PMSD/ISB 2409

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

MAY 9 1988

MEMORANDUM OF CONFERENCE

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: May 4, 1988 Meeting regarding Dicofol Registration Standard Deficiencies and S. Hummel reviews of 5/27/87 and 10/27/87

FROM: Susan V. Hummel, Chemist
Special Registration Section I
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

Susan V. Hummel

THRU: Edward Zager, Section Head
Special Registration Section II
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TO: Dennis Edwards, PM#12
Insecticide Rodenticide Branch
Registration Division (TS-767)

and

Files

Rohm and Haas Company requested a meeting to discuss Plant metabolism, animal metabolism, and residue studies in cottonseed and dry beans. Dicofol [1,1-bis(chlorophenyl)-2,2,2-trichloroethanol] is the active ingredient in Kelthane (R). The meeting occurred on May 4, 1988 at 10 am.

Attendees

Robert Larkin	Rohm and Haas
Ann Tillman	Rohm and Haas
Berni Chong	Rohm and Haas
Diana Bender	Rohm and Haas
Susan Hummel	EPA/RCB
Edward Zager	EPA/RCB
Dennis Edwards	EPA/PM#12

Plant Metabolism

The citrus and cottonseed samples have been stored two to three years. There are no bean samples left from the 1979 bean metabolism study. Storage stability data are available for 2 years. Will additional analyses/characterization of the stored

cottonseed and citrus samples be acceptable? RCB stated that these samples would be acceptable for additional metabolism work.

Once the citrus and cottonseed metabolism studies have been accepted, will a third metabolism study be required? Sue Hummel asked which crops Rohm and Haas was planning to support, since not all crops which currently have tolerances are on current dicofol labels. Dr. Larkin stated that he did not know, but that Rohm and Haas did not want any tolerances revoked. Rohm and Haas may also want to add additional crops to the label, such as sorghum. RCB requested additional time to consider this question.

What enzymes are recommended for release of residues? RCB stated that we cannot recommend specific enzymes, but listed enzymes which have been used in plant and/or animal metabolism work. (sulfatases, glucuronidase, cellulase, protease, lactase, carboxypeptidase, glucosidase).

Rohm and Haas asked how far they needed to go in attempting to characterize the residues. We replied that we expected a reasonable effort from the registrant. Residues needed to be identified. In the fractionation done on citrus peel, merely showing that the residue fractionated with sugars, cellulose, lignin, etc., is not sufficient. We need to know if the residue is actually a sugar, etc. Rohm and Haas asked if the polar compounds found in citrus peel needed to be further identified. RCB said yes. Rohm and Haas asked which of the fractions of citrus peel needed further identification. The bulk of the residue fractionated with lignin. This fraction needed further identification. The water and methanol extracts also needed further identification.

For additional cottonseed metabolism work, can samples which were treated when the bolls were open be used. These samples had higher residues than samples treated before the bolls open. We asked if dicofol was likely to be used when the bolls were open. Rohm and Haas stated that about 10% of the bolls could be open at the time of the last dicofol treatment. We said that these samples could be used.

<u>Animal Metabolism</u>

For goat and poultry liver, base and enzyme hydrolysis is needed. Enzymes which might work were discussed with plant metabolism. Rohm and Haas noted that in work on another chemical (Dithane), protease solubilized the liver tissue and created a messy extract. We reiterated that we had seen proteases used in metabolism work.

The animal tissues have been stored about three years. Are these samples adequate for additional characterization work? We said yes.

RCB stated that no additional work was needed on egg yolk.

Rohm and Haas asked whether the real intent of the metabolism studies was to determine which residues might be available to animals in their digestive system, or whether the intent was to determine worst case residues. We stated that the real concern is with what is available to the body through the digestive system.

Residue Field Trials

For the cottonseed field trials, acid delinted cottonseed was analyzed. Should the samples have been mechanically delinted rather than acid delinted? We answered that the raw agricultural commodity was the undelinted cottonseed, i.e., without any mechanical or chemical delinting. We recognize that this is not explicitly stated in the Residue Chemistry Guidelines. Rohm and Haas stated that they still have whole bolls in storage from the field trials previously conducted. Could these samples be ginned and reanalyzed? They have been stored about three years. The storage stability data showed less than 20% decline in 2 years. We stated that it should be acceptable to reanalyze the stored samples. (NOTE TO PM: Additional clarification of this follows the discussion of the meeting.)

How many additional field trials are required for dry beans? Six states and five varieties of beans were listed. We stated that we do not need residue data on each variety from each state. The residue data should reflect treatments of each major variety of dry beans, and each geographical location. For example, navy beans would be grown in MI, but not necessarily all the other states. Rohm and Haas had a plan for field trials which included at least one variety from each state. All five varieties were represented. We stated that the plan should be sufficient. (NOTE TO PM: Additional clarification of this follows the discussion of the meeting.)

Dr. Larkin explained the harvest of dry beans. The beans are windrowed to dry in the field. Then the beans are harvested, leaving almost dry plant material in the field. We stated that the vines are the almost dry material left in the field. When the vines are dried, they are called hay. The bean forage would be the whole immature plant. Residue data are needed on bean forage and hay. If there is a feeding restriction for bean forage and hay, then data would be needed on cannery waste. Rohm and Haas questioned whether there would be cannery waste for dry beans.

Submission of Protocols

Dennis Edwards suggested that Rohm and Haas submit protocols for th additional metabolism work. We added that protocols are optional. Rohm and Haas asked how quickly their protocols would be reviewed. We stated that protocols are reviewed quickly, ususally within several weeks, however, Sue Hummel has a very heavy workload at this time, so some additional review time might be required.

The meeting ended at 10:45 am.

Answers to questions and clarifications

Is a third metabolism study needed? Yes, based on the wide variety of crops for which there are tolerances. We would suggest that the third metabolism study be conducted on tomatoes or beans.

Following the meeting, we continued the discussion of metabolism issued with RCB Branch Management. While the concern is the toxicity of residues that may be released in the digestive process, there is enough uncertainty regarding release of residues in the digestive process to warrant the study of bound residues even when they can only be released by drastic means. Once the metabolite residues released by the enzyme hydrolysis are identified, then a decision can be made whether these residues should be included in the tolerance expression. These residues would be included in the tolerance expression when the residues are related to the pesticide, and would not be included in the tolerance expression if the residues were incorporated into natural plant constituents. If releasable residues need to be included in the tolerance expression, then the analytical method needs to be revised to determine the total residue of concern.If the registrant wants to pursue the argument that these bound residues are not released in the digestive system he should consult with Toxicology Branch regarding the bioavailability of the residue.

In rereading the deficiencies for residue data for dry beans and cottonseed, we noted that the geographical representation was not the only deficiency for the bean study, and that analysis of delinted cottonseed was not the only deficiency in the cottonseed study. There is also a discrepancy between the label and the submitted residue data in terms of the rates, numbers of applications, PHIs, and types of application (dilute, concentrate, ULV, and ground vs. aerial). These deficiencies will remain even if the stored cottonseed samples are analyzed and the few additional trials for dry beans are conducted. All of these deficiencies could be resolved by labeling changes.

NOTE TO PM:

Rohm and Haas should be sent a copy of this memo of conference and alerted to the answer to their question regarding the need for additional plant metabolism studies and the additional clarifications discussed above.

cc: R.F., Circu, dicofol S.F., S. Hummel, Dicofol Reg Std file (W. Boodee), EAB, EEB, TOX, PMSD/ISB
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TS-769:RCB:SVH:svh:RM810:CM#2:05/05/88