

FILE

125401

Date Out EFB: 11 APR 1984

TO: Robert Taylor
Product Manager
Registration Division
TS-767

FROM: Samuel Creeger, Chief *SM*
Review Section No. 1
Exposure Assessment Branch
Hazard Evaluation Division

Attached please find the environmental fate review of:

Reg./File No.: 279-EUP-293

Chemical: FMC 57020

Type Product: Herbicide

Product Name: FMC 57020 4 EC

Company Name: FMC Chemical Co.

Submission Purpose: Protocol review of field dissipation
study.

ZBB Code: ?

ACTION CODE: 450

Date in: 3/29/84

EFB # 4263

Date Completed: 4/10/84

TAIS (level II) Days

67

0.5

Deferrals To:

Ecological Effects Branch

Residue Chemistry Branch

Toxicology Branch

XX 116

1.0 INTRODUCTION

FMC Chemical Co. has submitted a protocol for the short term field dissipation study for eventual registration of the herbicide FMC 57020 4 EC. It is currently being tested under an experimental use permit. This protocol was developed in response to the OPP/FMC pre-registration meeting held 2/27/84. At that meeting EAB requested FMC submit a more complete protocol for review. The protocol handed out was too brief for EAB comment at that time. EAB did provide additional comments on the protocol which should be included.

2.0 DISCUSSION

2.1 Complete protocol is attached to this review.

2.2 FMC has incorporated EAB comments into the protocol:

- Soil will be a loamy sand (70-85% sand) with approximately 1% organic matter. The one-half acre plot will be a soil typical of soybean cultivation on Maryland's eastern shore.
- FMC 57020 4 EC will be soil incorporated to 3-4 inch depth.
- Two 2-inch rainfall events will be simulated by irrigation applied 4 and 9 days after herbicide application.
- In addition, 0.5 inch rainfall events will be simulated by irrigation at intervals during the 60 day study. (Amount of water added by irrigation will be co-ordinated with natural rainfall.)
- Soil will be sampled in one foot increments: 0-1, 1-2, 2-3, 3-4 feet segments. Soil textural class of each one foot segment will be provided.
- Soil samples will be analyzed for parent FMC 57020 and the anaerobic soil metabolite FMC 65317.
- Field plot will be held contingent upon the results of the 60 day study. If necessary, additional cores at lower depths can be taken and/or duration of study can be extended if needed.
- Basic environmental and hydrology data will be supplied.

3.0 Conclusion

- 3.1 The FMC protocol appears to be adequate. The previous EAB comments were incorporated into the study. If the study is conducted according to the protocol revised to include the points listed in 3.2, below, it should provide adequate data about leaching for the parent FMC 57020 and the anaerobic soil metabolite under field conditions.

Information available indicate that the average rainfall for the Maryland eastern shore is 3 - 3.5 inches per month for the period April to June. Thus, the amount of irrigation water to be applied to supplement the natural rainfall is adequate.

The registrant has provided a contingency for additional samples to be taken if needed. If residues are found at the four foot depth, then soil must be sampled at additional one foot increments.

- 3.2 FMC should be informed that the following additional points must be added to the protocol:

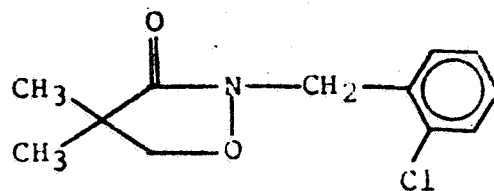
- The soil plot must be moistened with the equivalent of 2 inches of rainfall 2 to 3 days before FMC 57020 is applied.
- The sampling schedule should be revised to include sampling two days after the 2 inch irrigation application (i.e., at days 6 and 11 post application).
- The soil profile, including pH and percent organic matter, must be submitted in addition to the soil textural classification of the one foot soil segments.
- The analytical methods used, including recovery data, should be included in the report.
- Soil samples are to be stored in a manner that precludes degradation of residues.



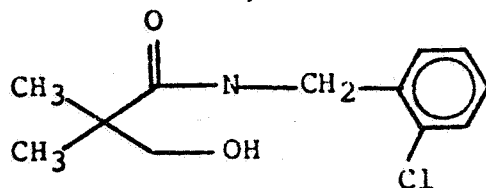
Clinton Fletcher
Review Section No. 1
Exposure Assessment Branch
Hazard Evaluation Division

Chemical:

FMC 57020



FMC 65317



CLIMATOLOGICAL SUMMARY

BLACKWATER REFUGE, MD

1951 - 1971

38° 26' N

76° 08' W

5 FT.

MONTH	TEMPERATURE (°F)													PRECIPITATION TOTALS (INCHES)													5 FT	
	MEANS			EXTREMES						MEAN NUMBER OF DAYS				PRECIPITATION TOTALS (INCHES)										MEAN NUMBER OF DAYS				
	DAILY MAXIMUM	DAILY MINIMUM	MONTHLY	RECORD HIGHEST	YEAR	DAY	RECORD LOWEST	YEAR	DAY	50° AND ABOVE	32° AND BELOW	32° AND BELOW	0° AND BELOW	MEAN	GREATEST MONTHLY	YEAR	GREATEST DAILY	YEAR	DAY	SNOW, SLEET				MEAN NUMBER OF DAYS				
																				MEAN	MAXIMUM MONTHLY	YEAR	GREATEST DEPTH	YEAR	DAY	10 or MORE		50 or MORE
JAN	43.3	26.9	35.1	75	67	23	-7	63	18	0	5	22	0	3.12	5.63	32	2.06	62	6	5.0	13.8	66	30.0	66	31	6	2	1
FEB	46.6	28.8	37.4	72	54	15	-4	61	2	0	2	19	0	3.27	5.47	61	1.70	58	7	4.0	21.5	67	33.0	66	3	7	3	1
MAR	53.5	39.1	44.3	79	61	28	14	62	2	0	0	12	0	3.61	6.59	32	2.05	58	20	2.6	19.6	60	9.0	60	10	7	3	1
APR	63.5	45.3	55.5	88	60	27	21	69	1	0	0	2	0	3.20	6.11	32	1.78	54	28	.1	1.0	57	1.0	57	13	7	3	1
MAY	74.9	54.5	64.7	97	62	20	31	66	10	1	0	0	0	3.16	8.72	71	2.79	68	28	.0								
JUN	82.7	63.5	73.1	102	59	30	42	66	1	3	0	0	0	3.55	6.41	61	3.90	67	19	.0								
JULY	86.7	68.2	77.5	100	59	1	50	71	6	9	0	0	0	4.39	10.03	39	4.02	64	23	.0								
AUG	85.3	66.7	76.0	100	53	31	48	68	30	6	0	0	0	5.34	16.09	35	8.60	35	13	.0								
SEPT	79.7	60.0	69.9	100	53	1	36	63	23	2	0	0	0	3.47	9.34	60	7.17	60	12	.0								
OCT	69.9	49.5	59.7	90	34	4	21	69	25	0	0	1	0	3.08	7.42	71	3.37	66	19	.0								
NOV	57.9	39.3	48.7	80	71	3	16	51	4	0	0	8	0	3.39	7.96	63	3.40	63	7	.7	7.0	67	7.0	67	30	6	2	1
DEC	46.8	30.5	38.7	76	71	16	2	58	16	0	2	19	0	3.40	7.66	69	1.90	69	26	2.7	12.0	62	6.0	66	28	6	3	1
YEAR	66.0	47.4	56.7	102	59	30	-7	63	18	23	9	83	0	43.48	10.09	55	8.60	53	13	15.1	21.5	67	33.0	66	31	76	30	12

CHEWVILLE BRIDGEPORT, MD

1951 - 1971

39° 39' N

77° 40' W

570 FT.

MONTH	TEMPERATURE (°F)													PRECIPITATION TOTALS (INCHES)													570 FT.		
	MEANS			EXTREMES						MEAN NUMBER OF DAYS				PRECIPITATION TOTALS (INCHES)												MEAN NUMBER OF DAYS			
	DAILY MAXIMUM	DAILY MINIMUM	MONTHLY	RECORD HIGHEST	YEAR	DAY	RECORD LOWEST	YEAR	DAY	MAX. MIN.				MEAN	GREATEST MONTHLY	YEAR	GREATEST DAILY	YEAR	DAY	SNOW, SLEET				MEAN NUMBER OF DAYS					
										90° AND ABOVE	32° AND BELOW	32° AND BELOW	0° AND BELOW							MEAN	MAXIMUM MONTHLY	YEAR	GREATEST DEPTH	YEAR	DAY	10 or MORE	50 or MORE	100 or MORE	
JAN	39.2	21.9	30.6	72	67	23	-15	68	12	0	7	26	1	2.30	4.06	53	1.31	71	1	8.8	29.3	66	27.0	66	30	3	1	0	
FEB	42.6	24.3	33.4	76	34	13	-10	67	8	0	4	23	0	2.35	3.92	71	1.76	65	7	7.8	29.5	61	31.0	61	8	3	1	0	
MAR	51.4	36.7	41.1	81	68	29	20	60	11	0	1	18	0	3.08	5.39	35	2.68	65	3	6.9	21.6	60	9.0	62	7	7	2	0	
APR	64.9	41.0	53.0	92	60	23	20	69	1	0	0	6	0	3.08	7.80	32	1.72	70	14	.6	4.0	59	4.0	59	12	7	2	0	
MAY	75.0	49.8	62.4	95	69	29	28	66	11	1	0	1	0	3.37	7.15	33	2.39	52	25	.0									
JUN	83.5	58.6	71.1	99	69	28	37	66	1	6	0	0	0	3.29	8.79	51	2.40	51	3	.0									
JULY	87.5	62.7	75.1	103	54	14	48	71	21	11	0	0	0	3.36	10.01	36	6.69	36	20	.0									
AUG	85.4	61.2	73.4	101	59	2	42	64	15	7	0	0	0	3.39	8.85	35	2.70	35	13	.0									
SEPT	79.1	54.4	66.8	100	53	2	30	56	21	3	0	0	0	2.88	7.49	66	4.32	66	14	.0									
OCT	67.6	49.5	58.7	93	31	5	18	69	24	0	0	4	0	2.44	5.22	71	2.77	71	25	.0									
NOV	53.6	34.4	44.0	83	71	2	11	70	25	0	0	14	0	2.73	6.07	52	2.70	32	21	2.4	8.5	71	9.0	71	25	6	2	1	
DEC	42.4	25.4	33.9	75	36	7	-11	60	23	0	5	24	0	2.59	5.02	51	1.77	37	26	7.3	23.1	51	16.0	51	20	6	2	0	
YEAR	64.4	42.3	53.4	105	54	14	-15	68	12	28	17	116	1	34.88	10.01	36	6.69	36	20	33.8	29.5	61	31.0	61	8	69	23	7	

COLEMAN 3 WNW, MD

1951 - 1971

39° 21' N

76° 08' W

78 FT.

MONTH	TEMPERATURE (°F)													PRECIPITATION TOTALS (INCHES)																					
	MEANS			EXTREMES									MEAN NUMBER OF DAYS		MEAN	GREATEST MONTHLY	YEAR	GREATEST DAILY	YEAR	DAY	SNOW, SLEET				MEAN NUMBER OF DAYS										
	DAILY MAXIMUM	DAILY MINIMUM	MONTHLY	RECORD HIGHEST	YEAR	DAY	RECORD LOWEST	YEAR	DAY	90° AND ABOVE	32° AND BELOW	32° AND BELOW	32° AND BELOW	0° AND BELOW							MEAN	GREATEST MONTHLY	YEAR	GREATEST DAILY	YEAR	DAY	MEAN	MAXIMUM MONTHLY	YEAR	GREATEST DEPTH	YEAR	DAY	10 or MORE	50 or MORE	100 or MORE
JAN	41.3	25.6	33.6	71	67	24	1	63	29	0	5	25	0	2.92	5.64	53	1.77	58	25	5.9	19.0	66	18.0	66	30	6	2	0							
FEB	45.1	27.4	36.3	77	34	16	3	61	2	0	2	21	0	3.14	6.37	71	1.89	66	13	5.0	20.3	67	17.0	58	6	7	3	1							
MAR	53.0	33.9	43.5	81	68	29	12	67	19	0	0	13	0	3.79	6.54	38	2.35	58	20	2.9	14.0	60	10.0	58	20	6	3	1							
APR	65.8	44.2	55.1	90	60	26	23	69	1	0	0	1	0	3.48	7.71	52	2.03	64	30	.0															
MAY	75.7	53.2	64.4	94	62	19	34	66	10	1	0	0	0	3.48	6.04	66	2.82	68	28	.0															
JUN	84.4	62.4	73.4	100	69	28	45	67	1	7	0	0	0	3.39	6.82	55	3.32	67	19	.0															
JULY	88.7	67.3	78.0	104	54	31	52	71	5	13	0	0	0	4.18	9.47	38	3.45	69	21	.0															
AUG	86.8	65.9	76.4	104	53	31	30	71	24	10	0	0	0	4.83	13.57	55	5.43	55	13	.0															
SEPT	80.8	60.2	70.5	100	53	2	36	51	30	4	0	0	0	3.75	9.93	66	4.60	60	12	.0															
OCT	69.7	49.5	59.6	94	34	13	29	65	30	0	0	0	0	3.00	7.20	71	3.85	66	19	.0															
NOV	56.5	39.3	47.9	80	71	2	16	55	29	0	0	7	0	3.70	7.23	63	3.24	36	2	1.0	9.3	67	10.0	67	30	6	3	1							
DEC	44.8	29.5	37.2	71	51	7	5	60	23	0	3	20	0	3.46	7.35	69	2.30	69	25	4.2	20.3	66	13.0	60	12	7	3	1							
YEAR	66.1	46.9	56.2	104	53	31	1	63	29	35	10	87	0	43.32	13.57	53	5.43	55	13	19.0	20.3	67	18.0	66	30	77	30	12							

• ALSO ON EARLIER DATES

Command exposure assessment review

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