COPY

To: L. Schnaubelt
Product Manager 12
Registration Division (TS-767)

From: Samuel M. Creeger, Chief
Environmental Chemistry Review Section 1
Exposure Assessment Branch
Hazard Evaluation Division TS-769c

Attached, please find the EAB review of:

Reg./File # : 464-404

Chemical Name: Chlorpyrifos

Type Product : Insecticide

Product Name : Dursban/Lorsban

Company Name : Dow Chemical

Purpose   : Protocol: fish accumulation in bluegill sunfish.

Date In: 5/7/86   Action Code: 352

Date Completed: 5/15/86   EAB #(s) :   6586

                                 Reviewing Time: 0.5 day

Deferrals to:

_____   Ecological Effects Branch

_____   Residue Chemistry Branch

_____   Toxicology Branch

Monitoring study requested by EAB: / /
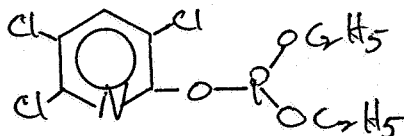Monitoring study voluntarily conducted by registrant: / /

1. <u>CHEMICAL</u>:

Common Name- chlorpyrifos

Chemical Name- O,O-diethyl-O-3,5,6-trichloro-2-
pyridyl phosphorothioate

Trade Name- Dursban/Lorsban

Chemical Structure-

2. <u>TEST MATERIAL</u>: Pyridine-ring labeled ^{14}C-chlorpyrifos at exposure concentration of 0.3 to 0.5 ug/L (ppb).

3. <u>STUDY/ACTION TYPE</u>: Dow chemical is requesting a review of a protocol of a fish accumulation study using bluegill sunfish.

4. <u>PROTOCOL IDENTIFICATION</u>: Bioconcentration of Chlorpyrifos in Bluegill (<u>Lepomis macrochirus</u> Rafinesque), Preliminary Copy, File No. ES-DR-043-4946-5.

5. <u>REVIEWED BY</u>:

Herbert L. Manning, Ph.D.   Signature: Herbert L. Manning
Microbiologist   Date: 19 May 1986
EAB/HED

6. <u>APPROVED BY</u>:

Samuel M. Creeger   Signature:
Chief, Section 1   Date:
EAB/HED   MAY 19 1986

7. <u>CONCLUSIONS</u>:

The proposed protocol is not acceptable (see RECOMMENDATION for specific comments).

8. **RECOMMENDATION:**

EAB finds the protocol for the fish accumulation study <u>unacceptable</u> for the following reasons:

1) The strategy to terminate the exposure part of the study if the three consecutive samples of the first 48 hours show plateauing of accumulation may be misleading and does not follow our guidelines. See Section 10 for more detail.

2) The residues in frozen samples must be shown to be stable for the storage period.

The following sampling schedule for fish and water is recommended:

<u>Exposure days</u>: -1, 1, 3, 7, 10, 14, 21, and 28

<u>Depuration days</u>: 1, 3, 7, and 14.

9. **BACKGROUND:**

A. <u>Introduction</u>

See Section 3 of this review.

B. <u>Direction for Use</u>

See attached protocol.

10. **DISCUSSION OF PROTOCOL:**

The protocol is <u>not acceptable</u> for two reasons:

1) We do not concur with terminating the study if three consecutive analyses of fish (within the first 48 hours of the study) show accumulation to plateau. Such early plateauing does not necessarily mean equilibrium of chlorpyrifos residues between the fish and the water has been reached. Residue accumulation in the fish may show a plateau early in the study but then climb to a second, higher plateau during further exposure. This would be due to partitioning or metabolism of the chlorpyrifos that did not occur within the first 48 hours while the fish (i.e., its biochemistry) was adjusting to the presence of the chlorpyrifos.

2) Since some samples will be kept in frozen storage before being analyzed, storage stability data will be needed showing the chlorpyrifos residues to be stable during this period.

3

11. <u>COMPLETION OF ONE-LINER</u>:

Not applicable.

12. <u>CONFIDENTIAL APPENDIX</u>:

Contains the protocol.

12. CONFIDENTIAL APPENDIX

Page_____ is not included in this copy.

Pages _6_ through _11_ are not included.

The material not included contains the following type of information:

_____ Identity of product inert ingredients.

_____ Identity of product impurities.

_____ Description of the product manufacturing process.

_____ Description of quality control procedures.

_____ Identity of the source of product ingredients.

_____ Sales or other commercial/financial information.

_____ A draft product label.

_____ The product confidential statement of formula.

_____ Information about a pending registration action.

_✓_ FIFRA registration data.

_____ The document is a duplicate of page(s) _____.

_____ The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.