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

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

JUL 15 1994

MEMORANDUM

SUBJECT: ADDENDUM TO EXPOSURE ASSESSMENT FOR THE USE OF
RH-7592 2F (FENBUCONAZOLE) ON PECANS

TO: Albin Kocialski, Section Head
Chemical Coordination Branch
Health Effects Division (7509C)

FROM: Arthur O. Schlosser, Chemist *Arthur O. Schlosser*
Special Review and Registration Section II

THRU: Mark Dow Ph.D. Section Head *Mark Dow*
Special Review and Registration Section II

Larry Dorsey, Chief *Larry Dorsey*
Occupational and Residential Exposure Branch
Health Effects Division (7509C)

Please find below review of:

DP Barcode: D199578

The Lifetime Average Daily Exposures (LADE) for the use on pecans assuming 100% skin penetration and 35 year occupational exposure are given below.

GROUND APPLICATION-Air blast

Mixer/loader-open pour..... 5.5 x 10⁻⁶ mg/kg/day

Applicator-open cab..... 1.3 x 10⁻⁴ mg/kg/day

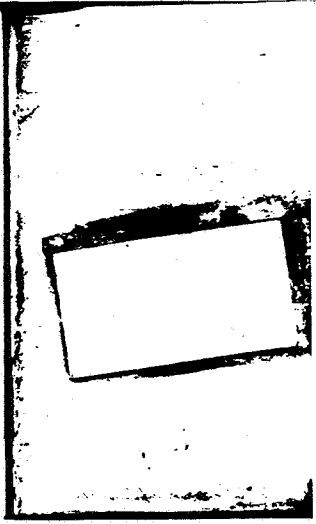
AIR APPLICATION-Fixed wing

Mixer/loader-open pour..... 2.0 x 10⁻⁵ mg/kg/day

Applicator-(pilot)..... 9.5 x 10⁻⁶ mg/kg/day



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MARK

Since there is an owner
risk I need
an LADD (LADE)

Thanks

Albi 305-7396

7/14/94

Pleasant

Room

718-L



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WASHINGTON, D.C. 20460

MAR 8 1994

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: EXPOSURE ASSESSMENT FOR THE USE OF RH-7592 2F
(FENBUCONAZOLE) ON PECANS

TO: Nan Gray, Chemical Coordinator
Chemical Coordination Branch (7509C)

FROM: Arthur O. Schlosser, Chemist *Arthur O. Schlosser*
Special Review and Registration Section II

THRU: Mark Dow Ph.D. Section Head *Mark Dow*
Special Review and Registration Section II

Larry Dorsey, Chief *Larry Dorsey*
Occupational and Residential Exposure Branch
Health Effects Division (7509C)

Please find below review of:

DP Barcode: D199578

Pesticide Chemical Code: 129011

EPA Reg. No.: 707-231

EPA MRID No.: None

PHED: YES Version 1.01 PHED: Mixer/loader Run #11; Applicators,
air-blast run #2; Applicator, aerial run #10.



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I INTRODUCTION:

A. Background:

Fenbuconazole is a protective fungicide recommended for use on pecans for the control of a variety of plant diseases. The product name is RH-7592 2F. Application is recommended at 6 to 8 fluid oz. (0.09 to 0.125 lb active) per acre using either ground or aerial equipment. Label restrictions include: (1) Do not make more than eight applications per season. (2) Do not apply after shuck split or within 28 days of harvest. (3) Do not apply more than 2 quarts (1 lb. active) per acre per season.

Personal Protective Equipment (PPE)- Applicators and other handlers must wear: Long-sleeved shirt and long pants. Shoes and socks. Waterproof gloves. Protective eyewear. Chemical-resistant headgear for overhead exposure. A notation included with this request for exposure assessment states that the label has been reviewed and accepted for Worker Protection Standard requirements.

A unit risk, Q_1^* of 1.65×10^{-2} (mg/kg/day)⁻¹, was calculated for fenbuconazole based upon male rat thyroid follicular cell tumor rates (1).

B. Purpose:

Registration Division (RD) requests an exposure assessment for the use of the protective fungicide RH-7592 2F (fenbuconazole) on pecans.

II DETAILED CONSIDERATIONS:

OREB uses the assumptions given below and the Pesticide Handlers Exposure Database, Version 1.01 (PHED) to develop the exposure assessments for the use of fenbuconazole on pecans.

Ground Equipment

Application rate taken as 0.108 lb ai/acre (average of recommended range-0.09 to 0.125 lb ai/acre).
 Eight applications per year.
 24 acres treated per day
 Unit of exposure for mixer/loader = 13.7 μ g/lb ai handled
 Unit exposure for applicator = 325.98 μ g/lb ai applied

Aerial Equipment

Application rate 0.108 lb ai/acre.
 Eight applications per year.
 87 acres treated per day
 Unit of exposure for mixer/loader = 13.7 μ g/lb ai handled
 Unit exposure for applicator = 6.4 μ g/lb ai applied

The Worker Protection Standard (WPS) for any agricultural pesticide is as a minimum: long pants, long-sleeved shirt, shoes and socks. The RH-7592 label specifies use of waterproof gloves and protective eyewear. See appendix for calculations.

III CONCLUSIONS/RECOMMENDATIONS

OREB estimates the following potential exposure values for the application of the protective fungicide, RH-7592 2F, containing the active ingredient fenbuconazole to pecans. Estimates are for Average Daily Exposure (ADE) to mixer/loaders and applicators using air-blast ground equipment and fixed-wing aircraft.

GROUND APPLICATION-Air Blast

Mixer/loader-open pour..... 1.1×10^{-5} mg/kg/day.

Applicator-open cab..... 2.6×10^{-4} mg/kg/day.

AIR APPLICATION-Fixed Wing

Mixer/loader-open pour..... 4.0×10^{-5} mg/kg/day.

Applicator-(pilot)..... 1.9×10^{-5} mg/kg/day.

Estimates are based on all workers wearing long pants, long-sleeved shirt, shoes and socks. All workers except the aerial applicators wore gloves.

Based on the recommended Pre-Harvest Interval of 28 days, significant post-application exposure to harvesters is expected to be unlikely.

APPENDIXGround application-

Mixer/loader-open loading, wearing gloves

Worker body weight is taken as 70 Kg.

$$24 \text{ acres/day} \times 0.108 \text{ lbs ai/acre} \times 13.7 \text{ } \mu\text{g/lb ai handled} = 35.5 \text{ } \mu\text{g/day} \div 70 \text{ kg bw} = 0.51 \text{ } \mu\text{g/kg/day}$$

$$8 \text{ applications/year} \times 0.51 \text{ } \mu\text{g/kg/day} = 4.1 \text{ } \mu\text{g/kg/year}$$

$$\text{Average Daily Exposure} = 4.1 \text{ } \mu\text{g/kg/year} \div 365 \text{ days/year} \\ = 0.011 \text{ } \mu\text{g/kg/day} = 1.1 \times 10^{-5} \text{ mg/kg/day.}$$

Applicator-air blast, wearing gloves

$$24 \text{ acres/day} \times 0.108 \text{ lbs ai/acre} \times 326 \text{ } \mu\text{g/lb ai handled} = 845 \text{ } \mu\text{g/day} \div 70 \text{ kg bw} = 12 \text{ } \mu\text{g/kg/day}$$

$$8 \text{ applications/year} \times 12 \text{ } \mu\text{g/kg/day} = 96 \text{ } \mu\text{g/kg/year}$$

$$\text{Average daily exposure} = 96 \text{ } \mu\text{g/kg/year} \div 365 \text{ days/year} \\ = 0.26 \text{ } \mu\text{g/kg/day} = 2.6 \times 10^{-4} \text{ mg/kg/day.}$$

Aerial application-

Mixer/loader-open loading, wearing gloves

Worker body weight is taken as 70 Kg.

$$87 \text{ acres/day} \times 0.108 \text{ lbs ai/acre} \times 13.7 \text{ } \mu\text{g/lb ai handled} = 129 \text{ } \mu\text{g/day} \div 70 \text{ kg bw} = 1.8 \text{ } \mu\text{g/kg/day}$$

$$8 \text{ applications/year} \times 1.8 \text{ } \mu\text{g/kg/day} = 15 \text{ } \mu\text{g/kg/year}$$

$$\text{Average daily exposure} = 15 \text{ } \mu\text{g/kg/year} \div 365 \text{ days/year} \\ = 0.041 \text{ } \mu\text{g/kg/day} = 4.1 \times 10^{-5} \text{ mg/kg/day.}$$

Applicator-fixed wing

$$87 \text{ acres/day} \times 0.108 \text{ lbs ai/acre} \times 6.4 \text{ } \mu\text{g/lb ai handled} = 60 \text{ } \mu\text{g/day} \div 70 \text{ kg bw} = 0.86 \text{ } \mu\text{g/kg/day}$$

$$8 \text{ applications/year} \times 0.86 \text{ } \mu\text{g/kg/day} = 6.9 \text{ } \mu\text{g/kg/year}$$

$$\text{Average daily exposure} = 6.9 \text{ } \mu\text{g/kg/year} \div 365 \text{ days/year} \\ = 0.019 \text{ } \mu\text{g/kg/day} = 1.9 \times 10^{-5} \text{ mg/kg/day.}$$

REFERENCES

(1) Febuconazole: Quantitative Risk Assessment, Two-Year Rat (Charles River Sprague-Dawley, MRID Nos. 416353-01 & 416353-02) Dietary study. (B. Fisher SAB/HED to S, Williams Tox II/HED, 2/2/94)

CC: A.Schlosser, OREB
Nan Gray, CCB
Chemical file- fenbuconazole/129011
Correspondence