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

signed 4/16/96

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: **Fipronil: PC Code 129121:**
Exposure Estimates and Risk Assessment for Applicators of a Proposed End-Use Product (CHIPCO CHOICE) on Commercial Turf.

FROM: Richard Griffin
Registration Team
Risk Characterization and Analysis Branch

THROUGH: Deborah McCall, Acting Team Leader
Registration Team
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and

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TO: Ann Sibold, PM 10
Insecticide-Rodenticide Branch
Registration Division (7505C)

Rhone-Poulenc is requesting registration of an end-use product named CHIPCO CHOICE®. This product is a 0.1% fipronil formulation and is intended to control mole crickets on golf courses and commercial turfgrass. The proposed label requires application by slit-placement equipment. The following summarizes the Health Effect Division's review of data submitted in support of this proposed use and provides an occupational risk assessment by comparing applicator exposure estimates to the toxicological endpoints designated for fipronil.

(1)

Hazard Identification/Dose Response Assessment:

Toxicological data supporting the registration of fipronil technical and various end-use products has been reviewed by HED. Toxicological endpoints for risk assessment have been established by the HED Reference Dose (RfD), Toxicology Endpoint Selection (TES), and Cancer Peer Review committees. The TES document for fipronil was completed on 1/27/95, and established risk assessment requirements for short term and intermediate term occupational/residential exposure to fipronil.

The NOEL selected for both short and intermediate exposure is 5.0 mg/kg/day from a 21-day dermal toxicity study in rabbits. This study demonstrated decreased body weight and food consumption in both sexes (LOEL: 10.0 mg/kg/day).

Since fipronil dermal absorption data was not available for TES review, worker exposure estimates are based on an assumption of 100% absorption. (A dermal absorption study for an 80% a.i. formulation was reviewed by R.P. Zendzian on 10/11/95).

Fipronil has been classified by the HED Cancer Peer Review Committee (7/18/95) as a Group C carcinogen. However, quantification (Q1*) of fipronil carcinogenic risk is not considered appropriate.

Occupational exposure estimates:

The Occupational and Residential Exposure Branch was unable to quantify worker exposure for the turf use due to a lack of data for the slit-placement application method required by the CHIPCO CHOICE label. However, OREB (C. Lang memo, 7/6/95) has done a qualitative comparison of the proposed turf use to the exposure/risk estimates for the use of REGENT 1.5G (1.5% fipronil a.i.) on field corn. REGENT/corn worker exposure estimates are based on Pesticide Handler Exposure Database (PHED) data.

The following reasons were given for an expectation of lower worker exposure for turf use:

- The a.i. in CHIPCO CHOICE (0.1%) is considerably less than in REGENT (1.5%).
- The maximum application rate of CHIPCO CHOICE (0.025 lbs ai/A; 2/yr) is considerably less than REGENT (0.13 lbs ai/A; 1/yr).
- Under optimal conditions, the slit-placement application method should minimize applicator exposure to the ai.

- The maximum acreage likely to be treated in one work day is 30 acres or less (less than half the acreage assumed for REGENT estimates).

Risk Assessment:

For fipronil, HED considers 100 (or more) to be an adequate margin of exposure for estimated short (1-7 day) and intermediate (1 week to several months) exposure. The MOE estimates for use of REGENT 1.5G on corn are 2940 for applicators and 1140 for mixer/loaders.

Although the exposure to fipronil of workers using CHIPCO CHOICE cannot be quantified, HED concludes that exposure will be less than the exposure estimated for the REGENT 1.5G use on corn and therefore has no objection to the proposed registration.

cc: C. Lang
Caswell file 129121
RCAB files