2-21-85

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

FEB 21 1985

MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: Chlorpyrifos Metabolism Study--Protocol for Dermal Application to Sheep.
No Accession Number. RCB # 581

FROM: Lynn M. Bradley, Chemist
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

THRU: Charles L. Trichilo, Chief
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TO: Ed Allen, PM Team 12
Insecticide-Rodenticide Branch
Registration Division (TS-767)

and

Amy S. Rispin, Director
Science Integration Section
Hazard Evaluation Division (TS-769)

The Registration Standard for Chlorpyrifos requires that a radiolabelled metabolism study in cattle, employing a dip treatment, be conducted and submitted to fill an existing data gap. RCB representatives, in a meeting with Dow representatives on 12/7/84, agreed that a skin-painting application would be acceptable, and that sheep could be used. (Personal communication with B. Hazel 2/14/85).

Dow has now submitted a protocol for a study using dermal application of 1 gram ^{14}C-chlorpyrifos/100 lb body weight, applied to a shaved area on the back of two mature sheep which are neither pregnant nor lactating. Rather than sacrifice the animals after an extended pre-slaughter interval, as required in the Standard, Dow proposes to monitor blood activity levels and sacrifice the animals as soon as peak activity is noted (after two declines). We agree with Dow's plan, in order to obtain tissue with activity levels sufficient to identify.

Dow's protocol proposes to identify "significant" residues, and to search for "unexpected" residues. We specifically request that Dow researchers be alert for the possible presence of a methylthio-trichloropyridinol metabolite which was found

in sizable quantities in a human liver after ingestion of chlorpyrifos (J. Ag. Food Chem., 26, 118 (1978)), even though we see no evidence of the presence of this metabolite in the 1981 radiolabelled goat study (oral dosing, >90% of liver residue was identified). Dow should be advised that any metabolite comprising 10% or more of the residue should be identified.

CONCLUSIONS AND RECOMMENDATIONS

The submitted protocol is acceptable for a dermal sheep metabolism study to satisfy the data gap identified by the Registration Standard. Dow should be advised of our specific comments on metabolite identification in the paragraph above.

cc: Chlorpyrifos S. F., LMB, circ., reading file, reviewer file
G. Beusch
RDI:Section Head:ARRathman:2/19/85: RDSchmitt:2/19/85
TS-769:RCB:Reviewer:L.Bradley:2/15/85:CM#2:RM:810:Date: 2/15/85
revised by LDT: 2/20/85

2