

109801

5-23-78

J.T. (3)

EEE BRANCH REVIEW

DATE: IN 4/17 OUT 5/23/78 IN \_\_\_\_\_ OUT \_\_\_\_\_

FISH & WILDLIFE

ENVIRONMENTAL CHEMISTRY

EFFICACY

FILE OR REG. NO. \_\_\_\_\_

PETITION OR EXP. PERMIT NO. 538-EUP-9

DATE DIV. RECEIVED \_\_\_\_\_

DATE OF SUBMISSION \_\_\_\_\_

DATE SUBMISSION ACCEPTED \_\_\_\_\_

TYPE PRODUCTS(S): I, D, H, (F), N, R, S Fungicide

DATA ACCESSION NO(S). 233197, 227615, 230242

PRODUCT MGR. NO. L. Zink

PRODUCT NAME(S) Proturf - Fungicide IV - (Chipeo 26019) Rhoda Inc. product.

COMPANY NAME O. M. Scott and Sons

SUBMISSION PURPOSE EUP to gather efficacy data - TURF

CHEMICAL & FORMULATION 3-(3,5-dichlorophenyl)-N-(1-methyl ethyl)-2,4-dioxo-1-imidazolidine carboxamide

1  
see P.C. review  
insite  
Sunny  
2-22-93

100.0

Pesticidal Use

The pesticide will be used under an experimental use permit to control the following turf grass diseases:

1. Brown patch
2. dollar spot (including benzimidazole tolerant strains)
3. leaf spot
4. red leaf spot
5. red thread
6. Fusarium patch (Pacific N.W., only)

100.1

Application method/directions

Application is made via a drop spreader (lawn fertilizer spreader) at two application rates. The two rates are:

1. Normal rate: 23 lb. (10.43 kg) treats 11,000 sq. ft. (1/4 acre/1022 sq. m), equivalence of 1.2 lb ai/acre.
2. Double rate: 23 lb (10.43 kg) treats 5,500 sq. ft. (1/8 acre/511 sq. m.), equivalence of 2.4 lb ai/acre.

The following diseases will be treated as specified:

Dollar Spot, Brown Patch, Red Leaf Spot and Red Thread:  
To prevent disease apply to moist foliage at the normal rate when disease activity is anticipated. repeat the application at 2 week intervals throughout the expected disease period.

To control active disease apply to moist foliage immediately at the normal rate and repeat the application every 2 weeks. If severe disease infestations occur apply at the double rate every 2 week until the disease is under control and then revert back to the normal rate for the remainder of the disease period.

✓

Fusarium Patch (Pacific Northwest only): To prevent disease apply to moist foliage at the normal rate when disease activity is anticipated. Repeat the application at 2 to 3 week intervals throughout the expected disease period.

To control active Fusarium patch apply to moist foliage at the double rate and repeat at 2 to 3 week intervals. When the disease activity is under control, apply at the normal rate at 2 to 3 week intervals.

Leaf Spot: To prevent disease apply to moist foliage at the double rate when disease activity is anticipated and repeat if needed after 3-4 weeks.

To control active leaf spot apply to moist foliage at the double rate when disease activity is first noted. Repeat as needed at the double rate at intervals not closer than 2 weeks.

100.2 Application rates

Normal rate is 23 lb/1/4 acre or 1.2 lb a.i./acre  
Double rate is 23 lb/1/8 acre or 2.4 lb a.i./acre

100.3 Precautionary labeling

Do not contaminate feed or foodstuffs. Keep children and pets off treated area until material has been washed off the foliage and the area is completely dry.

Environmental Hazards

Keep out of lakes, streams or ponds. Don not contaminate water by cleaning of equipment or disposal of wastes. Do not apply when weather conditions favor drift from areas treated.

All applications are to be made to moist foliage.

100.4 Proposed E.U.P. Program

100.4.1 Objectives

The purpose of the proposed program is to gather efficacy data to support registration of the product for the diseased named above, and gather feedback information from turf managers that have used the product under actual conditions.

100.4.2 Duration/Data/Amount shipped

The duration of treatment was not stated and thus assumed to be 1 year. The first disease preventive treatment is to begin April 15, 1978 and presumably continue through the growing season.

Eight-seven pounds of technical RP-26019 (hydantoin) is requested on the basis of application rates and number of applications.

100.4.3 Application procedures

Scotts proturf fungicide IV will be applied according to label instructions (see section 100.1). Its effectiveness in controlling the appropriate diseases will be compared to other commercial products. The testing program will be conducted on golf courses in 12 states.

100.4.4 Target Pests

The following turf diseases are the targets:

Dollar spot	Brown Patch
Red leaf spot	Red thread
fusarium Patch	leaf spot

100.4.5 Geographical Site Features

Twenty-four golf course sites will be selected in strategic areas throughout the U.S. Golf courses were selected because they are professionally managed and the history of turf disease is well known.

100.4.6 Test Program Description/Features

Scotts proturf fungicide IV will be applied to 3 greens on each course. The remaining greens will be treated with a standard type fungicide program and will be used for comparison. Non-treated areas adjacent to the green will be used as checks where possible. Also, non-treated turf areas in the vicinity of the golf course (neighboring golf courses; sections of practice and nursery greens) will be used as checks to rate disease pressures.

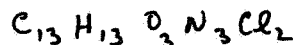
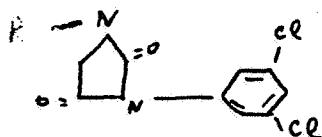
101.0 Chemical and Physical Properties

101.1 Chemical Name

1-isopropylearbamoyl-3-(3, 5-dichlorophenyl)hydantoin-3-(3, 5-dichlorophenyl)-N-(1-methyl ethyl)-2, 4-dioxo - 1 imidazolidine carboxamide

101.2 Common Name: RP-26019, Proturf Fungicide IV, Chipco 26019

101.3 Structural Formula:



101.4 Molecular Weight

330.17

101.5 Physical State (Technical material)

White, odorless, non-hygroscopic crystals with a melting point about 136°C. Vapor pressure is negligible at 20°C. Practically insoluble in water, slightly soluble in ethanole, and easily soluble in acetone, benzene, or methylenechloride.

To form the manufactured product the active ingredient is

INERT INGREDIENT INFORMATION IS NOT INCLUDED

102.0 Behavior in the environment

See review by G. L. Gavin, Jr. dated 3/21/77.  
Review is filed under the name Chipco 26019.

103.0 Toxicological properties

102.1 Mammal

Rat acute oral LD<sub>50</sub> - 3,7000 mg/kg -Technical RP 26019  
Rat acute oral LD<sub>50</sub> - 12,500 mg/kg - 50% W.P.

103.2 Fish and wildlife

The following summary sheet contains a summary of  
all fish and wildlife data referenced or supplied to  
date

TOXICITY SUMMARY SHEET

Species	Test	Data Review Number	Accession Number	Toxicity	Classification of Study
Bobwhite quail	Avian Acute Oral LD50	(ES) VII. C-1*	230242	LD <sub>50</sub> = 930 mg/kg (744 -1163 mg/kg)	Supplemental
Mallard duck	Avian Acute Oral LD50	(ES) VII. C-2*	230242	LD <sub>50</sub> 10,437 mg/kg	Supplemental
Bobwhite quail	Avian 8-day Dietary LC50 (Upland Game-bird)	(ES) VII. D-1*	230242	LC <sub>50</sub> = 9,200 ppm (6,865-12,328 ppm)	Core
Mallard duck	Avian 8-day Dietary LC50 (Waterfowl)	(ES) VII. E-1*	230242	LC <sub>50</sub> 20,000 ppm	Core
Bluegill	Fish Acute 96-hr LC50 (Warmwater)	(ES) VII. F-1*	230242	LC <sub>50</sub> = 2.25 ppm (1.85-2.74 ppm)	Core
Channel Catfish	Fish Acute 96-hr LC50 (Warmwater)	(ES) VII. F-2*	230242	LC <sub>50</sub> = 2.63 ppm (2.25-3.08 ppm)	Core
Rainbow trout	Fish Acute 96-hr LC50 (Coldwater)	(ES) VII. G-1*	230242	LC <sub>50</sub> = 6.70 ppm (5.87-7.64 ppm)	Core

\* Data review numbers refer to the Chipco 26019 review dated 7/15/77 by L.A. Windberg

\* \* ~~Missing~~ Data missing in previous reviews was received and reviewed.

*Jan 23 1978*

INERT INGREDIENT INFORMATION IS NOT INCLUDED

104.0 Hazard Assessment

104.1 Discussion

The material is to be applied via drop spreader to turf (on golf courses primarily) at a maximum rate of 2.4 lb a.i. per acre. The estimated residue with this rate of application to "short range grasses" is 580 ppm.

The method by which the pesticide is transferred to the diseased turf and the rate at which the transfer takes place is not known. These are vital questions that need to be answered to accurately determine the rate of exposure to non-target organisms.

104.1.1 Likelihood of Exposure to Non-target Organisms

The primary consideration for non-target organisms are the avian species that inhabit grass areas. Considering the dietary toxicity of the chemical the risk of receiving a lethal dose are minimal.

104.1.2 Endangered Species Considerations

The threat to endangered avian species is minimal. The threat to fish species might be slight, however, it is unlikely that endangered fish species will be associated with a highly disturbed areas around golf courses.

104.1.3 Adequacy of toxicity data

The referenced data was reviewed by L.A. Windberg and found to be core. Study ES-VII-F-1 which was previously found to be invalid was upgraded to core because the required information which was missing was found in Accession No. 227615, (359-EUP-55, original copy).



104.1.4 Additional Data Required

The following minimum studies must be submitted prior to registration

1. An avian acute oral LD<sub>50</sub> study using either the bobwhite quail or mallard duck.
2. An aquatic invertebrate acute 48 hr. LC<sub>50</sub> study (preferably for Daphnia magna).

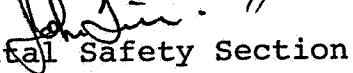
105.0 Conclusions

The Environmental Safety Section has no objection to the proposed EUP.

Prior to registration the following studies will be required.

1. An avian acute oral LD<sub>50</sub> study using either the bobwhite quail or mallard duck.
2. An aquatic invertebrate acute 48 hr. LC<sub>50</sub> study (preferably using Daphnia magna).

Due to the fact that repeat applications are to be used and these applications may occur during the bird nesting season, avian reproduction study on bobwhite quail and the mallard duck are required.

John Tice   
Environmental Safety Section  
EEEB-RD WH-567  
5/23/78