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

DEC 19 1985

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Protocol for Amitraz (BAAM®) on Hog Skin
Evaluation of October 14, 1985, Submission
(No Accession Number) [RCB #97]

FROM: Francis D. Griffith, Jr., Chemist
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THRU: Robert S. Quick, Section Head, TPS-1
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Nor-Am has submitted the proposed protocol for Amitraz, trade named BAAM® (N'-(2,4-dimethylphenyl)-N-([(2,4-dimethyl phenyl)inimo]methyl)-N-methyl methanimidamide) on hog skin. This protocol was submitted as a part of the agenda for the October 18, 1985, conference.

RCB Comments

In general, the petitioner will find RCB comments as supplementary to our review of his amendment to PP#4F3081 (see memo F. D. Griffith, Jr., September 6, 1985) and discussions during the October 18, 1985, conference.

In the Objective, RCB suggests the petitioner identify the metabolites to be determined. They should be the two metabolites that are in the Codex expression.

The petitioner needs to provide the weight of each hog used in the test at the start and at slaughter. RCB reiterates its conclusion 1a, b, and c of the September 6, 1985, amendment review. We would also like to know the sex and age of each hog used in the study.

In the Treatment Procedure section, RCB suggests the petitioner show his feed and water contain no amitraz. The petitioner should show his care and feeding is as close as possible to standard commercial hog raising procedures, or detail known differences in the procedure. The proposed use of Taktic® E.C. two oz/three gallons is the only spray schedule. RCB suggests that some of the group of 16 hogs be treated at an exaggerated level. Some exaggerated rate data may be helpful in addressing probems relating to the Delaney Clause. For example, one hog treated at an exaggerated rate could be used for each PSI. RCB does not object to one control hog per four test hogs.

The question of a preslaughter interval (PSI) is not mentioned, per se, in this protocol. RCB reiterates the petitioner needs to obtain outside documentation of what is currently considered the good agricultural practice in hog production for ectoparasite control. We suggested this documentation come from the state land grant/agricultural colleges in major hog producing States.

In the Slaughter Timing section, RCB notes no intermediate level for slaughter between one and 14 days after the second treatment. We suggest the petitioner consider a slaughter date of seven days as one of the intervals. In fact, any date from four to ten days would be satisfactory. During the conference the petitioner inquired would 30 day residue data be necessary when 14 day data showed no detectable residues. We suggest the 30 days interval be retained (see below under Conclusions).

For Sampling, the petitioner plans to remove the entire back and belly skin. RCB inquires will this be one sample or will the petitioner separate the skin into 2 samples. RCB suggests 2 samples (one belly skin and one back skin per hog). Residue data from two samples could be compared to previously submitted amitraz on hog skin data. RCB approves of slaughtering the control hog before slaughtering the treated hogs. The petitioner plans to place the high lipid hog skin samples in plastic bags. With the interferences noted on the previously submitted chromatograms and this reviewer's experience with residue samples in "plastic" containers RCB suggests the petitioner wrap the hog skins in de-oiled aluminum foil before sealing the samples in plastic.

On Processing, RCB suggests the petitioner fully describe the processing of raw hog skin into crackling and puffed hog skin snack food. Instead of 100 grams of unprocessed hog skin being retained, RCB suggests all unused raw hog skin be retained.

In obtaining the residue data RCB suggests the petitioner describe and document deviations made from the standard commercial hog skin processing.

RCB reminds the petitioner of various method deficiencies and storage stability deficiencies noted in our review. In any new protocol generating additional residue data, we would expect to see recovery data for the amitraz metabolites as well as their limit of detection being defined. Questions concerning extraction efficiency also need to be resolved. If the petitioner is planning to use the same method in gathering the additional residue data, RCB suggests the use of internal standards for all samples. Since the overall volume of data is small RCB asked for copies of many different chromatograms. RCB asks for some recovery data of amitraz and metabolites through the most appropriate PAM-I protocol(s).

RCB suggests a revised Section F is in order. We would like to see the amitraz tolerance expression be more in line with the Codex amitraz expression. Nor-Am indicated this would not present a problem to them. RCB also mentioned that once the tolerance expression identified specific metabolites, these metabolites should be in the EPA Repository at RTP-NC.

RCB Conclusions

1. RCB reiterates its conclusions 1, 2, 3, and 5 of its September 6, 1985 amendment review. They are repeated below as follows:

    1. The petitioner should provide additional details of the hog skin study as follows:

        a. name of the breed of hogs to determine if an economically important breed was used;

        b. description of the test facilities, including animal care and feeding;

        c. name and location of the processing plant.

    2a. The petitioner should demonstrate the basic hydrolysis step in the method used to determine amitraz residues in animal commodities is adequate to recover the possible conjugates of metabolites in animal tissues.

    2b. Additional extensive recovery data are needed for amitraz, per se, and its formamide and methyl-methamimidamide metabolites in/on hog skin,

fat, meat, kidney, and liver at or near the limit of detection (L.D.) and proposed tolerances. The petitioner should show the quantitative conversion of amitraz and its metabolites to 2,4-dimethylaniline so RCB may ascertain the total amitraz residues in tissues.

2c. The petitioner should determine the limit of detection for the formamide and methylmethanimidamide metabolites.

3. RCB has been unable to locate any storage stability data for amitraz and its metabolites in/on animal tissues. The petitioner should use spiked or weathered residue samples stored at subfreezing temperatures for intervals associated with the treated hog skin samples used to determine the magnitude of the residue. The storage procedure used in this amendment could be validated by preparing samples of hog fat or hog skin spiked with the parent compound and preparing separate samples for each metabolite at several ppm; i.e., two or three x L.D. and at the proposed tolerances. These samples should be stored under the same conditions as the "field" samples, then periodically remove sample aliquots for analysis.

5a. In any future revision of Section F RCB suggests the petitioner change the phrasing to bring it more in line with the Codex amitraz tolerance expression. Suggested phrasing could be "combined residues of amitraz [N'-(2,4-dimethylphenyl)-N-[[(2,4 dimethylphenyl)imino]methyl]-N-methylmethanimidamide) and its metabolites N-(2,4-dimethylphenyl)-N-methyl formamide and N-(2,4-dimethylphenyl)-N-methylmethanimidamide (both calculated as the parent) totaling X part per million."

5b. Assuming our method and storage stability questions are resolved without any increase in total amitraz residues, RCB tentatively agrees the proposed amitraz tolerances in hog meat at 0.05 ppm and in hog fat at 0.1 ppm are adequate.

5c. In a revised Section F the petitioner needs to propose a separate hog liver and kidney amitraz tolerance. RCB tentatively agrees a 0.2 ppm is adequate.

5d. RCB defers judgment on any amitraz in hog meat byproducts proposed tolerance until we have reviewed the amitraz results in cooked hog skin.

5e. If the results of the cooked hog skin study show higher amitraz residues than in raw hog skin, a food additive petition and a food additive amitraz tolerance proposal should be presented.

5f. RCB reiterates our concerns expressed in conclusion 4b of our July 11, 1984, review.

Assuming the above tolerances are established on hog commodities, they will need to be reevaluated at a later date if future proposals are considered for the possible use of amitraz on potential hog feed items.

2. RCB requests the petitioner identify the amitraz metabolites on which data will be reported. We also suggest these be the same metabolites identified in the Codex tolerance experession.

3. The petitioner should provide the starting weight and the slaughter weight of the hogs.

4. The petitioner needs to show no amitraz is in the test animals' feed and water.

5. RCB suggests that some of the hogs to be treated (for example, one per PSI) in the protocol be dosed at an exaggerated level with amitraz. This information could be useful in addressing problems relating to the Delaney Clause. We suggest retaining the 30 day PSI in the study and also suggest animals be included at a seven day PSI.

6. To accurately determine the proper PSI the petitioner needs to obtain "outside" documentation of good agricultural practices in hog production for ectoparasite control using Taktic® E.C.

7. Amitraz and its metabolites residue data should be presented on separate back and belly skin samples from the same hog.

8. RCB suggests the petitioner consider wrapping the high lipid hog skin samples in de-oiled aluminum foil before sealing them in plastic bags.

9. All unused hog skin samples should be retained.

10. Any deviations to the standard commercial hog skin processing to crackling and puff snack food should be described and documented.

11. RCB requests that some recovery data for amitraz and its metabolites using the most approriate PAM-I procedure(s) be presented.

RCB Recommendation

If the petitioner concurs with RCB conclusions 1 through 11, and can supply the requested information, then RCB recommends the petitioner proceed with the amitraz on hog skin study.

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