FILE COPY

Shaughnessy No. 084301 ~~104201~~

Date Out EAB: JAN 17 1985

TO: R. Taylor
Product Manager # 25
Registration Division
TS-767

FROM: Samuel M. Creeger, Chief
Environmental Chemistry Review Section No. 1
Exposure Assessment Branch
Hazard Evaluation Division

Attached please find the environmental fate review of:

Reg./File No.: 1471-148

Chemical: Benefin and oryzalin

Type Product: Herbicide

Product Name: BALAN® XL

Company Name: Elanco

Submission Purpose: Request for waiver from fish accumulation study

Action Code: 400

Date In: 12/13/84

EAB # 5201

Date Completed: 1/17/85

TAIS (Level II)	Days
62	1.5

Deferrals To:

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

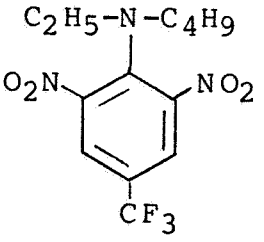
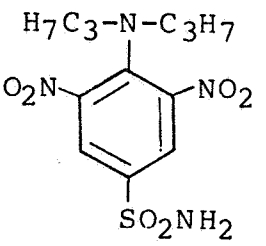
1.0 INTRODUCTION

Elanco is requesting waiver from the fish accumulation studies on benefin and oryzalin, the active ingredients of BALAN® XL.

The registrant has previously requested an EUP for the product (1 % each of the ai's) to be used for weed control on turf; however, environmental fate data gaps were indicated for both ai's in the EAB review of 2/2/84.

The registrant has submitted the summary of an aqueous dissipation study for both ai's to support the waiver request on the basis of short half-lives and section 165-4 (b)(2) of the guidelines (Elanco's letter to PM is attached).

1.1 Chemical

	Benefin	Oryzalin
o Common name:		
o Chemical name:	N-butyl-N-ethyl-α,α,α,-trifluoro-2,6-dinitro-p-toluidine	3,5-dinitro-N^4,N^4-dipropyl sulfanilamide
o Chemical structure:		

2.0 DIRECTIONS FOR USE

EAB review of 2/2/84 provides the following:

Rates of application for preemergence control would be about 2 to 3 pounds ai per acre, applied in late winter or early spring. In some areas, a second application may be made at the same rates 8 to 10 weeks later. The product is applied by drop or rotary spreader. Two passes at half the recommended rate at right angles to each other are recommended for more even coverage.

3.0 DISCUSSION

3.1 Dissipation of ^{14}C Benefin and ^{14}C Oryzalin in water Exposed to Natural Environmental Conditions. D. F. Berard, ABC-0288, Undated, EPA Acc. No. 255863

A copy of the report is attached.

Comments

- This is not a complete report, but a summary of the experiments; consequently, data presentation and description of methods are poor.

  1) Labeling position, specific radioactivity, and total radioactivity used were not described.

  2) Recoveries/material balance were not reported.

  3) Some of the data were presented only in figures, not in tables.

  4) Outdoor weather conditions were not reported.

- As the registrant stated, the half-lives of benefin and oryzalin seem to be short; however, the total radioactivity remaining in deionized water remained almost constant from 4 to 96 hours at about 50-60 % of the applied radioactivity for benefin and at about 85 % for oryzalin. For the solutions in water from the river, about 80 % of the applied radioactivity remained in water for both compounds. Since the degradation products were not characterized, it is not known whether the degradation products persist.

3.2 The registrant misstated section 165-4 (b)(2) of the Guidelines. The registrant's version reads as follows:

" (i) compound will not reach water, or
(ii) compound will not persist in water (i.e., has a half-life of approximately 4 days or less), or
(iii) compound has a relatively low potential for bioaccumulation in fish."

Comments

- The section 165-4 (b)(2) actually indicates that the compound (active ingredient) and/or its principal degradation product(s) should be so. From the study discussed in section 3.1, above, it is not known whether the degradation products persist or not.

- Also, a compound of K_{OW} less than approximately 1000 is considered to have low potential for accumulation; however, benefin has the K_{OW} of 195,000 (see EAB review of 12/13/84) implying benefin's high potential for bioaccumulation.

4.0 CONCLUSION

The fish accumulation data requirement on benefin and oryzalin cannot be waived for the reasons stated in the comments of this review.

Soobok Hong

Soobok Hong, Ph.D.
January 17, 1984
Environmental Chemistry Review Section 1
Exposure Assessment Branch/HED