US EPA ARCHIVE DOCUMENT

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Chemical Code:108801
Barcode:D225414

ENVIRONMENTAL FATE AND GROUND WATER BRANCH

To: Walter Waldrop, PM # 71
Special Review and Reregistration Division (7508W)

From: Elizabeth Behl, Chief
Environmental Fate & Ground Water Branch/EFED (7507C)

Attached, please find the EFGWB review of...

Common Name:	Metolachlor	Trade name:	Dual, Medal
Company Name:	CIBA-GEIGY Corporation		
ID #:			
Purpose:	Review of quarterly report for metolachlor small-scale prospective monitoring study		

Type Product:	Action Code:	EFGWB #(s):	Review Time:
Herbicide	001		0.5 day

STATUS OF STUDIES IN THIS PACKAGE:

Guideline	MRID	Status[1]
166-1		-

STATUS OF DATA REQUIREMENTS ADDRESSED IN THIS PACKAGE:

Guideline	Status[2]
166-1	S

[1]Study Status Codes: A = Acceptable U = Upgradeable C = Ancillary I = Invalid.
[2]Data Requirement Status Codes: S = Satisfied P = Partially satisfied N = Not satisfied R = Reserved W = Waived.

1. CHEMICAL:

Chemical name: 2-Chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl)acetamide

Common name: Metolachlor
Trade names: Dual and Medal
Structure:

2. TEST MATERIAL:

Metolachlor

3. STUDY/ACTION TYPE

Review of quarterly report for metolachlor small-scale prospective monitoring study

4. STUDY IDENTIFICATION:

Title: A Small-Scale Prospective Ground Water Monitoring Study for Metolachlor (Dual) at a Worst-Case Vulnerable Site in the Southeastern United States. Progress Report #3.

By: Christopher Stone
Susan Alexander
Stone Environmental, Inc.

For: CIBA-GEIGY Corporation
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Identifying No.: 108801
DP Barcode: D225414
Date Sent to EFED: 5/6/96

5. REVIEWED BY:

Kevin Costello, Geologist
OPP/EFED/EFGWB/Ground Water Technology Section
Signature: Kevin Costello
Date: 4/9/97

6. APPROVED BY:

Elizabeth Behl, Chief
OPP/EFED/EFGWB
Signature: E Behl
Date: 4/9/97

7. CONCLUSIONS:

This quarterly report details the results of sampling events 11 through 13 at the Macon County, Georgia metolachlor prospective ground-water monitoring study. These sampling events occurred respectively at 180, 210 and 240 days after treatment (DAT) of the study field with metolachlor. The bromide tracer was detected in soil water at all lysimeter depths by sampling event 12. Metolachlor degradate CGA-51202 (a product of hydrolysis) was detected in six of eight lysimeter clusters by sampling event 13. The maximum concentration of this degradate found in soil-water to that point was 16 ppb.

Neither the bromide tracer nor metolachlor has yet been detected in ground water. However, since the immunoassay method has been unable to detect metolachlor degradates, it is not the proper tool to determine when metolachlor degradates have reached ground water. CIBA reports in their fifth progress report (to be reviewed separately) that they began analyzing ground-water samples by LC/MS instead of by immunoassay as of the 17th sampling event. CIBA ceased analyzing soil-water samples using immunoassay methods as of sampling event 15 (300 DAT).

CIBA recently informed EFGWB that it had confirmed the existence of an analytical method for the ESA degradate of metolachlor. ESA degradates of similar compounds have had a significant impact on ground-water quality. Results of analysis for this degradate will be available beginning with the sixth progress report.

The sum of the precipitation and irrigation water to fall on the site during this quarter was 55.57 inches, which exceeded the target of 120% of the 30-year average precipitation by more than 14 inches. This does not mean that an excessive amount of water was applied to the field, but that significantly more than the target was required to grow the crop.

8. RECOMMENDATIONS:

CIBA should continue to provide progress reports following the current format.

9. BACKGROUND:

CIBA began the field phase of this small-scale prospective ground-water monitoring study with preliminary site characterization in early 1994. The site is located on the Lakeland sand soil series, which is considered highly vulnerable due to its coarse texture (>80% sand, <2% organic matter in the surface layer). Metolachlor was applied to the Georgia site on June 13, 1995, at a rate of 4.0 lb ai/acre.

The first detections of metolachlor degradate CGA-51202 was detected during the eighth sampling event (90 DAT). These first detections were in soil water at a concentration of 0.18 ppb. After confirming the existence of the metolachlor sulfonic acid degradate (CGA-354743), CIBA agreed to begin analysis for this compound in soil water and ground water. The fifth progress report (to be reviewed separately) states that this degradate will be included in the analysis beginning with the 18th sampling event.