Shaughnessy No.: 125601

Date Out of EAB: MAY 29 1986

To: R. Taylor/ J. Miller
Product Manager 25
Registration Division (TS-767)

From: Samuel Creeger, Chief
Review Section #1
Exposure Assessment Branch
Hazard Evaluation Division (TS-769)

Attached, please find the EAB review of...

Reg./File # : 10182-EUP-34

Chemical Name: Paclobutrazol

Type Product : Growth Regulator

Product Name : PARLAY

Company Name : Scotts

Purpose : New chemical, EUP for use on turf

Action Code(s): 725 EAB #(s) : 6313

Date Received: 2/07/86 TAIS Code:

Date Completed: MAY 29 1986 Total Reviewing Time: 2 days

Deferrals to: ____ Ecological Effects Branch

____ Residue Chemistry Branch

____ Toxicology Branch

Monitoring study requested by EAB: ____

Monitoring study voluntarily conducted by registrant: ____

1. CHEMICAL: Paclobutrazol, PARLAY

2. TEST MATERIAL: PARLAY 50WP

3. STUDY/ACTION TYPE: Field dissipaton study.

4. STUDY IDENTIFICATION: Francis, P.D. PACLOBUTRAZOL: Short Term Dissipation and Movement Following a Broadcast Spray. ICI Americas Inc., February 5, 1986.

5. REVIEWED BY:

Stephen J. Simko
Chemist
EAB/HED/OPP

Signature: S J Simko 5/29/86

6. APPROVED BY:

Samuel M. Creeger
Chief, Section 1
EAB/HED/OPP

Signature: Samuel M. Creeger

MAY 29 1986

7. CONCLUSIONS:

Paclobutrazol in the 0-6" soil level declined from 0.98 ppm at day 0 to 0.62 ppm at day 30. The ketone residues were detected at 0.02 ppm in the day 14 and day 30 samples only. Residues were below detection limits (0.01 ppm) in the lower soil layers at all sample intervals (see tables). The study demonstrates that leaching of Paclobutrazol residues into lower soil layers did not occur in a high sand content soil which received an average of 1/4 inch of rain for 30 days. The analytical method was not provided. — see review 7-31-87

8. RECOMMENDATIONS:

EAB requested that a 30 day study be carried out at two sites; however, this study at one site may satisfy EAB's concerns if the analytical method that was used in the study (Plant Protection Division Residue Analytical Method No. 79) is submitted.

A brief paper was included for estimating the leaching potential of the ketone degradate using an unacceptable method (the comparitive retention of the compound in reverse-phase high performance liquid chromatography).

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9. BACKGROUND:

This 30-day field study on the leaching potential of Paclobutrazol was requested by EAB in the review of 8/29/85. The field dissipation study (in support of EUP on turf) that was submitted at that time left open the question of leachability. Also, see the March 19, 1986 memo in the file

10. DISCUSSION OF INDIVIDUAL TESTS OR STUDIES:

Materials and Methods

Soil dissipation was studied in Goldsboro, North Carolina, using PARLAY formulation GFU029 (50% WP having 53% active ingredient) applied to bare soil at a rate equivalent to 2.25 lb ai/Ac. A sprayer with a four row (40-inch width rows) nine nozzle boom and 80° spray fan, giving a total spray width of 15 feet was used. The application was made with 1 pass at a speed of 1.76 MPH (temperature 78°F, relative humidity 59%, 35% cloud cover, wind calm, soil temperature at 2 inches 71°F). A 15 x 40 foot plot was cultivated, rototilled and irrigated 2 hours before application. The mean moisture content from five soil cores were 0-6", 9.6%; 0-12", 10.5%; 12-18", 16.0%; 18-24", 17.6%. At 0-12 inches the soil was a sandy loam, and at 12-24 inches the soil was a sandy clay loam (see tables).

The site, which was not previously treated with paclobutrazol, was sampled at ~~sampled at~~ 0, 1, 3, 7, 14 and 30 days. At each sampling, twenty soil cores were taken with a 12" or 18" zero contamination corer to a depth of 12", 18" or 24" (see tables). An overhead spray was used to supplement rainfall to give an average of 1/4 inch of rain per day (see tables). Six rainfall gauges were located at the site and measured daily. The soil cores were segmented into 6 inch lengths, combined, mixed, stored at -20°C and analyzed within 3 months. When soil cores were taken to a depth of 24" using a 12" corer twice, the top 1" of the lower core sample was discarded to guard against contamination from material that had fallen into the core from the surface.

Samples were analyzed for PP333 (paclobutrazol) and PP333 ketone (the major degradate) using methodology described in Plant Protection Division Residue Analytical Method No. 79. Determination was by GLC using a nitrogen selective detector.

Results

Paclobutrazol in the 0-6" soil level declined from 0.98 ppm at day 0 to 0.62 ppm at day 30. The ketone residues were detected at 0.02 ppm in the day 14 and day 30 samples only. Residues were below detection limits (0.01 ppm) in the lower soil layers at all sample intervals (see tables).

Reviewer's Discussion and Interpretation of Study Results

The study was well done and demonstrates that leaching of Paclobutrazol residues into lower soil layers did not occur in a high sand content soil which received an average of 1/4 inch of rain for 30 days. However, the analytical method must be submitted to EAB to complete the review of this study.

11. COMPLETION OF ONE-LINER:

12. CBI APPENDIX:

No CBI is included.

Paclobutrazol scientific review

Page _____ is not included in this copy.

Pages 5 through 10 are not included in this copy.

The material not included contains the following type of information:

___ Identity of product inert ingredients

___ Identity of product impurities

___ Description of the product manufacturing process

___ Description of product quality control procedures

___ Identity of the source of product ingredients

___ Sales or other commercial/financial information

___ A draft product label

___ The product confidential statement of formula

___ Information about a pending registration action

X FIFRA registration data

___ The document is a duplicate of page(s) _____

___ The document is not responsive to the request

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.