



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

JUL 10 1991

MEMORANDUM

SUBJECT: 48-hour review of a DCI for Permethrin. OFFICE OF  
PESTICIDES AND TOXIC  
SUBSTANCES  
FROM: Douglas Urban, Acting Chief *for H.T. Crown*  
Ecological Effects Branch  
Environmental Fate and Effects Division (H7507C)  
TO: Linda Deluise  
Exclerated Reregistration Branch  
Special Review and Reregistration Division (H7508W)

The following studies were previously reviewed and found to fulfill data requirements (EEB Chemical Profile for Permethrin completed 2-1-85):

- 72-1(a) Acute Toxicity to Atlantic Salmon MRID: 83085
- 72-1(c) Acute Toxicity to Coho Salmon MRID: 72846
- 72-1(c) Acute Toxicity to Channel Catfish MRID: 43735
- 72-2(a) Acute Toxicity to Mayfly Nymphs MRID: 47040

The following justification for the 72-7(a) Simulated Aquatic Field Study requirement is provided:

Laboratory toxicity values indicate that technical permethrin is highly toxic to freshwater fish, marine/estuarine organisms, and aquatic invertebrates. The lowest freshwater fish LC50 value for permethrin is 1.5 ppb with atlantic salmon. The lowest freshwater aquatic invertebrate LC50 value is 0.039 ppb with Daphnia magna.

The calculated EEC (0.7 ppb) for a six foot deep one acre pond with a single 0.1 lb ai/acre aerial application far exceeds 1/2 the lowest LC50 value for aquatic invertebrates (0.02 ppb) and is approximately equal to 1/2 the lowest freshwater fish LC50 (0.75 ppb). Multiple applications and a scenario with a pond depth of less than six feet would result in higher EECs.



Since the EECs exceed 1/2 the LC50 values and permethrin is registered for use on major crop sites such as corn, cotton, and soybeans, the Ecological Effects Branch has determined that a 72-7(a) Simulated Aquatic Field Study (Mesocosm Study) is now required. The approximate cost of this study is 1.8 million dollars.

For further questions please contact Dan Balluff at 557-7725.