

US EPA ARCHIVE DOCUMENT

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AMENDMENT TO DER BY JOHNSTON, 3/24/82

- 1. CHEMICAL: Cypermethrin
- 2. FORMULATION: 87.8% active ingredient (technical grade)
- 3. STUDY/ACTION TYPE: Avian dietary LC50
Mallard duck (Anas platyrhynchos)
- 4. CITATION: The subacute dietary toxicity (LC50) of cypermethrin (PP383) to the mallard duck. Submitted by ICI Americas for Phase 4 List B review. MRID 92027-004 (Summary Report) and MRID 00090071 (Study Report).

5. REVIEWED BY: Ann Stavola
Aquatic Biologist
EEB/EFED

Signature: *Ann Stavola*
Date: 1/8/91

6. APPROVED BY: Charles Lewis
Acting Section Head
EEB/EFED

Signature: *Charles Lewis*
Date: 1/10/91

7. CONCLUSIONS: The original DER was re-evaluated based upon the summary report submitted for the Phase 4 List B review. The report indicates that dietary concentrations of cypermethrin >2634 ppm were repellent. The repellency progressively declined in a dose related fashion to the 5th day of the study. This fact is corroborated in the DER by the statements regarding decreases in food consumption and body weight. Therefore, the LC50 value is being adjusted to correct for this repellency effect. The 8-day dietary LC50 value of technical cypermethrin for mallard ducks is >2634 ppm. This study is scientifically sound and fulfills our guideline requirements for an avian dietary LC50 study. This study indicates that cypermethrin is slightly toxic to waterfowl.

1. RECOMMENDATIONS: This study does not need to be re-done as a new study will not provide any additional data, and the chemical has a low toxicity. Also, the terrestrial residues produced by the use of cypermethrin are significantly less than the LC50 value.

DATA EVALUATION

1. CHEMICAL: Cypermethrin
2. FORMULATION: 87.8 % active ingredient (Technical grade) cis: trans ratio 53:47
3. CITATION: Roberts, N. L., Fairley, C., and Woodhouse, R. N. (1980) The subacute dietary toxicity (LC₅₀) of Cypermethrin to the mallard duck. Unpublished study submitted 12/28/81 by ICI Americas Inc., Wilmington, Delaware.

EPA Accession No. 070561 MRID 00090071
4. REVIEWED BY: Thomas B. Johnston
Biologist, EEB/HED
5. REVIEW DATE: 3/24/82
6. TEST TYPE: Avian subacute dietary LC₅₀
7. REPORTED RESULTS: The reported 8-day dietary LC₅₀ of Cypermethrin for mallard ducks is >20,000 ppm.
8. REVIEWER'S CONCLUSIONS: This study is scientifically sound, and fulfills USEPA guideline requirements for a subacute dietary toxicity test using a wild waterfowl. With an 8-day dietary LC₅₀ of >20,000 ppm, cypermethrin is practically non-toxic to mallard ducks.

Materials/Methods

Methods used generally followed USEPA guidelines, as written in the Federal Register, July 10, 1978, Part II, 163.71-2.

Statistical Analyses

Data were not statistically analyzed, because of insufficient numbers of toxic symptoms and mortalities.

Results

Concentrations (ppm)	No. Dead/No. Exposed
Control	0/30
1756	0/10
2634	0/10
3951	0/10
5926	0/10
8889	0/10
13333	1/10
20000	3/10

Discussion

There were dose-related decreases in bodyweight gain and food consumption at all dose levels. Except for the deaths at 13333 and 20000 ppm, no toxic symptoms were noted among control or test birds.

Conclusions:

Validation Category: Core

Category Rationale: N/A

Category Repairability: N/A