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Date Out of EFGWB: MAY 8 1991

TO: Lois Rossi/Connie Childress
Product Manager #74
Registration Division (H7505C)

FROM: Emil Regelman, Supervisory Chemist
Environmental Chemistry Review Section #2
Environmental Fate and Ground Water Branch, EFED (H7507C)

THRU: Henry M. Jacoby, Chief
Environmental Fate and Ground Water Branch, EFED (H7507C)

Attached, please find the EFGWB review of:

Reg./File #: 100-529

Common Name: Atrazine

Chemical Name: 2-Chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine

Type product: Herbicide (Symmetrical Triazine Type)

Product Name: AAtrex

Company Name: Ciba-Geigy Corporation, Agricultural Division

Purpose: Review of data submitted in response to data requested in
3/06/90 review of batch-equilibrium adsorption/desorption
studies conducted with atrazine and its main degradates. Data
requested: soil series names.

Date Received: 4/11/91

EFGWB #: 91-0517

Action Code: 660

Total Reviewing Time (decimal days): 0.1

Deferrals to: _____ Ecological Effects Branch, EFED

_____ Science Integration & Policy Staff, EFED

_____ Non-Dietary Exposure Branch, HED

_____ Dietary Exposure Branch, HED

_____ Toxicology Branch I, HED

_____ Toxicology Branch II, HED



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

OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

MAY 8 1991

MEMORANDUM

SUBJECT: Atrazine- Additional Data Submitted by Ciba-Geigy at the Request of EFGWB: Soil Series Names for the Soils Used in the Batch-Equilibrium Adsorption/Desorption Studies Reviewed on 3/06/90.

FROM: Silvia C. Termes, Chemist
Review Section #2
Environmental Fate and Groundwater Branch
Environmental Fate and Effects Division (H7507C)

TO: Lois Rossi/Connie Childress
Product Manager 74, Reregistration Branch
Special Review and Reregistration Division (H7508C)

THRU: Emil Regelman, Supervisory Chemist
Review Section #2
Environmental Fate and Groundwater Branch
Environmental Fate and Effects Division (H7507C)

Henry M. Jacoby, Chief
Environmental Fate and Groundwater Branch
Environmental Fate and Effects Division (H7507C)

On 3/06/90, the Branch reviewed four new batch-equilibrium adsorption/desorption studies of atrazine and its degradates submitted to the Agency to replace earlier reviewed studies (Atrazine: Second Round Review, 11/18/88) that were invalidated as a result of a laboratory audit conducted on 2/14/89. The new studies (3/06/90 review) were voluntarily submitted by Ciba-Geigy in 1989.

The studies reviewed on 3/06/90 (Atrazine, 41257901; G-34048, 41257902; G-28273, 41257904; G-28279, 41257905; G-30033, 41257906) were acceptable. However, EFGWB requested the soil series names and clay mineralogy for the four different soils used in the studies. The registrant has submitted the requested information (letter from T.J. Parshley, Ciba-Geigy dated 7/30/90) as provided to Ciba-Geigy by the contracting laboratory (letter of W.C. Spare, Agrisearch Inc., MD, 7/25/90). Copies of both letters are attached.



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Although the clay mineralogy may be inferred from the description of the each soil series name, EFGWB would have preferred that the actual clay type had been included in the additional data. The Branch recommends that in future studies involving soils the type of clay (i.e, if it is kaolinite, montmorillonite, etc.) be included together with the other physical/chemical characteristics of the soils.

Attached is also a copy of the table summarizing data experimental results of the studies reviewed on 3/06/90. The soils in the table should read now as follows:

<u>Table 3/06/90</u>	<u>Information Provided by Agrisearch</u>	
	<u>USDA Soil Series</u>	<u>Clay Formed From</u>
[Maryland] Sandy Loam	Sequatchie	Alluvial materials
[Maryland] Sand	Sassafras	Old wash material
[Maryland] Clay	Sharkey	Swelling clays from fine textured sediments
[California] Loam	Hesperia	Granitic alluvium

Conclusions: No further information is needed at this time. Data requirements for 163-1 (Mobility in soil studies) can be considered fulfilled.

Agricultural Division
CIBA-GEIGY Corporation
P.O. Box 18300
Greensboro, North Carolina 27419-8300
Telephone 919 632 6000
Fax 919 632 7353

July 30, 1990

Document Processing Desk (RS-0062)
Office of Pesticide Programs - H7504C
U.S. Environmental Protection Agency
1921 Jefferson Davis Highway
Crystal Mall 2 - Room 266A
Arlington, VA 22202
Attention: Connie Childress

Dear Ms. Childress:

SUBJECT: EPA LETTER RECEIVED JUNE 19, 1990
ATRAZINE REGISTRATION STANDARD
ATRAZINE TECHNICAL, EPA REG. NO. 100-529
ADDITIONAL INFORMATION ON ADSORPTION/DESORPTION DATA

In response to the above certified mailing, CIBA-GEIGY is pleased to provide the requested information. Please refer to the attached letter from the contract laboratory who conducted the subject studies for information on the USDA soil series classification and a description of soil types for the various clay soils used in the study.

It is hoped that this is sufficient for the Agency's assessments. If further information is needed, please do not hesitate to contact us.

Sincerely,

Thomas J. Parshley
Thomas J. Parshley
Senior Regulatory Specialist

Attachment

AUG 02 1990

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SEARCH INCORPORATED

July 25, 1990

RESEARCH FARM
Mt. Airy, MD 21771

LABORATORIES
26 Water Street
Frederick, MD 21701
301-662-2203

Mr. Ivan Szolics
Agricultural Division
CIBA-GEIGY Corporation
P.O. Box 18300
Greensboro, NC 27419

Dear Ivan,

Per your request I have investigated the series names of the soils used for the adsorption/desorption studies with atrazine, simazine, and their degradation products. The information on soil series and clay mineralogy is from the USDA Soil Survey maps for the area where the soil was originally collected. The results are as follows:

<u>Soil Name In Report</u>	<u>USDA Soil Series</u>	<u>Clay's Formed From</u>
Maryland Sandy Loam	Sequatchie	alluvial materials
Maryland Sand	Sassafras	old outwash material
- Maryland Clay	Sharkey	swelling clays from fine textured sediments
California Loam	Hesperia	granitic alluvium

I have enclosed a copy of the characterization for each soil from A & L Agricultural Laboratories. If I can be of any further service, please call.

Sincerely,

Bill

William C. Spare
Laboratory Director

WSC/awr

Taken From
 EFGWB Review of
 3/00/90 (SCT, # 90-0238)

TABLE I
 Sorption Coefficients of Atrazine and its Main Degradates in Four Soils

SOILS	Atrazine	G-28273	G-28272	G-30033	G-34048
<u>ADSORPTION COEFFICIENTS</u>					
Clay	2.455 (86.947)	1.558 (55.177)	2.7341 (96.833)	1.10182 (36.062)	389.57 (13797)
Sand	0.2038 (38.503)	0.1623 (30.653)	0.1607 (30.362)	0.0643 (12.153)	1.9808 (374.16)
Sandy Loam	0.7863 (70.356)	0.6472 (57.908)	0.5056 (45.238)	0.3551 (31.774)	6.5195 (583.32)
Loam	0.731 (155.34)	0.3574 (75.956)	0.2732 (58.052)	0.2113 (44.909)	12.108 (2572.9)
<u>DESORPTION COEFFICIENTS</u>					
Clay	9.1178 (322.9)	7.7985 (276.2)	12.364 (467.88)	8.1392 (288.26)	515.89 (18271)
Sand	1.5115 (285.5)	value indeterminable due to limited adsorption			
Sandy Loam	7.2717 (650.50)	8.0587 (721.04)	15.278 (1366.9)	11.189 (1001.1)	14.869 (1330.4)
Loam	4.7599 (1011.5)	6.8702 (1459.9)	6.9846 (1484.2)	3.9215 (833.31)	11.283 (22397.6)

Numbers in parentheses refer to K_{oc} values; $K_{oc} = K_a/d/\%OC$, where $\%OC = \%OM/1.7$

	% Sand	% Silt	% Clay	% OM	pH	CEC, meq/100g	BD, g/mL	% FC
Clay	25.2	32.8	42.0	4.8	5.9	24.3	1.22	35.9
Sand	95.5	2.2	2.2	0.9	6.5	1.8	1.65	3.8
Sandy loam	63.2	20.0	16.8	1.9	7.5	6.1	1.28	15.8
Loam	44.0	47.0	9.0	0.8	6.7	4.3	1.57	11.7

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