


87290-2

4/22/2010

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	<b>U.S. ENVIRONMENTAL PROTECTION AGENCY</b> <b>Office of Pesticide Programs</b> <b>Registration Division (7505P)</b> <b>Ariel Rios Building</b> <b>1200 Pennsylvania Ave., NW</b> <b>Washington, D.C. 20460</b>	EPA Reg. Number: <b>87290-2</b>	Date of Issuance: <b>APR 22 2010</b>
		Term of Issuance: <b>conditional</b>	
NOTICE OF PESTICIDE: <input checked="" type="checkbox"/> Registration <input type="checkbox"/> Reregistration (under FIFRA, as amended)		Name of Pesticide Product: <b>Willowood Ethofumesate Turf</b>	
Name and Address of Registrant (include ZIP Code):  <b>Willowood, LLC</b> <b>8690 Lookingglass Road</b> <b>Roseburg, OR 97471</b>			
<del>Note: Changes in labeling/differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.</del>			
<p>On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act. Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.</p> <p>The 'Basic Formulation' dated 1/05/2010 is acceptable.          This product is conditionally registered in accordance with FIFRA provided that you:</p> <ol style="list-style-type: none"> <li>1. Submit and/or cite all data required for registration review/reregistration of your product when the Agency requires all registrants of similar products to submit data.</li> <li>2. Submit the data listed below:             <ol style="list-style-type: none"> <li>a. Within one year of the date on this registration notice, Storage Stability (830.6317) and Corrosion Characteristics (830.6320) studies must be submitted. It is recommended that the observations be made at 0, 3, 6, 9, and 12 month intervals.</li> </ol> </li> <li>3. Make the following label revisions:             <ol style="list-style-type: none"> <li>a. Revise "EPA REG. NO.87290-" to "EPA REG. NO. 87209-2"</li> <li>b. For the statement, "Selective Herbicide For Use By Professional Applicators On Ornamental Turf Only" add the word, "Intended" after "Selective Herbicide" so that the statement reads: "Selective Herbicide <i>Intended</i> For Use By Professional Applicators On Ornamental Turf Only."</li> </ol> </li> </ol> <p><i>Continued on Page 2</i></p>			
Signature of Approving Official:  Kathryn V. Montague Project Manager 23 Herbicide Branch Registration Division (7505P)		Date:  <b>APR 22 2010</b>	

- c. Per the Ethofumesate RED, make the following revisions to the PPE section:
1. Add "All Mixers, Loaders" before "Applicators and other handlers must wear."
  2. Revise "waterproof gloves" with "Chemical-resistant gloves (such as natural rubber)"
- d. Per the Ethofumesate RED, add the following Engineering Control Statements:
1. "Engineering Controls for: Enclosed Cabs for Aerial Applicators: Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)]."
  2. "On-Site Closed Mixing and Loading System Engineering Controls for Liquid Formulations: Mixers and loaders must use a closed system that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)] for Dermal protection, and must:
    - wear the personal protective equipment required in the PPE section of this labeling for mixers and loaders as well as a chemical-resistant apron
    - wear protective eyewear, if the system operates under pressure, and
    - be provided chemical-resistant footwear that is immediately available in an emergency, such as a broken package, spill or equipment breakdown."
- e. Per the Ethofumesate RED, revise the Environmental Hazards statement to read as follows:  
"This pesticide is toxic to fish. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash waters or rinsate."
- f. Per the Ethofumesate RED, revise the Agricultural Use Requirements box with the following:
1. Remove the period after "12 hours" and add "for all crops, except turf grown for sod. The REI for turf is 9 days. The REI for each crop is listed in the directions for use associated with each crop."
  2. Add a WPS Double Notification statement: "Notify workers of the application by warning them orally and by posting warning signs at entrances to treated areas."
- g. Per the Ethofumesate RED, revise the Non-Agricultural Use Requirements box with the following:
1. Replace "Keep unprotected persons out of the treated area until sprays have dried." with "Do not enter or allow others to enter until sprays have dried."
  2. Add "Professional pesticide applicators applying to residential turf, including home lawns, parks, and recreation areas must inform their customers that all persons and pets must be kept off the treated turf until sprays have dried."
- h. Revise the last sentence of the first paragraph under 'PRODUCT INFORMATION' so that it reads: "Willowood Ethofumesate Turf is *intended* for professional use only."

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- i. Per the Ethofumesate RED, the following Spray Drift Management text must be added to the Directions for Use section:  
“SPRAY DRIFT MANAGEMENT  
This chemical can contaminate surface water through spray drift. A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.  
Wind Speed: Do not apply at wind speeds greater than 15 mph.  
Temperature Inversions: Do not make applications into areas of temperature inversion of stable atmospheric conditions.”
- j. Revise the heading, “USE PRECAUTIONS” to “USE PRECAUTIONS and RESTRICTIONS”
- k. Per the Ethofumesate RED, add the following restrictions to the “USE PRECAUTIONS and RESTRICTIONS” section:
  1. “Do not apply more than 1.5 lbs ai (48 oz product/A or 1.1 oz product/ 1,000 Sq. ft) per year”
  2. “Do not harvest treated sod for 16 days following application.”
- l. Revise all instances of “recommended rates” to “specified rates” or “listed rates” (e.g., sixth bullet on pg. 4; title of table on pg. 5; paragraph under table on pg. 9  
In addition, revise the last statement on pg. 4 to read “...SPECIFIC DIRECTIONS...” and not “...SPECIFIC RECOMMENDATIONS...”
- m. Revise the Rates and Timings table on page 5 to comply with the maximum use rate of 48 oz. (1.5 lbs product) per acre per year.
  1. Ryegrass, St. Augustine grass, and Overseeded (ryegrass) Bermuda grass: Dormant Bermuda grass use rates must be revised to not exceed 48 oz. of product/ Acre or 1.1 oz of product/ 1,000 Sq. ft.
  2. The “# of Apps” column must be revised so that the single and yearly max. application rate of 48 oz/ Acre is not exceeded. (either a split application of 24 oz./A once in the spring and once in the fall OR a single application of 48 oz/A in either the spring or the fall).
  3. The “Application Interval (Days)” column must be revised so that only the turf types that have instructions for a split application of 24 oz/A once in the spring and once in the fall include an application interval period. (does not apply for those that have only a single application of 48 oz./A).
- n. Revise the first bullet of the ‘Perennial Ryegrass’ section to read as follows:  
“For best results, apply Willowood Ethofumesate Turf at 24 oz/A (0.5 oz/1000 Sq. ft.) once in the fall and once in the spring.”
- o. Revise the fifth bullet of the ‘St. Augustinegrass (Established Turf)’ section to read as follows:  
“For best results, make two applications of Willowood Ethofumesate Turf at 24 oz/A (0.5 oz/1000 Sq. ft.) with the second application being made 21-28 days after the first application.”  
In addition, delete the sixth bullet, “A third application...” as this would exceed the yearly max. use rate of 48 oz/A.

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- p. Revise the first bullet of the 'Overseeded Dormant Bermudagrass' section to read as follows:  
"Do not make more than two applications at 24 oz/A (0.5 oz/1000 Sq. ft.) OR one application at 48 oz/A (1.0 oz/1000 Sq. ft.) of Willowood Ethofumesate Turf when treating nondormant bermudagrass. Treatment to turf that is not fully dormant may cause early injury and/or delayed spring green-up."
  - q. Delete the fifth bulleted statement of the 'Overseeded Dormant Bermudagrass' section, as this exceeds the yearly maximum use rate of 48 oz/A.
4. Submit one (1) copy of the revised final printed label for the record.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.



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**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
CAUTION**

Harmful if swallowed or inhaled. Avoid breathing vapor or spray mist.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Some of the materials that are chemical-resistant to this product are polyethylene or polyvinyl chloride. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

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

**ENGINEERING CONTROLS STATEMENT**

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

**USER SAFETY REQUIREMENTS**

**Users should:**

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

**ENVIRONMENTAL HAZARDS**

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 when wind conditions may cause spray drift from the application site. Do not contaminate water when disposing of equipment washwaters.

**DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not graze livestock on treated turf. Do not feed treated grass clippings to livestock. Read entire Use Precautions, Directions for Use and Condition of Sale and Limitation of Warranty and Liability before using this product.

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 in your State responsible for pesticide regulation.

**SHAKE CONTAINER WELL BEFORE USING.**

**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.

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 made of any waterproof material
- Shoes plus socks

**NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to uses of this product that are not within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Keep unprotected persons out of treated area until sprays have dried.

**PRODUCT INFORMATION**

Willowood Ethofumesate Turf is a herbicide intended for use on ornamental turf such as golf courses, sod farms, parks, cemeteries and homeowner or commercial lawns, and after overseeding specific grasses. It may be used on established perennial ryegrass, Kentucky bluegrass, creeping bentgrass, turf-type tall fescue, St. Augustinegrass, and dormant bermudagrass for the control and/or suppression of the annual grasses and broadleaf weeds listed in the tables below. Willowood Ethofumesate Turf is for professional use only.

Willowood Ethofumesate Turf has both preemergent and early (two-leaf stage) postemergence activity and works best in programs emphasizing both approaches. Willowood Ethofumesate Turf application is most effective on healthy, vigorously growing turf.

**WEED SPECIES CONTROLLED**

**PREEMERGENCE**

**Annual Grasses**

- Barnyardgrass (*Echinochloa crus-galli*)
- Bluegrass, annual (*Poa annua*)
- Canarygrass (*Phalaris canariensis*)
- Crabgrass, large (*Digitaria sanguinalis*)
- Crabgrass, smooth (*Digitaria ischaemum*)
- Foxtail, green (*Setaria viridis*)
- Foxtail, yellow (*Setaria glauca*)

**Annual Broadleaves**

- Burclover (*Medicago sp.*)
- Chickweed, common (*Stellaria media*)
- Purslane, common (*Portulaca oleracea*)
- Pigweed, redroot (*Amaranthus retroflexus*)

Willowood Ethofumesate Turf will also reduce competition from:

- Nutsedge, purple (*Cyperus rotundus*)
- Nutsedge, yellow (*Cyperus esculentus*)

**POSTEMERGENCE**

**Annual Grasses**

- Bluegrass, annual (*Poa annua*)

**Annual Broadleaves**

- Chickweed, common (*Stellaria media*)
- Clover, white (*Trifolium repens*)

**PREEMERGENCE/EARLY POSTEMERGENCE**

**Annual Grasses**

- Crabgrass, large (*Digitaria sanguinalis*)

Crabgrass, smooth (*Digitaria ischaemum*)

### USE PRECAUTIONS

- Willowood Ethofumesate Turf is not intended for use by homeowners and should be applied to homeowner lawns by licensed or certified applicators.
- **DO NOT OVER APPLY** Willowood Ethofumesate Turf. Follow the instructions in this label or damage to non-target turf may result.
- Spray overlap can cause turf injury due to over application. Use of a spray colorant or indicator is recommended so that spray overlap can be avoided.
- Do not apply with hand-held or flood jet nozzles because treatments may not be uniform.
- Do not apply this product through any type of irrigation system.
- When using Willowood Ethofumesate Turf, overseed to prevent stand thinning as a result of loss of annual bluegrass. Use the rate of Willowood Ethofumesate Turf recommended for the overseeded species when overseeding. In mixed stands of established turfgrasses, use the rate recommended for the *least* tolerant species.
- Delay application of Willowood Ethofumesate Turf at least 8 weeks after application of a Plant Growth Regulator although an Willowood Ethofumesate Turf program may be initiated on creeping bentgrass 3 weeks after a single application of PRIMO\* has been applied.
- Do not apply Willowood Ethofumesate Turf to putting greens.
- Do not apply Willowood Ethofumesate Turf to zoysiagrass and hard or fine fescue to avoid serious injury.

### Spray Equipment, Application, and Precautions

Use standard, low-pressure (20 to 50 psi) spray equipment to apply Willowood Ethofumesate Turf. Calibrate spray equipment prior to use and frequently check the equipment during application. Use a spray indicator to aid in even application. Prior to and after applying Willowood Ethofumesate Turf, thoroughly clean and rinse the spray tank and line.

### Varietal Tolerance

Ethofumesate (the active ingredient in Willowood Ethofumesate Turf) has been used on the following turfgrass cultivars. However, Willowood Ethofumesate Turf can be used on other cultivars. Prior to large-scale use of Willowood Ethofumesate Turf on cultivars other than those listed below, test a small area for tolerance.

- **CREEPING BENTGRASS-** The following cultivars have shown good to excellent tolerance to Willowood Ethofumesate Turf: Carmen, Cobra, Highland, Lopez, Mariner, National, Penncross, Providence, Putter, Southshore, SR1020, and Viper.  
Injury has been occasionally noted on Emerald, Penneagle, and Pennilinks cultivars.  
Willowood Ethofumesate Turf may cause serious injury to Cohansey, Colonial, south German varieties, Egmont, Bardot, Tracenta, Allure, Astoria, and SR7100.
- **DORMANT BERMUDAGRASS-** Tifgreen, Tidwarf and Common bermudagrass are more susceptible to Willowood Ethofumesate Turf than hybrid bermudagrass.
- **KENTUCKY BLUEGRASS-** Adelphi, American, Aspen, Asset, Challenger, Classic, Emundi, Huntsville, Georgetown, Glade, Haga, Julic, Liberty, Merit, Midnight, Monopoly, Mystic, Parade, Rugby, Sydsport, Touchdown. NOTE: DO NOT APPLY to Explorer, Limousine, Northstar, RAN I and Total Eclipse.
- **PERENNIAL RYEGRASS-** Acclaim, Blazer, Dasker, Derby, Elka, Fiesta, Goalie, Hunter, Linn, Loretta, Manhattan II, Palmer, Pennfine, Regal, Yorktown.
- **ST. AUGUSTINEGRASS-** Raleigh
- **TURF-TYPE FALL FESCUE-** America, Arid, Mustang

### Recommendations

- For fall control of annual bluegrass, begin applications of Willowood Ethofumesate Turf during the period of maximum weed germination and end as close to the first killing freeze as possible.
- Spring applications should be made during the period of maximum weed germination. Consult your weed science specialist or university extension service for the recommended application timing in your area. Spring applications are most effective following fall applications.

**SEE CHART BELOW FOR USE RATES AND TIMINGS AND READ TEXT BELOW FOR SPECIFIC RECOMMENDATIONS FOR EACH TYPE OF GRASS.**



**Recommended Rates and Timings**

Turf Type	Primary Targets	Application Timing	Use Rate <sup>1</sup>		# of Apps	Application Interval (Days)	Overseeding Safety Interval <sup>3</sup> (Weeks After Treatment)	Application Safety Interval <sup>4</sup> (Weeks After Emergence)
			Oz./Acre	Oz/1,000 Sq. Ft.				
Creeping Bentgrass	Annual Bluegrass	Fall	24	9/16	2-3	21-28	4	4
		Spring <sup>2</sup>	24	9/16	1-2	21-28		
Kentucky Bluegrass	Annual Bluegrass	Fall	24	9/16	2-3	21-28	6	8
Ryegrass	Annual Bluegrass	Fall	32-64	3/4-1 1/2	2-3	21-28	1-2	1-2
		Spring			1-2	21-28		
St. Augustinegrass (Est. Turf)	Bermudagrass Suppression	Spring	48-64	1 1/8 – 2 1/4	2-3	21-28	N/A	N/A
Turf-Type Tall Fescue	Annual Bluegrass	Fall	24-48	3/4-1 1/2	2-3	21-28	0	2-3
Overseeded (ryegrass) Bermudagrass: Dormant Bermudagrass	Annual Bluegrass	Fall	24-64	9/16 – 1 1/2	2-3	21-28	N/A	N/A
Nondormant Bermudagrass	Annual Bluegrass	Fall	32-36	3/4-7/8	2	21-28	N/A	N/A

N/A= Not applicable.

<sup>1</sup> Apply Willowood Ethofumesate Turf in 20 to 60 gallons of water per acre or 1 to 3 gallons of water per 1000 sq. ft.

<sup>2</sup> Only make spring applications after previous fall treatments.

<sup>3</sup> After the last treatment of Willowood Ethofumesate Turf, the interval provided applies to overseeding of the specific grass on same type of grass to which Willowood Ethofumesate Turf was applied.

<sup>4</sup> Willowood Ethofumesate Turf may be applied to specific grass following seed emergence after the recommended time interval.

**INSTRUCTIONS FOR SPECIFIC GRASS TYPES**

**COOL SEASON TURFGRASSES**

**Creeping Bentgrass**

Apply Willowood Ethofumesate Turf to bentgrass as long as the turf is at a length typically found on fairways (or longer). When applying to bent-grass, use the following guidelines.

- Avoid using Willowood Ethofumesate Turf in areas that are heavily shaded and/or poorly drained.
- Creeping bentgrass tolerance to Willowood Ethofumesate Turf may be improved by tank mixing Willowood Ethofumesate Turf with nitrogen fertilizer (controlled release or soluble) at a rate of 0.1 to 0.25 lb N per 10,000 ft<sup>2</sup>. This may also improve creeping bentgrass conversion in the areas treated.
- Control of annual bluegrass is best achieved by making two applications of Willowood Ethofumesate Turf; one in the fall followed by one in the spring.
- Willowood Ethofumesate Turf works best in the spring if applied after creeping bentgrass has resumed active growth and is fully green.

When overseeding with creeping bentgrass, use the following guidelines:

- After applying Willowood Ethofumesate Turf, wait a minimum of 3-4 weeks before overseeding with bentgrass.
- When an area has been renovated or overseeded with bentgrass, do not apply Willowood Ethofumesate Turf until 3-4 weeks after seedling emergence.

**Kentucky Bluegrass**

- Delay application of Willowood Ethofumesate Turf to bluegrass until at least 8 weeks after emergence.
- Bluegrass overseeded with ryegrass may be treated with Willowood Ethofumesate Turf 1-2 weeks after ryegrass emergence.

When overseeding with Kentucky Bluegrass use the following guidelines:

- Wait at least six weeks after the last Willowood Ethofumesate Turf application before reseeding with Kentucky bluegrass.
- Note that sod quality during the spring may be diminished following the fall applications of Willowood Ethofumesate Turf. Alternatives to fall application of Willowood Ethofumesate Turf include seeding with dormant bluegrass in the late fall or to delay reseeding until the spring.

**Perennial Ryegrass**

Control of annual bluegrass in perennial ryegrass is easiest when it is newly emerged, and application of Willowood Ethofumesate Turf is made during the primary period of annual bluegrass germination (and up to 30 days after annual bluegrass emergence) in the fall and/or spring. Consult your local Extension Service or university weed specialist for the date(s) that annual bluegrass germinates in your area.

- For best results, apply Willowood Ethofumesate Turf in both the fall and spring.
- Application in the fall or spring will also reduce competition from selected broadleaf weeds and crabgrass.

When overseeding with perennial ryegrass, use the following guidelines:

- Wait 1-2 weeks (or until the seedlings are approximately 1" tall) before applying Willowood Ethofumesate Turf to the seeded area.
- To the extent possible, thatch should be removed from the area being seeded as it can diminish the effectiveness of the Willowood Ethofumesate Turf treatment.
- Do not apply mulch or straw to the seeded areas until after Willowood Ethofumesate Turf has been applied.

**Turf-Type Tall Fescue**

Make Willowood Ethofumesate Turf applications to turf-type tall fescue in the fall. If overseeding with turf-type tall fescue, application of Willowood Ethofumesate Turf may be done at the same time as seeding.

**WARM SEASON TURFGRASSES**

**St. Augustinegrass (Established Turf)**

Willowood Ethofumesate Turf suppresses the development of actively growing Bermudagrass in established St. Augustine sod. Apply Willowood Ethofumesate Turf to St. Augustinegrass in the spring and early summer to suppress Bermudagrass and Bermudagrass seedhead formation and/or for control of annual bluegrass.

Notes regarding applications to St. Augustinegrass:

- Do not treat St. Augustinegrass in the first six months after germination.
- Do not treat St. Augustinegrass that is under stress or injury to the turf may result.
- Temporary stunting and minor discoloration of St. Augustinegrass may occur after application. If the St. Augustinegrass shows signs of severe yellowing or stunting, discontinue applications.

Use the following guidelines when applying Willowood Ethofumesate Turf to St. Augustinegrass:

- Begin Willowood Ethofumesate Turf applications when Bermudagrass first breaks dormancy in the spring. Application timing is critical to achieve optimum results and will vary depending on location and temperature.
- For best results, make multiple applications of Willowood Ethofumesate Turf with the second application being made 21-28 days after the first application.
- A third application made 21-28 days after the second application may be necessary for maximum suppression of bermudagrass or annual bluegrass.
- To improve suppression, each application of Willowood Ethofumesate Turf may be tank-mixed with (Atrazine at up to 2 lb ai/A for first application and 0.75 lb-1 lb ai/A triazine for second or third application).

**Overseeded Dormant Bermudagrass**

#### Notes regarding applications to Bermudagrass:

- Do not make more than two applications of Willowood Ethofumesate Turf when treating nondormant bermudagrass. Treatment to turf that is not fully dormant may cause early injury and/or delayed spring green-up.
- Application of Willowood Ethofumesate Turf to bermudagrass that is stressed due to shade, poorly drained soils, and high traffic may result in increased turf injury. Avoid use of Willowood Ethofumesate Turf or use lower rates under these conditions.

#### Use the following guidelines when applying Willowood Ethofumesate Turf to Bermudagrass:

- To control annual bluegrass, make applications of Willowood Ethofumesate Turf in late fall (ideally 1-2 weeks after emergence of overseeded perennial ryegrass) on overseeded bermudagrass.
- When Willowood Ethofumesate Turf is applied in late November or early December, applications of 32-36 oz. per acre have shown acceptable control of annual bluegrass with minimum injury to nondormant (or predormant) bermudagrass. If lower rates are used, reduced annual bluegrass control should be expected. If higher rates are used, increased injury to Bermudagrass may occur.
- One or two supplemental applications made through the winter (at 21-28 day intervals) may assist in controlling annual bluegrass.
- Willowood Ethofumesate Turf should not be applied to Bermudagrass in the 4 weeks prior to breaking winter dormancy. Applications made to Bermudagrass in the 4 weeks prior to breaking dormancy may temporarily delay the normal start of active growth.

#### When overseeding bermudagrass, use the following guidelines:

- Common bermudagrass in fairways or roughs may be more susceptible to herbicide injury than hybrid bermudagrass.
- When making applications to nondormant bermudagrass, Willowood Ethofumesate Turf should be kept within areas that are overseeded so that the ryegrass will mask any early injury or late transition in the spring that may occur.
- Using a higher than normal seeding rate may be desirable in order to minimize the appearance of thin turf.

#### **Willowood Ethofumesate Turf Mixtures with Fertilizers**

##### **Willowood Ethofumesate Turf Impregnation on Dry Bulk Fertilizers**

Willowood Ethofumesate Turf may be impregnated on many dry bulk fertilizers (See "1" below) and applied for the control of labeled grasses and broadleaf weeds. All Willowood Ethofumesate Turf label and supplementary literature instructions and precautions regarding rates per acre, soil type, application, and other directions must be followed. All individual State regulations relating to dry bulk fertilizer blending, registration, labeling and application are the responsibility of the individual and/or company selling the Willowood Ethofumesate Turf fertilizer mixtures. A minimum of 200 pounds and a maximum of 700 pounds of approved fertilizer ingredients impregnated with the appropriate amount of Willowood Ethofumesate Turf must be applied per acre. For impregnating the pesticide on dry fertilizers, use a closed rotary drum type mixer equipped with suitable spraying equipment. The spray nozzles should be positioned inside of the mixer to provide uniform spray coverage of the tumbling fertilizer. The Willowood Ethofumesate Turf should be sprayed uniformly onto the fertilizer using a fine spray pattern.

The physical properties of fertilizers vary, particularly in liquid absorptive capacity. When absorptivity is sufficient, simple spray impregnation of the fertilizer with Willowood Ethofumesate Turf provides a satisfactory dry mixture. If the absorptivity is not adequate, use of a highly absorptive powder is required to provide a dry, free-flowing mixture. Microcel E (Johns-Manville Products Corporation) is the recommended absorbent powder. It should be added separately and uniformly to the prepared pesticide/fertilizer mixture in a quantity that is sufficient to provide a suitably free-flowing mixture. Generally, less than 2% by weight of Microcel E is required.

The amount of Willowood Ethofumesate Turf actually required in the formulation of specific fertilizer mixtures should be calibrated carefully for each production operation. This is necessary to ensure that the amount of Willowood Ethofumesate Turf actually contained in the fertilizer mixture applied to the soil represents the correct dosage rate.

Bulk fertilizers impregnated with Willowood Ethofumesate Turf should be applied immediately, NOT STORED.

**1. Approved dry fertilizer ingredients for use with Willowood Ethofumesate Turf.**

**Willowood Ethofumesate Turf Impregnation on Dry Bulk Fertilizers**

	<b>N</b>	<b>P</b>	<b>K</b>
Ammonium nitrate	34	0	0
Ammonium sulfate	21	0	0
Ammonium phosphate-sulfate	16	20	0
Diammonium phosphate	18	46	0
Monoammonium phosphate	11	56	0
Potassium chloride	0	0	60
Potassium sulfate	0	0	52
Single superphosphate	0	20	0
Triple superphosphate	0	46	0
Urea	45	0	0

<b>Willowood Ethofumesate Turf Physical Data</b>	
Density	1.15 g/cm <sup>3</sup>
Pounds/gallon	9.60
Flashpoint	Non-combustible

**Willowood Ethofumesate Turf with Liquid Fertilizer**

The following procedure is suggested for evaluation of physical compatibility of Willowood Ethofumesate Turf in mixtures with liquid fertilizers for spray tank applications.

**Material Required**

1. Willowood Ethofumesate Turf- components of tank sizes if intended for use
2. Liquid fertilizer to be used.
3. Adjuvant for fertilizer tank mix: Compex\* or E-Z Mix\*\*
4. Two (or more) one quart wide mouth containers with lids or stoppers
5. Measuring spoons (25 ml pipette or graduated cylinder provides more accurate measurement)
6. Measuring cup, 8 fl. oz. (237 ml)

\*Compex, Kalo Baloratories, Inc., Kansas City, MO

\*\*E-Z Mix, United Agri-Products, Greeley, CO

**Procedure**

1. Pour one pint (473 ml) of the liquid fertilizer into each of the quart containers.
2. Add adjuvant(s) to one or more of the containers and mix; follow label directs of adjuvant.
3. Add the Willowood Ethofumesate Turf and tank mix components to the containers (see rate table below).
4. Close the containers with lids or stoppers and mix contents by inverting the containers ten times.
5. Inspect the surface and body of mixture:
  - a. immediately after mixing
  - b. after allowing mixtures to stand quietly for 30 minutes,
  - c. immediately after mixing again (invert the containers ten more times).

If uniform mixture does not occur, the spray tank mixture should not be used. If any of the mixtures remain uniform for 30 minutes, that mixture may be used in spray tank applications. Should any of the mixtures separate after 30 minutes but remix readily into a uniform mixture with inversion of the container, the mixture may be used provided that the adequate agitation is maintained in the spray tank. If a Willowood Ethofumesate Turf plus fertilizer mixture utilizing an adjuvant is satisfactory, but the one

without adjuvant is not, be sure to use the adjuvant in the spray tank at the rate recommended on the label which was used in the test.

If non-dispersible oil, sludge, or clumps of solids form in the mixtures, those combinations should not be used for spray tank application.

**Rate Table for Willowood Ethofumesate Turf Mixtures with Liquid Fertilizers**

Gal. of Liquid Fertilizer to be applied per acre	ml or tsp of Willowood Ethofumesate Turf to be added to 1 pint of fertilizer	
	gal	tsp.
20	17.6	3.6
30	12.0	2.4
40	9.0	1.9
50	7.1	1.5
60	6.0	1.2

\* Based on field rate of 3.0 lb. ai/acre (3/4 gal/acre) in the fertilizer volumes indicated. Adjust amount of Willowood Ethofumesate Turf added proportionately to correspond with intended field use rate recommended on Willowood Ethofumesate Turf label. Add the proportionate amount of tank mix component.

### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Protect product from freezing temperatures.

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

**CONTAINER DISPOSAL:** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying.

(Nonrefillable container ≤ 5 gallons): 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

(Nonrefillable > 5 gallons): 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. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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[EPA approval date]