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SHAUGHNESSEY NO

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TYPE PRODUCT(S) Insecticide/Nematicide

DATA ACCESSION NO(S) 408031-01

PRODUCT MANAGER, NO. W. Miller (16)

PRODUCT NAME(S) Mocap 15G

COMPANY NAME Rhone Poulenc

SUBMISSION PURPOSE Submission of further data to enable EEB to finalize review of Level 1 Terrestrial Field Study

SHAUGHNESSEY NO.	CHEMICAL	% A.I.

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

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM April 13, 1989

SUBJECT: Registrant (Rhone Poulenc) Submission of Additional Information on Mocap Field Study

FROM: for James W. Akerman, Chief
Ecological Effects Branch Ray W. Matheny 4/14/89
Environmental Fate and Effects Division H7507C

TO: William Miller PM 16
Insecticide/Rodenticide Branch
Registration Division H7505C

What is use rate?

The registrant, Rhone-Poulenc, has submitted additional information on the 1984 Terrestrial Field Study conducted by Bio-Life Associates, Ltd. The study was conducted to determine if use of Mocap 15G on corn would cause avian mortality.

Background

The EEB previously reviewed this study (see memorandum dated June 22, 1987 and DER dated 11-5-87 by D. McLane, both attached). The initial memorandum indicated that additional information was necessary.

1. Original photographs;

2. Aerial photographs showing treated sites;

3. Map of county showing all study sites;

4. Area searched for carcasses, including adjacent habitat; and

5. How much area was searched for avian population censusing.

The subsequent DER by McClane indicated the study was not acceptable.

Submission

With this submission the EEB has received:

1. Photocopies of photographs;

2. Photocopies of soil maps showing sites; and

3. Calculations showing area searched;

EEB Evaluation

The study was conducted in 1984 as a result of concern expressed for use of granular mocap on corn. At the time, the study was apparently designed to measure both acute mortality (via carcass searches) and effects to avian populations. No official protocol review was performed, however, Zucker and Balcomb provided comments (letter dated May 1, 1984 to Lindsay Taliaferro) to the contractors performing the field study.

In that letter, suggestions were provided to improve the study. However, little guidance was provided relating to study deficiencies now identified. For example, Balcomb and Zucker suggest that the contractor consider measuring the efficiency of their carcass searches, but did not indicate how or when it should be done.

The EEB is evaluating the study as if it is a Level I carcass search study to indicate if birds are killed by the use of granular mocap.

Summary

The study is inadequate and cannot be upgraded because of the following reasons.

The information provided (photocopies of photographs and soil maps) still do not allow EEB to adequately assess the study sites and the adjacent habitat. The EEB is assuming that the registrant submitted photocopies and not the original maps and photographs.

There was inadequate effort to search adjacent habitat. Simply including the area immediately next to a treated area as part of the field perimeter search is not sufficient. Searching adjacent habitat would involve separate searches, with separate search efficiency trials and carcass removal studies.

It was not indicated that the search efficiency trials were conducted "blind." That is, the field searchers being unaware that a search efficiency trial was being conducted. The EEB believes that if the searchers know they are being tested for their

efficiency, their increased effort to find birds may bias the results, making the efficiency seem higher than it actually is.

Search efficiency trials and predator removal studies were not conducted at each field.

Search efficiency and predator removal should have been determined at random times throughout the study at each study site.

The area searched was inadequate based on search efficiency, predator removal, avian populations in all field except T2. Therefore, failure to find dead birds does not mean that birds were not killed. See the following calculations and discussion.

Discussion

Using the search efficiency, census data and predator removal information provided, the EEB has calculated how much acreage would have to have been searched to detect 2 dead birds if they were there. This was previously calculated in the 11-5-87 review, but has been recalculated with additional information provided by the registrant.

Field	Birds[1] per Acre	Search[2] Efficiency	Minimum[3] Acreage	Acreage[4] Searched	Proportion cap. of this study[5]
T1	3.1	0.666 0.783	6.05 5.15	1.67	0.36 0.31
T2	5.8	0.666 0.783	3.24 2.75	3.04	0.11 0.09
T3	2.7	0.666 0.783	6.95 5.91	2.01	0.35 0.29
T4	1.7	0.666 0.783	11.14 9.39	1.41	0.78 0.67
T5	2.9	0.666 0.783	6.47 5.6	1.73	0.37 0.32
T6	3.4	0.666 0.783	5.5 4.69	1.73	0.32 0.27
T7	4.1	0.666 0.783	4.58 3.89	2.12	0.22 0.18
T8	3.6	0.666 0.783	5.21 4.43	2.89	0.18 0.15
T9	4.1	0.666 0.783	4.58 3.89	2.25	0.20 0.17
T10	2.7	0.666 0.783	6.95 5.91	2.14	0.32 0.28

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[1] Average birds censused per day/acreage censused.

[2] Calculations were done with both minimum and average search efficiency.

[3] Minimum acreage that would have to have been searched to detect 2 dead birds. Based on search efficiency and density indicated, and predator removal of 20%.

[4] Based on calculations presented by registrant.

[5] Using the acreage searched in this study, the proportion of the bird population (as determined by the census techniques used) that could have been detected as mortality is calculated. A number of 0.4 means that with area searched, search efficiency and predator removal, 40% of the birds would have had to die before it is likely that one dead bird would have been detected.

Based on the values in the "Minimum Acreage" column the area searched in the actual study was inadequate to detect dead birds if they occurred[6]. Calculations were made using the N=DREAP formula (Guidance Document for Conducting Terrestrial Field Studies by Fite, E.C, et al., 1988).

Where:

N=2
D=Density (Birds per Acre)
R=Carcasses remaining after predator removal (0.8)
E=Search Efficiency of 0.666 (lowest) and 0.783 (average)
A=Acreage to be searched to detect 2 birds
P=Proportion of population killed (0.2)

Conclusions

The EEB has reviewed the additional information provided by Rhone-Poulenc (MRID #: 408031-01) and found the 1984 study (Acc No: 263447) to be inadequate for an avian Level 1 Field Study. It is no longer necessary for the registrant to submit any more information for this study, it is cannot be upgraded. If you have questions, contact Dan Rieder.

Note to PM

If the registrant submitted original maps or photographs, they should be forwarded to EEB, rather than provided to the document center to be recorded on microfiche and subsequently shredded. It is important that we view, and maintain in our files, the original maps and photographs, if submitted.

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[6] Using the assumption that less than 20% mortality would be acceptable, and that EEB requires that the study be designed to detect if 20% or more mortality occurs.