

US EPA ARCHIVE DOCUMENT

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Date Out of EFGWB: JUL - 9 1991

JUL 9 1991

TO: R. Taylor:  
Product Manager #25  
Registration Division (H7505C)

FROM:

Paul Mastradone, Section Chief *PM*  
Environmental Chemistry Review Section #1  
Environmental Fate and Ground Water Branch

THRU:

Henry Jacoby, Chief *Henry Jacoby*  
Environmental Fate and Ground Water Branch  
Environmental Fate and Ground Water Division (H7507C)

Attached please find the EFGWB review of:

Reg./File # : 000279-03053

Chemical Name: Dimethazone

Product Type : Herbicide

Product Name : Command 4 EC

Company Name : FMC Corporation

Purpose : Review request to add proso millet and sorghum as rotational crops

Date Received: 09/04/90 Action Code: Label Revision Amendment

Date Completed: EFGWB No.: 90-0845

Total Reviewing Time (decimal days): 2.0

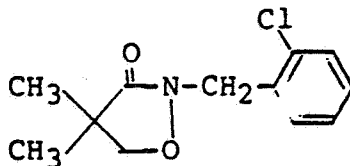
Deferrals to:  Ecological Effects Branch, EFED  
 Science Integration & Policy Staff, EFED  
 Non-Dietary Exposure Branch, HED  
 Dietary Exposure Branch  
 Toxicology Branch, HED

1.0 CHEMICAL:

Common name: Dimethazone

Chemical name: 2-(2-chlorophenyl)-methyl-4,4-dimethyl-3-isoxazolidinone

Chemical Structure:



Physical/Chemical Properties of Active Ingredient:

Empirical Formula: C<sub>12</sub>H<sub>15</sub>NO<sub>2</sub>Cl

Molecular Weight: 240.70

Vapor Pressure (Torr): 1.44E 4

Log K<sub>ow</sub> : 2.54

2.0 TEST MATERIAL: N/A

3.0 STUDY/ACTION TYPE: Amend the Command 4 EC Label

4.0 STUDY IDENTIFICATION: N/A

5.0 REVIEWED BY:

George Tompkins  
Entomologist, Review Section 1  
EFGWB/EFED

Signature: *George Tompkins*  
Date: JUL - 8 1991

6.0 APPROVED BY:

Paul Mastradone  
Section Chief, Review Section 1  
EFGWB/EFED

Signature: *Paul J. Mastradone*  
Date: JUL - 9 1991

7.0 CONCLUSIONS:

The submitted label does not clearly state that a 9 month rotational interval can only be used when the application rate does not exceed 1.25 lb ai/A. Additional data to support a 9 month rotational crop restriction interval at an application rate greater than 1.25 lb ai/A has not been submitted.

Several discrepancies regarding the weight of active ingredient per unit volume exist on the submitted label (See Discussion). These discrepancies should be corrected.

All environmental fate data requirements have been satisfied as of 2 July 1990 (EFGWB # 90-0490) with the exception of additional volatility data requested by EFGWB (the volatility data is presently unreviewed). Dimethazone appears to be mobile in soil and persistent in soil in non-anaerobic conditions and appears to have the characteristics to leach to ground water. Dimethazone is stable to hydrolysis, soil photolysis, and has an aqueous photodegradation half-life of 87 days (under natural sunlight). The compound degrades under anaerobic conditions with a half-life of 13 days and has an aerobic soil metabolism half-life of 56 to 173 days, depending on soil type. Interim data on volatility has been supplied showing that volatility is higher from moist soil than from dry soil. Mobility studies show that dimethazone is mobile with adsorption coefficients ranging from 1.54 in sand to 6.85 in silt loam soils. Dimethazone dissipates under field conditions with a half-life range of 24-82 days depending on soil type and method of application (pre-emergence and preplant incorporated application). Dimethazone was detected in rotational crops planted 10 months after chemical application. The reported bioaccumulation factor was 40x for whole fish.

#### 8.0 RECOMMENDATIONS:

Notify the registrant that the additional data to support a 9 month rotational crop restriction interval at an application rate greater than 1.25 lb ai/A has not been submitted.

#### 9.0 BACKGROUND:

The registrant has requested a revision for the use as a chemical fallow treatment to allow rotation to proso millet and sorghum in addition to winter wheat on a 9 month rotational crop interval. Previously (EAB # 4486-4488 dated 23 Nov 84), a 10 month rotational crop interval was accepted based on an application rate of 2 lb ai/A, and it was stated that additional data will be required if a shorter interval is desired. In 2 Jul 85 (EAB # 5437-5439) EAB approved a proposed 9 month rotational crop restriction interval based on the grounds that the original data supporting the 10 month rotational crop restriction was generated using 2 lb ai/A, while the maximum rate in the proposed label was for 1.25 lb ai/A.

10.0 DISCUSSION :

- 10.1 The weight of the active ingredient of Command 4 EC is listed on the proposed new label as 1 pint contains 0.5 lb ai on pages 13, 15, 16, 18, 19, 20, 41, 42, 43, and 45. However, on pages 46, 47, 48, and 49 it is listed that a pint contains 16 ounces (which is equivalent to 1 pound). This is twice as much active ingredient per unit volume than on the previous pages.
- 10.2 On page 20 of the label in footnote 1, it is listed that for certain states that 2.5 lbs ai/A are to be used for high pressure and heavy soils. This would be equivalent to 5 pints. This high rate must be addressed if indeed that is the actual application rate.
- 10.3 On pages 21-36 of the proposed label, the broadcast rate is listed only by volume with no mention of weight of active ingredient to be applied. Because of these discrepancies it is suggested that wherever a broadcast rate is listed the correct volume and weight be listed together.

11.0 COMPLETION OF ONE-LINER: N/A

12.0 CBI APPENDIX: N/A