop.

Weed Resistance

Populations of green foxtail tolerant to trifluralin have developed in a number of fields in Western Canada which have had a long history of repeated trifluralin use. Trifluralin or ethalfluralin containing products (i.e., Treflan MicroActiv Herbicide, Treflan Herbicide*, Heritage**, Triflurex¹, Rival², Fortress³ and Edge* Herbicides) will not control trifluralin tolerant green foxtail. To delay selection or reduce the spread of trifluralin tolerant green foxtail, avoid the use of these products repeatedly in the same field or use a separate herbicide application for control of trifluralin tolerant green foxtail. As a preventative measure, Gowan Company, L.L.C. strongly recommends rotating the use of herbicides that have different modes of action. Consult provincial extension personnel for more information.

DIRECTIONS FOR USE IN OILSEED AND SPECIALTY CROPS Land

Preparation

When applying to unworked stubble fields, cultivate once before application of Treflan MicroActiv Herbicide to allow granules to penetrate to the soil surface. If existing weed growth is heavy, cultivate to destroy existing weeds before application of Treflan MicroActiv Herbicide. Disc-type implements provide the best results. To avoid concentrating wild oat seeds below the treated layer, do not plow (moldboard) land prior to application of Treflan MicroActiv Herbicide. If the swath is removed by burning, cultivate once to remove charcoal layer prior to application of Treflan MicroActiv Herbicide.

Application

Apply with a properly calibrated granular herbicide applicator that will apply the granules uniformly. Calibrate the applicator according to manufacturer's directions and check frequently during application to be sure equipment is working properly. Avoid concentration of the material in narrow bands. Apply Treflan MicroActiv Herbicide to soil surface and incorporate in the same operation if possible. Ensure that large clods are broken. Do not delay incorporation more than 24 hours after application. When applied as directed, Treflan MicroActiv Herbicide will not harm the treated crop or crops that follow in rotation; however, an over-application caused by overlapping, improper calibration, non-uniform application etc. may reduce stands of the treated crop or rotational crops.

Incorporation

To incorporate, work Treflan MicroActiv Herbicide into the soil in two different directions. Use a tandem disc, discer or field (vibra-shank type) cultivator set to work 8 to 10 cm deep for the first incorporation. Disc or cultivate in a cross direction at the same depth. Operate disc implements at 7 to 10 km/hr and cultivators at 10 to 13 km/hr. DEEP TILLAGE CULTIVATOR NOT RECOMMENDED. A field cultivator (vibra-shank type) is defined as an implement with 3 or 4 rows of sweeps spaced at intervals of 20 cm or less and staggered so that no soil is left unturned.

- Treflan MicroActiv Herbicide should not be incorporated with a field cultivator when the soil is crusted, lumpy or too wet for good mixing action.
- Disc type implements are preferred on stubble to ensure a 10 cm depth of operation.
- Incorporation with implements set to cut less than 8 cm deep or more than 10 cm deep may result in erratic weed control or crop damage.
- Rod weeders, harrows, deep tillage cultivators, chisel plows or hoe drills will not properly incorporate Treflan MicroActiv Herbicide.

NOTE: FOR MORE EFFECTIVE WEED CONTROL, IT IS RECOMMENDED THAT THE SECOND INCORPORATION MUST BE DELAYED FOR AT LEAST 3 DAYS FOLLOWING THE FIRST INCORPORATION. THIS ALLOWS TIME FOR GREATER RELEASE OF TREFLAN MICROACTIV HERBICIDE ONTO SOIL PARTICLES AND ASSURES MORE UNIFORM DISTRIBUTION IN SOILS.

Fall Application

Treflan MicroActiv Herbicide can be applied in the fall between September 1 and prior to soil freeze-up for weed control the following year. On all deep black soils and heavy textured soils, early fall application is preferred to allow more time for even dispersion of Treflan MicroActiv Herbicide in the treated soil layer. Apply fall rates and incorporate as above. The initial incorporation must be done within 24 hours of application.

FOR BEST RESULTS IT IS RECOMMENDED TO DO BOTH INCORPORATIONS IN THE FALL FOLLOWED BY TILLAGE (5 to 8 cm) IN THE SPRING PRIOR TO PLANTING.

Summer Application

Treflan MicroActiv Herbicide can be applied to summerfallow between June 1 and September 1 for weed control in canola and flax the following year. Apply the summer rate and incorporate as above. Treflan MicroActiv Herbicide must be incorporated at least twice with the implement operated in two different directions. The initial incorporation must be done within 24 hours of application. The second incorporation (and subsequent incorporations) may be done whenever necessary to destroy resistant weed growth during the remainder of the summerfallow. Tillage (5 to 8 cm) is necessary in the spring prior to seeding (refer to Spring Tillage for Seedbed Preparation). DO NOT APPLY TO SAND AND SANDY LOAM SOILS.

Spring Tillage For Seedbed Preparation

Spring tillage following summer or fall application of Treflan MicroActiv Herbicide should be done prior to seeding when the soil is warm enough to promote germination. Use a disc or field cultivator (vibra-shank) set to cut at 5 to 8 cm deep. On all deep black soils and heavy textured soils, it is recommended to prework the soil early in the spring to aerate the layer treated with Treflan MicroActiv Herbicide for optimum weed control. Avoid transplanting weed seedlings; seed into a weed-free seedbed using accepted cultural practices. Avoid excessive compaction of the soil layer treated with Treflan MicroActiv Herbicide. Any operation that results in a more shallow or compacted treated layer may allow weeds to emerge. This compaction may result from tractor wheel tracks, implement wheels, drill press wheels or other field operations done after incorporation. Soils are more susceptible to compaction when they are moist.

WEEDS CONTROLLED

Annual Grasses

wild millet (green^x and yellow foxtail)
barnyard grass
Persian darnel
crab grass
meadow brome grass
cheat
stink grass
goose grass
annual blue grass

Annual Broadleaved Weeds

cow cockle
pigweed
lamb's-quarters
chickweed
purslane
knotweed
carpetweed
wild buckwheat

WEEDS SUPPRESSED

Wild oats

^x Treflan MicroActiv Herbicide will not control trifluralin tolerant green foxtail. See specific recommendations in Warning section of this label.

NOTE: When used as directed, Treflan MicroActiv Herbicide will provide commercially acceptable control of the above weeds. Some wild oats and wild buckwheat may escape the herbicidal action of Treflan MicroActiv Herbicide but will be retarded in growth and will provide little competition to the crop.

CROPS REGISTERED

canola	barley (fall application only)
triazine tolerant canola (t.t. canola)	flax (summer and fall application only)
mustard	soybeans
sunflower	dry beans
peas (field and canning)	fababeans
lentils (fall application only)	alfalfa establishment (flax and canola cover crops only)

Table 1: Recommended Rates of Treflan MicroActiv Herbicide in Oilseed And Special Crops

Crop	Soil Zones And % of Soil Organic Matter	Rates per Hectare for Specific Soil Textures	
		Light	Medium to Heavy
		sand sandy loam	loam silty clay loam silt loam clay loam silt silty clay sandy clay loam clay
Summer canola, t.t. canola, flax (do not use on low linolenic acid varieties)	brown, dark brown, black or deep black	not recommended	17 kg/ha
Fall canola, t.t. canola, lentils, sunflower, fababeans, mustard, flax, peas, soybeans, dry beans, alfalfa establishment	brown, dark brown or black 2-6% O.M.	11 kg/ha	14 kg/ha
	black or deep black 6-15% O.M.	14 kg/ha	14-17 kg/ha (use 17 kg/ha for heavy wild oat infestations)

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

SPECIAL INSTRUCTIONS FOR FLAX (Do not use on low linolenic acid varieties) AND LENTILS

- Both incorporations of Treflan MicroActiv Herbicide must be done in the season of application prior to seeding in the spring. Leave at least 3 days between incorporations.
- The seedbed should be shallowly tilled (5 to 8 cm) and packed just prior to seeding in the spring to ensure a firm seedbed and accurate depth of planting.
- Seeding should be done with a press drill or hoe drill. Seed into a moist seedbed no more than 4 cm deep.
- Do not seed flax early in May when soil conditions are cold. Seeding should generally not be prior to May 15.
- Refer to Warning statement regarding stresses that can lead to crop injury or yield reduction.

TREFLAN MICROACTIV HERBICIDE PLUS A REGISTERED POSTEMERGENCE TRIAZINE HERBICIDE FOR TRIAZINE TOLERANT CANOLA

NOTE: THIS TREATMENT FOR USE ONLY ON TRIAZINE TOLERANT CANOLA. NON-TRIAZINE TOLERANT CANOLA WILL BE KILLED BY THIS COMBINATION.

Treflan MicroActiv Herbicide may be applied in the summer or fall for triazine tolerant canola. A postemergence triazine herbicide registered for this use may then be applied after crop emergence to control several additional broadleaved weeds. Refer to individual labels of the postemergence herbicides for specific recommendations and follow warnings and precautions as stated.

SPECIAL INSTRUCTIONS FOR USE IN BARLEY - FALL APPLICATION ONLY

User instructions must be followed closely to ensure good crop tolerance.

Table 2: Recommended Rates of Treflan MicroActiv Herbicide in Barley (Fall Application Between September 1 and Freeze-Up Only)

Soil Zones and % of Organic Matter	Rates per Hectare for Specific Soil Textures	
	Light	Medium to Heavy (most soils)
	sand sandy loam	loam silt loam silt sandy clay loam silty clay loam clay loam silty clay clay
brown and dark brown 2-4% O.M.	8.5 kg/ha	11 kg/ha
black 4-6% O.M.	11 kg/ha	14 kg/ha

Rates

Be sure to use the rates recommended for barley outlined in Table 2. For a list of weeds that are controlled in barley, refer to the Weeds Controlled section of this label. For barley, do not apply Treflan MicroActiv Herbicide on grey-wooded soils or other soils containing less than 2% organic matter or on black/deep black soils containing more than 6% organic matter. Application to eroded knolls may result in reduced crop stand.

Incorporation

General instructions for Incorporation and Fall Application are the same for barley as outlined in the Directions For Use section of this label. **HOWEVER, ON BARLEY BOTH INCORPORATIONS MUST BE DONE IN THE FALL.** Refer also to the Land Preparation and Application sections of this label.

Seeding

Seeding should be done with a press drill or hoe drill. Seed into a moist, warm seedbed with the drill set to seed shallow (approximately 5 cm deep). Use of discers and air seeders can result in uneven emergence of the barley due to the loose seedbed and variable seeding depth. If a discer or air seeder is used, the field should be packed or harrowed after seeding to promote quick and even germination. Do not seed early when soils are cold.

Precautions For Use In Barley

- Do not apply Treflan MicroActiv Herbicide on stubble in the fall for barley when the crop harvested in the current calendar year was treated with either: Treflan MicroActiv Herbicide, Treflan (or a product containing trifluralin) or Edge (ethalfluralin) Herbicides. This includes applications made in the previous summer or fall.
- Refer to the Warning statement regarding stresses that can lead to crop injury or yield reductions. Apart from these conditions, any early season effects on crop development that may be noted are temporary and the crop will develop to full yield potential.

FALL APPLICATION TO STUBBLE OR SUMMERFALLOW FOR CONTROL OF GREEN FOXTAIL IN WHEAT CROPS REGISTERED

spring wheat (includes semi-dwarf) durum
wheat

WEED CONTROLLED IN CROP YEAR

green foxtail^x (wild millet)

During the crop year, Treflan MicroActiv Herbicide will provide commercially acceptable control of green foxtail.

^x Treflan MicroActiv Herbicide will not control trifluralin tolerant green foxtail. See specific recommendations in Warning section of this label.

Recommended Rates Of Treflan MicroActiv Herbicide Per Hectare (FALL APPLICATION)

Soils between 2% and 8% organic matter.

Date of Application September 1 to freeze-up

Rate of product per hectare 5.5 kg/ha

WARNING

- Application to severely eroded knolls may result in reduced crop stand.
- 5.5 kg/ha is the maximum rate for wheat. Do not use higher rates for wheat as crop injury may result.

CAUTION: Do not apply Treflan MicroActiv Herbicide on stubble in the fall for wheat when the crop harvested in the current calendar year was treated with Treflan MicroActiv Herbicide, Treflan, Heritage, (or a trifluralin product) or Edge (ethalfluralin) herbicides. This includes applications made in the previous summer or fall.

Land Preparation

Treflan MicroActiv Herbicide may be fall applied to summerfallow and to standing or preworked stubble, provided trash is not so heavy as to prevent soil mixing due to plugging of the implement. Treflan MicroActiv Herbicide may be applied over top of moderate green growth (not affecting soil mixing). If green growth is heavy (interfering with soil mixing), destroy existing growth before application of Treflan MicroActiv Herbicide either by cultivation or with the application of a recommended herbicide. If the swath is removed by burning, cultivate once to remove charcoal layer prior to Treflan MicroActiv Herbicide application.

Application

Treflan MicroActiv Herbicide can be applied in the fall between September 1 and prior to soil freeze-up for green foxtail control the following year. Apply with a properly calibrated granular herbicide applicator that will apply the granules uniformly. Calibrate the applicator according to manufacturer's directions and check frequently during application to ensure the equipment is working properly. Avoid concentration of the material in narrow bands or strips. Apply Treflan MicroActiv Herbicide to the soil surface and incorporate in the same operation if possible. Ensure that large clods are broken. Do not delay incorporation more than 24 hours after application. When applied as directed, Treflan MicroActiv Herbicide will not harm crops that follow in rotation; however, an over-application caused by overlapping, improper calibration, non-uniform application etc., may reduce stands of crops that follow in rotation.

Incorporation

Incorporate Treflan MicroActiv Herbicide into the soil in two different directions using a field cultivator, deep tillage cultivator or disc implement operated at 8 to 10 km/hr and set to work 5 to 8 cm deep. The second working should be done in a cross direction at the same depth.

To conserve trash cover throughout the winter, one incorporation may be completed in the fall with the second incorporation done in spring at the time of seedbed preparation.

Both incorporations may be completed in the fall. If so, it is recommended that the second working be delayed at least 3 days following the first. This allows time for greater release of Treflan MicroActiv Herbicide onto the soil particles and assures more uniform distribution in the soil. The second incorporation should be done in a cross direction to the first and at the same depth.

- Treflan MicroActiv Herbicide should not be incorporated with a field cultivator when the soil is crusted, lumpy or too wet for good mixing action.
- Incorporation with implements set to cut less than 5 cm deep or more than 8 cm deep may result in erratic weed control or crop damage.
- Rod weeders, harrows or hoe drills will not properly incorporate Treflan MicroActiv Herbicide.

Spring Tillage For Seedbed Preparation

All spring tillage following fall application of Treflan MicroActiv Herbicide should be done when the soil is warm enough to promote germination.

When only one incorporation is completed in the fall to conserve trash cover, the spring tillage should be done at an angle or cross direction to the fall incorporation with the implement operated at a 5 to 8 cm depth.

When both incorporations are completed in the fall, shallow spring tillage (no deeper than fall incorporation) should be completed with a cultivator or disc implement.

Avoid transplanting weed seedlings.

Seeding

Seed into a firm, moist, weed-free seedbed using a double disc press drill or hoe drill set to seed 3 to 6 cm deep.

If a discer or air seeder is used for seeding, separate spring tillage may not be necessary. However, care must be exercised such that the discer or air seeder is set to uniformly place the seed 3 to 6 cm deep and the seedbed should be firmly packed or harrowed after seeding to promote good germination.

To reduce the risk of **wheat** injury, use quality seed and agronomic practices which will promote good growing conditions. Avoid deep seeding, loose seedbeds and seeding into cold soils. When seeding **semi-dwarf wheat**, special care should be taken to ensure shallow seeding. Check local recommendations for proper seeding depth.

DIRECTIONS FOR USE ON SUMMERFALLOW

Treflan MicroActiv Herbicide is a preemergence herbicide which is blended (mixed into the soil) to provide control of several annual grasses and annual broadleaved weeds during both years of the summerfallowwheat rotation. TREFLAN MICROACTIV HERBICIDE CONTROLS SUSCEPTIBLE WEEDS BY KILLING SEEDLINGS AS THEY GERMINATE. It will not control established weeds.

CROPS REGISTERED

spring wheat (includes semi-dwarf) durum
wheat

WEEDS CONTROLLED

Fallow Year

wild millet (green foxtail)^x
Persian darnel
barnyard grass
wild buckwheat
cow cockle
lamb's-quarters
redroot pigweed
Russian thistle

Crop Year

wild millet (green foxtail)^x
lamb's-quarters
wild buckwheat[†]

WEEDS SUPPRESSED

Wild oats

^xTreflan MicroActiv Herbicide will not control trifluralin tolerant green foxtail. See specific recommendations in Warning section of this label.

[†]Some wild buckwheat may escape the herbicidal action of Treflan MicroActiv Herbicide but its growth will be retarded and result in limited competition to the wheat.

NOTE: During the fallow year, susceptible weeds may not be fully controlled until after the second Fallowblend* operation has established a uniform layer of soil treated with Treflan MicroActiv Herbicide. During the crop year Treflan MicroActiv Herbicide will provide commercially acceptable control of weeds as specified above.

Table 3: Recommended Rates of Treflan MicroActiv Herbicide in the Brown Soil Zone (Summerfallow Application)

Date of Application	Rates per Hectare	
	1-3% O.M.	4-8% O.M.
May	9.5 kg/ha	11.0 kg/ha
June	8.0 kg/ha	9.5 kg/ha
July	6.5 kg/ha	8.0 kg/ha

Land Preparation

By reducing the number of fallow workings in a season, a greater trash cover is retained which reduces wind erosion and evaporation. The greatest reduction in the number of necessary fallow cultivations in a season may be obtained by applying Treflan MicroActiv Herbicide just prior to the first spring fallow working.

Treflan MicroActiv Herbicide may be applied to standing or preworked stubble, provided trash is not so heavy as to prevent soil mixing. Treflan MicroActiv Herbicide may be applied over top of moderate green growth (not affecting soil mixing). If green growth is heavy (interfering with soil mixing), destroy existing growth before application of Treflan MicroActiv Herbicide either by cultivation or with the application of a recommended herbicide.

Application

Application of Treflan MicroActiv Herbicide to summerfallow fields will provide weed control during both years of the summerfallow-wheat rotation. Apply with a properly calibrated granular herbicide applicator that will apply Treflan MicroActiv Herbicide uniformly.

Calibrate the applicator according to manufacturer's directions and check frequently during application to ensure equipment is working properly. Avoid concentration of the material in narrow bands or strips. Apply Treflan MicroActiv Herbicide to soil surface and Fallowblend in the same operation if possible (see below for Fallowblend* details). Ensure that large clods are broken. When applied as directed, Treflan MicroActiv Herbicide will not injure wheat grown in rotation after summerfallow; however, an over-application caused by overlapping, improper calibration or non-uniform application may result in reduced crop stand, delayed development or reduced yields.

Fallowblend Operations

To Fallowblend, mix Treflan MicroActiv Herbicide into the soil in two different directions using a field cultivator, deep tillage cultivator or a disc implement operated at 8 to 10 km/hr. The first Fallowblend operation must be done within 24 hours of application and the second working should be done no sooner than one week after application. Subsequent workings may be done whenever necessary to destroy resistant weed growth during the remainder of the fallow year. For the first two Fallowblend operations the equipment should be set to work 5 to 8 cm deep. Subsequent workings should be no deeper than 8 cm.

After completing the two Fallowblend operations, additional operations with a rod weeder or shallow tillage may be required to control resistant weed growth and more uniformly blend Treflan MicroActiv Herbicide into the soil. These additional cultivations should be as shallow as possible to minimize surface trash burial and evaporation.

- Treflan MicroActiv Herbicide should not be blended with a cultivator when the soil is crusted, lumpy or too wet for good mixing action.
- Blending with implements set to cut deeper than 8 cm may result in erratic weed control and crop injury.

Spring Tillage For Seedbed Preparation

Seedbed preparation should be done using a field cultivator set to cut 5 cm deep (no deeper than the Fallowblend operation), when the soil is warm enough to promote good germination. Avoid transplanting weed seedlings; seed into a weed-free seedbed using a double disc drill or hoe drill set to seed 3 to 6 cm deep.

If a discer or air seeder is used for seeding, separate spring tillage may not be necessary. The discer or air seeder should be set to place seed 3 to 6 cm deep and the seedbed should be firmly packed or harrowed after seeding to promote good germination.

Seeding

To reduce the risk of **wheat** injury, use quality seed and agronomic practices which will promote good growing conditions - avoid deep seeding, loose seedbeds and seeding into cold soils.

When seeding **semi-dwarf wheat**, special care should be taken to ensure shallow seeding. Check local recommendations for proper seeding depth.

RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, Treflan MicroActiv Herbicide is a Group 3 herbicide. Any weed population may contain or develop plants naturally resistant to Treflan MicroActiv Herbicide and other Group 3 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance:

- Where possible, rotate the use of Treflan MicroActiv Herbicide or other Group 3 herbicides with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group when such use is permitted.
- Herbicide use should be based on an IPM program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical), cultural, biological and other chemical control practices.
- Monitor treated weed populations for resistance development.
- Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.
- For further information or to report suspected resistance, contact Gowan Company, L.L.C. at 1-800-883-1844.

NOTICE TO USER: This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

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³ Fortress is a registered trademark of Gowan Company LLC

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