(5)

EEB BRANCH REVIEW

DATE: IN 5/8/78 OUT 5/10/78 IN ____ OUT ____ IN ____ OUT ____

FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO. 7077-

PETITION OR EXP. PERMIT NO. ____

DATE DIV. RECEIVED ____

DATE OF SUBMISSION April 26, 1978

DATE SUBMISSION ACCEPTED ____

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

DATA ACCESSION NO(S). ____

PRODUCT MGR. NO. Jamerson

PRODUCT NAME(S) Stampede

COMPANY NAME Rohm and Haas

SUBMISSION PURPOSE Sec 18: N. Dakota & Minn.
Weed control in wheat

CHEMICAL & FORMULATION 3,4 dichloropropionanilide 41%

100.0 Pesticide Use

Section 18's in N. Dakota and Minn. for the ground application of the postemergent (to the weed) herbicide in wheat to control green and yellow foxtail -- Setania lutescens and Setaria viridis.

100.1-.2 Application Rates

A single application of 1.5 lbs ai/A will be applied when the foxtail seedlings are in the 2-4 leaf stage and when wheat is in the 2 leaf to early tillering stage (May 10 - June 25 in Minn.). The material to be used is a 3 lb EC.

101.0 Chemical and Physical Properties

101.1 Chemical Name

3,4 dichloropropionanilide

101.2 Common Name

Propanil
Starn

101.3-1.01.6 -- See previous review by G. G. Gavin 4/7/77.

102.0 Behavior in the Environment

The following is a compilation of unvalidated Environmental Chemistry data contained in EC's files:

Propanil is stable in neutral and alkaline aqueous solutions and hydrolyzes to 3,4 dichloroaniline under acidic conditions (pH 5.1). At the latter pH, this occurs at >56% of original amount in 28 days. At higher pH's 99% of the material remained after 28 weeks. However, propanil did not appear to build up in crayfish or catfish. Propanil is degraded by microorganisms. There may be persistence in soil, but leaching does not appear to be a problem as the material can bind to soil. The material (parent compound) is absorbed into the plant tissue. Rats and cows respectively show excretion of 92 and 99% of the material in urine and feces.

103 Toxicology

Summary of unvalidated data from G. Gavin's review 4/7/77:

Mallard	x oral dietary	LD_{50} ∿ 375 mg/Kg	41% ai
Lake emerald shiners	96 hr.	LC_{50} 7.5 ppm	ai
Rainbow trout	48 hr.	LC_{50} 7.4 ppm	of 41% form.
Catfish	48 hr.	LC_{50} 22.4 ppm	of 41% form.
Daphnia	48 hr.	LC_{50} 11.8 ppm	of 41% form.

x mg/Kg/day for 10 days

104.0 Hazard Assessment

The application by low pressure ground equipment using 12-15 gals of H_2O/A at 40 PSI plus the potential for binding to soil should greatly reduce the possibility of contaminating the aquatic environment. The birds and mammals that may forage on the young shoots may be exposed to residues immediately upon application of 360 ppm on short grass. No dietary data on birds has been submitted for review, therefore extrapolating from the 375 mg/Kg/day oral dietary on mallards, one obtains an LC_{50} on the technical of 1650 ppm.

The calculations for mallard are:

$$\frac{\text{feed eaten/day(g)}}{\text{weight of bird(g)}} \times \begin{matrix}\text{pesticide}\\ \text{residues}\\ \text{(ppm)}\end{matrix} = \frac{\text{mg/Kg}}{5}$$

$$\frac{50\ g}{1100}\ (X) = \frac{375}{5}$$

$$X = 1650 \text{ ppm}$$

Based upon the toxicology review by R. Dessert for this same Sec. 18 the acute oral LD_{50} in rats was reported as 2270 mg/Kg and the 90 day feeding study produced a no effect level of > 200 ppm.

In light of the above data, there would appear to be no unreasonable adverse effect to birds and mammals from the use of propanil in spring wheat.

107.0 Conclusions

The Environmental Safety Section does not anticipate any unreasonable effect to birds, mammals or aquatic organisms from the single, ground application of propanil to spring wheat in N. Dakota and Minn.

HTC

H. T. Craven
ES/EEB/RD
5/10/78