JUL 9 1973

bcc: R. E. Keller - TIB
W. B. Papageorge - B2NA

July 5, 1973

Dr. Lynn B. Willett
Assistant Professor
Department of Dairy Science
Ohio Agricultural Research and Development Center
Wooster, Ohio 44691

Dear Lynn:

We have completed our analysis of the 0.0 ppm "C" milk blank extract, the silage samples (#40 PFS and #41 PFS), and the corresponding milk samples (#40 PFBT, 5-11-73, and #41 PFBT, 5-21-73).

We observed the same type of residue in the 0.0 ppm "C" milk blank extract that you did. If this sample really should not have contained any PCB residues, the only thing that we can suggest is that it may have been inadvertently contaminated somewhere along the line.

We experienced a similar situation several years ago when we began analyzing a large number of diverse samples for PCBs. At that time we found that if we cleaned our equipment in the normally accepted manner (hot soap and water wash, distilled water rinse, acetone rinse, and a hexane rinse) that when it was re-used we could always detect PCBs even in a simple laboratory blank if we tried hard enough.

This PCB background was caused by adsorption of a small percentage of the PCBs in the sample and sample extracts by the glass equipment. This background was not a problem as long as the samples being analyzed contained high levels of PCBs. However, when we began looking for lower and lower levels, the background became more and more significant, especially when we concurrently ran samples which contained both high and low levels of PCBs. We found that this background could be conveniently eliminated by storing the non-volumetric equipment used to work up samples over night in an oven at ~150-200°C after washing. The same problem has been experienced by other laboratories; to illustrate this I have included a recently published article on the very subject by an acquaintance of mine from Texas A&M University.

The PCB levels we found in the milk and silage samples are shown in the following table.

TABLE

Sample Designation	Sample Weights (g) Wet Weight	Fat/Dry Weight	Ppm PCBs* Wet Weight	Fat/Dry** Weight
Milk (40 PFBT, 5-11-73)	63.10	2.05	0.015	0.458
[redacted] (41 PFBT, 5-21-73)	45.52	1.65	0.036	0.993
Silage 40 PFS	23.84	9.53	0.315	0.788
Silage 41 PFS	27.00	10.32	0.443	1.125

* Calculated as Aroclor 1254
** Dry weight - silage - 10g dried at 100°C for 48 hrs.

I do not recall the levels which you found in these samples. Hopefully, our results agree with yours. If not then I'm sure that the exchange of a few more samples should alleviate any differences.

The sample preperation procedures used are outlined in the attached Monsanto method, "Analysis of Environmental Materials for Polychlorinated Biphenyls", wich changes noted in pencil.

Silage: pg 5

Milk: pre-thawed by immersion in hot tap water, pg 6

Example chromatograms for each sample type and a standard are included.

[redacted] additional articles are also attached - one on the Polytron homogenizer, one on the automated GPC, ~~and a third on a perchlorination procedure.~~ And two

Best regards,

E. S. Tucker
Res. Group Leader

Js
P. S. If I've missed any information I promised to send you, please let me know.

MONS 094974

Corrected on original

Bill: in order to do some of this hydrolysis may have to purchase ~$500 - $750 worth of extra equipment. It might be worth it to provide him with some extra money Scott