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To: GEORGE LAROCCA
 Product Manager 15
 Registration Division (H7505C)

FILE COPY

From: Anthony F. Maciorowski, Chief
 Ecological Effects Branch/EFED (H7507C)

Attached, please find the EEB review of...

Reg./File # : 10182-96
 Chemical Name : KARATE
 Type Product : _____
 Product Name : _____
 Company Name : ICI
 Purpose : CONSIDER REGISTRANT RESPONSE TO PREVIOUS
EEB REVIEW OF FISH FULL LIFE CYCLE STUDY

Action Code : 575 Date Due : _____
 Reviewer : CANDACE BRASSARD Date In EEB: 4-9-91

EEB Guideline/MRID Summary Table: The review in this package contains an evaluation of the following:

GDLN NO	MRID NO	CAT	GDLN NO	MRID NO	CAT	GDLN NO	MRID NO	CAT
71-1(A)			72-2(A)			72-7(A)		
71-1(B)			72-2(B)			72-7(B)		
71-2(A)			72-3(A)			122-1(A)		
71-2(B)			72-3(B)			122-1(B)		
71-3			72-3(C)			122-2		
71-4(A)			72-3(D)			123-1(A)		
71-4(B)			72-3(E)			123-1(B)		
71-5(A)			72-3(F)			123-2		
71-5(B)			72-4(A)			124-1		
72-1(A)			72-4(B)			124-2		
72-1(B)			72-5			141-1		
72-1(C)			72-6			141-2		
72-1(D)						141-5		

Y=Acceptable (Study satisfied Guideline)/Concur
 P=Partial (Study partially fulfilled Guideline but additional information is needed)
 S=Supplemental (Study provided useful information but Guideline was not satisfied)
 N=Unacceptable (Study was rejected)/Nonconcur



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 15 1993

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Review of Fish Full Life Cycle Study for Karate

FROM: Anthony F. Maciorowski, Chief *A. Maciorowski*
Ecological Effects Branch
Environmental Fate and Effects Division (H7507-C)

TO: George La Rocca, PM 15
Insecticide and Rodenticide Branch
Registration Division (H7505-C)

The Ecological Effects Branch has completed the review of the following response to the fish full life cycle study conducted on lamda-cyhalothrin(also referred to as karate):

J.F. Tapp, C.A. Smith. 1990. ICI Response to the July 26, 1990 EEB Review of the PP321 Fish Life Cycle Study. ICI Group Environmental Laboratory, Brixham, Devon, United Kingdom. ICI Volume 62, ICI Report No. BL/B/3476, MRID 41519001.

Based on the additional information submitted, the study has been classified as SUPPLEMENTAL. Based on the discrepancies, the study cannot be upgraded. However, EEB has determined the study provides adequate information to determine the chronic toxicity effects of lamda-cyhalothrin to fathead minnow. Therefore, the study satisfies the data requirement for Guideline Reference No. 72-5.

Based on the results of the study, the following parameters were the most sensitive all with a NOEL of 31 pptr and a LOEL of 62 pptr: F1 Survival at 28 days; F0 length at 56 days; Male length and weight at 300 days, and F1 weight and length at 31 days.

The discrepancies identified in the data evaluation record for the most part have been adequately addressed in the response. There are a few concerns that still remain that even though may have been addressed, cannot be corrected and they are as follows:

- The number of eggs used for the study(80 instead of the recommended 200) is still a concern. As pointed out by the study authors, the study was initiated with 80 eggs instead of the recommended 200 eggs. According to the study authors, these eggs were carefully selected for viability.

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- The larvae were pooled where as the SEP guidelines recommends pooling when the adults are spawning. Therefore, the number of larval tanks are reduced by one-half.

- The percent hatch in one of the four incubation cups in the DWC was only 68.4 or 6/19 eggs failed to hatch. The average percent hatch for that replicate was 79.5.

- The mortality in the both the solvent controls and the dilution water controls were higher than would have been expected in a life cycle study. Unfortunately, since the photoperiod did not follow the Evansville, Indiana times, the females did not stop spawning. EEB did evaluate the control data to include the first seven spawns, and determined that the egg production as well as survival was within the range of historical control data that are available to EEB.

- The study authors reported that the residue analysis by Liquid Scintillation Counting (LSC) was done once a week. After a cursory review, it appeared that the residue sampling was done many times with a 9 day interval or greater. The study authors reported that Gas Chromatograph(GC) sampling would be done once every two weeks, when in fact the sampling interval was much longer. For example replicate AP1 was sampled on day 175 and the next sampling was day 202, then sampling was never done for the rest of the study in this replicate except at the two highest concentrations- no sampling in the DWC or SC. AP2 was sampled on day 175 (in some of the treatment levels and the SC only, then on day 202(again only some of the treatment levels), then day 230, and so on.

The concerns that EEB identified in the previous review and the response submitted were not adequately addressed with regards to the contamination levels that are found in the DWC and the solvent control. The levels were as high as 0.010 ppb, where the study author indicated the highest was 0.007 ppb(Refer to Table 12). The LSC results did not report the DWC and the Solvent Control data. Raw data should have been submitted for these as well(Table 4). In addition, recovery values for Cis-A were not reported.

Based on all the information submitted, this study has been classified as supplemental. The information is adequate to satisfy the data requirement for the Fish Full Life Cycle study data requirement. The study authors have previously submitted a core marine fish early life stage study. Based on all of the information submitted, the value added to repeat the study would be low since we have sufficient information to evaluate the chronic effects to fish in a risk assessment. If there any further questions, please feel free to contact Candy Brassard at 703-305-5392.

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