

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OCT 17 1991

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MEMORANDUM

SUBJECT: An Explanation of Acute Toxicity Test Requirements for Formulated Products (TEP) with Permethrin.

FROM: Douglas Urban, Acting Chief
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

TO: Linda Deluise
Excellerated Reregistration Branch
Special Review and Reregistration Division (H7508W)

The Ecological Effects Branch requires that 72-1(b), 72-1(d) 72-2(b), 72-3(d), 72-3(e) and 72-3(f) studies with permethrin (TEP) be submitted to the Agency to support reregistration for the following reasons:

- Permethrin may be introduced directly into an aquatic environment through the mosquito control use pattern.
- The Estimated Environmental Concentration (EEC) in the aquatic environment is greater than 1/2 the lowest LC50.
- Permethrin is registered for use on major crop sites such as corn, cotton, and soybeans.

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 lowest marine/esturine organism LC50 value is 0.34 ppb for brown shrimp.

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) and marine/estuarine organisms (0.17). It also 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.

CONCURRENCES							
SYMBOL	H7507C	H7507C	H7507C				
SURNAME	Balleff	Cover	D. J. H. H.				
DATE	10-2-91	10/16/91	10/16/91				

The 32.8 % a.i. Permethrin TEP is the recommended test material to support the outdoor crop use patterns because it appears to be the formulated product with the highest percent of active ingredient for these uses.

The 10% a.i. Permethrin TEP is the recommended test material to support the mosquito control use pattern because it appears to be the formulation with the highest percent of active ingredient for this use.

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