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

OPP OFFICIAL RECORD
HEALTH EFFECTS DIVISION
SCIENTIFIC DATA REVIEWS
EPA SERIES 361

OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

APR 15 1992

MEMORANDUM:

pc 070701

Subject: Review of potential Occupational and Residential Exposure to Capsaicin (pepper) for the Reregistration Eligibility Document (RED).

To: Esther Saito, Chief
Science Administration Section
Science Analysis & Coordination Branch (SACB)
Health Effects Division (H7509C)

From: James Yowell, Senior Scientist *Jim Yowell*
Reregistration Section II
Occupational and Residential Exposure Branch
Health Effects Division (H7509C)

Thru: *ae Nielsen*
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Reregistration Section II
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Thru: Charles L. Trichilo, Ph.D., Chief
Occupational and Residential Exposure Branch
Health Effects Division

Chemical: Capsaicin (pepper)

Case#: 4018

Chemical#: 070701

Company:

Defer to: _____ Biological Analysis Branch/BEAD
_____ Accelerated Reregistration Branch/SRRD
_____ TB-Insecticide/Rodenticide Support Section
_____ TB-Herbicide/Fungicide/Antimicrobial

OCCUPATIONAL AND RESIDENTIAL EXPOSURE

Based on the LUIS report, Use Profile, and labels provided by BEAD and SRRD, Capsaicin is used as an insect, dog, cat, raccoon, squirrel, deer and rabbit repellent and as a human attack preventative for humans. Capsaicin is used as an acaricide and insecticide on a variety of fruit, nut, citrus trees, vegetables, melons, figs, cereal grains, ornamental woody shrubs and vines, ornamental herbaceous plants, and lawns. It is also used around households/domestic dwellings and their contents as an insecticide/insect repellent (crack, crevice, carpets and fabrics). Capsaicin is formulated as a dry ground product, soluble concentrate/liquid, pressurized liquid, and liquid-ready to use. The dust formulations contain 0.6250-12.0% Capsaicin a.i. and 0.2160-5% *Allium sativum* (garlic) a.i.; the soluble concentrate/liquids contain 2.5-36% Capsaicin a.i. with one product combined with 24.0% *Allium sativum* (garlic) a.i.; the liquid-ready to use product contains 0.6250% Capsaicin and 0.2160% allyl isothiocyanate a.i.; and the pressurized liquids 0.350-1.00% Capsaicin.

The ground formulations can be applied as dusts (ground or aerial) to the foliage of growing crops or with a granular applicator (or shaker can). The labels call for a minimum of 7 days between applications. The liquid formulations are diluted with water and broadcast sprayed by aircraft, ground boom, hand held garden, and airblast spray equipment except for the ready-to-use pressurized product. Preharvest intervals of a minimum of 2 days and maximum of 15 days have been recommended for tree crops and spray must be applied prior to fruit formation in vegetable crops.

Based on the application methods and formulation types, the potential for eye, dermal and inhalation exposure to mixers, loaders, and applicators does exist. In addition, the potential for postapplication exposure may be significant for the foliar treatments applied prior to harvest (especially where no pre-harvest intervals are recommended).

OPP's Biotechnology Work Group recommends that Capsaicin be classified as a biochemical pesticide (1).

Based on discussions with Esther Saito and Tom McClintock of SACB (2), the toxicity of capsaicin is well known and no toxicity concerns for the current uses of Capsaicin were identified. Therefore, no dermal or inhalation exposure data are required.

1. Memorandum from J. Thomas McClintock, dated November 26, 1991.
2. Based on discussion with Esther Saito of SACB, on 1/13/92, and Tom McClintock of SACB, on 1/23/92, and 3/9/92, there are minimal tox concerns or data requirements for Capsaicin at this time.

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CONCLUSIONS

Based on the lack of toxicological concern as provided in conversations with SACB, OREB has no data or product labeling concerns at this time and defers this case to SACB for any further evaluation.

cc: James Yowell/OREB
Tom McClintock/SACB
Chemical File
Correspondence
Circulation

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