10-18-84

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

OCT 18 1984

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Memo of Conference, 10/2/84. "Thiodicarb on Tomatoes - Discussion of Questions Arising from RCB's 7/26/84 Review of PP#4F3013/FAP#4H5421" and "Thiodicarb on Cotton and Soybeans - Discussion of Acetamide in Animal Commodities (Including Milk) Resulting from the Uses Proposed in PP#0F2413/FAP#0H5275 and PP#3F2793/FAP#3H5378.

FROM: Michael P. Firestone, Ph.D., Chemist
V. Frank Boyd, Chemist
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

THRU: Robert S. Quick, Section Head
Tolerance Petition Section I
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

and

John H. Onley, Ph.D., Section Head
Tolerance Petition Section II
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TO: RCB Files

ATTENDES:

Union Carbide	EPA
J. Steven Lovell	Richard D. Schmitt, RCB
Richard Heintzleman	V. Frank Boyd, RCB
Timothy Hunt	Michael P. Firestone, RCB
	Chriss Chaisson, TOX
	Alain Katz, TOX
	Jay S. Ellengberger, RD
	Dennis Edwards, RD

Representatives of Union Carbide came to discuss questions regarding RCB's concern of acetamide residues from thiodicarb in milk and tomatoes. The meeting progressed in two parts:

(a) UC representatives discussed tomatoes with R. Schmitt, Frank Boyd and Dennis Edwards.

(b) UC representatives discussed milk with R. Schmitt, M. Firestone, Dennis Edwards, J. Ellenberger and TOX representatives.

In discussing acetamide residues in tomatoes, Heintzelman and Lovell presented an inductive/deductive argument aimed at showing the infinitesimal quantity of acetamide that could be present in tomatoes from application of thiodicarb. The argument was based on their determination of thiodicarb as mainly a surface dislodgeable residue on tomatoes leaves and a comparison of metabolism pathways for plants and animals.

RCB countered this argument by citing a need for experimental proof of acetamide levels. RCB suggested a possible study using injection of C^{14}-acetonitrile into tomatoes (on the vine) and analysis of acetamide or other terminal metabolites formed or accumulating.

After a brief discussion, it appeared that UC will present their "logic" argument in an attempt to convince RCB that any experimental work on tomatoes is unnecessary. They indicated that the new processing study required by RCB would be performed.

In discussion of acetamide in milk and other animal commodities resulting from the proposed use of thiodicarb on cotton and soybeans, the initial dialogue centered around the ratio of acetonitrile:acetamide in milk, which RCB calculated could be as small as 4:1 based on a study in which a single dose (7.02 mg/kg) of ^{14}C-thiodicarb was fed to a lactating Holstein cow. Union Carbide determined a ratio of about 800:1 based on a single determination of acetamide in milk obtained from a cow fed 21 day with ^{14}C-thiodicarb equivalent to 100 ppm in the diet. RCB reiterated its request for a proper dairy cattle or goat feeding study in which milk is sampled daily over the course of the entire study, so that a more reliable estimate of the acetonitrile:acetamide ratio could be determined.

TOX has calculated the level of acetamide in milk which would result in a cancer risk of 10^{-6} (Sm = 36 ppb - see C. Chaisson memo of 9/21/84 re: subject petitions). This value is greater than 100 times the acetamide level RCB has estimated would occur in milk as a result of the proposed uses on cotton and soybean (see M. Firestone memo of 9/24/84 re: subject petitions).

In light of the above, the petitioner indicated that he would attempt to gain a waiver for the requirement of a SOM method for acetamide/acetonitrile in milk. This would be necessary since based on an acetonitrile:acetamide ratio of 4:1, the petitioner's SOM method for acetamide/acetonitrile in milk would have a reported lowest limit of reliable measurement (LLRM) of 325 ppb, or approximately 10 times the Sm calculated by TOX, thus, making it unacceptable. The waiver for a method for acetamide or acetonitrile in milk would be based on a proviso in an unpublished FDA draft of a revised SOM procedure. Union Carbide stated that the revised SOM procedure allows for method waivers if a metabolite is less than 1% of the naturally occurring level. Finally, RCB asked about the progress in developing a GC-MS procedure for the determination of acetamide, and whether data would be submitted substantiating a previous claim of endogenous acetamide in milk. The petitioner indicated that the GC-MS procedure is still under development, and that anlayses of processed milk showed the presence of acetamide. RCB is awaiting submission of the above.

cc:R.F., Ciruc, Reviewer, Memo of Conference File
TS-769:CM#2:RM810:X7484:M. Firestone:wh:10/15/84
RDI:J. Only:10/15/84:R. D. Schmitt:10/15/84