

111601
SHAUGHNESSEY NO.

19
REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 3/30/83 OUT MAY 11 1983

FILE OR REG. NO. 707-174

PETITION OR EXP. PERMIT NO. _____

DATE OF SUBMISSION 3/23/83

DATE RECEIVED BY HED 3/29/83

RD REQUESTED COMPLETION DATE 6/9/83

EEB ESTIMATED COMPLETION DATE 6/2/83

RD ACTION CODE/TYPE OF REVIEW 305/Amendment

TYPE PRODUCT(S): I, D, H, F, N, R, S Herbicide

DATA ACCESSION NO (S) . _____

PRODUCT MANAGER NO. R. Mountfort (23)

PRODUCT NAME(S) Goal 1.6E

COMPANY NAME Rohm and Haas Company

SUBMISSION PURPOSE Proposed conditional registration of use

on bananas, plantain, and coffee in Puerto Rico

SHAUGHNESSEY NO.

CHEMICAL, & FORMULATION

% A.I.

111601

Oxyfluorfen

19.4%

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111601

Goal 1.6E Herbicide

100 Pesticide Label Information

100.1 Pesticide Use

Herbicide for treating bananas, coffee and plantain in Puerto Rico.

100.2 Formulation Information

Goal 1.6E Herbicide is 19.4% Oxyfluorfen.

100.3 Application Methods, Directions, and Rates

BANANA AND PLANTAIN:

Apply GOAL (R) 1.6E Herbicide in new plantings at 2.6 to 3.4 pints per acre within 3 days of planting seed piece and prior to emergence of weeds. If new or established vegetation is present, apply GOAL (R) 1.6E at 2.6 to 3.4 pints per acre, tank mixed with a burn-down herbicide. A second application may be needed 90 to 100 days after the first application. (3.4 pints/acre = 0.838 lbs a.i./acre)

Apply GOAL (R) 1.6E Herbicide in established plantings post-directed at 2.6 to 3.4 pints per acre one or two times per year, either alone or tank mixed with another herbicide.

Apply GOAL (R) 1.6E Herbicide in drainage ditches at 2.6 to 3.4 pints per acre one or two times per year.

Do not make more than 2 applications per year. Do not apply within 3 days of harvest.

COFFEE:

Apply GOAL (R) 1.6E Herbicide pre- or postemergence in coffee nurseries at 0.43 to 0.86 pint per acre. One to three applications may be made before transplanting from nursery to the field.

To a relatively weed-free field, apply GOAL^(R) 1.6E Herbicide pre-transplant or early post-transplant at 2.6 to 3.4 pints per acre. If weed vegetation is prevalent, apply GOAL (R) 1.6E Herbicide post-directed, tank mixed with another herbicide. One or two applications may be made each year. (3.4 pint 0.838 lbs a.i.)

Apply GOAL (R) 1.6E Herbicide post-directed either pre- or postemergence once or twice each year in established plantings at 2.6 to 3.4 pints per acre, tank mixed with another herbicide if needed.

Do not make more than 2 applications per year. Do not apply within 7 days of harvest.

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100.5 Precautionary Labeling

Do not apply directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes.

This product is highly toxic to aquatic invertebrates, aquatic plants, wildlife and fish. Use with care when applying in areas frequented by wildlife or adjacent to any body of water or wetland area. Do not apply when weather conditions favor drift or erosion from target areas.

101 Physical and Chemical Properties

See review dated 6/30/81 by D. Rieder

102 Behavior in the Environment

See review dated 6/30/81 by D. Rieder

Oxyfluorfen:

leaches very little in soil
has a half-life in soil of 50 to 70 days
has low water solubility (100 ppb)
would build up in hydrosol
has a mild tendency to uptake in plants
bioaccumulates in fish
inhibits microorganism growth only at high levels (500 ppm).

103 Toxicological Properties

See review dated 6/30/81 by D. Rieder

<u>Species</u>	<u>Toxicity</u>	<u>Category</u>
Rat	LD50 > 5000 mg/kg	
Dog	"	
Bobwhite quail	LD50 > 5000 mg/kg	Suppl.
Bobwhite quail	LC50 = 390 ppm	Core
Mallard duck	LC50 > 4000 ppm	Core
Bluegill sunfish	LC50 = 200 ppb	Core
Rainbow trout	LC50 = 410 ppb	Core
Channel catfish	LC50 = 400 ppb	Core
<u>Daphnia magna</u>	LC50 = 1.5 ppm	Core
Freshwater clam	96-hr LC50 = 9.57 ppm	Suppl
Grass shrimp	LC50 = 31.7 ppm	Core
Oyster larvae	48 hr LC50 > 32 ppb	Suppl
Fish Reproduction	MATC > 38 < 74 ppb	Core

Hazard Assessment

This formulation of oxyfluorfen, Goal 1.6E Herbicide, is presently registered for:

Almond, Apricot, Cherry, Fig, Nectarine, Peach, Pear, Pistachio, Plum, Prune, Walnut and Grape; Conifer Seed beds, Transplants and Container stock; corn;
Cotton;
Spearment and Peppermint; and
Soybean;

This proposed used on bananas, plantain and coffee in Puerto Rico is not a significant increase in acreage over existing uses.

104.3

Endangered Species Consideration

None of the mammals or reptiles on the Puerto Rican list of endangered species would be affected by these uses. However, based on the results of applying the label rate to kenegas' nomograph, if birds were exposed to treated vegetation, they could experience concentrations greater than 1/10 the avian LC50 (Bobwhite quail LC50 = 390 ppm)

<u>Rate (lbs a.i./acre)</u>	<u>Vegetation type residues (ppm)</u>					
	<u>short</u> <u>grass</u>	<u>long</u> <u>grass</u>	<u>leafy</u> <u>crops</u>	<u>forage &</u> <u>Insects</u>	<u>seed</u> <u>Pods</u>	<u>fruit</u>
.8 (X 3 applications)	576	264	300	138	30	18

The following species were considered and subsequently eliminated from concern.

<u>Species</u>	<u>Rationale for No Effect</u>
Artic peregrine falcon	feeding habits
Puerto Rican parrot	lives in forests, feeds on fruit. <u>1/</u>
Brown pelican	Feeding habits
Puerto Rican plain pigeon	Known to occur around banana/plantain groves but as yet has not been affected by herbicides of similar toxicities. <u>2/</u>
Puerto Rican whip-poor-will	Lives in forest, feeds on insects <u>1/</u>
Yellow-shouldered blackbird	Does not occur near commercial banana, plantain or coffee growing areas <u>2/</u>

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Golden coqui

This was the species of greatest concern since it is assumed to be as sensitive as aquatic organism. If exposure occurred, an herbicide could affect this frog in two ways: 1. By direct application to the water in which it dwells. It occurs only in the water that collects in the cavities formed by clusters of bromeliad plant stalks; and 2. By killing the bromeliad species on which this frog depends for existence.

According to George Dewey of OES 2/ the golden coqui lives in the mountains area where bananas and plantain are not grown commercially. Further more, even though coffee is grown more in the mountain, he specifically indicated that the nearest coffee plantations were at least 2 miles from the known golden coqui habitat.

1/ Telephone conversation with Jay Shepherd, OES, FWS, (235-1975) on 4/19/83. See attached phone message.

2/ Telephone conversation with George Drewery, OES, FWS (235-1975) on 4/19/83. See attached phone message.

107 Conclusions

107.4 Data Adequacy Conclusions

The available data were adequate to perform a hazard assessment for this registration action.

107.7 Recommendations or Findings

EEB has completed an incremental risk assessment (3(c)(7) finding) of the proposed conditional registration of Goal 1.6E for use on bananas, coffee and plantain in Puerto Rico. Based on the available data EEB concludes that the proposed uses provide for no significant increase in exposure or risk to non-target organisms.

Daniel Rieder 5/11/83
Daniel Rieder, Wildlife Biologist
Ecological Effects Branch

Norm Cook 5-13-83
Norm Cook, Section Head #2
Ecological Effects Branch

Clayton Bushong 5/13/83
Clayton Bushong, Chief
Ecological Effects Branch

5.

Endangered region bananas coffee and plantain in Puerto Rico

REPORT OF TELEPHONE CALL OR VISITOR	DATE 4/19/83
INCOMING VISITOR NAME	
OUTGOING _____ Jay Shepherd & George Drewery	
ORGANIZATION OES	235 1975 PHONE NUMBER
ADDRESS	SUBJECT Endangered
	Species in
	Puerto Rico

BRIEF SUMMARY OF CONVERSATION I asked what endangered species could occur in or adjacent to Coffee, Banana or Plantain plantations. Jay said the Puerto Rican Parrot occurred only in forests and ate fruit; Puerto Rican Plain Pigeon occurred in lowland near Cidra where there is agriculture; Puerto Rican Whip-poorwill occurred in forests and ate insects; Yellow shouldered black bird in lowlands near coast does feed in sorghum and other grain fields; Golden coqui in upper mt'n areas. Some coffee grown close but not adjacent.

REPORT OF TELEPHONE CALL OR VISITOR	DATE 4/19/83
INCOMING VISITOR NAME	
OUTGOING _____ George Drewery	
ORGANIZATION OES	235-1975 PHONE NUMBER
ADDRESS	SUBJECT Bnd.
	Spec. in Puerto
	Rico

BRIEF SUMMARY OF CONVERSATION George called me back to say they would be most concerned with 3 species

1. Golden coqui: lives in bromeliads (related to pineapple) which if these were wiped out by herbicides would kill the frogs, no great amount to bananas grown there (just for personal use i.e. home-grown) coffee is at least 2 miles away.
2. Plain pigeon known to occur near banana/plantain plantation but has not been effected yet. (Plantain is like a big non sweet starchy banana which is cooked and eaten) (6) day

yellow-shouldered black-bird Farther out along
southwest coast, generally beyond area of commercial
banana plantations.

They generally indicated that the only concern would be if
the herbicide (goal) were more toxic than normal herbicides
or if it would wipe out the bromeliad growth.