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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

APR 21 1983

MEMORANDUM:

TO: J. Ellenberger
Product Manager 12
Registration Division (TS-767)

Thru: Raymond W. Matheny *RWM*
Head, Review Section #1
Ecological Effects Branch
Hazard Evaluation Division (TS-769)

Thru: Clayton Bushong, Chief *CB*
Ecological Effects Branch
Hazard Evaluation Division (TS-769)

SUBJECT: Request for an Experimental use permit and review
of protocols for determining the impact of Temik
(EPA Reg. ~~264-330/264-331~~) to non-target organisms

Background to memorandum

The registrant (Union Carbide Agricultural Corporation) has submitted two (2) protocols designed to:

1. Assess the impact of Temik 15G on non-target avian and mammalian populations.
2. Monitor tile drainage waters for Temik residues.

The field monitoring studies requested by the Ecological Effects Branch (EEB) are needed to complete an incremental risk assessment (3(c)(7)) finding for the proposed conditional registration of Temik (10G/15G) on sorghum and corn. Both studies are to be conducted under actual end use conditions and at the maximum labeled rate of 1.5 lbs. A.I./acre. Rationales underlying the need for end use field monitoring are presented in detail in three (3) earlier reviews on this chemical (See Bowen, 07/26/82, Peer Group memo 04/15/82).

Response

The protocol designed to monitor the effects of Temik 15G on non-target birds and mammals has been reviewed and found to be deficient in several areas. The protocol submitted by the registrant is deficient in both pre- and post application censusing techniques. As presently designed, results

depend entirely on carcass searches and do not consider less obvious effects. From a statistical standpoint the described study treatment is weak because only one pre-treatment survey is proposed. Detection of effects of Temik formulations on animal populations requires a more sensitive statistical design. Details of the application method and type of equipment to be used were not discussed. Professional qualifications of personnel conducting the test were not presented. The provision for extending field inspections to 32 and 64 days post treatment is unnecessary. Efforts should be concentrated on more intensive (daily) searches during the first two weeks (14-day) following product applications.

Experimental protocols must provide enough information to insure that studies are conducted under conditions that reflect actual field usage and ensure that census (monitoring) procedures and carcass searches are reliable estimates of the pesticides' impact on non-target organisms. The existing protocol is deficient in all these areas.

Criteria for actual field testing for birds and mammals are outlined in 1982 Pesticide Assessment Guidelines, Subdivision E, Section 17-5 (c)(2)(i) through (iii). References that appear in Section 71-5 (e)(2) can be used as guidance for developing acceptable protocols.

EEB has reviewed the proposed protocol for monitoring drainage water from tiled fields treated with Temik 15G and, with the exception of conditions cited below, will defer to the Exposure Assessment Branch (EAB) on the acceptability of this protocol:

1. Details on application methods and equipment must be provided.
2. Professional qualifications of the personnel conducting this study must be provided.
3. Methodology employed must insure that this study is conducted under actual-use conditions.

Summary

EEB has previously completed an incremental risk assessment (3(c)(7)) finding of the proposed conditional registration of Aldicarb (10-G/15-G) for use on corn (Bowen 7/26/82). Based upon the data presented in this review EEB concludes that the proposed experimental use (1881 acres of field corn in 21 states) provides for no significant increase in exposure or acute risks to non-target organisms.

Protocols accompanying the subject request have been reviewed and have been found to be unacceptable. The subject protocols should be revised in accordance with guideline requirements cited above. EEB suggests that, given

the wide level of expertise required to design and implement these types of field studies, Union Carbide personnel are strongly advised to consult with other more experienced researchers who can assist in designing Agency approved field studies.

Charles A. Bowen 9/24/83

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Attachment: Your 4/12/83
Data Review Record