041701

EEB

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Init. CN

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From: Carolyn K. Offutt, Chief
Environmental Processes and Guidelines Section
Exposure Assessment Branch, HED (TS-769)

Attached please find the environmental fate review of:

Reg./File No.: 476 - 1995

Chemical: Fonofos

Type Product: Insecticide

Product name: DYFONATE 5-G and DYFONATE 2-G

Company name: Stauffer

Submission Purposes: Review of protocol for gathering data to assess human exposure and reentry interval for fonofos after its application to turf or corn

Data In: 2/8/85

Action Code 352

Date Completed: 4/12/85

EAB #: 5336

TAIS (Level II)	Days
60	1

Deferrals To:

___ Ecological Effects Branch

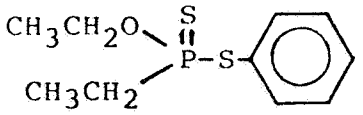
___ Residue Chemistry Branch

___ Toxicology Branch

REVIEW OF REENTRY DATA

1. CHEMICAL:

Fonofos: O-Ethyl S-phenyl ethylphosphonodithioate.



2. TEST MATERIAL:

Proposed to be Dyfonate 5G and Dyfonate 2G to be applied to turf.

3. STUDY/ACTION TYPE:

Request for review of two protocols [A. Foliar Residue and Ambient Air Sampling Following Post-Emergent Application of Dyfonate Insecticide (2/1/1985); and B. Dislodgeable Residues of Fonofos and Fonofos Oxon Following Application of Dyfonate® 5G and 2G to Turf (2/1/1985)[EPA ID No. 476-1995, Record No. 144775].

4. STUDY IDENTIFICATION:

Not Applicable

5. REVIEWED BY:

James D. Adams, PhD
Chemist
Environmental Processes and Guidelines Section 4/12/1985

6. APPROVED BY:

Carolyn K. Offutt, Chief
Environmental Processes and Guidelines Section
Exposure Assessment Branch, HED (TS-769) 4/12/1985

7. CONCLUSIONS:

The protocol is acceptable for the stated purpose if the following suggestions are considered.

8. RECOMMENDATIONS:

Fortified residue recovery studies must be performed for each of the two studies in order to validate the residue data to be gathered. The Registrant should also consider the other suggestions contained in the discussion of this review.

9. BACKGROUND:

Stauffer Chemical Co. has agreed to submit dislodgeable residue dissipation data for its products Dyfonate 5-G and 2-G on turf and on corn. The Registrant has requested that EAB review the protocols for the dislodgeable residue dissipation studies. This is a review of those two protocols.

10. DISCUSSION OF INDIVIDUAL PROTOCOLS:

A. STUDY ON CORN [Foliar Residue and Ambient Air Sampling Following Post-Emergent Application of Dyfonate Insecticide (2/1/1985)[EPA ID No. 476-1995, Record No. 144775]].

Number of tests: The Registrant proposes to perform the studies at three separate locations in the cornbelt with three samples to be taken at each location on each of the sample days. This is acceptable. The timing of the sample days at 0, 1, 3, 5, 7, 10, 14, 21, and 28 days post application is acceptable.

Sampling procedure: The proposed location of plants is acceptable being 60 feet in from the field edge, at 6 locations in the field, with 8 leaf punches per location. This will give 48 punches per sample.

The size of the punch is not specified in the protocol. I suggest that the one-inch diameter punch be used.

The location of leaves to be punched is acceptable. There will be some dilution of the residues by plant growth during the study, and it is even possible that late in the study new upper leaves will not have received pesticide. In addition, plant necropsy caused by punches may become evident late in thestudy which may make it necessary to change plants for sampling.

Timing of the study: As recognized by the Registrant, timing is important since it will involve almost a whole month. I suggest that sampling should be started in the second or third week of July to coincide with the schedule for detasseling operations.

Fortified-sample analysis should be performed for leaves as well as air samples. If analysis of the fortified samples shows a significant loss of the residues during storage and analysis, the field samples must be corrected for that loss. This is discussed in Guidelines Subdivision K.

Air sampling: Residues in air may be undetectable after the first 3 days. Fonofos is known to volatilize after application and the inhalation exposure should be estimated from the airborne residue levels and those exposure values should be added to the corresponding dermal exposure levels corrected for dermal penetration. That is; alveolar penetration will be assumed to be 100% of the airborne residues inhaled, but dermal exposure may be corrected for penetration if a dermal penetration factor is available.

B. STUDY ON TURF [Dislodgeable Residues of Fonofos and Fonofos Oxon Following Application of Dyfonate® 5G and 2G to Turf (2/1/1985)[EPA ID No. 476-1995, Record No. 144775].

Number of tests: The Registrant is proposing to study dislodgeable residues on grass after application of the 2-G or 5-G formulations under six different situations each with residues also being determined on a non-treated plot. This is acceptable.

Sampling procedure: The sampling protocol is acceptable and is similar to the protocols that have been used in other similar studies. The conversion factor that they will determine is important for the conversion of the dislodgeable residues from a mass to mass basis to a mass to surface area basis.

The proposed sampling schedule is acceptable.

Fortified-sample analysis should be also performed for grass as in the corn study. If analysis of the fortified samples shows significant loss of the residues during storage and analysis, the field samples must be corrected for that loss. This is discussed in Guidelines Subdivision K.

11. COMPLETION OF ONE-LINER:

Not Applicable

12. CBI APPENDIX:

Not Applicable