RJ

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

AUG 17 1988

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMO OF CONFERENCE

SUBJECT: Meeting of 8/12/88. Protocol for Postharvest MeBr Fumigation of Almonds, Walnuts, Prunes, and Raisins

FROM: Cynthia Deyrup, Ph.D., Chemist C Deyrup
Residue Chemistry Branch
Tolerance Petition Section 2
Hazard Evaluation Division (TS-769)

THRU: John H. Onley, Ph.D., Section Head
Residue Chemistry Branch
Tolerance Petition Section 2
Hazard Evaluation Division (TS-769)

TO: RCB Files

Attendees

G.L. Oberauf	Prune, Raisin, and Walnut Marketing Boards
E.M. Ruckert	Heron, Burchett, Ruckert, & Rothwell
D.R. Thompson	Daniel R. Thompson, P.C.
W.C. Francis	RD
W.J. Hazel	RCB
C. Deyrup	RCB

Members of RCB and RD met with G.L. Oberauf and E.M. Ruckert, representing the dried fruit and nuts interests and D.R. Thompson, representing the spice interests, to discuss protocols for MeBr postharvest treatments.

Mr. Oberauf said that it would be difficult to fulfill the Registration Standard requirement that the raw agricultural commodities be grown in soil which had been preplant fumigated. MeBr is generally used to fumigate the soil when it is necessary to replant a tree to replace a dead tree. This is apparently also true of grape vines. Therefore, it would not be possible to find a large number of trees or grapes which have undergone a uniform preplant fumigation treatment; the dosage and the time after fumigation would vary. If commercial fumigation equipment is required for the residue trials (2000-10,000

1

ft^3 chambers), it would not be possible to gather enough sample with a homogeneous preplant fumigation history to fill the chamber. The interval from preplant fumigation to harvest could range from 3-12 years for fruit and nut crops. RCB suggested that the fruit and nuts be analyzed for MeBr residues after exposure to the preplant use only. If the MeBr and iBr residue levels from the preplant use are insignificant compared to residues from postharvest use, it may not be necessary to use preplant fumigated samples for postharvest fumigation.

Mr. Oberauf said that the little fumigation chamber (1 ft^3) probably represented the worst case. RCB responded that bridging data from a small chamber to commercial equipment had been requested in the review of the first proposed almond protocol. Without bridging data, RCB would be reluctant to extrapolate data from a 1 ft^3 to a 10,000 ft^3 chamber. Mr. Oberauf said that bridging data on a nut crop and a dried fruit product may be provided.

RCB had been concerned that the aeration of commercial lots of raisins for 24 hours may not lower residue levels as efficiently as the aeration of half a pound of raisins in the small chamber for the same length of time. Mr. Oberauf said that the raisins are always fumigated in bins measuring 4'x 4'x 4'. The bins are placed in square stacks consisting of 8 bins x 8 bins x Y bins. The bins are separated by 4 in. to achieve adequate circulation. In generating the bridging data, RCB emphasized that samples should be drawn from different sections of the bins to determine whether residue levels are higher in the center of the bins or at the perimeter. Mr. Oberauf wanted to know whether samples also had to be selected from different areas of the chamber. If samples had to be drawn from various parts of the chamber and from various parts of each bin, a multitude of samples from the commercial chamber would need to be analyzed. RCB said that the MeBr levels in various sections of the chamber should be monitored before samples are selected. Samples should be drawn from the area of the highest MeBr concentration. If the MeBr concentration is uniform throughout the chamber and between the stacks of bins, the location of the sample in the bin would not matter.

Mr. Oberauf said that the stored raisins must be sold after 18 months and that the raisins are refumigated about every 6 weeks, depending on the temperature; a maximum of 10 fumigations could result. RCB said that this explanation should be submitted in support of the protocol specifying 10 treatments for raisins, and that this type of explanation with documentation should be submitted for each protocol to support the number of fumigations specified in the protocol.

According to Mr. Oberauf, vacuum fumigation of nuts is used only for export purposes, and therefore residue data reflecting the use of vacuum chambers would not be submitted. MBIP would need to be informed that the vacuum fumigation of domestic nuts should be dropped from the label. The nut

processors also do not intend to submit residue data reflecting the fumigation of almonds and walnuts in the hull; this treatment is used by the USDA on imported nuts, and the USDA will need to support this use.

Mr. Oberauf said that there is no domestic use for MeBr on fresh grapes, just raisins. RCB had thought that there was a use because the label submitted with PP #5F3300 listed a use for the crop group, small fruits and berries, which includes grapes. [According to the RCB chapter in the Registration Standard (BUD use index), postharvest use on fresh grapes is on the label.] Mr. Oberauf said that a label change was needed.

Mr. Oberauf said that after the raisins leave the processor, they go directly to the market and would not be refumigated. He will double check to ensure that that this is the case.

RCB cautioned Mr. Oberauf that tolerances based on MeBr levels after aeration periods should reflect practical aeration periods. Mr. Oberauf responded that the processors can exercise a certain amount of control after the last fumigation. However, it would be impractical if it is necessary to aerate a commodity for 3 months before an acceptable level is reached. The nut processors have already determined an aeration period of 3 months is required for MeBr residues to decline to undetectable levels in some nuts.

RCB cited an article which indicated that different cultivars of almonds may absorb differing levels of MeBr. Mr. Oberauf said that the processors had conducted fumigation studies on various cultivars.

RCB asked Mr. Oberauf if the effect of temperature on residue levels had been investigated. The label permits use at $\geq$50°F. Mr. Oberauf said that data had been generated to establish that cooler temperatures result in higher residue levels. The temperature of the fumigation chamber is not controlled in commercial practice. Mr. Oberauf said that temperatures of 50° and 60°F were chosen for the protocols because the temperatures of the chambers probably would be no less than 50° for the dried fruit or 60° for nuts. RCB said that if lower temperatures result in higher residues, the residue data should reflect fumigation at 50°, since the label permits application at 50°. Mr. Oberauf said that fumigations should be carried out at 50°F. RCB pointed out that residue data on pecans are needed for a crop group tolerance for tree nuts. Whereas almonds and walnuts are grown in CA, pecans are grown in the Southeast as well. Mr. Oberauf said that some walnuts are also grown in OR. Although the fumigation temperature in OR would not differ from the coolest temperatures expected in CA, he said that he would check with pecan growers around the country to determine fumigation temperatures used for pecans.

Mr. Oberauf was told that data on pistachios would be needed because, for regulatory purposes, pistachios are not classified

as a member of the tree nuts crop group. Mr. Oberauf agreed to provide residue data on pistachios.

Although there is no commodity group for dried fruit, Mr. Oberauf wanted to know whether residue data needed to be generated for all the cut dried fruit. RCB said that data for prunes, raisins, dates, and figs would be needed for the whole dried fruit and that it may be necessary to generate data for each commodity for which there is a use, such as dried, sliced apricots, peaches, nectarines, pears, apples, and plums. Since all the dried, cut fruit are either pome or stone fruits, it may be possible to submit data on a pome and a stone fruit only; or possibly the small chamber may be used to generate data on the dried fruit to determine the worst case, and appropriate residue data would then be generated on that fruit. RCB said that no decision among these regulatory alternatives could be made at the meeting. Mr. Ruckert said that a proposal for covering all cut dried fruit with residue data generated from more limited data would be submitted.

Mr. Oberauf said that bunches of raisins are fumigated and wanted to know if residue data on the fumigated raisin waste were also required. RCB replied that if the waste is fumigated, residue data on raisin waste were needed.

The petitioners thanked RCB for taking the time (2 and a half hours!) to meet with them, and the meeting ended.

cc: Circu, SF, RF, Reg. Std File-Boodee, W.Hazel-RCB, C.Deyrup
RDI: J.Onley:8/16/88:R.D.Schmitt:8/16/88
TS-769:CM#2:RM810:X7484:C.Deyrup:cd:8/17/88