4-22-76

EEE BRANCH REVIEW

DATE: IN _____ OUT _____ IN 4/9/76 OUT 4/22/76 IN _____ OUT _____

FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. 352-EUP-91

PETITION OR EXP. PERMIT NO. 681765

DATE DIV. RECEIVED _____

DATE OF SUBMISSION _____

DATE SUBMISSION ACCEPTED _____

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

PRODUCT MGR. NO. L. Zink 585

PRODUCT NAME(S) DuPont Velpar Weed Killer

COMPANY NAME E. I. duPont de Nemours and Company

SUBMISSION PURPOSE Experimental use for control of weeds in sugarcane

CHEMICAL & FORMULATION 3-cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2/4 (1H,3H)-dione-Tank mix Diuron

1.0 Introduction

1.1 Active ingredient: 3-cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4 (1H, 3H)-dione (Velpar(R)) 90%

1.2 Uses involved: Herbicide for weed control in sugarcane

1.3 Proposed experimental program: Shipment of 6,000 lbs of formulated product containing 5,400 lbs of active ingredient is proposed for use in four states and Puerto Rico on a total of 3,800 acres. Major use will be on 3,000 acres in Hawaii. A total of 5,800 lbs of Karmex will be used for tank mixtures.

1.4 See previous reviews for Velpar of 6/26/75 and 3/22/74 and 7/10/74 for Diuron.

2.0 Directors for Use:

2.1 For selective pre- and/or postemergence weed control in sugarcane. Apply recommended amount of 'Velpar' in a minimum of 20 gals. of water per acre with ground equipment and 7 gals. per acre by air. Do not treat sugarcane growing on sand, thinly covered subsoils or rocky areas. Where a range of rates is given, use the lower rate on coarse (loamy sand) soils or weeds 1 to 2 inches tall, and the higher rates on finer soils (clays) or weeds 2 to 6 inches tall. Postemergence sprays may be either directed sprays, or applied over the top of emerged cane.

Rates of 'Velpar' to be Tested

Location	Lbs./Acre Pre-, Post- or Pre + Post
Florida, Puerto Rico	1/2 to 2
Louisiana	3/4 to 1
For - Raoulgrass	1 1/2
Hawaii - Irrigated	1/2 to 2
Non - Irrigated	1/4 to 1 1/2

Rates of 'Velpar' + 'Karmex' (Tank-Mix)

Location	Lbs./Acre Pre-, Post- or Pre + Post	
	'Velpar'	'Karmex'
Florida, Puerto Rico	1/2 to 1	2 to 4
Texas, Louisiana	1/2 to 3/4	2 to 3
Hawaii-Irrigated	1/2 to 1	2 to 4
Non-Irrigated	1/4 to 1	2 to 4

Rates are broadcast. Use 1/3 of the above broadcast rate when band treating 1/3 of the area.

Do not apply a total of more than twice the highest rate per crop cycle.

In Florida, do not exceed 6 lbs of 'Karmex' per acre per crop cycle.

3.0 Discussion of Data:

3.1 No environmental chemistry data were submitted with this application for an experimental use permit. However, the following list of references was included:

Environmental Chemistry Section	Data Submitted	Application for regis.
"Metabolism of 'Velpar' Weed Killer in Rat" R. C. Rhodes, R. A. Jewell and H. Sherman	5/8/75	Exhibit 1
"Studies with 'Velpar' Weed Killer in Water: by R. C. Rhodes	"	Exhibit 2
"Decomposition of 'Velpar' Weed Killer in Soil" by R. C. Rhodes	"	Exhibit 3
"Mobility and Adsorption Studies with 'Velpar' Weed Killer on Soils" by R. C. Rhodes	"	Exhibit 4
"Evaluation of Possible Effects of DPX-3674 on Soil Microorganism Populations" by R. L. Kraus	"	Exhibit 5
"Evaluation of Possible Effects of 'Velpar' Weed Killer on Nitrifying Bacteria in Two Different Soils" by M. H. Williams	"	Exhibit 6
"Four Week Residue Studies with 'Velpar' Weed Killer and Bluegill Sunfish" by R. C. Rhodes	"	Exhibit 7
"Residue Procedure for the Determination of DPX-3674 and Metabolites Using Nitrogen Sensitive Gas Chromatography" by R. F. Holt	"	Exhibit 8
"Residues Resulting from Application of DPX-3674 to Soil" by R. F. Holt	"	Exhibit 9
Chemical Abstracts Service Systematic Name	"	Appendix I
Process Description	"	Appendix 2

3.2 Data previously submitted indicate that the half-life of Velpar and significant degradation products may exceed 6 months in field soils, about 20% bound in 12 to 21 weeks and that Velpar is relatively stable to hydrolysis in P H range 5.7 to 9.0.

3.3 No rotational crop data have been submitted. Either adequate data must be submitted or a suitable label restriction against rotated crop must be imposed.

4.0 Recommendations:

4.1 We cannot concur with the proposed experimental use on sugarcane.

4.2 No data have been submitted to allow assessment of the hazard to rotational/subsequent crops. Data of the following type will be needed to determine an interval when crops can be rotated:

(Radiolabeled study)

1. For crops rotated immediately after harvest of a crop in the treated area, the pesticide is to be aged in a sandy loam soil under aerobic conditions for about 120 days, then the soil planted to a root crop, small grain, and a vegetable. The root crop is required: however, crops in two other crop groupings may be substituted for the small grain and vegetable.

2. For crops rotated the following year after treatment, the pesticide is to be aged in the soil for one year prior to planting. Crops should be as above.

3. If significant residues are found, then actual field studies using non-labeled pesticide will be required. Such data must be obtained under actual agricultural practice.

4. If residues are found in rotational and/or subsequent crops in the field, then a labeling restriction will be needed. This restriction will take the form a time interval from application to planting of rotational crops such that residues will not occur in the rotational crop.

5. Cover crops can be rotated if label restrictions are such that the cover crop is plowed under and not grazed.

6. If the Agricultural practice is such that a treated crop area is rotated with another crop that will result in another treatment of the pesticide to the same area, residue data will be required on the second crop. The rotational crop is to be grown under actual use conditions.

In lieu of the above crop uptake data, a label restriction against the planting of rotational or subsequent crops on treated areas within 18 months of the last application of Velpar will be acceptable for the purpose of this permit.

4.3 All environmental chemistry data as required by Section 3 of the regulations must be either submitted or referenced prior to registration. This will include tank mix data generated according to the following outline.

a. Laboratory study using cold chemicals applied to two soils as recommended in the proposed use. A light and heavy soil will be adequate.

b. Analysis through two half-lives of each pesticide applied as a mixture and separately. The same soil types are to be used for the comparison of the mixture vs. individually applied chemicals. Sampling depth should be to bottom of container (not) or 6 inches.

RE Key 4/27/76

Ronald E. Key, Jr. 4/22/76

Arthur O. Schlosser 4/22/76
Environmental Chemistry Section
Efficacy and Ecological Effects Branch