August 14, 1973

PP # 2F1218 and FAP # 2H5004. Benomyl on Grapes. Amendment of 6/12/73.

Coordination Branch and
Toxicology Branch/RD

In our latest evaluation (see memo of Dr. R. J. Hummel, 4/12/73), the petitioner was informed that for a favorable recommendation, we would require the following:

1. Additional methodology with improved clean-up for poultry liver.
2. A more appropriate tolerance proposal for dried grape pomace.
3. Residue data and an appropriate food additive tolerance, if necessary, for raisin waste.
4. Data, indicating whether residues of benomyl are converted to STB during the commercial drying of wet pomace.

These deficiencies were subsequently discussed in a conference with the petitioner and in accordance with the agreements reached there (see memo of conference, Dr. R. J. Hummel, 5/11/73), the petitioner has submitted additional validation data for poultry liver, residue data for STB in dried grape pomace and a revised Section F.

Eight samples of poultry liver were obtained commercially and analyzed for apparent residues of benomyl and its metabolites. Control values for 5-OH MBC ranged from 0.05 - 0.1 ppm while no apparent residues of 4-OH MBC and benomyl/MBC (<0.04 ppm) were detected. In our previous review, we concluded that the proposed uses were Category 2 of Section 180.6(a) with respect to poultry and eggs. Since combined apparent residues of benomyl and its metabolites in poultry liver may exceed 0.1 ppm, the petitioner has increased the proposed tolerance for poultry liver from 0.1 to 0.2 ppm. We conclude that this tolerance level is appropriate and that the proposed analytical method is adequate to enforce it.

In accordance with the recommendations of our previous review, the proposed food additive tolerance for dried grape pomace has been increased from 70 to 125 ppm. We conclude that benomyl residues on dried grape pomace will not exceed 125 ppm.

Two samples of wet grape pomace containing benomyl residues of 3.4 and 6 ppm were dried in a laboratory oven at 170°F and analyzed for STB residues by a liquid chromatographic procedure. No detectable residues of STB (<0.25 ppm) were found in the dried pomace. Commercially, grape pomace is dried for ca. 15 min. in revolving drums using forced air heated

to 212 - 280°F. Since it is unlikely that the temperature of the pomace will exceed 170°F in this process, we feel that this study adequately simulates a commercial drying process. Therefore, we conclude that residues of benomyl will not be converted to STB during the commercial drying of wet pomace and that STB will not be a component of the residue in dried grape pomace.

A food additive tolerance of 125 ppm has been proposed for residues of benomyl in or on raisin waste. No additional residue data are submitted. In our previous evaluation, we concluded that the feeding of raisin waste would not lead to problems with secondary residues in meat and milk but we were reluctant to recommend a suitable food additive tolerance level due to the limited amount of residue data available. The proposed tolerance of 125 ppm (12.5X the grape tolerance) may be higher than that actually needed to cover residues as, in our limited experience, residues on raisin waste have not exceeded 7.5X those on grapes. In addition, cull raisins, a major constituent of raisin waste, will contain maximum benomyl residues of only 50 ppm. However, since the tolerance level for raisin waste will have no effect on meat and milk residues and since it is also consistent with that for dried grape pomace, we consider it to be appropriate.

Conclusions

1. The proposed analytical method is adequate to enforce the tolerance on poultry liver.

2. The proposed food additive tolerances of 125 ppm for residues of benomyl and its metabolites containing the benzimidazole moiety in or on dried grape pomace and raisin waste are appropriate.

3. STB will not be a component of the terminal residue in grape pomace.

4. The proposed tolerance of 0.2 ppm for benomyl residues in or on poultry liver is appropriate.

Recommendation

We recommend that the following proposed pesticide tolerances and food additive tolerances be established:

10 ppm in or on grapes
0.1 ppm in eggs, meat, fat, and meat by-products of poultry (except poultry liver - 0.2 ppm)
50 ppm in or on raisins
125 ppm in dried grape pomace
125 ppm in or on raisin waste

We note that no information is available concerning the manufacturing process for benomyl. We understand that this information will be requested at the time of registration.

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Reading File

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