080803

Shaughnessy Number: ~~10880~~

Date Out of EFGWB: NOV 20 1991

TO: Robert Taylor
Product Manager 25
Registration Division (H7505C)

FROM: Elizabeth Behl, Acting Section Chief
Ground-Water Technology Section
Environmental Fate & Ground-Water Branch/EFED (H7507C)

THRU: Henry Jacoby, Chief
Environmental Fate & Ground-Water Branch/EFED (H7507C)

Attached, please find the EFGWB review of:

Reg./File #: 100-521

Chemical Name: Atrazine

Type Product: Herbicide

Company Name: CIBA-GEIGY Corporation

Purposes: Review of the detections of CIBA-GEIGY chemicals (atrazine, metolachlor, and simazine) in ground water in Florida and Ohio

Date Received by EFGWB: 9/5/91

ACTION CODE: 405 Adverse 6 (a) (2)

Date Completed: 11/19/91 EFGWB #(s): 910912
Monitoring study requested: ____ Total Review Time: 0.5 day

Monitoring study voluntarily: ___

Deferrals To: _____ Ecological Effects Branch, EFED

_____ Science Integration & Policy Staff, EFED

_____ Occupational & Residential Exposure Branch, HED

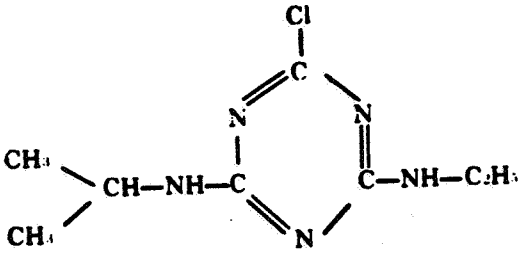
_____ Chemistry Branch, HED

_____ Toxicology Branch, HED

1. CHEMICAL:

Chemical name: 2-Chloro-4-ethylamino-6-isopropylamino-S-triazine

Common name: Atrazine
Trade name: AAtrex
Structure:



2. TEST MATERIAL:

Atrazine

3. STUDY/ACTION TYPE

Review of the detections of CIBA-GEIGY chemicals (atrazine, metolachlor, and simazine) in ground water in Florida and Ohio.

4. STUDY IDENTIFICATION:

Title: Reports of CIBA-GEIGY chemicals in ground water.

Submitted by: Karen S. Stumpf
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P.O. Box 18300
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5. REVIEWED BY:

Larry Liu, Ph.D. Signature: Larry Liu
Environmental Scientist
OPP/EFED/EFGWB/Ground-Water Section Date: 11/20/91

6. APPROVED BY:

Elizabeth Behl Signature: D. A Wells for EB
Acting Section Chief
OPP/EFED/EFGWB/Ground-Water Section Date: 11/20/91

7. CONCLUSIONS:

Three herbicides manufactured by CIBA-GEIGY (atrazine, metolachlor, and simazine) were detected in ground water. Atrazine was detected above the HAL in a well in Wood County, Ohio. Residues of metolachlor were also reported below the HAL

of 100 ppb, but no specific concentration level was given.

Simazine was detected at levels above the HAL in two wells in Highland County, Florida. Other chemicals, not manufactured by CIBA-GEIGY, were also detected, but the names of chemicals and concentrations were not given.

8. RECOMMENDATIONS:

(1). The registrant should submit any available information about the wells with detections to the Agency. Information that we would find useful includes: reasons for investigation, well location, pesticide use history in the vicinity of the wells with detections, number of wells investigated, number of wells with detections, depth of water table, depth of the well, ground-water flow direction, spill or disposal in the past, well construction, the type of water use (such as for irrigation or drinking).

(2). We would recommend the registrant sample nearby wells at each of the sites for possible ground-water contamination.

(3). Regardless of manufacturers, the registrant should submit all findings of the investigations to the Agency. The following data must be submitted: (1) the level of metolachlor detection in the well in Wood County, Ohio; and (2) the names and detection levels of the chemicals manufactured by other registrants.

9. BACKGROUND:

Atrazine has been registered since 1959 and has been used intensively in the United States since the early 1960's. There is some evidence that atrazine use has been declining in recent years, but it is still among the two or three most heavily used pesticides in the country, with annual use of 80-90 million pounds. Atrazine is also the primary pesticide used on corn. In the United States, atrazine use is primarily on field corn (86%), sorghum (10%), sugarcane (1.5%), and pasture (1%).

Metolachlor is a widely used herbicide for weed control in corn and soybean. Other uses include cotton, nonbearing citrus, nonbearing grapes, peanuts, pod crops, potatoes, safflowers, grain or forage sorghum, stone fruits, tree nuts, and woody ornamentals. Metolachlor is manufactured and marketed by CIBA-GEIGY Corp. under the trade name Dual. Metolachlor is also used in combination with atrazine under the trade name Bicep. Bicep is used to control weeds in corn and grain or forage sorghum.

Simazine is used for the control of most annual grasses and broadleaf weeds in corn, alfalfa, Bermudagrass, cherries, peaches, citrus, cranberries, grapes, apples, pears, certain

nuts, asparagus, certain ornamental and tree nursery stock, and in turf grass sod production.

Due to the classification of atrazine as a C carcinogen and the growing awareness of pesticide-contaminated ground water, since 1988 EPA has discussed the merits of placing it into Special Review. The assessment of atrazine in ground and surface water is still in progress.

10. DISCUSSION:

The purpose of this review is to comment on the detections of three herbicides manufactured by CIBA-GEIGY in ground water in two states. Due to the lack of detailed information (such as use history, site description, type of water use), discussion by the Agency is limited.

Findings of three herbicides and other chemicals in the ground water in Florida and Ohio are summarized below:

State (County)	# of Wells	Chemicals Detected	Health Advisory Level, ppb	Concentration ppb
FL (Highland)	2	simazine	1	3.8; 5.4
		others*	not reported	not reported
OH (Wood)	1	atrazine	3	16.5
		metolachlor	100	<100
		others**	not reported	not reported

Notes: * Another chemical (name unspecified) was detected in the wells at levels exceeding the HAL.
** Other pesticides (names unspecified) and nitrates were also detected at levels above the established HAL's.

Simazine residues of 3.8 and 5.4 ppb, which exceeded the HAL of 1 ppb, were detected in two private wells north of Sebring, Highland County, Florida. These two wells are positioned at the same location and are not used for drinking water. Another unspecified chemical, which was not manufactured by CIBA-GEIGY, was also detected in the wells at levels exceeding its HAL. CIBA-GEIGY reported that the manufacturer of the unspecified chemical has initiated installation of a filter for this location.

Although the use history of simazine and crops at the vicinity of the wells with detections in Highland County, Florida was not

reported, it appears that the detections might have been related to its use on citrus. Highland County ranks #6 in terms of the citrus acreage per county basis in the U.S (Census of Agriculture, 1987). There are 49,000 acres of land for the growth of citrus in Highland County.

In Wood Country, Ohio, a sample was collected from a non-drinking well containing 16.5 ppb atrazine and metolachlor residues. Reportedly the metolachlor residues were "far below its HAL of 100 ppb", but no specific concentration level was given. Other pesticides and nitrates were also detected at levels above the established HAL's, but residue levels were not reported.

Detections of atrazine and metolachlor in the well in Wood County, Ohio suggest that contamination of the well water is related to their use on corn. Reasons are as follows: (1) atrazine and metolachlor are major herbicides for corn; and (2) Wood County has the largest acres for corn in all counties in Ohio (Census of Agriculture, 1987).

Reference:

Census of Agriculture. 1987. Volume 1. Geographic Area Series; Part 51. United States-Summary and State Data. U.S. Department of Commerce.