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

MAY 31 1990

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Discuss Results of Karate Mesocosm Data

FROM: Anne L. Barton, Director *Anne L. Barton*  
Environmental Fate and Effects Division (H-7507-C)

TO: Anne E. Lindsay, Director  
Registration Division (H-7505-C)

Karate, also known as lambda-cyhalothrin or PP321, has consistently demonstrated a very high toxicity to aquatic organisms in laboratory testing.

Therefore, ICI Americas, Inc. was required to submit an aquatic field study to negate the presumption of hazard indicated by the laboratory data. The company chose to conduct a simulated field study, termed a Mesocosm Study.

In May 1990, the Ecological Effects Branch (EEB) completed the final review of the Mesocosm Data on Karate. This study was performed at the rate of application to support cotton. Significant adverse effects to macroinvertebrates, zooplankton and fish were indicated at all doses tested. Based on the exposure estimates, the data indicate there is a 20-40 % reduction in the total fish weight and the weight of the young fish, at rate as low as to 0.01 of the expected 5 % spray drift application on cotton. Based on all the data, EEB has serious concerns for the aquatic environment if this chemical continues to be registered for use on cotton.

In addition, the registrant is proposing use on soybeans. The exposure was estimated to be approximately what was loaded into the mid dose ponds of this cotton mesocosm study. If this chemical is used on soybeans, EEB expects that the adverse effects demonstrated in the low and mid dose ponds of this study (40 % reduction in fish weight) will be evident from this use as well.

Therefore, EEB believes that the conditional registration of Karate (lambda-cyhalothrin) poses a significant risk to the aquatic environment and if this chemical is registered for use on soybeans, EEB expects that the aquatic environment in soybean growing regions will be at the same risk.

EEB staff members would like an opportunity to brief you and your staff members at your earliest convenience, since the registrant, ICI Americas, Inc. is requesting a company meeting to discuss a proposal of conditional registration of this chemical on soybeans. Thank you.