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SHAUGHNESSY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 9-15-88

DATE: OUT 7/11/89

FILE OR REG. NO. 35978-T

PETITION OR EXP. NO.

DATE OF SUBMISSION 8-24-88

DATE RECEIVED BY HED 9-14-88

RD REQUESTED COMPLETION DATE 12-13-88

EEB ESTIMATED COMPLETION DATE 12-13-88

RD ACTION CODE 171

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

DATA ACCESSION NO(S).

PRODUCT MANAGER (NO.) W. Miller(41)

PRODUCT NAME(S) Strychnine Alkaloid Egg Baits

COMPANY NAME State of Montana Dept. of Livestock/ State  
of Wyoming Dept. of Agriculture

SUBMISSION PURPOSE Submission of avian dietary LC50 data using  
black-billed magpies and American kestrels  
to support Section 3 Reg. of strychnine treated eggs to control  
rabid skunks.

SHAUGHNESSY NO.

CHEMICAL & FORMULATION(S)

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ECOLOGICAL EFFECTS BRANCH

Chemical Name: Strychnine

100.0 Pesticide Submission

The Wyoming Department of Agriculture and the Montana Department of Livestock have submitted avian toxicity studies (Guideline Requirement 71-2; Avian Dietary LC50 Studies) in response to statements of commitment, signed on October 18, 1985 by the states of Wyoming and Montana, to support a Section 3 registration of strychnine alkaloid-treated egg baits to control rabid skunks.

The following studies were submitted for review:

1. A dietary range finding study for magpies.
2. A 5-day dietary LC50 for magpies.
3. Estimated acute oral LD50 for magpies.
4. Determination of the Approximate Lethal Dose for kestrels.
5. A dietary range finding study for kestrels.
6. A 5-day dietary LC50 for kestrels.

101.0 Data Adequacy

The EEB has completed a data evaluation record for four of the submitted studies (Note: a data evaluation was not completed for the range finding tests) and has concluded that, as submitted, the studies can only be classified as Supplemental, unless additional information/data are submitted. If this missing information/data are submitted, the studies can be upgraded to Core status for the rabid skunk Section 3 registration (See attached DERs for specific comments and missing data).

102.0 Conclusions

Based upon the submitted studies, strychnine can be classified as moderately toxic to black-billed magpies and American kestrels. The results indicate that magpies are more sensitive than kestrels to strychnine alkaloid on a dietary basis (i.e., LC50 for the magpie and kestrel was 98.7 and 233.5 ppms, respectively).

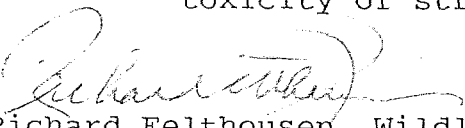
Based upon the acute oral tests, strychnine can be classified as very highly toxic to both magpies and kestrels. There would be enough strychnine alkaloid in one treated egg (i.e., 35 mg) to kill numerous magpies and kestrels (i.e., the reported LD50 for the magpie was 2.87 mg/kg while the ALD for the kestrel was 4.22 mg/kg) on an acute oral basis.


103.0


Summary

The Registrants, Montana Department of Livestock and the Wyoming Department of Agriculture, have submitted basic avian toxicity data to support the Section 3 Registration of strychnine treated egg baits to control rabid skunks. The EEB has completed a data evaluation of the studies and concludes the following:

1. The dietary LC50 studies for the black-billed magpie and kestrel are adequate to support the registration provided the registrant supply the missing data relative to body weight, food consumption, tissue residues, abnormal behavior, testing temperature and photoperiod;
2. The acute oral LD50 study for the black-billed magpie did not involve sufficient number of birds/dosage for the study to be classified as Core and fully satisfy the data requirement. In addition, certain other data/information such as body weights, food consumption, behavior, testing temperature and photoperiod were not reported. This study may be used as Supplemental data for use in a hazard assessment.
3. The ALD study only provided an approximation of the acute oral LD50 of strychnine to kestrels and, as such, does not satisfy the data requirement. An LD50 must be established not only for hazard assessment purposes but also for any comparative analysis on the relative toxicity of strychnine to other chemicals.

 6/6/89  
Richard Felthousen, Wildlife Biologist  
EFED/EEB

 7-7-89  
Norm Cook, Head-Section 2  
EFED/EEB

 7/11/89  
Jim Akerman, Chief  
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