

US EPA ARCHIVE DOCUMENT

FILE COPY

Shaughnessy No.: 122804

Date Out of EFGWB: APR - 6 1989

To: Geo. LaRocca/A. Heywood
Product Manager # 15
Registration Division (TS-767)

From: Paul Mastradone, Ph.D., Acting Chief *PM*
Environmental Chemistry Review Section 1
Environmental Fate and Ground Water Branch
Environmental Fate and Effects Division (TS-769-C)

THRU: Henry Jacoby, Acting Chief *Henry Jacoby*
Environmental Fate and Ground Water Branch/EFED (TS-769C)

Attached, please find the EAB review of...

Reg./File # : 618-OI

Chemical Name: Avermectin

Type Product : Miticide/Insecticide

Product Name : AGRI-MEK 0.15 EC

Company Name : MERCK

Purpose : Review request to register product on tomatoes.

Date Received: 11/15/88

Action Code: 181

Date Completed: _____

EFGWB#(s): 90143

Total Reviewing Time (decimal days): 2.0

Deferrals to:

_____ Ecological Effects Branch, EFED

_____ Science Integration & Policy Staff, EFED

_____ Non-Dietary Exposure Branch, HED

X Dietary Exposure Branch, HED

_____ Toxicology Branch, HED

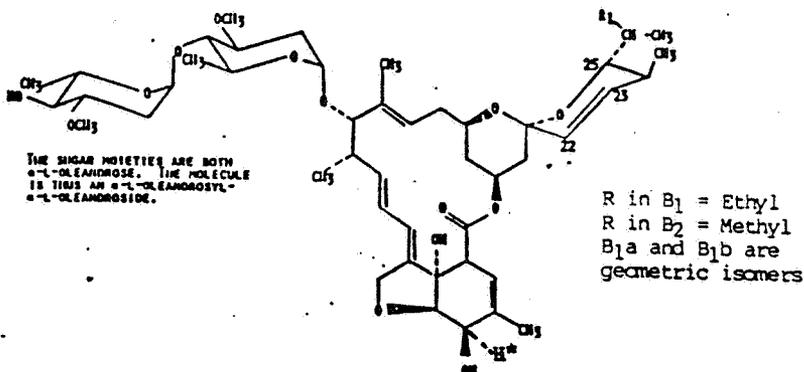
1. CHEMICAL:

Common Name— abamectin

Chemical Name— avermectin

Trade Name— AGRI-MEK 0.15 EC

Chemical Structure—



The active ingredient is composed of not less than 80% avermectin B_{1a} and not more than 20% avermectin B_{1b}.

2. TEST MATERIAL: Not applicable. Reference is to Abamectin 0.15 EC

3. STUDY/ACTION TYPE: The registrant is applying for registration of abamectin/avermectin B_{1a} and its delta 8, 9 isomer for use on tomatoes; a petition for permanent tolerances on tomatoes is also submitted.

4. STUDY IDENTIFICATION: Not applicable.

5. REVIEWED BY:

Herbert L. Manning, Ph.D.
Microbiologist, EFGWB/EFED

Signature: *Herbert L. Manning*
Date:

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6. APPROVED BY:

Paul J. Mastradone, Ph.D.
Acting Chief, Section 1, EFGWB/EFED

Signature: *Paul J. Mastradone*
Date:

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7. CONCLUSION:

Our files indicate two studies, Field Dissipation and Adsorption/Desorption, are required to support registration of abamectin/avermectin B_{1a} and its delta 8, 9 isomer on tomatoes. A

recent review (1/17/89, EFGWB # 90227, 90225) evaluated a field dissipation study and judged it unacceptable, since it was incomplete and amounted to an interim report. See Section 9A (Introduction to BACKGROUND) for a summary of the environmental fate data on abamectin.

8. RECOMMENDATION:

EFGWB (Environmental Fate & Ground Water Branch) recommends that the registrant send in for review the results of the analyses of the three remaining soil core replicates (study reviewed 1/17/89, Norton, J.A, 1988. Soil leaching/soil dissipation study for abamectin 0.15 EC miticide/insecticide, Acc. #409271-01), along with identification of residues, half-life calculations, and decline curves, in order to complete the soil dissipation study.

We also recommend an Adsorption/Desorption (batch equilibrium) leaching study be done, since abamectin/avermectin has been shown to give conflicting results in the soil TLC (immobile) and soil column (polar products leached) studies.

9. BACKGROUND:

A. Introduction- The data required for use of abamectin on tomatoes (terrestrial, food crop use), and the current status of the data in our files, is as follows:

<u>Studies Required</u>	<u>Current Status in Files</u>
o Hydrolysis	Stable to hydrolysis at pH 5,7, and 9 (review of 4/18/83, EAB #130). Acceptable study.
o Photodegradation- watery/ soil	Rapid degradation; half-life of <12 hours in water and <one day on soil. Degradates were only characterized as polar, moderately polar, and nonpolar (review of 3/28/84, EAB #4170). Acceptable study.
o Aerobic/Anaerobic Soil Metabolism	Aerobic degradation depended on soil type; half-life varied from 2 weeks to 2 months. Fourteen degradates were detected, but not identified (review of 3/28/84). Acceptable study.

o Leaching (soil columns and TLC)

Soil TLC indicated immobility (Class I). Radioactivity (mainly polar products) was detected (<8%) in leachates of all 4 columns in both aged and unaged parent (review of 3/28/84). An Adsorption/desorption study should be done.

o Field Dissipation

Incomplete data from review of 1/17/89. Remainder of data will be forthcoming.

o Rotational Crop

Presently under review.

o Fish Accumulation

Tested in bluegill sunfish, bioconcentration factors were 69 for whole fish, 30 for fillet, and 110 for viscera (review of 3/28/84); study is acceptable.

10. DISCUSSION OF INDIVIDUAL STUDIES:

Not applicable.

11. COMPLETION OF ONE-LINER:

Not applicable.

12. CBI APPENDIX:

There is no CBI in this review.

OFFICE OF PESTICIDE PROGRAMS DATA REVIEW RECORD

ATTACHMENT 1

Confidential Business Information-Does Not Contain National Security Information(E.O. 12065)
This form is to be used for individual studies and for submission of pesticide applications

1. PRODUCT NAME AGRI-MEK		CHEMICAL NAME VERMECTIN			
2. IDENTIFYING NUMBER 618-01	3. RECORD NUMBER 234652	4. ACTION CODE 181	5. MRID/ACCESSION NUMBER N/A	6. STUDY GUIDELINE OR NARRATIVE N/A	
7. REFERENCE NUMBER 2	8. DATE RECEIVED (EPA) OCT. 27, 1988	9. PRODUCT/REVIEW MANAGER/DCI LaRocca/Heyward	10. PM/RM TEAM NUMBER PM-15	11. DATE SENT TO (HED/EFED/RD/BEAD) NOV. 15, 1988	
12. PROJECTED RETURN DATE Feb 15, 1989	13. DATE RETURNED TO (RD/SRRD) 4-6-89	9. INSTRUCTIONS Refer to environmental data on file to support the proposed section 3 registration of avermectin on tomatoes			

(THIS SECTION APPLIES TO REVIEW OF STUDIES ONLY)

14. CHECK APPLICABLE BOX:

- ADVERSE 6(a)(2) DATA (405) GENERIC DATA (660) (REREGISTRATION)
- SPECIAL REVIEW DATA (870)

15. NUMBER OF INDIVIDUAL STUDIES SUBMITTED

PRODUCT SPECIFIC DATA (655) (REREGISTRATION)

16. HAVE ANY OF THE ABOVE STUDIES (in whole or in part) BEEN PREVIOUSLY SUBMITTED FOR REVIEW? (circle: yes or no) IF YES, PLEASE IDENTIFY THE STUDY(IES):

17. RELATED ACTIONS:

9F3703
9H5570

18. TO	TYPE OF REVIEW	19. REVIEWERS ALSO SENT TO	20. DATA REVIEW CRITERIA
HED	SCIENCE ANALYSIS & COORD.	— SAC — PC	A. Policy Note #31 <input type="checkbox"/> 1 = data which meet 6(a)(2) or meet 3(c)(2)(B) flagging criteria <input type="checkbox"/> 2 = data of particular concern from registration standard <input type="checkbox"/> 3 = data necessary to determine tiered testing requirements B. Section 18 <input type="checkbox"/> 1 = data in support of section 3 in lieu of section 18 C. Inert Ingredient <input type="checkbox"/> 1 = data contin List 1
	TOXICOLOGY/HFA	— TOX/HFA — PL	
	TOXICOLOGY/IR	<input checked="" type="checkbox"/> TOX/IR	
	DIETARY EXPOSURE	<input checked="" type="checkbox"/> DEB — EA	
	NON-DIETARY EXPOSURE	<input checked="" type="checkbox"/> NDE — AC	
EF ED	ECOLOGICAL EFFECTS	— — BA	
	<input checked="" type="checkbox"/> ENVIRONMENTAL FATE & GROUND H2O	<input checked="" type="checkbox"/> EEB	
SRRD	SPECIAL REVIEW	— EFGWB	
	REREGISTRATION	— SR	
	GENERIC CHEMICAL SUPPORT	— RER	
RD	INSECTICIDE-RODENTICIDE	— GSC	
	FUNGICIDE-HERBICIDE	— IR	
	ANTIMICROBIAL	— FH	
BEAD	PRODUCT CHEMISTRY	— AM	
	PRECAUTIONARY LABELING		
	ECONOMIC ANALYSIS		
	ANALYTICAL CHEMISTRY		
	BIOLOGICAL ANALYSIS		

CONFIDENTIAL STATEMENT OF FORMULA (TRADE SECRETS)

LABEL ATTACHED

White - Data Coordinator

Yellow - Data Review Section

Green - Return with completed review

Include original + two (2) copies with each submission

Pink - 1