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

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MEMORANDUM

SUBJECT: Thiobencarb Herbicide: Correction to MRID# 416909-02, Seed Germination, Seedling Emergence and Vegetative Vigor Studies (123-1,2). DP Barcode D158745.

FROM: Elizabeth Leovey, Chief
Environmental Risk Characterization Branch
Environmental Fate and Effects Branch (7505C)

TO: Mark Wilhite, PM-51
Special Review and Reregistration Division (7508W)

The Environmental Risk Characterization Branch has corrected the non-target plant studies (123-1,2) using Thiobencarb. This was submitted under DP Barcode D158745.

There were some interesting aspects to the seedling emergence study in that the mortality EC_{25} values for lettuce and ryegrass were similar to the shoot length EC_{25} values. Mike Davy discussed this study with the Plant Risk Evaluation Team (PRET). Much of the mortality of the emerged seedlings for lettuce and ryegrass occurred at lower dosages as well as at high dosages for these two species thus causing a sensitive level of mortality as well as difficulty in providing an EC_{25} value for shoot length. This provides a high degree of uncertainty in the EC_{25} value for shoot length. **It was determined by the PRET that the lettuce and ryegrass species should be retested at lower dosages.** Since lettuce and ryegrass are two of the most sensitive species and seedling emergence is the most sensitive plant study for thiobencarb, **the added value for retesting the lettuce and ryegrass at lower dosages for shoot length parameter is considered to be high. Data from the study will be used to evaluate risk from runoff to non-target plants.**

Regarding the invalid seed germination study, EFED has determined that the emergence study is more sensitive for measuring runoff effects to non-target plants. There is a low added value to having the seed germination study redone. **Therefore ERCB does not recommended redoing the seed germination study.**

The following studies have been corrected:

CITATION: Hoberg, J.R. 1990. (Thiobencarb Technical) - Determination of Effects on Seed Germination, Seedling Emergence and Vegetative Vigor of Ten Plant Species. Laboratory Report No. 90-9-3462. Conducted by Springborn Laboratories, Inc., Wareham, MA. Submitted by Chevron Chemicals Company, Agricultural Chemicals Division, Richmond, CA. EPA MRID No. 416909-02.

Seed Germination: This study does not meet the requirements for a Tier 2 seed germination test using non-target plants. Seeds were considered germinated if the radicle length was 3 mm or greater. Subdivision J guidelines state that radicles need to be 5 mm in length to be considered germinated. In addition, no raw data were submitted for these studies.

Seedling Emergence: This study meets the requirements for a Tier 2 seedling emergence test using non-target plants with the exception of ryegrass and lettuce due to insufficient level of dosage for shoot length parameter. Additional testing is recommended for lettuce and ryegrass at lower dosage levels for the shoot length parameter.

In this study. the most sensitive species was ryegrass, a monocot. For shoot length, the NOEC, EC_{25}, and EC_{50} values are 0.011, 0.027, and 0.070 lb ai/A, respectively. For **mortality**, the NOEC, EC_{25}, and EC_{50} values are 0.005, 0.019, and 0.038 lb ai/A, respectively.

In this study, the most sensitive dicot is lettuce. For shoot length, the NOEC, EC_{25}, and EC_{50} values are 0.029, 0.074, and 1.4 lb ai/A, respectively. For **mortality**, the NOEC, EC_{25}, and EC_{50} values are <0.29, 0.266, and 0.386 lb ai/A, respectively.

Vegetative Vigor: This study meets the requirements for a Tier 2 vegetative vigor test using non-target plants.

The most sensitive monocot species was ryegrass. For shoot length the NOEC, EC_{25}, and EC_{50} values are 0.02, 0.073, and 0.286 lb ai/A, respectively.

The most sensitive dicot species was soybean. For shoot weight the NOEC, EC_{25}, and EC_{50} values are 0.80, 1.2, and 2.1 lb ai/A, respectively.

If you have questions regarding this review, please contact Mike Davy at 305-7081.

2