

Specimen Label



Treflan® 4D

Herbicide

®Trademark of Dow AgroSciences LLC

A herbicide for the preemergence control of annual grasses and broadleaf weeds

Group	3	HERBICIDE
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Active Ingredient:

trifluralin: α, α, α -trifluoro-2,6-dinitro- <i>N</i> , <i>N</i> -dipropyl- <i>p</i> -toluidine.....	43%
Other Ingredients.....	57%
Total	100%

Contains petroleum distillates.

Contains 4 lb active ingredient per gallon.

EPA Reg. No. 68156-4

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION

Causes Moderate Eye Irritation • Harmful If Swallowed • Prolonged Or Frequently Repeated Skin Contact May Cause Allergic Reaction In Some Individuals

Avoid contact with eyes, skin, or clothing.

Personal Protective Equipment (PPE)

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

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Nitrile, Butyl, Neoprene, or Barrier Laminate
- 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.

Engineering Controls

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

User Safety Recommendations

Users should:

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

First Aid

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 center or doctor for treatment advice.

First Aid (Cont.)

If swallowed: Immediately call a poison control center or doctor.

Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

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

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

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 for emergency medical treatment information.

Note to physician: This product contains an aromatic hydrocarbon and can be extremely harmful if swallowed. Aspiration of this product may produce a severe pneumonitis. Stomach lavage with a cuffed endotracheal tube in place and immediate administration of activated charcoal, 6 to 8 heaping teaspoonfuls with water, should be considered. Treatment is otherwise symptomatic and supportive.

Environmental Hazards

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

Directions for Use

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

Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides.

It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

Exception: If the product is soil-injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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

- Coveralls
- Chemical-resistant gloves such as Nitrile, Butyl, Neoprene, or Barrier Laminate
- Shoes plus socks
- Protective eyewear

Storage and Disposal

Do not contaminate water, food, or feed by storage or disposal.

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

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Nonrefillable containers 5 gallons or less:

Container Handling: Nonrefillable container. Do not reuse or refill this container.

Storage and Disposal (Cont.)

Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Refillable containers 5 gallons or larger:

Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Nonrefillable containers 5 gallons or larger:

Container Handling: Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Product Information

Treflan® 4D herbicide is an herbicide for the preemergence control of annual grasses and broadleaf weeds. Treflan 4D may be applied in liquid sprays of water or liquid fertilizer, or impregnated on dry bulk fertilizer. To reduce loss of herbicidal activity, Treflan 4D should be soil incorporated within 24 hours after application unless otherwise specified in specific use directions or supplemental labeling. Treflan 4D may be tank mixed or followed by overlay or postemergence treatments with other herbicides to improve the spectrum of weeds controlled. Treflan 4D controls weeds by disrupting growth processes during germination. Treflan 4D does not control established weeds.

Use Precautions

Applied according to directions and under normal growing conditions, Treflan 4D will not harm the treated crop. Over-application may result in crop injury or rotational crop damage from herbicide carryover. Uneven application or improper incorporation of Treflan 4D 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 Treflan 4D. Under these conditions, delayed crop development or reduced yields may result.

Do not apply Treflan 4D to soils that are wet or are subject to prolonged periods of flooding as poor weed control may result.

Do not use Treflan 4D on any crop grown in Pecos county or Reeves county, Texas.

Chemigation: Treflan 4D may be applied by chemigation on certain crops. See instructions for chemigation in the Application Methods section of this label. Also, see specific instructions for certain crops in the Crops section of this label.

Rotation Crop Restrictions

Sugar Beets, Red Beets, and Spinach

- **In Arizona, Colorado, California, Idaho, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming:** Sugar beets, red beets, or spinach should not be planted for 12 months after a spring application or 14 months after a fall application of Treflan 4D. Moldboard plowing to a depth of 12 inches prior to planting these crops will reduce the possibility of crop injury. If land has not been irrigated, these crops should not be planted for 18 months after a spring application or 20 months after a fall application of Treflan 4D.
- **In all other areas:** Sugar beets, red beets, and spinach should not be planted for 12 months after a spring application or 14 months after a fall application. Before planting sugar beets, moldboard plow to a depth of 12 inches to reduce the possibility of crop injury.

Proso Millet, Corn, Sorghum (Milo), Oats, and Annual or Perennial Grass Crops or Grass Mixtures

- **In Arizona, Colorado, California, Idaho, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming:** Unless crop injury is acceptable, proso millet, corn, sorghum (milo), oats, and annual or perennial grass crops or grass mixtures should not be planted for 12 months after a spring application or 14 months after a fall application of Treflan 4D to avoid the possibility of crop injury. If land has not been irrigated, these crops should not be planted for 18 months after a spring application or 20 months after a fall application. Moldboard plowing to a depth of 12 inches before planting these crops will reduce the possibility of crop injury.
- **In Minnesota, North Dakota, and South Dakota:** Unless crop injury is acceptable, proso millet, sorghum (milo), oats, and annual or perennial grass crops or grass mixtures should not be planted for 18 months after a spring application or 21 months after a fall application of Treflan 4D.
- **In those portions of Kansas, Nebraska, Oklahoma, and Texas that receive less than 20 inches of rainfall and irrigation to produce a crop:** Unless crop injury is acceptable, do not plant proso millet, sorghum (milo), oats and annual or perennial grass crops or grass mixtures for 18 months after an application of Treflan 4D. In sorghum, cool, wet weather conditions during early growth stages may increase the possibility of crop injury.
- **All other areas receiving more than 20 inches of rainfall and irrigation:** Unless crop injury is acceptable, do not plant proso millet, sorghum (milo), oats, and annual or perennial grass crops or grass mixtures for 12 months after a spring application or 14 months after a fall application of Treflan 4D.

Rotation Crops Other Than Those Specifically Addressed Above Crops, other than those to which Treflan 4D may be applied as a preplant soil incorporated treatment, should not be planted within 5 months after an application of Treflan 4D.

Weed Resistance Management

Trifluralin, the active ingredient in this product, is a group 3 herbicide (inhibition of microtubule assembly). Some naturally occurring weed biotypes that are tolerant (resistant) to trifluralin may exist due to genetic variability in a weed population. Where resistant biotypes exist, repeated use of herbicides with the same mode of action can lead to the selection for resistant weeds. Certain agronomic practices reduce the likelihood that resistant weed populations will develop, and can be utilized to manage weed resistance once it occurs.

Dow AgroSciences strongly recommends use of the following management practices to prevent or delay the development or spread of DNA-resistant green foxtail in spring cereal production areas:

1. Rotate herbicides so that the same product or same class of herbicide is not used repeatedly year after year. Treflan 4D and/or other dinitroaniline herbicides should not be applied in consecutive years and preferably should be used only once in a three year period. Consult your local extension service or Dow AgroSciences representative for information regarding herbicides with alternative modes of action.
2. Rotate crops and use alternative weed control methods, including tillage, fallow periods and/or other herbicides with different modes of action.
3. Thoroughly clean small grains harvested from fields with confirmed resistance before using as seed, or avoid using grain from DNA-resistant fields for seed.
4. Thoroughly clean all crop residues from tillage and harvesting equipment before moving out of fields with confirmed resistance.

Soil Texture Guide for Application Rates

Rates listed for incorporated treatments of Treflan 4D are based on soil texture class (coarse, medium, or fine) and soil organic matter content. A fine textured soil (e.g., clay loam) will require a higher application rate than a coarse textured soil (e.g., loamy sand). In the table below, find the soil texture class (coarse, medium, or fine) corresponding to the soil texture to be treated. Choose the proper rate for each application based on the soil texture class and specific crop directions. Do not exceed specified rates.

Soil Texture Class	Soil Texture to be Treated
coarse (light) soils	sand, loamy sand, sandy loam
medium soils	loam, silty clay loam ¹ , silt loam, silt, sandy clay loam ¹
fine (heavy) soils	clay, clay loam, silty clay loam ¹ , silty clay, sandy clay, sandy clay loam ¹

¹Silty 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 Directions

Treflan 4D - Alone

Treflan 4D may be mixed with water or most liquid fertilizer materials. Prior to mixing Treflan 4D in liquid fertilizer, refer to the label section entitled Testing for Compatibility in Liquid Fertilizers for testing procedures to determine compatibility with the liquid fertilizer product to be used. The combination of Treflan 4D with solution and suspension-type fertilizers provides weed and grass control equal to water sprays.

Fill spray tank 1/3 to 1/2 full with clean water or liquid fertilizer. Start agitation. Add correct amount of Treflan 4D and continue agitation while filling tank to required spray volume.

Precaution: Do not allow water or spray mixture to back-siphon into a water source.

Treflan 4D in Tank Mix

For broader spectrum weed control, Treflan 4D may be applied in tank mix combination with other products registered for use on crops listed in this label unless tank mixing with trifluralin is prohibited by the manufacturer's label. When tank mixing, use the specified rate of Treflan 4D. Follow the label "Directions for Use" of each tank mix partner for applicable use instructions including application rate, application timing, weeds controlled, and specific precautions and restrictions of product use.

Treflan 4D may be tank mixed with other products and applied with water or most liquid fertilizer materials. Prior to mixing Treflan 4D with other pesticides or liquid fertilizers, refer to the Compatibility Testing for Tank Mix Partners Including Liquid Fertilizers section below.

Compatibility Testing for Tank Mix Partners Including Liquid Fertilizers

A jar test is recommended prior to tank mixing this product with other pesticides or liquid fertilizer to ensure compatibility. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions and in the order indicated in the tank mixing section above. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If components of the mixture separate readily, a compatibility agent may be helpful in maintaining the stability of the spray mixture. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, the components of the mixture are not compatible and full-scale tank mixing should not be attempted.

Note: Compliance with state regulations for liquid fertilizer mixing, registration, labeling, and application are the responsibility of the individual and/or company offering the fertilizer or chemical mixture for sale.

Application Methods

General

As spray volume decreases, the importance of accurate calibration and uniform application increases. Check calibration and uniformity of spray application daily. To avoid spray drift, do not apply when winds are gusting or when wind speed is greater than 15 mph.

Ground Broadcast Application

Apply Treflan 4D in 5 to 40 gallons of liquid carrier per acre (broadcast basis), using any properly calibrated, low pressure herbicide sprayer that will apply the spray uniformly. The carrier may be water or liquid fertilizer as specified for the crop to be treated in the Crops section of this label. For band application, adjust herbicide rate and spray volume in proportion to the band width and row width treated.

Aerial Broadcast Application

Apply Treflan 4D in 5 to 10 gallons of water per acre. Adjust pump pressure, nozzle arrangements, speed, and application height to provide uniform application to the soil surface. Use swath markers or flaggers to assure proper swath width interval.

Avoiding Spray Drift: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following spray drift management practices are recommended to avoid off-target movement of sprays:

- The distance from the outer most nozzles on the spray boom must not exceed 3/4 the length of the wingspan or rotor.
- Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

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

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

Boom Length: For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

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

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

Wind: Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential.

Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

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

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

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

Application with Dry Bulk Fertilizer

Dry bulk fertilizers impregnated or coated with Treflan 4D may be applied as a preplant incorporated treatment on approved crops. All label use directions for Treflan 4D regarding application rates, incorporation directions, special instructions, and precautions should be followed. Read and follow all label instructions below concerning use of Treflan 4D with dry bulk fertilizer. Properly applied dry bulk fertilizers impregnated with Treflan 4D provides weed and grass control equal to water sprays.

Use the following formula to calculate the amount of Treflan 4D required to impregnate a ton of dry bulk fertilizer.

$$\frac{\text{Pints Treflan 4D X}}{\text{Per Acre}} \times \frac{1000}{\text{Pounds Fertilizer per Acre}} = \frac{\text{Quarts Treflan 4D}}{\text{Per Ton of Fertilizer}}$$

Limitations: Apply a minimum of 200 lb per acre of dry fertilizer impregnated with Treflan 4D at the specified broadcast rate per acre. Any commonly used dry fertilizer can be used for impregnation with Treflan 4D except coated ammonium nitrate and pure limestone. These materials will not absorb the herbicide. Blends containing mixtures of these materials can be impregnated.

Impregnation: Use any closed drum, belt, ribbon, or other commonly used dry bulk fertilizer blender. Nozzles used to apply Treflan 4D to dry bulk fertilizer should be placed to provide uniform spray coverage.

Application and Incorporation: Spread the fertilizer/chemical mixture with properly calibrated application equipment. Be certain the material is applied uniformly to the soil surface. Dry bulk fertilizer impregnated with Treflan 4D must be incorporated two times. The first incorporation should occur within 24 hours after application. The second incorporation should be delayed a minimum of 5 days after the first and be completed prior to planting.

Compliance with State Regulations: Compliance with state regulations relating to dry bulk fertilizer blending, registration, labeling, and application are the responsibility of the individual and/or company offering the fertilizer or chemical mixture for sale.

Application by Chemigation

Treflan 4D may be applied through properly equipped chemigation systems for weed control in certain crops as specified in Crops section of this label. Read and follow all label instructions outlined below concerning chemigation before applying Treflan 4D by this method.

General Chemigation Directions:

Apply this product only through continuously moving center pivot, lateral move end tow, solid set, or hand move irrigation systems, or certain other systems described in EPA-accepted supplemental labeling.

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

If you have questions about calibration you should contact state extension 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 sprinkler irrigation systems (center pivot, lateral move, or end tow):

- 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 back-flow.
- 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 that will stop the water pump motor when the water pressure decreases to the point that 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.
- Treflan 4D should be injected continuously throughout the chemigation period. The chemigation-metering pump should be checked periodically during application to insure proper operation.
- The injection-metering pump must be calibrated as specified by the manufacturer.
- Pesticide injection hoses that connect chemigation-metering equipment to the sprinkler irrigation system should be of braided reinforced construction with an internal tube made of nylon, cross-linked polyethylene, or high-density polyethylene.
- Treflan 4D may cause staining of plastic hoses and tanks.
- Apply Treflan 4D in sprinkler irrigation equal to 1/2 to 1 inch of water.
- During chemigation, maintain agitation in supply tank at all times.

Chemigation System Calibration:

Sample calculation for use of Treflan 4D in a chemigation system:

- 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 (133 acres X 1.5 pt/acre = 199.5 pt = 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 1.25 gal/hr and is calculated as follows:

- $25 \text{ gal} \div 20 \text{ hr} = 1.25 \text{ gal/hr}$
 $1.25 \text{ gal/hr} = 160 \text{ fl oz/hr}$

Proper calibration requires the injection pump to be adjusted to deliver 2.7 fl oz/min and is calculated as follows:

- $160 \text{ fl oz/hr} \div 60 \text{ min./hr} = 2.7 \text{ fl oz per min.}$

Chemigation Mixing Directions:

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

Diluted Treflan 4D: Treflan 4D 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 Treflan 4D required (do not add water to Treflan 4D). Start agitation. Add the required amount of Treflan 4D to water in the supply tank and continue mixing while filling the tank to the final volume required by the injection pump calibration. When injecting diluted Treflan 4D, maintain continuous agitation in supply tank.

Application Timing

Preplant Incorporated Application

Treflan 4D may be applied and incorporated prior to planting when soil can be worked and is in a condition that allows thorough mixing to insure uniform incorporation. See Crops section for application timing directions for specific crops.

Preemergence Application Immediately After Planting

Apply and incorporate Treflan 4D immediately after planting and prior to crop germination. Adjust incorporation equipment so as to avoid disturbance of planted seed. Refer to the Crops section of this label for crop specific instructions.

Postemergence and Layby Application

Apply and incorporate Treflan 4D at the specified rate to the established crop at or before the last cultivation. Required preharvest intervals for treatments with Treflan 4D for certain crops are specified in the Crops section of this label. Crop cover may prevent uniform soil coverage from over-the-top sprays. To avoid this problem, use drop nozzles or directed sprays to achieve uniform soil coverage.

Fall Application

Treflan 4D may be applied in the fall for weed control in the crop of the following growing season in all crops for which Treflan 4D is specified as a preplant incorporated treatment. Refer to Crops section for any crop specific fall application instructions. In the states of California, North Dakota, South Dakota and Minnesota, apply and incorporate Treflan 4D any time between September 1 and December 31. In all other states, fall apply Treflan 4D between October 15 and December 31.

Fall application of Treflan 4D is not recommended on fields that remain wet or are subject to periods of flooding. Ground may be bedded up over winter. On bedded ground, reduce beds to desired height before planting,

by moving some treated soil from beds into furrows. Where soil is left flat over winter, care should be taken not to turn up untreated soil during spring bedding operations. Destroy established weeds during seedbed preparation. Weeds established in furrows as a result of exposing untreated soil should be destroyed before planting.

Incorporation Directions

Soil Preparation and Incorporation

Ground cover or existing weeds can interfere with uniform soil incorporation of Treflan 4D. A manageable level of ground cover will allow uniform incorporation into the top 2 to 3 inches of the final seedbed. Ground cover and crop residues, if excessive, should be reduced by appropriate soil tillage prior to application.

Treflan 4D must be incorporated within 24 hours after application unless otherwise specified on supplemental labeling. Non-uniform application may result in erratic weed control or crop injury. With most equipment and methods of application, a second incorporation is required and may occur any time before planting. The second incorporation should be in a different direction, and to avoid bringing untreated soil to the surface should not be deeper than the first. **Note: Two-pass incorporation is required for all special use programs unless otherwise specified.**

General Soil Conditions: The soil surface should be smooth enough to allow for uniform application and efficient incorporation of Treflan 4D. Break up clods using tillage equipment prior to application of Treflan 4D. Apply when soil moisture is sufficient to allow the breakup of large clods and uniform mixing during the incorporation process. Soil compaction and/or non-uniform incorporation may occur if soil is excessively moist.

Incorporation in Bedded Culture: In bedded culture, Treflan 4D should be incorporated to a depth of 2 to 3 inches in the final seedbed.

Application Prior to Bedding: Apply Treflan 4D and incorporate 1 time with recommended equipment. The bedding operation serves as the second incorporation. Do not expose untreated soil during post-bedding operations such as planting since removal of treated soil during planting can allow weed germination and establishment in the drill row.

Application After Bedding: Knock off beds to planting height before applying Treflan 4D. Apply and incorporate Treflan 4D with recommended equipment that will conform to the shape of the bed. Do not expose untreated soil.

Cultivation After Planting: Treated crops may be shallowly cultivated without reducing the weed control activity of Treflan 4D. Limit depth of cultivation to the zone of treated soil to avoid moving untreated soil to the surface. Exposure of untreated soil may cause loss of weed control.

Incorporation Equipment

Use incorporation equipment capable of mixing Treflan 4D uniformly into the top 2 to 3 inches of the final seedbed. Use of inappropriate equipment or improper use of recommended equipment may result in erratic weed control and/or crop injury. Incorporation equipment such as a tandem disc will mix Treflan 4D approximately half as deep as the equipment is set to operate. For example, a disc set to cut 4 inches deep will mix most of the Treflan 4D within the top 2 inches of soil. Any recommended incorporation implement may be used alone or in combination with any other recommended implement. Two incorporation passes are required when using the following incorporation implements (for single pass incorporation, refer to soil conditions and equipment listed under Single Pass Incorporation Option below):

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

Rolling Cultivator: Set equipment to cut 2 to 4 inches deep and operate at 6 to 8 mph.

Bed Conditioner (Do-All): Set equipment to cut 2 to 4 inches deep and operate at 4 to 6 mph. One incorporation pass is adequate in bedded culture, while 2 incorporation passes are required in flat-planted culture. The Do-All should be used only on coarse and medium textured soils.

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

Other Equipment: Other implements including the flexible tine-tooth harrow (Flexline or Melroe), are recommended, but only for certain uses defined in the Crops section of this label.

Conservation Tillage Practices: In reduced or minimum tillage situations, fall or spring application and incorporation of Treflan 4D may be combined with tillage operations. The first incorporation may utilize equipment such as a tandem disc, combination implement or bedding equipment that provides good soil mixing but leaves a maximum amount of crop residue on the soil surface. The second incorporation may be accomplished with tillage equipment that provides uniform soil mixing used in conjunction with no-till planters (see specific directions for reduced or conservation tillage situations for cotton and soybeans in the Crops section).

Single Pass Incorporation Option

Treflan 4D may be incorporated in a single pass if incorporation conditions allow for thorough and uniform mixing into the top 2 to 3 inches of the final seedbed. Thorough and uniform incorporation may be achieved if the soil at the time of incorporation is of good tillth with moderate moisture, and is relatively free of clods and crop residue. **The following types of equipment can be used to obtain thorough and uniform soil mixing from a single incorporation pass:**

Finishing Disc with disc blades no greater than 22 inches in diameter spaced no more than 7 1/2 inches apart. Operate at 4 to 6 mph. Best results are obtained when the disc is equipped with harrow, reel, or basket attachments.

Field Cultivator: Set equipment to cut 3 to 4 inches deep and operate at a minimum of 5 mph. A field cultivator is defined as an implement with 3 to 4 rows of sweeps, spaced at intervals of 7 inches or less with sweeps on successive rows staggered so that no soil is left unturned. Chisel points should not be used. Best results are obtained when the field cultivator is equipped with harrow, reel, or basket attachments.

Combination Implements: These implements are defined as 2 or more tillage devices combined to operate as a single tillage unit. For example, 2 to 3 rows of field cultivator C- or S-shaped shanks with successive rows of sweeps staggered so that no soil is left unturned, followed by a spike-tooth or flexline harrow, followed by ground driven reel, basket or incorporator wheels. Combination implements should be set to cut 3 to 4 inches deep and operated at a minimum of 6 mph. Two incorporations are recommended under conditions which prevent optimum soil mixing such as excessive surface residue, roughness, high clay content or soil is too wet or too dry. Combination tools can also be composed of 2 rows of wide crown sweeps that overlap so that the roots of all weeds and plants are severed. This should be followed by 2 gangs of rotating spoked wheels that thoroughly mix Treflan 4D into the top 2 to 3 inches of the final seedbed.

P.T.O.-Driven Equipment (Tillers, Cultivators, Hoes): Adjust equipment to incorporate Treflan 4D into the top 2 to 3 inches of the final seedbed with rotors spaced to provide a clean sweep of the soil. P.T.O. equipment should not be operated more than 4 mph.

Weeds Controlled by Treflan 4D

Common Name	Scientific Name
Grass Weeds	
annual bluegrass	<i>Poa annua</i>
barnyardgrass (watergrass)	<i>Echinochloa crus-galli</i>
brachiaria (signalgrass)	<i>Brachiaria</i> spp.
bromegrass	<i>Bromus tectorum</i>
(cheatgrass)	
(downy brome)	
cheat	<i>Bromus secalinus</i>
(chess)	
crabgrass	<i>Digitaria</i> spp.
(large crabgrass)	
(smooth crabgrass)	
foxtail	<i>Setaria</i> spp.
(bottlegrass)	
(bristlegrass)	
(foxtail millet)	
(giant foxtail)	
(green foxtail) ⁸	
(pigeongrass)	
(robust foxtail)	
(yellow foxtail)	
guineagrass ¹	<i>Panicum maximum</i>
itchgrass	<i>Rottboellia exaltata</i>
(raoulgrass) ¹	
johnsongrass (from seed)	<i>Sorghum halepense</i>
(rhizome) ²	
jungerlice	<i>Echinochloa colonum</i>
panicum	<i>Panicum dichotomiflorum</i>
(fall panicum)	
(spreading panicgrass) ³	
red rice ⁴	<i>Oryza sativa</i>
ryegrass, Italian	<i>Lolium multiflorum</i>
(annual ryegrass)	
sandbur (burggrass)	<i>Cenchrus incertus</i>
shattercane (wild cane) ⁵	<i>Sorghum bicolor</i>
sprangletop	<i>Leptochloa filiformis</i>
stinkgrass (lovegrass)	<i>Eragrostis cilianensis</i>
Texas panicum	<i>Panicum texanum</i>
(buffalograss)	
(Coloradograss)	
woolly cupgrass	<i>Eriochloa villosa</i>
Broadleaf Weeds	
carpetweed	<i>Mollugo verticillata</i>
chickweed	<i>Stellaria media</i>
field bindweed ⁶	<i>Convolvulus arvensis</i>

Weeds Controlled by Treflan 4D (Cont.)

Common Name	Scientific Name
Broadleaf Weeds (Cont.)	
goosefoot	<i>Chenopodium hybridum</i>
henbit	<i>Lamium amplexicaule</i>
knotweed	<i>Polygonum aviculare</i>
kochia	<i>Kochia scoparia</i>
(fireweed)	
(Mexican fireweed)	
lambquarters, common	<i>Chenopodium album</i>
pigweed ⁵	<i>Amaranthus</i> spp.
(carelessweed)	
(palmer amaranth) ⁷	
(prostrate pigweed)	
(redroot)	
(rough pigweed)	
(spiny pigweed)	
puncturevine (western US only)	<i>Tribulus terrestris</i>
(caltrop)	
(goatweed)	
purslane, common	<i>Portulaca oleracea</i>
pusley, Florida	<i>Richardia scabra</i>
(Florida purslane)	
(Mexican clover)	
(pusley)	
Russian thistle (tumbleweed)	<i>Salsola iberica</i>
stinging nettle (nettle)	<i>Urtica dioica</i>

¹See special instructions for control in sugarcane in the Crops section.

²See special instructions for control in cotton, soybeans, fruit and nut crops and vineyards in the Crops section.

³See special instructions for control in cotton and soybeans in the Crops section.

⁴See special instructions for suppression or partial control in soybeans in the Crops section.

⁵See special instructions for control in soybeans in the Crops section.

⁶See special instructions for control in fruit and nut crops and vineyards in the Crops section.

⁷Suppression only in areas of the southwest U.S. where tolerance to trifluralin has been observed.

⁸Will not control dinitroaniline (DNA) herbicide weed biotypes. See Weed Resistance Management section.

Special Use Programs

Treflan 4D is approved for the following special use programs. Refer to the Crops section of this label for details on soil preparation, use rates, application, soil incorporation, and precautions for each type or program.

Cotton

- Chemigation
- Postemergence Soil Incorporated (Kansas, Texas, Oklahoma, and New Mexico)
- Weed Control in Conservation Tillage
- Fall Panicum Control
- Pigweed and Seedling Johnsongrass Control
- Additional Weed and Grass Control (Gulf Coast Counties of Texas)
- Rhizome Johnsongrass Control

Soybeans

- Fall Application Prior to Planting in the Spring (Arkansas, Louisiana and Mississippi)
- Chemigation
- Weed Control Under Reduced or Conservation Tillage
- Fall Panicum Control
- Pigweed and Seedling Johnsongrass Control
- Additional Weed and Grass Control (Gulf Coast Counties of Texas)
- Itchgrass (Raoulgrass) Suppression
- Charcoal Soils in Arkansas, Louisiana, and Mississippi
- Red Rice Control in Arkansas, Louisiana, Mississippi, and Texas
- Rhizome Johnsongrass Control in Eastern United States and the State of Texas
- Wild Cane (Shattercane) Control
- Control of DNA-Resistant Goosegrass in Soybeans with Treflan 4D Plus Dual Tank Mix

Citrus, Stone Fruit and Nut Crops and Vineyards

- Rhizome Johnsongrass Control
- Field Bindweed Control

Crops

Alfalfa - Established

Mechanically Incorporated

Apply Treflan 4D with ground or aerial equipment and mechanically incorporate prior to weed emergence to control weeds listed in the Product Information section of this label. Use mechanical incorporation equipment that will insure thorough soil mixing with minimal damage to crop stand.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.5
medium	2.0
fine	2.0

Surface Applications (Chemigation or Water Incorporated)

Treflan 4D may be surface applied for annual grass control in established alfalfa by chemigation, or ground or aerial broadcast application equipment.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
all soil textures	4.0

Chemigation

Refer to Application by Chemigation section in the Product Information section of this label for use directions for chemigation.

Surface Applications Activated by Rainfall or Irrigation

Broadcast surface applications of Treflan 4D to established alfalfa may be activated by rainfall, sprinkler, flood, or furrow irrigation. Rainfall or a single overhead sprinkler irrigation of 0.5 acre inch or more is required to activate Treflan 4D. If activated by furrow irrigation, care should be taken to thoroughly wet beds between furrows. If rainfall or irrigation has not occurred within 3 days after application, Treflan 4D may be mechanically incorporated. If mechanically incorporated, use equipment that will insure thorough soil mixing with minimum damage to the established alfalfa.

Application Timing and Weeds Controlled

Applications to established alfalfa for annual grass control can be made during dormancy or semi-dormancy, or during the growing season immediately after a cutting. Because Treflan 4D does not control established weeds, application must be made prior to the expected time of weed germination. Bromegrass and cheat begin to germinate in the fall with the onset of cooler weather. To control these weeds, apply Treflan 4D immediately after a cutting between August 1 and October 1, but prior to weed germination. When fall applied, Treflan 4D controls bromegrass and cheat in addition to other labeled weeds that germinate after application.

The following weeds are controlled when Treflan 4D is applied by chemigation or surface applied and incorporated by rainfall or irrigation:

barnyardgrass	crabgrass
bromegrass	cupgrass
(cheatgrass)	foxtail
(downy brome)	jungerice
(cheat)	sandbur
(chess)	wild barley
canarygrass	

Precautions:

- Do not cut or graze alfalfa within 21 days after application of Treflan 4D.
- Apply no more than 4 pints of Treflan 4D during any growing season. In the growing season following application of 4 pints of Treflan 4D to alfalfa, plant only those crops for which Treflan 4D is registered as a preplant treatment or crop injury may occur.

Tank Mixing

Other products registered for use on established alfalfa may be applied in tank mix combination with Treflan 4D or applied as sequential treatments following application of Treflan 4D. Tank mixes containing Treflan 4D must be applied by ground broadcast when alfalfa is dormant or semi-dormant, or immediately after a cutting.

Precautions: Follow the label Directions for Use of each tank mix partner for applicable use instructions including application rate, application timing, weeds controlled, and specific precautions and restrictions of product use. See detailed information for tank mixing in the Product Information section of this label.

Asparagus - Established

Apply Treflan 4D to established asparagus as a single or split application. Treflan 4D will suppress volunteer seedling asparagus and field bindweed when applied as directed. Follow soil preparation, application, and incorporation procedures for Treflan 4D.

Application Timing

Make applications to dormant asparagus in winter or early spring after mature ferns have been removed. Do not apply after new spears begin to emerge. Apply post-harvest applications immediately after harvest in late spring or early summer just before ferns are allowed to develop.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)	
	Split Application	Single Application
	Before and After Harvest	Before or After Harvest
coarse	1.0 + 1.0	2.0
medium	1.5 + 1.5	3.0
fine	2.0 + 2.0	4.0

- Do not apply more than 2 pints per acre on coarse soils, 3 pints per acre on medium soils or 4 pints per acre on fine soils during any calendar year.

Beans - All Dry and Fresh Beans/Peas (Except Beans/Peas Listed Elsewhere on This Label)

Treflan 4D - Alone

Apply and incorporate Treflan 4D in the spring before planting or in the fall in advance of spring planting. See instructions for fall application of Treflan 4D under the heading Application Timing in the Product Information section of this label.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.0 - 1.5
fine	1.5 - 2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2 pints
- Soils with 5 to 10% organic matter - 2 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Tank Mixing or Sequential Treatments

For broader spectrum weed control, other products registered for use in dry and fresh beans/peas may be applied in tank mix combination with Treflan 4D or as a sequential treatment following application of Treflan 4D. When tank mixing, use the specified rate of Treflan 4D. Follow the label Directions for Use of each tank mix partner for applicable use instructions including application rate, application timing, weeds controlled, and specific precautions and restrictions of product use. See detailed information for tank mixing in the Product Information section of this label.

Beans - Guar and Mungbean

Apply Treflan 4D as a preplant soil incorporated treatment.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.5
fine	1.5

- All soils with 2 to 5% organic matter - 1.5 pints

Beans - Lima Bean and Snap Bean

Apply Treflan 4D as a preplant soil incorporated treatment.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.0
fine	1.5

- All soils with 2 to 5% organic matter - 1.5 pints

Carrot

Apply Treflan 4D as a preplant soil incorporated treatment.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25 - 1.5
fine	1.5 - 2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2 pints
- Soils with 5 to 10% organic matter - 2 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Chemigation: Treflan 4D may be applied through properly equipped chemigation systems for weed control in carrot. Refer to Application by Chemigation section under the Application Methods section of this label for chemigation use directions. Do not apply Treflan 4D through any type of irrigation system unless these directions are carefully followed.

Castor Bean

Apply Treflan 4D as a soil incorporated treatment, before or immediately after planting. If applied and incorporated after planting, set incorporation equipment so as to avoid disturbance of seed.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25 - 1.5
fine	1.5 - 2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2.0 pints
- Soils with 5 to 10% organic matter - 2.0 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Celery

Apply Treflan 4D as a soil incorporated treatment. Treflan 4D may be applied to direct seeded or transplant celery before planting, at planting, or immediately after planting.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25 - 1.5
fine	1.5 - 2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2 pints
- Soils with 5 to 10% organic matter - 2 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Chicory (*Cichorium intybus* or *Cichorium endiva*)

Treflan 4D may be applied as a preplant incorporated treatment to chicory grown either as a root crop or leafy vegetable as indicated below:

Cichorium intybus, considered to be a root crop, may yield the following:

- Chicory - the dried and processed root used as a coffee substitute.
- Radicchio - green leaves harvested from field grown plantings.
- Belgian Endive - white leaves grown in the dark; growth from field grown rootstalks.

Cichorium endiva, considered to be a leafy vegetable, may yield the following:

- Escarole - curly green leaves from field grown plantings.
- Endive - very curly green leaves from field grown plantings.

Apply Treflan 4D as a soil incorporated treatment in spring or early summer prior to planting.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.5
fine	2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2 pints
- Soils with 5 to 10% organic matter - 2 pints

Cole Crops - Broccoli, Brussels Sprouts, Cabbage, and Cauliflower

Direct Seeded Cole Crops

Apply Treflan 4D as a preplant soil incorporated treatment.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.0
fine	1.5

- Soils with 2 to 5% organic matter - 1.5 pints

Precaution: Direct seeded cole crops exhibit marginal tolerance to higher than specified rates of Treflan 4D. Stunting or reduced stands may occur.

Transplanted Cole Crops

Apply and incorporate Treflan 4D prior to transplanting.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25 - 1.5
fine	1.5 - 2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter- 2 pints
- Soils with 5 to 10% organic matter - 2 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Direct Seeded Chinese Cabbage or Kohlrabi

Apply this product as a preplant soil incorporated treatment.

Broadcast Application Rates/Acre:

Soil Texture	Treflan 4D (pints)
Coarse	1.0
Medium	1.0
Fine	1.5

- All soils with 2-5% organic matter - 1.5 pints of Treflan 4D

Precautions:

Chinese cabbage and kohlrabi tolerance to this product is marginal.

The combined effect of certain cultural practices and unfavorable soil or environmental conditions may cause excessive crop seedling stress resulting in retarded crop growth, stand reduction, and reduced yield.

For best results, observe the following cultural practices or precautions when applying Treflan 4D.

- Seedling disease, cold weather, deep planting, excessive moisture, high salt concentration, or drought may weaken crop seedlings and increase the possibility of crop stress and damage.
- Do not exceed specified application rates. This is particularly important on coarse textured or low organic matter soils.
- Carefully follow incorporation directions.
- Use only high quality seed and plant at maximum seeding rates.

Corn - Field Corn Only

Postemergence Incorporated Treatment

Apply Treflan 4D as a postemergence treatment following cultivation and/or use of a preemergence herbicide. Treflan 4D does not control established weeds. Apply when crop is well established (2 true leaf stage or taller). Apply as an over-the-top spray or as a directed spray using drop nozzles if foliage prevents uniform coverage of the soil surface.

Incorporation Directions

Applications of Treflan 4D must be mechanically incorporated within 24 hours. Mechanical incorporation may be accomplished with 1 pass of a sweep-type cultivator or properly adjusted rolling cultivator. The sweep-type cultivator should have 3 to 5 sweeps per row middle and be operated at a speed that will provide vigorous soil mixing. Set middle sweeps so as to avoid exposing untreated soil. Adjust incorporation equipment so as to avoid mechanical injury to the crop.

Water In Option for Coarse and Medium Textured Soils: On coarse and medium textured soils, Treflan 4D may be incorporated by continuous rainfall or sprinkler irrigation amounting to at least 1/2 to 1 inch of water. Best results are obtained if application is made immediately after a

cultivation when the soil surface is open and porous. Rainfall or sprinkler irrigation prior to application will tend to consolidate and seal the soil surface and prevent the downward movement of Treflan 4D that is expected under porous, open, recently tilled conditions. Supplemental irrigation can be applied through a center pivot, solid set, or hand moved sprinkler system. Do not use furrow irrigation. Mechanically incorporate as described above if the required amount of rainfall or sprinkler irrigation does not occur within 24 hours after application.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	0.75 - 1.0 ¹
medium	1.25 - 1.5
fine	1.5 - 2.0

¹Apply 1 to 1.5 pints per acre on coarse soils in Alabama, Florida, Georgia, North Carolina, South Carolina, and Virginia to control fall panicum and Texas panicum.

- Apply lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Precautions:

- Do not apply to sweet corn, popcorn, or corn grown for seed.
- Do not apply Treflan 4D to corn as a preplant or preemergence treatment or crop injury may occur.
- Where corn is planted in a furrow, Treflan 4D should be applied only after a cultivation to move soil into the row.

Restriction: Do not apply Treflan 4D within 6 weeks prior to harvesting forage, fodder, or silage, or after corn is 30 inches tall.

Chemigation

Treflan 4D may be applied through properly equipped chemigation systems for weed control in field corn. Refer to Application by Chemigation section in the Product Information section of this label for chemigation use directions. Do not apply Treflan 4D through any type of irrigation system unless these directions are carefully followed.

Application Timing

Apply Treflan 4D in 1/2 to 1 acre inch of sprinkler irrigation when field corn is at the 2 true leaf stage of growth or taller. Apply Treflan 4D prior to weed emergence or after existing weeds have been controlled with herbicides or cultivation. Treflan 4D does not control established weeds.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.5 - 2.0
medium	1.5 - 2.0
fine	Do not apply by chemigation to fine textured soils.

Precautions:

- Do not apply Treflan 4D by chemigation to sweet corn, popcorn, or corn grown for seed.
- Where corn is planted in a furrow, Treflan 4D should be applied only after a cultivation to move soil into the row.
- Do not apply Treflan 4D to corn as a preplant or preemergence treatment as crop injury may occur.

Restriction: Do not apply Treflan 4D within 6 weeks prior to harvesting forage, fodder, or silage, or after corn is 30 inches tall.

Cotton

Application Timing

Treflan 4D may be applied for weed control in cotton in the fall, in the spring before planting, after planting, but prior to crop emergence, or to established cotton up to and including layby, but no later than 90-days before harvest.

Application Directions

Treflan 4D may be applied and soil incorporated or it may be applied through chemigation (see directions for chemigation in Chemigation section below).

Follow soil preparation, application, and incorporation procedures in the Product Information section of this label. For fall application, in addition to the directions below, refer to instructions in the Application Timing section under Product Information. For layby application, refer to instructions in the Layby Application section below.

If incorporating after planting, incorporate Treflan 4D soon after planting and set equipment so as to avoid disturbing planted cottonseed.

For band applications, reduce the application rate in proportion to the row spacing and bandwidth treated. For example, treating a 12-inch band where the row spacing is 36 inches would require 1/3 of the specified broadcast rate per acre (12 inches divided by 36 inches = 1/3).

Tank Mixing or Sequential Treatments: For broader spectrum weed control, other products registered for use in cotton may be applied in tank mix combination with Treflan 4D or as a sequential treatment following application of Treflan 4D. When tank mixing, use the specified rate of Treflan 4D. Follow the label Directions for Use of each tank mix partner for applicable use instructions including application rate, application timing, weeds controlled, and specific precautions and restrictions of product use. See detailed information for tank mixing in the Product Information section of this label.

Conventional Tillage Cotton

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)		
	Spring Application ¹	Fall Application	
		Eastern U.S. ²	Western U.S. ³
coarse	1.0	2.0	1.5
medium	1.25 – 1.5	2.0	2.0
fine	1.5 – 2.0	2.5	2.5

- ¹ Spring Application:
- On coarse and medium soils with 2 to 5% organic matter use 1.5 pints per acre.
 - On fine soils with 2 to 5% organic matter use 2 pints per acre.
 - On all soils with 5 to 10% organic matter use 2 to 2.5 pints per acre.
 - Use lower rate in rate range for areas receiving less than 20 inches of total annual rainfall and irrigation.

² Fall Application: For eastern U.S. including Alabama, Arkansas, northern Florida, Georgia, Louisiana, Mississippi, southeastern Missouri (Bootheel), North Carolina, New Mexico, Oklahoma, South Carolina, Tennessee, and Texas.

³ Fall Application: For western U.S. including Arizona and California. For fall application in all other states and areas not listed in the above footnotes: Apply Treflan 4D at the spring application rate, using the high rate where a range is given.

Minimum Tillage Cotton (Conservation Tillage Cotton)

Fall Application Prior to Establishing a Cover Crop

Apply Treflan 4D to flat ground at a broadcast rate of 2 to 3 pints per acre. Use the 3 pint per acre rate where crop residues are present or where dense weed populations are anticipated. Incorporate once within 24 hours using incorporation implements, such as a springtooth harrow, set to cut no more than 2 to 3 inches deep. **Do not incorporate with a tandem disc.** Form beds with disc bedders or other bedding implements that will mix and move most of the treated soil from the furrow area to the beds. Fertilizer may be applied as appropriate during incorporation operations. Plant 2 to 4 rows of a small grain cover crop, such as barley, rye or wheat, 2 inches deep in the furrow area between the beds. To avoid injury to small grain seedlings, place seed below the treated layer of soil. Barley is more tolerant to injury than wheat or rye. Existing soil moisture must be present to establish and maintain the cover crop. In late winter (February), apply 2,4-D if necessary for broadleaf weed control.

Spring Application Before or After Planting

Apply Treflan 4D as a broadcast treatment or as a band to bare ground or standing dead cover following burndown with a postemergence herbicide. Treflan 4D may be applied and incorporated either before planting or after planting. If applied after planting, incorporate immediately and set incorporation equipment to operate at a depth that will not disturb the planted seed. If Treflan 4D is applied as a band, adapt incorporation equipment to the width of the treated band and use equipment that that will uniformly mix Treflan 4D into the top 1 inch of soil. Be aware, that compared to double-pass incorporation, weed control may be reduced when using single pass incorporation; or, if using equipment that does not provide thorough soil mixing.

Broadcast Application Rates per Acre for Minimum Tillage

Soil Texture	Treflan 4D (pints)
coarse	1.0 – 2.0
medium	1.5 – 2.0
fine	2.0 – 4.0

Use the lower rate in the rate range when additional sequential applications of Treflan 4D are anticipated. Use the higher rate in the rate range where crop residues are present, and where dense weed populations are anticipated.

Chemigation

Apply Treflan 4D in overhead sprinkler irrigation equal to 1/2 to 1 inch of water in either conventional or minimum tillage cotton. Treflan 4D must be applied within 2 days after planting and prior to crop emergence. Because Treflan 4D does not control established weeds, planting

and application should occur as soon as possible after the last tillage operation. Soil incorporation is not required when Treflan 4D is applied through chemigation systems.

Cultivation: Soil treated by chemigation with Treflan 4D may be shallow cultivated without reducing weed control activity.

Refer to Application by Chemigation in the Product Information section of this label for use directions for chemigation. Apply Treflan 4D only through the kinds of sprinkler irrigation systems specified in that section of the label.

Broadcast Application Rates per Acre for Chemigation

Soil Texture	Treflan 4D (pints)	
	Conventional Tillage	Minimum Tillage ¹
coarse	1.0	1.0 – 3.0
medium	1.5	1.5 – 4.0
fine	2.0	2.0 – 4.0

¹ In minimum tillage situations, use the lower rate in the rate range when additional sequential applications of Treflan 4D are anticipated. Use the higher rate in the rate range when a large amount of crop residue is present, where dense weed populations are anticipated, or when additional sequential applications will not be made.

Rotational Crop Restrictions after Chemigation:

- **Conventional Tillage:** Refer to the rotational crop restrictions in the Use Precautions section of this label.
- **Minimum Tillage:** In addition to the rotational crop restrictions listed in the Use Precautions section of this label, do not plant grain sorghum in the year following the application of Treflan 4D.

Layby Application

Layby application may be made in established cotton after the 4 true leaf growth stage, but no later than 90 days before harvest. Apply Treflan 4D uniformly to the soil surface using drop nozzles if necessary. Incorporate into soil using one pass of a sweep-type cultivator or properly adjusted rolling cultivator. Operate cultivation equipment at speeds sufficient to provide vigorous soil mixing, and exercise care to avoid mechanical injury to the crop. Compared to conventional double pass incorporation, weed control may be reduced when using single pass incorporation, or if using equipment that does not provide thorough soil mixing. The layby application rate must not exceed the rate given in the layby table below for each soil texture.

Layby Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.5
fine	2.0

Application Over Standing or Shredded Cotton Stalks After September 1 (California Only)

Treflan 4D may be broadcast applied, after September 1, over the top of standing cotton stalks or after shredding using ground or aerial equipment. First incorporation must occur within 24 hours after application using a disc operated at 4 to 6 mph. The second incorporation may be delayed until spring prior to bedding. To avoid dilution of the herbicide or bringing untreated soil to the surface, the treatment should not be chiseled, ripped or deep plowed following incorporation.

Special Use Programs

1. Cotton – Fall Panicum Control
Apply as a preplant incorporated treatment at a broadcast rate of 2 pints per acre on both coarse and medium soils.
2. Cotton – Pigweed and Seedling Johnsongrass Control
Apply Treflan 4D as a preplant incorporated treatment in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, southeastern Missouri (Bootheel), North Carolina, South Carolina, Tennessee, and southern Virginia.

Broadcast Application Rates per Acre for Pigweed and Seedling Johnsongrass Control

Soil Texture	Treflan 4D (pints)
coarse	1.0 – 1.5
medium	1.5 – 2.0
fine	2.0

Exception: Louisiana, where 3 pints per acre can be applied to fine soils.

- Use higher rates in the rate range where high weed populations are anticipated.

3. Cotton – Additional Weed and Grass Control in Gulf Coast Counties of Texas
Apply Treflan 4D as a preplant incorporated treatment up to 2 weeks before planting in Brazoria, Calhoun, Chambers, Fort Bend, Galveston, Harris, Jackson, Jefferson, Liberty, Matagorda, Orange, Victoria, Waller, and Wharton counties of the Texas Gulf Coast.

Broadcast Application Rates per Acre in Gulf Coast Counties of Texas

Soil Texture	Treflan 4D (pints)
coarse	1.5
medium	2.0
fine	3.0

4. Cotton – Rhizome Johnsongrass Control (For use in all cotton producing states except Arizona and California)
Rhizome johnsongrass control with Treflan 4D requires maximum application rates for 2 consecutive years (see Broadcast Application Rates per Acre for Rhizome Johnsongrass Control below).
Commercially acceptable control cannot be obtained with only 1 year of applying the maximum use rate of Treflan 4D. Carefully follow all special use directions.

Soil Preparation: Satisfactory results are dependent upon proper preparation of soil prior to application. Chisel plow to bring rhizomes to the soil surface. Disc twice before application to chop rhizomes into small (2 to 3 inch) pieces and destroy any recently emerged johnsongrass plants.

Broadcast Application Rates per Acre for Rhizome Johnsongrass Control

Soil Texture	Treflan 4D (pints)
coarse	2.0
medium	3.0
fine	4.0

Spring Application: Apply Treflan 4D any time before planting in the spring for 2 years in succession.

Fall Application: Apply Treflan 4D between October 15 and December 31 for 2 years in succession.

Incorporation: Deep incorporation with a tandem disc is essential for good results. Set disc to operate 4 to 6 inches deep and operate at 4 to 6 mph. Two incorporation passes are necessary, and the second should be in a different direction than the first.

Cultivation: Some johnsongrass plants will not be controlled. Timely cultivation during the crop season is necessary to remove escaped plants and maintain commercially acceptable control.

Precautions: In the season following a maximum rate treatment, plant only rice or crops for which Treflan 4D is labeled as a preplant incorporated treatment, or crop injury may occur.

Restrictions and Use Precautions

Precautions: To avoid crop injury, cotton should be planted after early season adverse weather conditions have passed, especially when using high rates. Cool, wet weather early in the growth cycle causes stress to the cotton plant. The added stress may result in reduced stand, delayed maturity, and reduced yields.

Maximum Crop Year Use Rates: For full season weed control, Treflan 4D may be applied one or more times sequentially during the crop year observing the rates, methods of application, and a 90-day preharvest interval. The maximum dosage must not exceed the rates given, and **the maximum cumulative amount of Treflan 4D that may be applied within the same crop year (includes fall application or spring application plus layby application) must not exceed 4.0 pints per acre (2 lb active ingredient per acre).**

Rotation Crop Restrictions: Refer to Rotation Crop Restrictions section under Product Information for specific rotational crop restrictions. When the cumulative amount of Treflan 4D in one crop year (fall or spring plus layby) exceeds the rates in the table below, plant only those crops for which Treflan 4D is labeled as a preplant incorporated treatment in the season following the application of Treflan 4D, or crop injury may result.

Soil Texture	Cumulative Amount of Treflan 4D per Acre in One Crop Year (pints)
coarse	1.5
medium	1.5
fine	2.0

A small grain cover crop such as barley, rye, or wheat that is intended for prevention of wind erosion in Minimum Tillage Cotton may be planted in the fall following a maximum crop year use rate of 4 pints per acre of Treflan 4D; however, reduced stand and delayed emergence and development of the cover crop may result. The cover crop must not be grazed or harvested.

Cottonwood Trees Grown for Pulp

Apply as a soil incorporated treatment to control weeds susceptible to Treflan 4D in new and established plantings of cottonwood trees grown for pulp.

Application Before Planting

Apply and incorporate Treflan 4D before planting.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25 - 1.5
fine	1.5 - 2.0

- All soils with 2 to 5% organic matter - 1.5 to 2 pints
- All soils with 5 to 10% organic matter - 2 pints
- Use lower rate in rate range in areas receiving less than 20 inches total rainfall and irrigation.

Application to Established Plantings

In established plantings, apply and incorporate Treflan 4D prior to periods of weed germination or immediately after existing weeds are controlled by tillage or herbicide treatment. Apply as a directed spray and use incorporation methods not injurious to the crop.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
all soil textures	2.0 - 4.0

Application rate within the rate range may be adjusted according to weed pressure.

Johnsongrass Suppression in Established Plantings

Proper soil preparation before application is necessary for satisfactory results. Use a chisel plow or similar implement to bring rhizomes to the soil surface. Then work the soil twice using a tandem disc to cut rhizomes into small (2 to 3 inch) pieces and to destroy emerged johnsongrass.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
all soil textures	4.0

Incorporation: Incorporate twice with tandem disc set to cut 4 to 6 inches deep and operated at 4 to 6 mph.

Cultivation: Some johnsongrass plants will escape. Timely cultivation with tillage implements or spot spraying with effective postemergence herbicides will improve the level of johnsongrass control.

Cucurbits

Apply Treflan 4D after emergence when plants have reached the 3 to 4 true leaf stage of growth. Apply as a directed spray to soil between the rows. Avoid foliage contact as slight crop injury may occur. Set incorporation equipment to move treated soil around the base of plants.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25 - 1.5
fine	1.5 - 2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2 pints
- Soils with 5 to 10% organic matter - 2 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Restriction: Do not apply within 30 days of harvest, except for Watermelon which has a 60-day preharvest interval.

Eggplant (Transplant)

Apply and incorporate Treflan 4D before transplanting or apply post-transplant and incorporate. When applied post-transplant, direct liquid sprays to the soil between rows and beneath plants.

Broadcast Application Rates/Acre:

Soil Texture	Treflan 4D (pints)
Coarse	1.0
Medium	1.0
Fine	1.5

- On coarse and medium soils with 2-5% organic matter - 1.5 pints of Treflan 4D

Precautions:

Eggplant tolerance to Treflan 4D is marginal. The combined effect of certain cultural practices and unfavorable soil or environmental conditions may cause excessive crop seedling stress resulting in retarded crop growth, stand reduction, and reduced yield.

For best results, observe the following cultural practices or precautions when applying Treflan 4D:

- Seedling disease, cold weather, deep planting, excessive moisture, high salt concentration, or drought may weaken crop seedlings and increase the possibility of crop stress and damage.
- Do not exceed specified application rates. This is particularly important on coarse textured or low organic matter soils.
- Carefully follow incorporation directions.

Flax (Fall Application Only)

Apply and incorporate Treflan 4D in the fall for weed control in spring seeded flax. Incorporate once within 24 hours after application. The second incorporation may be performed in the spring prior to planting.

Special Instructions for Flax

- Incorporation operations or other tillage practices performed in the spring prior to seeding should be relatively shallow so as to maintain a firm seedbed, and the seedbed should be packed prior to seeding.
- Seeding should be done with a press drill or hoe drill. Seed into moist seedbed and plant no more than 1 1/2 inches deep.
- Delay seeding until soil has warmed sufficiently to allow rapid germination and establishment.
- Refer to Use Precautions in the Product Information section of this label for information on growing conditions that can lead to crop injury or yield reduction.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.5
fine	2.0

Grain Sorghum (Milo)

Postemergence Incorporated Treatment

Apply Treflan 4D as a directed or over-the-top spray when grain sorghum is 8 to 24 inches tall. Drop nozzles should be used if foliage prevents uniform soil coverage.

Soil Preparation: Cultivate before application of Treflan 4D to remove established weeds and to cover the base of grain sorghum plants with soil. Cultivation equipment should be set to add approximately 1 inch of soil to the base of sorghum plants.

Incorporation Directions: Applications of Treflan 4D must be mechanically incorporated within 24 hours after application. Mechanical incorporation may be accomplished with 1 pass of a sweep-type cultivator or properly adjusted rolling cultivator. Sweep-type cultivators should have 3 to 5 sweeps per row middle and be operated at a speed that will provide vigorous soil mixing. Set middle sweeps so as to avoid exposing untreated soil. Adjust incorporation equipment so as to avoid mechanical injury to the crop.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	0.75 - 1.0
medium	1.0 - 1.5
fine	1.5 - 2.0

- Apply Treflan 4D at lower rate in rate range in areas receiving less than 20 inches total rainfall and irrigation.

Precautions:

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

Restriction: Do not apply after grain sorghum is 24 inches tall.

Chemigation

Treflan 4D may be applied through properly equipped chemigation systems for weed control in grain sorghum 8 to 24 inches tall. Refer to Application by Chemigation section in the Product Information section of this label for chemigation use directions. Do not apply Treflan 4D through any irrigation system unless these directions are carefully followed.

Soil Preparation: Cultivate before application of Treflan 4D to destroy existing weeds and cover the base of the grain sorghum plants with soil. Cultivation equipment should be set to add approximately 1 inch of soil to the base of sorghum plants.

Application Timing: Apply Treflan 4D to grain sorghum in 1/2 to 1 acre inch of overhead sprinkler irrigation as soon as possible after a cultivation when grain sorghum is 8 to 24 inches tall. Treflan 4D must be applied prior to weed emergence or after existing weeds are controlled. Treflan 4D does not control established weeds.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	0.75 - 1.0
medium	1.0 - 1.5
fine	Do not apply by chemigation to fine textured soils.

Restriction: Do not apply after grain sorghum is 24 inches tall.

Greens - Collard, Kale, Mustard and Turnip (Fresh, for Processing, or Grown for Seed)

Apply Treflan 4D to greens as a preplant soil incorporated treatment.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.5
fine	1.5

- Soils with 2 to 10% organic matter - 1.5 pints

Hops

Apply and incorporate Treflan 4D to established crop during dormancy. Use incorporation equipment that will insure thorough soil mixing with minimal damage to crop stand.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25 - 1.5
fine	1.5

- Soils with 2% to 10% organic matter - 1.5 pints

Kenaf

Apply Treflan 4D as a preplant soil incorporated treatment.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse ¹	1
medium	1 - 1.5
fine	1.5

¹Coarse soils with 2 to 5% organic matter - 1.5 pints

- Use higher rate in rate range where high weed populations are anticipated.

Precaution: Do not graze or harvest treated crop for livestock forage.

Okra

Apply Treflan 4D as a soil-incorporated treatment, before or immediately after planting. If applied and incorporated after planting, set equipment so as to avoid disturbance of planted seed.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25 - 1.5
fine	1.5 - 2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2 pints
- Soils with 5 to 10% organic matter - 2 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Onions (Dry Bulbs Only)

Postemergence Layby Application: Apply at layby to the soil between onion rows. Avoid applying directly to the tops or exposed bulbs of onion plants. Emerged weeds should be removed prior to application of Treflan 4D. Treflan 4D will not control established weeds.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	0.75 - 1.0
medium	1.0 - 1.25

- Apply only to soils containing 3.5% or less organic matter
- **Note:** Use the lower rate in rate range where light weed pressure is anticipated.

Incorporation: Treflan 4D should be uniformly incorporated into the soil between the onion rows. Incorporation may be accomplished by operating a sweep-type or rolling cultivator 2 to 4 inches deep at 6 to 8 mph. Two incorporation passes are required with the first occurring within 24 hours after application or erratic weed control may result. Avoid covering onions with treated soil during incorporation as injury to the crop may occur. Care should be taken to avoid mechanical injury to onion roots during incorporation.

Precautions

- **Preharvest interval:** Do not apply within 60 days of harvest.
- Do not apply as a preplant or preemergence treatment.
- Do not apply to muck soils.
- **Note:** Reduced yields may result from use of Treflan 4D on onion crops weakened by diseases, improper incorporation depth, excessive moisture, high salt concentration, or drought may weaken the crop and increase the possibility of damage from Treflan 4D. Under these conditions reduced yields may result.

Peas - Dry Peas and English Peas

Treflan 4D - Alone

Apply and incorporate Treflan 4D in the spring before planting or in the fall in advance of spring planting. Refer to instructions for fall application under Application Timing in the Product Information section of this label.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)	
	Spring Application	Fall Application ¹
coarse	1.0	1.0
medium	1.0 - 1.5 ²	1.25 - 1.5
fine	1.5	1.5

¹Treflan 4D may be fall applied to dry and English peas in the states of Idaho, Oregon and Washington.

²Medium soils with 3% or greater organic matter - 1.5 pints

- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Tank Mixing or Sequential Treatments

For broader spectrum weed control, other products registered for use in dry and English peas may be applied in tank mix combination with Treflan 4D or as a sequential treatment following application of Treflan 4D. When tank mixing, use the specified rate of Treflan 4D. Follow the label Directions for Use of each tank mix partner for applicable use instructions

including application rate, application timing, weeds controlled, and specific precautions and restrictions of product use. See detailed information for tank mixing in the Product Information section of this label.

Peas - Southern Peas

Apply Treflan 4D as a preplant soil incorporated treatment.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25 - 1.5
fine	1.5 - 2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2 pints
- All soils with 5 to 10% organic matter - 2 pints
- Use the lower rate in the rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Peanuts

Treflan 4D - Alone (For Use in Texas, Oklahoma, and New Mexico Only)

Apply and incorporate Treflan 4D before planting, at planting or immediately after planting. When incorporating after planting, adjust equipment so as to avoid disturbance of planted seed.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.5

Tank Mixing or Sequential Treatments

For broader spectrum weed control, other products registered for use in peanuts may be applied in tank mix combination with Treflan 4D or as a sequential treatment following application of Treflan 4D. When tank mixing, use the specified rate of Treflan 4D. Follow the label Directions for Use of each tank mix partner for applicable use instructions including application rate, application timing, weeds controlled, and specific precautions and restrictions of product use. See detailed information for tank mixing in the Product Information section of this label.

Pepper (Transplant Only)

Apply and incorporate Treflan 4D prior to transplanting.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25 - 1.5
fine	1.5 - 2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2 pints
- Soils with 5 to 10% organic matter - 2 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Potatoes (Not for Use in the State of Maine)

Application After Planting

Apply and incorporate Treflan 4D after planting but before emergence, immediately following dragoff, or after potato plants have fully emerged.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25-1.5
fine	1.5-2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2 pints
- Soils with 5 to 10% organic matter - 2 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Incorporation Directions: Set incorporation equipment so that the bed and furrow will be uniformly covered with a layer of treated soil. If the layer of treated soil is not uniform and the herbicide is concentrated over the bed, potato emergence may be retarded and stem brittleness can occur. When applying and incorporating Treflan 4D after potato plants have fully emerged, do not completely cover the foliage with treated soil. Likewise, do not completely cover foliage at subsequent cultivations. Be careful that incorporation machinery does not damage potato seed pieces or elongating sprouts.

Split Applications Before and After Planting (for Use in Idaho, Oregon and Washington)

On all soils apply and incorporate Treflan 4D at the rates shown below as split applications before planting and after planting when potato plants have fully emerged. Do not apply to soils containing 2% or more organic matter. Follow incorporation directions provided above for application to potatoes after planting.

Broadcast Application Rates per Acre

	Treflan 4D (pints)
before planting	0.75
after planting	0.75

Treflan 4D Plus Eptam herbicide Tank-Mix - Post Plant Preemergence Treatment (for Use in Kansas, Minnesota, Nebraska, North Dakota, Oklahoma, South Dakota and Texas)

Treflan 4D may be tank-mixed with Eptam herbicide and applied as a soil incorporated treatment to control additional weeds. Apply after planting, but before crop emergence. In areas where potatoes are normally dragged off, apply and incorporate up to or immediately following drag off. Use application rates for Treflan 4D specified for Applications After Planting above. Incorporate immediately.

Precautions: Refer to the label for Eptam for application rates, additional use directions, precautions and limitations before use. Do not graze for feed forage to livestock from fields treated with the Treflan 4D plus Eptam tank mix.

Treflan 4D Plus Eptam Tank Mix - Preplant Treatment (for Use in Idaho, Oregon and Washington)

Treflan 4D may be tank mixed with Eptam and applied as a soil incorporated treatment to control additional weeds. Apply before planting and incorporate immediately.

Broadcast Application Rates per Acre

	Treflan 4D (pints)
all soil textures	0.75

Precautions: Do not use this tank mix both before and after planting in the same season. Do not graze for feed forage to livestock from fields treated with the Treflan 4D plus Eptam tank mix. Refer to the label for Eptam for application rates, additional use directions, precautions and limitations before use.

Chemigation (Treflan 4D Only)

Treflan 4D may be applied through properly equipped chemigation systems for weed control in potatoes. Refer to Chemigation section in the Product Information section of the label for Treflan 4D. Do not apply Treflan 4D through any type of irrigation system unless these directions are carefully followed.

Apply Treflan 4D to potatoes in 0.5 to 1 acre inch of overhead sprinkler irrigation after planting, before emergence, or immediately following dragoff or after the potato plants have fully emerged. Existing weeds must be destroyed by tillage or cultivation prior to application of Treflan 4D. Treflan 4D does not control established weeds. Incorporation is not necessary when Treflan 4D is applied by chemigation.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.5

- Do not apply by chemigation to fine textured soils.

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

Radish

Apply Treflan 4D as a preplant soil incorporated treatment.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.5
fine	1.5

Rapeseed (Canola) and Crambe

Apply as a soil incorporated treatment in the spring before planting, or in late summer or early fall before a fall planting. Follow soil preparation, application, and incorporation directions for Treflan 4D.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.5
fine	2.0

Precautions

- Do not apply to rapeseed (canola) grown in the state of Alaska.
- Where applications are made in late summer or fall, plant as rotation crops in the season following application only those crops to which Treflan 4D may be applied as a preplant incorporated treatment or crop injury may occur.
- Do not graze or harvest crambe for livestock forage.

Safflower

Apply and incorporate Treflan 4D in the spring before planting or in fall in advance of spring planting. See instructions for fall application under Application Timing in the Product Information section of this label.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)	
	Spring Application	Fall Application
coarse	1.0	1.5
medium	1.25 - 1.5	2.0
fine	1.5 - 2.0	2.5

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2 pints
- Soils with 5 to 10% organic matter - 2.5 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Weed Control in Safflower in the state of Montana: Apply and incorporate Treflan 4D in the fall after September 1 or in the spring before planting. Make only one application of Treflan 4D per crop cycle. Follow soil preparation, application and incorporation instructions in the product label for Treflan 4D.

Broadcast Application Rates Per Acre:

Soil Texture	Treflan 4D (pints)
Coarse	1.0
Medium	1.5
Fine	2.0

Use 1.5 to 2.0 pints of Treflan 4D per acre on coarse and medium soils with 2-5% organic matter.

Precautions

- Rotational Crop Planting Restriction:** Plant only spring seeded barley (grown under irrigated conditions), rapeseed, safflower or sunflower as rotational crops in the crop year following the crop treated with Treflan 4D. If one of these specified crops is not planted, the land should be left idle or fallow for the entire crop year following the crop treated with Treflan 4D.
- Do not graze or harvest crambe for livestock forage.

Small Grains - Barley, Durum, and Wheat

Special Precautions for Use of Treflan 4D on Small Grains

Carefully follow directions for use of Treflan 4D on small grains to minimize potential crop stress. Under certain conditions, delayed crop emergence and/or stand reduction may occur when Treflan 4D is applied to barley, durum, or wheat. The combined effect of certain cultural practices and unfavorable soil or environmental conditions may cause excessive crop seedling stress resulting in retarded crop growth, stand reduction, and possibly reduced yield. **For best results, observe the following cultural practices or precautions:**

Use tillage methods that provide a uniformly firm seedbed and time tillage operations to conserve moisture.

Irrigate prior to planting or after germination and emergence. Moisture received between planting and emergence may cause crusting, especially on loose seedbeds.

Do not exceed specified application rates for Treflan 4D. This is particularly important on coarse textured or low organic matter soils.

Carefully follow incorporation directions. When applying preplant incorporated treatments, operate equipment at recommended depth and speed to place Treflan 4D into the upper 1 to 1 1/2 inches of soil. If applied after planting, set incorporation equipment so as to avoid disturbance of planted seed.

Set drills to place seed at the depth specified in use directions. A planting depth greater than 2 1/2 inches for **spring wheat or durum** will result in increased seedling stress and decreased emergence.

Use only high quality seed where Treflan 4D is to be applied (avoid use of small seed with low starch reserves).

If seed treatments are used, apply at the correct rate and uniformly across all seeds. Misapplication may result in reduced germination and/or seedling vigor.

Avoid use of seed varieties known to have poor seedling (emergence) vigor.

Soil characteristics and environmental conditions which may contribute to crop seedling stress that may be accentuated by use of Treflan 4D include:

Soil related: High salinity, eroded knolls/hilltops, loose dry soils and compaction.

Weather related: Cold and/or wet soils, excessively hot soils, excessive moisture, drought, and soil crusting from heavy rainfall.

Note: Do not apply Treflan 4D on small grains where a dinitroaniline herbicide such as Treflan® or Sonalan® herbicide was applied at a rate greater than 0.5 lb ai per acre the previous growing season.

Application Directions for Small Grains

Barley, Spring Seeded -- Spring Application Preplant Incorporated for Foxtail (Pigeongrass) Control (for Use in Minnesota, North Dakota, and South Dakota)

Apply Treflan 4D as a preplant incorporated treatment prior to planting spring seeded barley. Treflan 4D may be applied to ground that has a manageable level of crop residue or has been fallowed or pre-tilled. The first incorporation is required within 24 hours after application. The second incorporation is required prior to planting to destroy emerged weeds and to insure even distribution of Treflan 4D in the soil surface.

Broadcast Application Rates per Acre: Apply at a rate of **1 pint per acre** for all soil textures regardless of organic matter content.

Incorporation: Recommended incorporation tools include the chisel plow (first incorporation pass only), tandem disc and field cultivator. Refer to Incorporation Equipment in Product Information section of this label for details on operation of incorporation equipment.

Planting Directions: Barley should be seeded approximately 1 1/2 inches deep.

Precautions:

- Carefully read and follow Special Precautions for Use of Treflan 4D in Small Grains before application of Treflan 4D.
- While use of this weed control practice may result in a stand reduction, slight stand reductions do not normally affect yield.

Barley, Spring Seeded -- Spring Application Preplant Incorporated for Foxtail (Pigeongrass) Control in Barley Used as a Cover Crop or in the Conservation Reserve Program

Apply Treflan 4D as a preplant incorporated treatment prior to planting spring seeded barley on land enrolled in acreage conservation reserve programs. Follow soil preparation, application, and incorporation procedures for Treflan 4D.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.5
fine	1.5

Planting Directions: Barley should be seeded approximately 1 1/2 inches deep.

Precautions: Use of this weed control practice may result in slight stand reduction. Follow the most severe grazing restrictions imposed either by the label for Treflan 4D or by the USDA Acreage Conservation Reserve Program, whichever is longest. Consult the local ASCS office or other state agency to determine the period of USDA grazing restriction.

Winter Wheat -- Preplant Incorporated for Control of Cheatgrass and Other Annual Grasses and Broadleaves (for Use in Idaho, Oregon, and Washington)

Apply Treflan 4D as a preplant incorporated treatment for control of downy brome (cheatgrass), annual ryegrass, annual bluegrass, pacific meadow foxtail (blackgrass), henbit, and fiddleneck (tarweed). 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 Treflan 4D. Treflan 4D may be applied for up to 3 weeks before planting.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.5
medium	1.5
fine	2.0

Incorporation Directions: Incorporate Treflan 4D with a flexible tine-tooth harrow (Flextine or Melroe) set to cut 1 to 2 inches deep and operate at 3 to 6 mph. Incorporate once within 24 hours after application and a second time in a different direction from the first prior to planting. Do not till the soil with a disc after Treflan 4D has been incorporated with a flexible tine harrow.

Planting Directions: Use only a deep furrow or semi-deep furrow drill that will place the seed below the zone of soil treated with Treflan 4D.

Precautions:

- Carefully read and follow Special Precautions for Use of Treflan 4D in Small Grains before application of Treflan 4D.
- Wheat planted in direct contact with treated soil may suffer crop injury in the form of delayed emergence and development.

Winter Wheat -- Post Plant Incorporated Treatment

Apply and incorporate Treflan 4D after planting, but before emergence, to control the following weeds susceptible to Treflan 4D in winter wheat: annual ryegrass, annual bluegrass, downy brome (cheatgrass), pacific meadow foxtail (blackgrass), fiddleneck (tarweed), and henbit.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0 - 1.5
medium	1.5

Planting Directions: Plant wheat 2 to 3 inches deep in a well-tilled seedbed. Do not use a deep or semi-deep furrow drill.

Incorporation Directions: Incorporate Treflan 4D using 2 passes with a flex-tine or spike-tooth harrow operated at least 5 mph. The second incorporation pass should be in a different direction than the first. Set equipment to cut 1 to 1 1/2 inches deep and avoid disturbing seed. Application and first incorporation should be done in the same operation if possible. Both incorporations must be done within 24 hours.

Precautions:

- Carefully read and follow Special Precautions for Use of Treflan 4D in Small Grains before application of Treflan 4D.
- Wheat seed in direct contact with treated soil may suffer crop injury in the form of delayed emergence and development.
- If less than 20 inches of rainfall plus irrigation was received between planting and harvest, refer to rotation crop restrictions before planting sorghum or oats.

Winter Wheat -- Fallow Soil Application Prior to Planting (for Use in Idaho, Oregon, and Washington)

Treflan 4D may be applied and shallowly incorporated into fallow soil up to 4 months before planting wheat to control cheatgrass and certain annual grasses and broadleaf weeds. Apply Treflan 4D any time from May to September prior to fall planting of winter wheat. Wheat growth, development and yield will not be adversely affected so long as the seed is placed below the zone of soil treated with Treflan 4D.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.5
medium	1.5
fine	2.0

Incorporation Directions: Incorporate Treflan 4D with a flexible tine-tooth harrow (Flextine or Melroe) set to cut 1 to 2 inches deep and operate at 3 to 6 mph. Incorporate once within 24 hours after application and a second time in a different direction from the first prior to planting. Do not till the soil with a disc after Treflan 4D has been incorporated with a flexible tine harrow.

Planting Directions: Use only a deep furrow or semi-deep furrow drill that will place the seed below the zone of soil treated with Treflan 4D.

Precautions:

- Carefully read and follow Special Precautions for Use of Treflan 4D in Small Grains before application of Treflan 4D.
- Wheat planted in direct contact with treated soil may suffer crop injury in the form of delayed emergence and development.

Wheat, Durum and Barley, Spring Seeded - Fall Applied Preplant Soil Incorporated for Foxtail (Pigeongrass) Control (for Use in Minnesota, North Dakota and South Dakota)

Apply Treflan 4D herbicide in the fall for foxtail (pigeongrass) control during the following growing season. Incorporate 1 time within 24 hours. Incorporate a second time before planting to destroy existing weeds and insure a uniform distribution of Treflan 4D in treated soil. Treflan 4D may be applied to ground that has a manageable level of crop residue, or has been fallowed or pre-tilled.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse and medium	1.0
fine	1.5

Incorporation: Recommended incorporation tools include the chisel plow (first incorporation pass only), tandem disc and field cultivator. Refer to Incorporation Equipment in Product Information section of this label for details on operation of incorporation equipment.

Planting Directions

Set equipment to place seed approximately 1 1/2 inches deep.

Precautions

Carefully read and follow Special Precautions for Use of Treflan 4D in Small Grains before application of Treflan 4D.

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

Spring Wheat, Durum, and Barley -- Postplant Incorporated for Foxtail (Pigeongrass) Control

Apply and incorporate Treflan 4D after planting, but before emergence, to control foxtail (pigeongrass) in spring wheat, durum, and barley.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.0
fine	1.5

Planting Directions: Plant wheat 2 to 3 inches deep in a well-tilled seedbed.

Incorporation Directions: Incorporate Treflan 4D using 2 passes with a flex-tine or diamond harrow operated at least 5 mph. The second incorporation pass should be in a different direction than the first. Set equipment to cut 1 to 1 1/2 inches deep and avoid disturbing seed. Application and first incorporation should be done in the same operation if possible. Both incorporations must be done within 24 hours.

Precautions:

- Carefully read and follow Special Precautions for Use of Treflan 4D in Small Grains before application of Treflan 4D.
- Wheat seed in direct contact with treated soil may suffer crop injury in the form of delayed emergence and development.

Soybeans

Treflan 4D - Alone

Apply and incorporate Treflan 4D in the spring before planting or in the fall in advance of spring planting. See instructions for fall application under Application Timing in the Product Information section of this label.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)	
	Spring Application	Fall Application ¹
coarse	1.0	2.0
medium	1.5	2.0
fine	2.0	2.5

¹Fall Application Rates for States Including: Alabama, Arkansas, northern Florida, Georgia, Louisiana, Mississippi, southeastern Missouri (Bootheel), North Carolina, Oklahoma, Oklahoma, South Carolina, Tennessee, and Texas.

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2 pints
- Soils with 5 to 10% organic matter - 2 to 2.5 pints

For soybeans grown in states other than those listed above, fall apply Treflan 4D at broadcast rates specified for spring preplant incorporated treatment.

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 on soybean plants which may result in reduced stand, delayed maturity and reduced yield.

Tank Mix Overlay and Postemergence Recommendations

For broader spectrum weed control, other products registered for use in soybeans may be applied in tank mix combination with Treflan 4D or as a sequential treatment following application of Treflan 4D. When tank mixing, use the specified rate of Treflan 4D. Follow the label Directions for Use of each tank mix partner for applicable use instructions including application rate, application timing, weeds controlled, and specific precautions and restrictions of product use. See detailed information for tank mixing in the Product Information section of this label.

Special Use Programs

1. Soybeans - Chemigation

Treflan 4D may be applied through properly equipped chemigation systems for weed control in soybeans. Refer to Application by Chemigation in the Product Information section of this label for use directions for chemigation. Do not apply Treflan 4D through any irrigation system unless these directions are carefully followed.

Apply Treflan 4D in sprinkler irrigation equal to 1/2 to 1 inch of water. Planting and application should occur as soon as possible after the last tillage operation. Treflan 4D must be applied within 2 days after planting and prior to crop emergence. Treflan 4D does not control established weeds. Soil incorporation is not required when Treflan 4D is applied through chemigation systems.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.5 - 2.0
medium	1.5 - 2.0
fine	2.0 - 2.5

- Soils with 2% to 5% organic matter - 2 pints
- Soils with 5% to 10% organic matter - 2 to 2.5 pints

Cultivation: Soil treated by chemigation with Treflan 4D may be shallow cultivated without reducing weed control activity.

2. Soybeans - Weed Control Under Reduced or Conservation Tillage
Treflan 4D can be applied either in the fall or in the spring as a preplant incorporated treatment for weed control in soybeans grown under reduced or conservation tillage conditions. Make only 1 application per crop cycle.

Apply to tilled land or standing or chopped stubble from the previous season's crop. The first incorporation of Treflan 4D must occur within 24 hours. For the first incorporation, a tandem disc or combination tool that

can thoroughly mix Treflan 4D into the top 2 to 3 inches of the final seedbed while leaving the desired amount of plant residue on the soil surface is recommended. For fall or spring application, the second incorporation can occur anytime prior to planting or at planting with tillage equipment that provides uniform soil mixing used in conjunction with no-till planters.

Application With Dry Bulk Fertilizers

Dry bulk fertilizers impregnated or coated with Treflan 4D may be applied as a preplant incorporated treatment. See instructions for Application with Dry Bulk Fertilizer in the Product Information section of this label. Under reduced or conservation tillage conditions, uniformly applied dry bulk fertilizers impregnated with Treflan 4D provide weed and grass control equal to or better than Treflan 4D applied in liquid sprays. Two incorporation passes are required when Treflan 4D is applied with dry bulk fertilizer. For best results with spring applications, incorporate once within 24 hours after application and a second time at least 5 days later.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)	
	Spring Applied	Fall Applied
coarse	1.0 - 1.5	1.5 - 2.0
medium	1.5 - 2.0	2.0 - 2.5
fine	2.0 - 2.5	2.5 - 3.0

Use the higher rate in the rate range where higher crop residues are present or where dense weed populations are anticipated.

Precautions: To be effective, Treflan 4D must be mixed thoroughly in the top 2 to 3 inches of soil in the final seedbed. Weed control may be poor or erratic where soil conditions or heavy crop residues do not permit thorough soil mixing.

3. Soybeans - Fall Panicum Control

Apply Treflan 4D as a preplant incorporated treatment at a broadcast rate of 2 pints per acre on coarse and medium soils.

4. Soybeans - Pigweed and Seedling Johnsongrass Control

Apply Treflan 4D as a preplant incorporated treatment.

Broadcast Application Rates per Acre: In Alabama, Arkansas, Florida, Georgia, Kansas, Louisiana, Mississippi, Missouri, Nebraska, North Carolina, Oklahoma, South Carolina, Tennessee, and southern Virginia, apply Treflan 4D at the following broadcast rates:

Soil Texture	Treflan 4D (pints)
coarse	1.0 - 1.5
medium	1.5 - 2.0
fine	2.0 - 2.5

Exception: Louisiana, 3 pints per acre on fine soils.

5. Soybeans - Additional Weed and Grass Control in Gulf Coast Counties of Texas

Apply Treflan 4D as a preplant incorporated treatment up to 2 weeks before planting.

Broadcast Application Rates per Acre: For soybeans grown in Brazoria, Calhoun, Chambers, Fort Bend, Galveston, Harris, Jackson, Jefferson, Liberty, Matagorda, Orange, Victoria, Waller, and Wharton counties of the Texas Gulf Coast, apply Treflan 4D at the following broadcast rates:

Soil Texture	Treflan 4D (pints)
coarse	1.5
medium	2.0
fine	3.0

6. Soybeans - Itchgrass (Raoulgrass) Suppression

Apply Treflan 4D as a preplant incorporated treatment or at layby.

Layby Treatment: Cultivate to remove existing weeds and treat when soybeans are well established (10 inches tall). Apply as a directed spray to the soil surface and incorporate using a rolling cultivator set to cut 2 to 4 inches deep or sweep-type cultivator with 3 to 5 sweeps per row middle operated 2 to 3 inches deep. Set incorporation equipment to throw treated soil to the row.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)	
	Preplant Incorporated	Layby Application
medium	3.0	1.0
fine	3.0	2.0

7. Soybeans - Charcoal Soils in Arkansas, Louisiana, and Mississippi

Newly cleared land often contains high organic matter (5 to 10%) and charcoal from burning debris. Charcoal and organic matter tends to bind Treflan 4D and reduce weed control activity. Under these conditions, higher rates of Treflan 4D 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 Treflan 4D. In the burn row a high level of charcoal is usually present. Consequently, poor weed control may result, even if an increased rate of Treflan 4D is used. Follow application and incorporation procedures for Treflan 4D.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.5 - 2.5
medium	2.5
fine	3.0

8. Soybeans - Red Rice Control in Arkansas, Louisiana, Mississippi, and Texas Only

Suppression or partial control of red rice can be obtained from a two-year treatment program which consists of a maximum rate application the first year followed by application in the second year at normal rates indicated for soil texture, organic matter or charcoal content. Apply and incorporate Treflan 4D in the spring before planting. Follow soil preparation and incorporation procedures for Treflan 4D.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)	
	Application Year 1	Application Year 2
coarse	2.0	1.0
medium	3.0	1.5
fine	4.0	2.0
coarse Soils with 2-5% organic matter	3.0	1.5
soils with 5-10% organic matter	4.0	2.0 - 2.5

In Arkansas, Louisiana and Mississippi, if a combination of high soil organic matter (5 to 10%) and charcoal are present, apply Treflan 4D at the following broadcast rates:

Soil Texture	Treflan 4D (pints)
coarse	1.5 - 2.5
medium	2.5
fine	3.0

For more information on charcoal soils see discussion in preceding section.

Precaution: Crop Rotation: The recommendation for red rice control in soybeans is a two-year program. In the first year following a maximum rate application, plant only soybeans. During the second year, after applying Treflan 4D at the normal rate indicated for soil texture and charcoal level, plant only those crops for which Treflan 4D is registered as a preplant treatment or crop injury may result. Rice may be planted during the third year following application of normal use rates in year two.

9. Soybeans - Rhizome Johnsongrass Control in Eastern United States and the State of Texas

Rhizome johnsongrass control with Treflan 4D requires maximum rate application for 2 consecutive years. Commercially acceptable control cannot be obtained with only 1 year of maximum rate use of Treflan 4D. Carefully follow the special use directions which follow.

Soil Preparation: Satisfactory results are dependent upon proper soil preparation prior to application. Use implements such as a chisel plow to bring rhizomes to the soil surface. Disc twice before application to chop rhizomes into small (2 to 3 inch) pieces and destroy any recently emerged johnsongrass plants.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	2.0
medium	3.0
fine	4.0

- Coarse soils with 2 to 5% organic matter - 3 pints
- Soils with 5 to 10% organic matter - 4 pints

Spring Application: Apply Treflan 4D any time before planting in the spring for two consecutive years.

Fall Application: Apply Treflan 4D after October 15 for 2 consecutive years.

Split Application: Apply Treflan 4D at the broadcast rates indicated in the following table both spring and fall for two consecutive years.

Soil Texture	Treflan 4D Spring + Fall (pints)
coarse	1.0 + 1.0
medium	1.5 + 1.5
fine	2.0 + 2.0
coarse Soils with 2-5% organic matter	1.5 + 1.5
soils with 5-10% organic matter	2.0 + 2.0

Incorporation: Deep incorporation with a tandem disc is essential for good results. Set disc to operate 4 to 6 inches deep and operate at 4 to 6 mph. Two incorporation passes are necessary and the second should be in a different direction than the first.

Cultivation: Some johnsongrass plants will not be controlled. Timely cultivation during the crop season is necessary to remove escaped plants and maintain commercially acceptable control.

Precautions: In the season following a maximum rate treatment, plant only rice and those crops to which Treflan 4D can be applied as a preplant treatment or crop injury may result.

10. Soybeans - Wild Cane (Shattercane) Control

Follow soil preparation and application procedures for Treflan 4D. 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 by using increased rates of Treflan 4D.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	2.0
fine	2.5

Incorporation: Deep incorporation with a tandem disc is essential for good wild cane control. Incorporate Treflan 4D 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 in a different direction than the first.

Cultivation: Cultivation during the growing season will improve shattercane control.

11. Control of DNA-Resistant Goosegrass with Treflan 4D Plus Dual Tank Mix

Apply Treflan 4D plus Dual® herbicide tank-mix as a preplant incorporated treatment to control DNA-resistant goosegrass in soybeans.

Broadcast Application Rates/Acre

Soil Texture	Soils with 0 - 2% Organic Matter	
	Treflan 4D (pints)	Dual 8E (pints)
Coarse	1.0	1.25
Medium	1.5	1.5
Fine	2.0	2

- Coarse and medium soils with 2-5% organic matter - 1.5 pints of Treflan 4D
- Fine soils with 2-5% organic matter - 2.0 pints of Treflan 4D

Note: Follow all applicable use directions, precautions and limitations in the product label for Dual herbicide.

Spearmint and Peppermint

Apply to established spearmint and peppermint as a soil incorporated treatment, by chemigation, or surface applied and watered-in. Apply during dormancy or semi-dormancy in late winter to spring or in the fall after harvest. Treflan 4D does not control established weeds, therefore, application must be made prior to germination time of target weeds (refer to product label for labeled weeds). Late winter to early spring application will control susceptible weeds that germinate in the

spring and early summer and fall application will control susceptible fall germinating weeds. If mechanically incorporated, use equipment that will provide thorough soil mixing with minimal damage to the crop stand (refer to product label for incorporation equipment recommendations and labeled weeds).

Treflan 4D may be surface applied for annual grass control in established mint using chemigation, or ground, or aerial broadcast application equipment.

Chemigation: For chemigation application, apply at the specified broadcast application rates. See instructions for chemigation in the Application Methods section of this label.

Surface Applications Activated by Rainfall or Irrigation: Surface applications of Treflan 4D may be activated by rainfall, sprinkler irrigation, or flood irrigation. Rainfall or a single overhead sprinkler irrigation of 0.5 acre inch or more is required to activate Treflan 4D. If rainfall or irrigation has not occurred within 3 days after application, mechanical incorporation is recommended to activate the treatment.

Broadcast Application Rates:

Soil Texture	Treflan 4D (pt/acre)
Coarse	1.0
Medium	1.25
Fine	1.5

Sugar Beets

Treflan 4D - Alone

Apply Treflan 4D as an over-the-top spray and incorporate. Apply from the time the first true leaves have formed until plants are 6 inches tall.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25 - 1.5
fine	1.25 - 1.5

Incorporation: Set incorporation equipment to move treated soil around the plants in the row. Avoid damage to the sugar beet tap root from incorporation equipment.

Precaution: Exposed beet roots should be covered with soil before application of Treflan 4D to reduce the possibility of girdling.

Incorporation with a Tine-Tooth Harrow (for Use in California, Colorado, Idaho, Nebraska, Oregon, Texas, Utah, Washington, and Wyoming)

A tine-tooth harrow (Flextine or Melroe) can be used to incorporate Treflan 4D in sugar beets. Incorporation with tine-tooth harrow requires 2 passes in opposite directions over the same set of rows. Set the harrow to cut 1 to 2 inches deep and operate at 3 to 6 mph. Set incorporation equipment carefully to avoid damage to sugar beet tap root. Use application procedures and broadcast application rates specified in preceding section.

Tank Mixing

For broader spectrum weed control, other products registered for use in sugar beets may be applied in tank mix combination with Treflan 4D or as a sequential treatment following application of Treflan 4D. When tank mixing, use the specified rate of Treflan 4D. Follow the label Directions for Use of each tank mix partner for applicable use instructions including application rate, application timing, weeds controlled, and specific precautions and restrictions of product use. See detailed information for tank mixing in the Product Information section of this label.

Sugarcane

Apply and incorporate Treflan 4D twice a year. Make the first application of Treflan 4D in the fall on firmly packed beds immediately after the seed pieces are planted. Make the second application of Treflan 4D in the spring before or shortly after the cane emerges. Loosen rain-packed beds 2 to 3 inches deep before the spring application. Take care that incorporation equipment does not damage the seed pieces or emerging shoots.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
all textures	2.0 - 4.0 ¹

¹Application rate within rate range may be adjusted according to weed pressure.

Postplant Application for Control of Most Annual Grasses, Including Guineagrass (for Use in Hawaii)

Surface apply Treflan 4D after planting (for plant cane) or after harvesting (for ratoon cane). For best results in plant cane, the soil surface should be smooth and finely tilled. Apply Treflan 4D as soon as possible after tillage and planting before germination and emergence of grass weeds. For optimum efficacy in ratoon cane, minimize surface residue from previous crop before applying. Apply Treflan 4D just before anticipated rainfall in non-irrigated and furrow-irrigated sugarcane. Apply 0.5 inch or more irrigation in drip-irrigated or sprinkler-irrigated sugarcane as soon as possible after applying Treflan 4D.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
all textures	6.0 - 8.0

Repeat Applications: Subsequent germination of grass weeds may occur prior to the development of a full dense canopy of sugarcane. If this occurs, additional grass weed establishment is strongly suppressed. One or two additional applications of Treflan 4D can be applied to maintain weed control during the early crop development period. For repeat applications, direct the spray to the soil surface to minimize interception of the herbicide by the crop.

Restrictions:

- Do not apply Treflan 4D as a postplant surface applied treatment within 180 days of harvest.

Applications Up to Layby for Plant Cane or Ratoon Cane (for Use in Louisiana and Texas)

Apply and incorporate Treflan 4D in spring from shortly before or after cane emergence until layby. Apply after beds have been shaved or false shaved. Loosen rain-packed beds 2 to 3 inches deep before application. Avoid incorporation equipment damage to seed pieces or emerging shoots. Incorporate with a rolling cultivator or bed chopper for all soil textures. Set rolling cultivator to cut 2 to 4 inches deep and operate at 6 to 8 mph. Set bed chopper to cut 3 to 4 inches deep and operate 4 to 6 mph. Two incorporation passes are necessary.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
All Textures	2.0 - 4.0 ¹

¹Application rate within rate range may be adjusted according to weed pressure.

Itchgrass (Raoulgrass) Control (for Use in Louisiana)

Apply and incorporate Treflan 4D on plant or ratoon cane. Follow use directions in preceding section for layby application.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
All Textures	2.0 - 4.0

Sunflower

Treflan 4D - Alone

Apply and incorporate Treflan 4D in the spring before planting or in the fall in advance of spring planting. See instructions for fall application under Application Timing in the Product Information section of this label.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
coarse	1.0
medium	1.25 - 1.5
fine	1.5 - 2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 to 2 pints
- Fine soils with 2 to 5% organic matter - 2 pints.
- Soils with 5 to 10% organic matter - 2 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Tank Mixing

For broader spectrum weed control, other products registered for use in sunflower may be applied in tank mix combination with Treflan 4D or as a sequential treatment following application of Treflan 4D. When tank mixing, use the specified rate of Treflan 4D. Follow the label Directions

for Use of each tank mix partner for applicable use instructions including application rate, application timing, weeds controlled, and specific precautions and restrictions of product use. See detailed information for tank mixing in the Product Information section of this label.

Weed Control in Sunflower in the state of Montana: Apply and incorporate Treflan 4D in the fall after September 1 or in the spring before planting. Make only one application of this product per crop cycle. Follow soil preparation, application and incorporation instructions in the product label for this product.

Broadcast Application Rates Per Acre:

Soil Texture	Treflan 4D (pints)
Coarse	1.0
Medium	1.5
Fine	2.0

Use 1.5 to 2.0 pints of Treflan 4D per acre on coarse and medium soils with 2-5% organic matter.

Precautions

- Rotational Crop Planting Restriction:** Plant only spring seeded barley (grown under irrigated conditions), rapeseed, safflower or sunflower as rotational crops in the crop year following the crop treated with this product. If one of these specified crops is not planted, the land should be left idle or fallow for the entire crop year following the crop treated with this product.
- Do not graze or harvest crambe for livestock forage.

Tomatoes

Apply Treflan 4D to direct-seeded tomato as a directed spray between rows and beneath plants and incorporate at the time of blocking or thinning. For transplant tomatoes, apply and incorporate before transplanting or apply post-plant as a directed spray to the soil between the rows and beneath plants and incorporate.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- Coarse and medium soils with 2 to 5% organic matter - 1.5 pints
- Fine soils with 2 to 5% organic matter - 2 pints
- Soils with 5 to 10% organic matter - 2 pints
- Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation.

Tree and Vine Crops - Citrus, Stone Fruits, and Nut Trees and Vineyards

New Plantings of Citrus, Stone Fruit, and Nut Trees

For new plantings of almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, plum, prune, tangelo, tangerine, and walnut trees, apply and incorporate Treflan 4D before transplanting.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
Coarse	1.0
Medium	1.25 - 1.5
Fine	1.5 - 2.0

- All soils with 2 to 5% organic matter - 1.5 to 2 pints
- All soils with 5 to 10% organic matter - 2 pints
- Use lower rate in rate range in areas receiving less than 20 inches total rainfall and irrigation.

New Plantings of Vineyards

Apply and incorporate Treflan 4D before transplanting.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
Coarse	1.0 - 1.5
Medium	1.5 - 3.0
Fine	3.0 - 4.0

- Soils with 2 to 10% organic matter - 4 pints
- Use lower rate in rate range in areas receiving less than 20 inches total rainfall and irrigation.

Note: Do not use more than 2 pints per acre on mist propagated grape rootings.

Established Non-bearing and Bearing Citrus, Stone Fruit, and Nut Trees and Vineyards

Treflan 4D may be applied in established non-bearing and bearing vineyards and plantings of almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, plum, prune, tangelo, tangerine and walnut trees. In established plantings, apply and incorporate Treflan 4D prior to periods of weed germination or immediately after existing weeds are controlled by tillage or herbicide treatment. Apply as a soil directed spray and incorporate using methods not injurious to the crop. Do not apply to vineyards within 60 days of harvest.

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
all soil textures	2.0 - 4.0

Application rate within the rate range may be adjusted according to weed pressure.

Rhizome Johnsongrass Control - Special Two-Year Use Program

Treflan 4D may be applied for two consecutive years in a special use program to control rhizome johnsongrass in established vineyards and in plantings of almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, tangelo, plum, prune, tangerine, and walnut trees. Do not apply to vineyards within 60 days of harvest.

Soil Preparation: Work the soil thoroughly to move rhizomes near the soil surface and cut them into smaller pieces.

Broadcast Application Rates per Acre

The following application rate must be applied for two consecutive years:

Soil Texture	Treflan 4D (pints)
all soil textures	4.0

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

Cultivation: Some johnsongrass plants will escape. Timely cultivations are necessary to obtain commercially acceptable control. Commercially acceptable control cannot be obtained with only a single year use of Treflan 4D.

Precautions: Do not use the 4 pint rate on new plantings or crop injury may result. Do not interplant orchards or vineyards with other crops. If treated vineyards and orchards are diverted to other crop uses, then in the next cropping season plant only those crops for which Treflan 4D has been registered as a preplant incorporated treatment.

Bindweed Control in California

Treflan 4D can be applied using a specially equipped spray blade for the control of field bindweed in vineyards and in plantings of almond, apricot, grapefruit, lemon, nectarine, orange, peach, pecan, tangelo, tangerine, and walnut trees.

Soil Preparation: Destroy existing weeds with soil tillage before applying Treflan 4D to prevent interference with operation of the spray blade.

Equipment: Application requires a spray blade capable of operation at 4 to 6 inches below the soil surface. The blade should be equipped with nozzles located under the blade and directed so as to allow spray to be trapped in a thin layer as the blade is pulled through the soil. Use a nozzle spacing sufficient to insure application of a uniform horizontal layer.

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

Broadcast Application Rates per Acre

Soil Texture	Treflan 4D (pints)
all soil textures	4.0

Precautions: Some soils may develop cracks as they dry after rainfall or irrigation. Field bindweed may emerge if the cracks extend through the layer of Treflan 4D. Prevent or eliminate cracks by shallow discing or other tillage. Avoid deep tillage, which disturbs the subsurface layer. Cultivation or tillage also aids the control of germinating seeds.

Chemigation in Established Plantings of Tree and Vine Crops

Treflan 4D may be applied through sprinkler irrigation systems for weed control in certain fruit and nut orchards or vineyards. Follow all label instructions for chemigation in the Product Information section of this label before applying.

Application Instructions

- Apply Treflan 4D at a rate of 2.0 to 4.0 pints per broadcast acre.
- Total chemigation period for Treflan 4D should not exceed 4 hours.
- Application of Treflan 4D through irrigation systems should be used as a supplemental weed control practice.
- Do not apply when wind speed favor drift beyond the area intended for treatment.
- Calibration and distribution may be more accurately achieved by injecting a larger volume of a more dilute solution. If desired, dilute Treflan 4D with water prior to injection and mix thoroughly. During chemigation, maintain agitation in the supply tank at all times.
- Sprinkler systems should be calibrated to deliver a volume of 4-50 gallons per hour per emitter.
- Inject Treflan 4D into the irrigation system during the middle of the irrigation cycle. The application interval should be such that at one period of time during the injection, the first and last emitters in the system are simultaneously emitting water containing Treflan 4D. After application is complete, flush equipment with clean water and then continue to irrigate for one to two hours.

Use Precautions

- Do not apply to vineyards within 60 days of harvest.
- Do not allow treated irrigation water to contact the fruit or foliage.
- To prevent ground water contamination, follow all irrigation system requirements.

Chemigation System Calibration (Sample Calculations)

A. Broadcast Application:

- Assume, in this example, 20 acres are to be covered by a chemigation treatment.
- Product required, assuming a rate of 4.0 pints/acre, is 80 pints (20 acres x 4.0 pt/acre = 80 pints = 10 gallons)
- Inject 10 gallons of Treflan 4D into the irrigation system over a time period not to exceed 4 hours.

B. Non-Broadcast Application:

- Calculation of use rate is based on wetted area around each emitter or sprinkler head.
- Treated area per emitter = A (A = 3.14 x radius x radius)
Example: If the average distance from the emitter to the perimeter of the wetted area = 36 inches, then: A = 3.14 x 36" x 36" - 4069.4 square inches
- Area in square feet wetted in each = B

$$B = \frac{A \times \text{Emitters/acre}}{144}$$
Example: If there are 200 emitters per acre, then:

$$B = \frac{4069.4 \times 200}{144} = 5651.9 \text{ square feet}$$
- Total area in square feet wetted by system = C

$$C = B \times \text{acres covered by the irrigation system}$$
Example: If the system covers 20 acres, then:

$$C = 5651.9 \text{ square feet} \times 20 = 113,038 \text{ square feet}$$
- Total area, in acres, wetted by system = D

$$D = \frac{C}{43,560} = \frac{113,038}{43,560} = 2.595 \text{ acres}$$
- The amount of Treflan 4D to be injected into the irrigation system = D x rate per acre
Example: If the desired rate is 4.0 pints/acre, then:

$$2.595 \times 4.0 = 10.4 \text{ pints of Treflan 4D injected into the irrigation system over a time period not to exceed 4 hours.}$$

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2. Replacement of amount of product used

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Dow AgroSciences
9330 Zionsville Road
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Revisions:

1. Added the following uses:
 - a. Spearmint and Peppermint
 - b. Eggplant (Transplant)
 - c. Application Over Standing or Shredded Cotton Stalks After September 1 for Weed Control in Cotton (California)
 - d. Chemigation in Established Plantings of Tree and Vine Crops
 - e. Direct Seeded Chinese Cabbage or Kohlrabi
 - f. Application in Irrigation Water Rings in Non-bearing Citrus Trees
 - g. Control of DNA-Resistant Goosegrass in Soybeans with Treflan 4D Plus Dual Tank Mix
 - h. Chemigation Application to Carrot
2. Added Resistance Management language