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Monsanto

FROM (NAME & LOCATION) E. S. Tucker - R&D Research - S. Second

DATE : October 30, 1969

SUBJECT : ANALYSIS OF MILK & WATER SAMPLES FROM THE MARYLAND COOP. MILK PRODUCERS, INC. FOR PCBs

REFERENCE :

cc: Jim Bryant - JBRYA
M. W. Farrar- Res. 1
R. E. Keller- Res. 1
W. R. Richard-WRICH

TO :

E. P. Wheeler - EWHEE

Results:

	ppb DDE	ppb PCB Reported as Aroclor 1254
Sample No. 1 - Fred G. Butler IBM #1295 9/22/69	21	< 44
Sample No. 2 - Lewis Bros. IBM #4758 9/22/69	17	< 3
Sample No. 3 - Russell E. Price IBM #6500 9/22/69	7	< 11
Sample No. 4 - S. T. Brown IBM #1117 9/22/69	11	< 1
Sample No. 5 - C. A. & V. L. Riner IBM #6830 9/22/69	2	< 171
Sample No. 6 - C. A. & V. L. Riner IBM #6830 Water (stream) 9/22/69	< 1	< 1
Sample No. 7 - Russell E. Price IBM #6500 Well water - Dairy Tap 9/22/69	< 1	< 1
Sample No. 8 - Fred G. Butler IBM #1295 Well water (well storage tank) 9/22/69	< 1	< 1

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Sample No. 9 - Fred G. Butler
IBM #1295 < 1 < 1
Well water (Pasture)
9/22/69

All water and milk sample extracts were characterized initially by electron capture gas chromatography on polar and non-polar columns. The extracts were then saponified with alcoholic KOH and extracted with concentrated sulfuric acid and again characterized by electron capture gas chromatography on polar and non-polar columns. The residues extracted from milk sample No. 1 were also subjected to GC/Mass identification.

The retention times from the initial EC/GC fingerprints strongly suggested the presence of PCBs with the exception of two peaks which were out of proportion in terms of intensity ratios. Chemical treatment of the residues followed by electron capture gas chromatography again produced chromatograms suggesting the presence PCBs. The two peaks whose intensity ratios were off were changed. The early peak had grown at the expense of the second later peak. DDT and DDE behave in this manner.

From the GC/MASS dates we were able to verify the presence of DDE and of pentachlorobiphenyl.

I have chosen to report the PCB as a less than figure since the isomer distribution of the PCBs in the milk was different from that of the standard used. The standard used was Aroclor 1254 and the results are, if anything, biased toward the high side, especially Number 5.

The reported amounts of DDE and PCB are calculated on the weight of whole milk sample taken and not on soluble fat content of the samples. These values would be much higher if reported on the basis of fat content, ie., ppM range.

E. S. Tucker

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