Monsanto

Monsanto Company
800 N. Lindbergh Boulevard
St. Louis, Missouri 63166
Phone: (314) 694-1000

October 13, 1969

G. Fred Lee, Professor
Water Chemistry
The University of Wisconsin
Madison, Wisconsin 53706

Dear Professor Lee:

Thank you for your letter of September 29, requesting information concerning the polychlorinated biphenyls.

I have enclosed copies of three papers or discussionals which Professor Widmark of the Institute of Analytical Chemistry in Stockholm kindly provided us when we visited with him in May. You will recall that it was at this Institute the identification of PCB's as interfering substances in residue analysis was made.

The first paper (Methods of Analysis and Examples of Chromatograms) describes the method and analysis used in the Swedish program and also being used by the Pesticide Residue Committee of the twelve OECD countries. I believe this should be helpful in your analytical efforts.

The second enclosure (The OECD Study of Analysis of PCB) is of interest since it mentions some of the difficulties encountered in using the technique.

The third enclosure relating to the "Number of Compounds which Can Result from the Chlorination of Biphenyl" is referred to in the second enclosure mentioned above. It emphasizes the number of isomers which can be present in a biphenyl chlorinated to a specific percent.

I am sure this is elementary, but perhaps it demonstrates why Monsanto has not exerted a major effort to isolate specific isomers. I am told that the lack of specific isomers for reference or standards does not make it impossible to relate chromatograms from residue analysis to chromatograms of the commercial grade materials. Positive identification is then possible with mass spectroscopy.

In reference to the presence of PCB's in Wisconsin and/or Lake Michigan, we are supporting the project underway by WARF attempting to pin-point possible sources not only of the chlorinated pesticides but also sources of the PCB's. This is only one part of an extensive research program which has been underway for more than a year.

Perhaps you would be interested in learning that we have recently received reports from our toxicology consulting laboratory which indicate that interim results (90 days) of our ongoing two year chronic feeding studies show no effects in rats and dogs. The studies underway include our Aroclors 1242, 1254 and 1260 which are being fed at levels of 1, 10 and 100 parts per million in the diet. In a three generation rat reproduction study with Fo parental animals mating for first or second litters, there has been no effect on live birth and 24 hour survival indices of F1a litters.

I am sorry that I am not familiar with the material that has appeared in the chemical literature in the past 15-20 years that indicates that we have done considerable work on the Aroclor mixtures. I have, however, referred this portion of your letter to individuals in our research group for any comments they might have.

If you have any questions concerning the analytical techniques, may I suggest that you write or call the following:

Dr. E. S. Tucker
Research Department
Organic Chemicals Division
1700 S. Second Street
St. Louis, Missouri 63177
Telephone (314) Ma. 1-4000, Sta. 343

Very truly yours,

Elmer P. Wheeler
Manager, Environmental Health

EPW:ju

Enclosures (3)

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