Monsanto

FROM (NAME & LOCATION) E. S. Tucker - R&D Laboratories - South Second Street

DATE April 16, 1970

SUBJECT PCB CONTAMINATED MILK, STATE OF OHIO, DEPT. OF AGRICULTURE, FOODS, DAIRIES, AND DRUGS LABORATORIES

REFERENCE C. Weaver letter (copy attached)

cc: R. E. Kelly - GO
E. P. Wheeler - GO
W. R. Richard - GO
M. W. Farrar - Res. 1
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TO : W. B. Papageorge
General Offices

GC/Mass and EC/GC analysis of the raw milk petroleum ether extract and the silo scrapings confirmed that they contain significant levels of PCB's.

Unaltered Aroclor 1254 was found in the silo scrapings at a level of 2.87%, while the raw milk extracts contained an estimated PCB level of 0.6-0.7 ppm. Although the isomer distribution of the PCB's in the raw milk extract was altered with respect to the Aroclor 1254 standard, the isomers present were those that occur in Aroclor 1254. This observation was further confirmed by GC/Mass analysis which detected trace amounts of tetrachlorobiphenyl and large amounts of penta and hexachlorobiphenyl.

The raw milk samples initially sent by ODA were destroyed in transit and could not be analyzed. A second set was requested and upon receipt analyzed. Equivalent results were obtained and an estimated level of 0.7-0.8 ppm was found.

Representative electron capture chromatograms of the sample extracts are included and even a visual examination leaves no doubt that the ODA results are qualitatively correct. I cannot address myself to the quantitative results since they did not provide us with the amounts they estimate to be present. However, we have established that our procedures are quantitative.

Interestingly, this is probably the first clear cut chance we have had to observe which PCB homologs are most resistant to metabolism, etc., in a mammal. For this reason, I have labeled the peaks in the Aroclor 1254 electron capture chromatogram according to the homolog(s) they represent.

Another interesting sidelight is that we have observed strikingly similar isomer alterations in the electron capture chromatograms of an extract of a human fat biopsy fat sample, supplied to us by WARF Institute (Sample #9120924) and in extracts of raw milk samples supplied to us by the Maryland Coop Milk Producers. Both organizations had suspicioned PCB contamination, unfortunately, in both cases GC/Mass confirmation could not be obtained because of the limited amount of sample available (WARF) or the low level of contamination (MCMP).

E. S. Tucker

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Attachments - 3