7-8-88 RF

JUL 8 1988

RCB SCIENCE INTEGRATION/DEFERRAL

To: Theodore M. Farber, Ph.D.
Chief, Toxicology Branch

From: Charles L. Trichilo, Ph.D.
Chief, Residue Chemistry Branch

Subject: Request for Toxicology Input on PCBN
(Manufacturing Impurity in Chlorothalonil)

RCB Number: _____

Action: FRSTR

Chemical Name: Chlorothalonil

Purpose: Determination of Need for Additional Residue Data for PCBN

Due Date: _____

Background Data: Before RCB can complete it's work, input from TOX is needed. Refer to the attached memo for a discussion of the background information pertaining to this deferral.

Technical Contact: Debra Edwards -RCB (557-4353)

Deferral: Based on the data summarized in the attached memo, should RCB require field residue data for pentachlorobenzonitrile (PCBN) in or on additional crops, in order to obtain a complete PCBN residue data base?

cc: Lois Rossi (PM 21)
Amy Rispin (SIMS)
W. Boodee (RCB)
RCB Subject File
RCB Registration Standard File

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

JUL 8 1988

MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: Chlorothalonil Final Registration Standard and Tolerance Reassessment (FRSTR): Response to TOX Branch Memo Regarding Residues of the Chlorothalonil Manufacturing Impurity, pentachlorobenzonitrile (PCBN), in food and feed crops

FROM: Debra F. Edwards, Ph.D.
Residue Chemistry Branch
Hazard Evaluation Division (TS-769C)

Debra Edwards

THROUGH: Charles L. Trichilo, Ph.D., Chief
Residue Chemistry Branch
Hazard Evaluation Division (TS-769C)

TO: Esther Saito
Science Integration and Policy Staff
Hazard Evaluation Division (TS-769C)

and

William Burnam, Deputy Chief
Toxicology Branch
Hazard Evaluation Division (TS-769C)

Introduction:

In the Residue Chemistry chapter of the Chlorothalonil FRSTR (3/11/88), RCB requested data depicting the residues of PCBN, a manufacturing impurity of chlorothalonil, in several raw agricultural commodities (RACs) and processed products following treatment with registered chlorothalonil end-use products. Although acceptable PCBN data are available for several crops (see table on following page), additional data were required for several major food and feed items, including potatoes, succulent beans, tomatoes, dried plums, sweet corn forage, mint, papayas, passion fruit, peanuts and grass grown for seed. Subsequently, the TOX Branch issued a memo (D. Ritter, 5/2/88), based on their review of the currently available PCBN data in the Residue Chemistry chapter, which stated that residues of PCBN in raw agricultural commodities are in approximately the same proportion relative to residues of chlorothalonil as in technical chlorothalonil products. Thus, the TOX Branch inferred that "the toxicological profile of the technical product reflects the toxicity of PCBN as an impurity." They concluded, "our concern for residues of potentially toxic PCBN in racs is alleviated."

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RCB Response:

The data upon which TOX based their conclusions were not field residue data. Rather, the TOX reviewer summarized fortification levels used in method validation for PCBN and chlorothalonil. These levels were obtained from the fortification/recovery tables (Tables 2 and 3) in the Analytical Methods section of the Residue Chemistry chapter.

To provide the TOX Branch with actual comparisons of PCBN and chlorothalonil residues in crops for which data are currently available, RCB has rereviewed the PCBN data summarized in the Residue Chemistry chapter of the FRSTR. Reported PCBN values were adjusted to a theoretical maximum based on batch analysis of the product used in the residue trial. For example, the maximum theoretical PCBN for broccoli was obtained by multiplying the actual reported value by 1.9. This conversion factor was based on analysis of the 4 lb/gal FlC (41.8%) batch used in the residue trial (the batch contained [redacted] technical products). In general, theoretical maximum PCBN residue levels constitute ≤ 4% of the chlorothalonil levels (see table below). However, in the cases of broccoli and bulb onions, the maximum level of PCBN relative to chlorothalonil is significantly higher (14 and 63%, respectively).

Crop	Maximum Theoretical PCBN Level (ppm)[a]	Chlorothalonil + SDS 3701[b] (ppm)	% PCBN
Broccoli	0.27	1.88	14.4
Brussels sprouts	0.107	4.48	2.4
Bulb onions	0.038	0.06	63
Cabbage	0.082	5.02	1.6
Carrots	0.04	1.01	4
Cauliflower	<0.005[c]	2.28	0
Celery	<0.005	3.3	0
Cranberries	0.125	4.28	3
Cucumbers	0.13	4.32	3
Green onions	0.564	25.06	2.3
Melons	0.05	2.6	1.9
Soybeans	<0.005	0.019	0
Summer Squash	0.11	4.15	2.7
Winter Squash	0.068	2.7	2.5

[a]Maximum actual value adjusted to theoretical maximum based on batch analysis of product used in residue trial.

[b]SDS-3701 = 4-hydroxy-2,5,6-trichloroisophthalonitrile (metabolite currently included in tolerance definition)

[c]Nondetectable (<0.005) - Actual values were ≤ untreated control values.

RCB defers to the TOX Branch regarding the need for PCBN field residue data for potatoes, succulent beans, tomatoes, dried plums, sweet corn forage, mint, papayas, passion fruit, peanuts, and grass grown for seed (crops for which adequate PCBN data are not currently available).

RDI:D.Edwards:7/88:(557-4353):W.Boodee:7/88:R.Schmitt:7/88
cc:PMSD/ISB:RF:SF:Reg.Standard File:Circu

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