

081901
SHAUGHNESSEY NO.

REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 6/5/81 OUT 6/16/81

FILE OR REG. NO. 677-313

PETITION OR EXP. PERMIT NO. _____

DATE OF SUBMISSION 6/2/81

DATE RECEIVED BY HED 6/5/81

RD REQUESTED COMPLETION DATE 6/16/81

EEB ESTIMATED COMPLETION DATE _____

RD ACTION CODE/TYPE OF REVIEW 450/Protocol

TYPE PRODUCT(S): I, D, H, F, N, R, S Fungicide

DATA ACCESSION NO(S). _____

PRODUCT MANAGER, NO. H. Jacoby (21)

PRODUCT NAME(S) Bravo 500

COMPANY NAME Diamond Shamrock Corporation

SUBMISSION PURPOSE Proposed aquatic field study for

review

SHAUGHNESSEY NO. CHEMICAL AND FORMULATION % A.I.

081901 Chlorothalinalol 40.4

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE JUN 17 1981

SUBJECT Review of Field Study Protocol

*Fish Analysis
whole fish if no residue present
no distribution analysis will
be done. OK.*

FROM Wildlife Biologist
Ecological Effects Branch/HED

TO Henry Jacoby (PM #21) TS-767

THRU: Norm Cook, Head, Section 2, EEB *MCook*

THRU: Clayton Bushong, Chief, Ecological *CB* Effects Branch

Re: Registration #: 677-313
Chemical Use: Fungicide for Soybeans
Product: Bravo 500
Active Ingredient: Chlorothalonil

INTRODUCTION

The Registration Division (RD) has requested that the Ecological Effects Branch (EEB) review a proposed field monitoring study submitted by the Diamond Shamrock Corporation. Diamond Shamrock requested and received a registration to use Bravo 500 on soybeans. One of the conditions of that registration was for Diamond Shamrock to perform an aquatic field monitoring study to determine the fate and effects of chlorothalonil in the field. This study was needed because chlorothalonil is relatively persistent and highly toxic to aquatic organisms (see EEB review by D. Rieder dated 5/1/80). In the process of reviewing the proposed protocol, EEB sought the assistance of the Environmental Fate Branch (EFB). (see attached memos)

REVIEW

The protocol appears to meet the requirements. However there are aspects of the proposed study which are not addressed in the protocol. The following questions and comments should be addressed and additional protocol approved by EEB before the study is initiated.

- ← 1. How soon after collection will the sediments be analyzed?
- *2. Define "Mannings N" and "maximum interception storage" as used in the proposed protocol on page 6.
- *3. Provide copies of all analytical methods used; also provide raw recovery data.
- *4. Provide pH and cation exchange capacity of field soil.

5. The water samples should be analyzed as unfiltered water and filtered water and filtrate (suspended sediment).

Using data reference

*Same day analyze
polyethylene or glass
reference
data re absorption
to polyethylene*

*some procedure
- crops to be
submitted w final report*

*defined in
final protocol*

*will address
in protocols*

*2 samples (1 sample for total,
1 sample for filtrate + sediment.)*

EPA Form 1320-6 (Rev. 3-76)

*organic content }
pH of sediment }*

Sed. Analysis

*↓
H₂O analysis Soil method*

Check w/ Larry
Anaerobic metabol study

No
Prot.

6. Analyze all samples for Chlorothalonil, DS-3701 and 3-cyano-2,4,5,6-tetrabenzamide. Bottom samples should be analyzed for compounds formed from anaerobic soil metabolism, if these compounds are known.
7. Include in the study report a description of the agricultural practices employed to control erosion. \leftrightarrow typical farming practices employed no extreme controls used.
8. What is the historical use of chemicals or pesticides on the test and control fields? No Problem
9. The top 5 cm of sediment should be sampled. as a minimum can go deeper if residue are found at 4-5 in and go deeper
10. How soon after a rain can the automatic sampling devices be collected and preserved? dedicate sampling devices and collection procedure.
11. The size of the fish, the cage size, and the depth at which they are maintained should be such that minimal stress to the test organisms will be experienced. Cat Fish & Blue gill caged 3' level \leftarrow floating cage "4" mesh
12. How long will the test fish be acclimated? fish size will be noted 2 wks acclimation.
13. Do the ponds presently have a natural fish population. If so this should be described. Rough description of population, no detail

1000 each

Conclusion

If the above comments are appropriately addressed, and the proposed protocol followed, the study should meet the EEB requirements.

Daniel Rieder 6/17/81
Daniel Rieder

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: JUN 17 1981

SUBJECT: Review of Field Study Protocol

FROM: Wildlife Biologist
Ecological Effects Branch/HED

TO: Henry Jacoby (PM #21) TS-767

THRU: Norm Cook, Head, Section 2, EEB *MCook*

THRU: Clayton Bushong, Chief, Ecological *CB* Effects Branch

Re: Registration #: 677-313
Chemical Use: Fungicide for Soybeans
Product: Bravo 500
Active Ingredient: Chlorothalonil

INTRODUCTION

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REVIEW

The protocol appears to meet the requirements. However there are aspects of the proposed study which are not addressed in the protocol. The following questions and comments should be addressed and additional protocol approved by EEB before the study is initiated.

1. How soon after collection will the sediments be analyzed?
2. Define "Mannings N" and "maximum interception storage" as used in the proposed protocol on page 6.
3. Provide copies of all analytical methods used; also provide raw recovery data.
4. Provide pH and cation exchange capacity of field soil.
5. The water samples should be analyzed as unfiltered water and filtered water and filtrate (suspended sediment).

6. Analyze all samples for Chlorothalonil, DS-3701 and 3-cyano-2,4,5,6-tetrabenzamide. Bottom samples should be analyzed for compounds formed from anaerobic soil metabolism, if these compounds are known.
7. Include in the study report a description of the agricultural practices employed to control erosion.
8. What is the historical use of chemicals or pesticides on the test and control fields?
9. The top 5 cm of sediment should be sampled.
10. How soon after a rain can the automatic sampling devices be collected and preserved?
11. The size of the fish, the cage size, and the depth at which they are maintained should be such that minimal stress to the test organisms will be experienced.
12. How long will the test fish be acclimated?
13. Do the ponds presently have a natural fish population. If so this should be described.

Conclusion

If the above comments are appropriately addressed, and the proposed protocol followed, the study should meet the EEB requirements.

Daniel Rieder 6/17/81
Daniel Rieder

081901

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Daniel

DATE: JUN 9 1981

SUBJECT: Monitoring Protocol Review Request

FROM: Wildlife Biologist
Ecological Effects Branch/HED

TO: Chief, Environmental Fate Branch

THRU: Norm Cook, Head, Section 2, EEB *Norm Cook*

THRU: Clayton Bushong, Chief, EEB *Clayton Bushong*

Re: Registration #677-313 Chemical Use: Fungicide for Soybeans
Active Ingredient: Chlorothalonil

The Ecological Effects Branch (EEB) requests that the Environmental Fate Branch (EFB) review the attached field monitoring protocol submitted by Diamond Shamrock Corp. for Bravo 500.

Besides a standard review, EEB also requests responses to the following questions:

1. Do you see any problems with asking Diamond Shamrock to also measure residue levels of Chlorothalonil's primary degradate, DS-3701?
2. Is there a minimum amount of rainfall needed during the study to provide results that could be useful in a hazard assessment? If so, how much?
3. Considering the type of soil mentioned, is there a need for the study to include sampling of soil in the application area?
4. Should there be concern over the length of time samples are held in refrigeration before being analyzed? What is the maximum acceptable time? (refer page 5 and page 6)
5. Could you define "Mannings N"? (page 6)
6. Is the method for measuring Chlorothalonil residue levels standard enough that it need not be addressed in the protocol?

In addition EEB requests that a representative from the EFB attend a meeting at 10:00 AM on June 17, 1981, with people from Biospherics Inc. and Diamond Shamrock Corp.

Please notify me at phone #75651 if this review cannot be completed by June 16, 1981, or if there is a problem with the meeting at that time and date.

Daniel Rieder
Daniel Rieder

Daniel Rieder / CDW / 6/8/81 / CS#4 / TS-769

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE:

6/16/80

SUBJECT: Chlorothalonil Protocol Review

FROM: Samuel Creeger, Chemist *SC*
Environmental Fate Branch/HED (TS-769)

TO: Clayton Bushong, Chief
Ecological Effects Branch/HED (TS-769)

THRU: Dr. Willa Garner, Head, Section #1 *W*
Environmental Fate Branch/HED (TS-769)

THRU: Dr. David Severn, Chief
Environmental Fate Branch/HED (TS-769)

David Severn

The following comments pertain to the protocol titled, "Aquatic Field Study to Support FIFRA Registration Requirements for Bravo 500". The protocol was prepared by Biospherics for Diamond Shamrock.

A. Comments

- 1) Section 2.4 - Specify that the pond bottom sediment be sampled to at least 5 cm.
- 2) Section 2.8 - Specify that the pond bottom sediment be taken to at least 5 cm. Suspended sediment should also be analyzed for residues.
- 3) Section 2.11 - A definition of Mannings N and of maximum interception storage are needed.
- 4) Section 2.12 - Provide the pH and cation exchange capacity of the soil.
- 5) Section 2.14 - Provide copy of the analytical methods used.

B. Response to EEB questions

- X 1) I would require water and sediment samples be analyzed for parent compound, DS-3701 and 3-cyano-2,4,5,6-tetrabenzamide. I also would require analysis for compounds formed as a result of anaerobic soil metabolism. However, an anaerobic soil metabolism study has not yet been received telling us if anaerobic soil metabolites form that are different than the aerobic soil metabolites.

- 2) I do not know the parameters used in making your hazard assessment. However, if no residues are found in the pond and sediment after rainfall events representative for that time of year, then it can be assumed that runoff would not occur in another study or under use conditions under situations similar to this experiment.
- 3) Soil sampling of the treated field is not needed.
- 4) I would recommend that this concern be addressed to the registrant. Have them provide statements and proof that the compounds will not degrade while refrigerated.
- 5) I cannot define "Mannings N" at this time. See comment A(3) above.
- 6) I would ask for copies of all analytical methods used including recovery data.