

US EPA ARCHIVE DOCUMENT

Shaughnessy #: 07940

EFB Logout Date: 16 APR 1984

Init.: gf / kn SC

To: George La Rocca  
Product Manager #15  
Registration Division (TS-767)

From: L.A. Richardson, Chief  
Environmental Chemistry Review Section #3  
Exposure Assessment Branch  
Hazard Evaluation Division (TS-769c)

Attached please find the EAB review of...

Reg./File No.: 11678-5

Chemical: Endosulfan

Type Product: I

Product Name: \_\_\_\_\_

Company Name: Makhteshim-Agan Inc.

Submission Purpose: Response to RS (Terrestrial Field Dissipation Study)

ZBB Code: \_\_\_\_\_

ACTION CODE: 655

Date In: 2/28/84

EFB # 4210

Date Completed: 4/16/84

TAIS (level II) \_\_\_\_\_ Days \_\_\_\_\_

Deferrals To:

42 \_\_\_\_\_ 1

\_\_\_\_\_ Ecological Effects Branch

\_\_\_\_\_ Residue Chemistry Branch

\_\_\_\_\_ Toxicology Branch

Reviewer: Patricia Ott  
*Patricia Ott*

Endosulfan Terrestrial Field Dissipation Study

Reference: Submitted by Makhteshim-Agan, Inc. EPA Reg. No. 11678-5, cover memo dated January 12, 1984.

This is not new data, but a summary of four published studies. Three of the four (studies 1, 2, and 3) were reviewed as part of the registration standard. These are summarized from EAB's Task 1. The fourth study (Study 4, Rao and Murty (1980), was reviewed as a new study, since the reviewer was able to obtain the hard copy from an EAB journal.

Study 1. Study of Gorbach et al. (found in Task 1, Study 78)  
S. Gorbach, R. Haarring, W. Knauf and H.J. Werner.  
Bull. Environ. Contam. Toxicol. 6(3)193-199 (1971).

This study is an aquatic field dissipation study, not a terrestrial field dissipation study and also, this study is for a rice use in rice fields and endosulfan has no rice use, so it is inappropriate for both the terrestrial and aquatic field dissipation studies.

Study 2. Study of van Dyk and van der Linde (found in Task 1, Study 82)  
L.P. van Dyk and A. van der Linde. Agrochemophysica 8(2)  
31-34 (1976)

This study does not satisfy the terrestrial field dissipation requirement because data was missing for some of the field samples, there was inadequate sampling, and the authors did not determine the concentration of endosulfan applied to the field sampled.

Study 3. Study of El Zorgani (found in Task 1, Study 39)  
G.A. Zorgani. Bull. Environ. Contam. Toxicol. 15(3), 378-382 (1976)

This study does not meet the terrestrial field dissipation study requirement because residues found immediately post-application were four times higher than the concentration of endosulfan applied to the soil. Also, samples were only analyzed weekly for seven weeks, soil characteristics were not given, soil samples were not analyzed for degradation products and only results from one of the two plots studied were included.

Study 4. Study of Rao and Murty (not in Task 1 of the registration standard)

Reference: Published study (D. Rao and A. Murty, J. Agr. Food Chem. 1980, #28, vol. 6 1099-11101) submitted by American Hoechst Corporation, EPA Reg. No. 8340-13, cover memo dated December 23, 1983.

Conclusions:

It is impossible to assess the validity of this study because critical information is missing, such as size of plots, sampling depth, temperature, controls, pre-application sampling, type of equipment used, and how the pesticide was applied. Also, normal field practice for cotton is 2-3 applications at 5-7 day intervals at 0.75-1.5 lb/A and these workers only applied a maximum of 0.8 lb/A once. This study was conducted in India. The registrant only provided a brief summary of this published study. The reviewer obtained the hard copy but many essential details are missing.

Materials and Methods:

Since endosulfan is not registered for rice, the paddy field (flooded) application is not discussed.

Three test plots were sprayed with a 35% EC formulation at 0.1, 0.2, and 0.8 lb/A on a loamy clay soil. Cotton was growing in two of the plots and eggplant was in the third, sampling depth unknown. Core samples (7" deep) were taken at day 100 in one plot only.

Samples were Soxhlet extracted, cleaned up with a charcoal column and analyzed by TLC and colorimetry. The limit of detection was 0.05 ppm and recovery was 87%.

Reported Results:

The half-life for the three application levels appears to be <10 days. At day 100, endosulfan and metabolites did not leach beyond the 4 inch depth, sampled to 7 inches.

Discussion:

1. Study was done at one-half the highest recommended rate and only with one application.
2. Sampling depth not stated.
3. Method of application not given, including equipment used to apply.
4. Temperature not given.
5. No data for formation and decline of metabolites was given.
6. There was no mention of control samples.

**REGISTRATION DIVISION DATA REVIEW RECORD**  
 Confidential Business Information - Does Not Contain National Security Information (E.O. 12065)

7831  
0122/84

1. CHEMICAL NAME <b>ENDOSULFAN</b>			
2. IDENTIFYING NUMBER <b>11678-5</b>	3. ACTION CODE <b>655</b>	4. ACCESSION NUMBER <b>252184</b>	TO BE COMPLETED BY PM
			5. RECORD NUMBER <b>116321</b>
			6. REFERENCE NUMBER <b>8</b>
			7. DATE RECEIVED (EPA) <b>11/2/84</b>
			8. STATUTORY DUE DATE
			9. PRODUCT MANAGER (PM) <b>La Rocca</b>
			10. PM TEAM NUMBER <b>15</b>

14. CHECK IF APPLICABLE <input type="checkbox"/> Public Health/Quarantine <input type="checkbox"/> Substitute Chemical <input type="checkbox"/> Seasonal Concern <input type="checkbox"/> Minor Use <input type="checkbox"/> Part of IPM <input type="checkbox"/> Review Requires Less Than 4 Hours	TO BE COMPLETED BY PCB
	11. DATE SENT TO HED/TSS <b>2/28/84</b>
	12. PRIORITY NUMBER <b>20</b>
	13. PROJECTED RETURN DATE <b>4/28/84</b>

15. INSTRUCTIONS TO REVIEWER A. HED <input type="checkbox"/> Total Assessment - 3(c)(5) <input type="checkbox"/> Incremental Risk Assessment - 3(c)(7) and/or E.L. Johnson memo of May 12, 1977. B. SPRD (Send Copy of Form to SPRD-PM) <input type="checkbox"/> Chemical Undergoing Active RPAR Review <input checked="" type="checkbox"/> Chemical Undergoing Active Registration Standards Review C. <input type="checkbox"/> BFS D. <input type="checkbox"/> TSS/RD E. <input type="checkbox"/> Other	F. INSTRUCTIONS <b>Reg. Standard - <del>Terrestrial Field Dissipation</del></b> <b>Terrestrial Field Dissipation</b>
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16. RELATED ACTIONS  
**Acc No 25227, 252185**

17. 3(c)(1)(D) <input type="checkbox"/> Use Any or All Available Information <input type="checkbox"/> Use Only Attached Data <input type="checkbox"/> Use Only the Attached Data for Formulation and Any or All Available Information on the Technical or Manufacturing Chemical.	18. REVIEWS SENT TO <input checked="" type="checkbox"/> TB <input type="checkbox"/> RCB <input checked="" type="checkbox"/> EEB <input checked="" type="checkbox"/> EFB <input type="checkbox"/> EF <input type="checkbox"/> CH <input checked="" type="checkbox"/> PL <input type="checkbox"/> BFS
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19. To	TYPE OF REVIEW	NUMBER OF ACTIONS							
		Registration	Petition	EUP	SLN	Sec. 18	Inert	MNR. USE	Other
HED	TOXICOLOGY								
	ECOLOGICAL EFFECTS								
	RESIDUE CHEMISTRY								
	ENVIRONMENTAL DATA								1
RD/TSS	CHEMISTRY								
	EFFICACY								
	PRECAUTIONARY LABELING								
BFS	ECONOMIC ANALYSIS								

20. <input type="checkbox"/> Label Submitted with Application Attached	21. <input type="checkbox"/> Confidential Statement of Formula	22. <input type="checkbox"/> Representative Labels Showing Accepted Uses Attached	23. Date Returned to RD (to be completed by HED)	24. Include an Original and 4 (four) Copies of This Completed Form for Each Branch Checked for Review.
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