



Weinberg Consulting Group Inc.

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September 7, 1983

Dr. Allan Ford
Mail Code E1SA
Monsanto Company
800 N. Lindbergh Boulevard
St. Louis, MO 63167

Dear Al:

I have just completed the review of the first part of the literature search which we are conducting and think that this is a good point at which to write to both convey first impressions and discuss a major issue.

This first search was of three public data bases. "CHEMICAL ABSTRACTS," "MEDLINE," and "BIOLOGICAL ABSTRACTS" for the years 1979 through the present. The strategy of the search was to find all citations for dioxins, 2,4,5-T, 2,4-D, benzofurans, and, in addition, to find all references to chlorophenols in the two biological data bases. We found about 1000 separate citations. I have completed my first review of all of the citations. This involved reading the abstracts (where available) and the titles and key words where the abstracts were not available.

My first impression is that about 40% of all of the articles recovered deal with chlorinated phenols with no mention of dioxin. I have marked a number of these for your attention and will forward copies of these to you by the end of this week. Under my current assignment with Townely & Updyke, I am not reviewing these further. I would be interested in knowing, however, if we turn up anything which is of interest to you but is not in your file.

My second impression, and the one about which this letter is written, is, about 25 percent of the articles about dioxins deal with enzyme induction and subcellular receptor activities. It would appear that there is a significant amount of work going on in this area — much more work than one would consider if one reads just Poland's work.

Clearly there are two sites for which dioxin affinity is high, where dioxin is a significant tool in mapping the enzyme site and where dioxin is used to evaluate the characteristics of the receptor. Comparisons are being made with other similar enzyme inducers and other materials which affect the receptor site. I find these comparisons of great interest because a number of materials, hexobarbital for example, seem to cause some of the same subcellular effects but, and this is a big but, these materials do not have the usual sequelae alleged to follow dioxin and/or chlorinated phenols exposure. That is to say, there are many materials which have affinities for the same receptors which do not cause cancer or do not affect immunosensitivities, etc.

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I am trying to compile all of the papers on receptor site activation and on enzyme induction that deal with dioxins, benzofurans, PCBs, DDT-like molecules, and chlorinated phenols. We should consider writing a summary of these. You must have a better view of the overall field of enzyme induction, of receptor activities, and of the effects such the changes in P-450 and related moieties, etc., before following Poland only.

This has been a long letter which may be summarized in 3 points:

- (a) there is a great deal of work underway in the areas of enzyme induction and receptor mapping which must be understood before adopting Poland as the guide;
- (b) the work indicates that these effects, (i.e., enzyme induction and receptor activation) may not signal any key sequelae or health effects and hence must be understood to be able to deal with Carnow; and
- (c) a review of these two areas is in order.

I hope this has been useful.

I hope to speak with you after you have reviewed this so that we can determine what is the next step.

Very truly yours,

WEINBERG CONSULTING GROUP Inc.
Myron S. Weinberg, Ph.D.

cc: Dr. William McCarville

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Dr. Allan Ford
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Dear Al:

I am trying to learn more about three subjects which are relevant to the various dioxin-related cases with which we are dealing. I would solicit your help in getting more information on these.

The first deals with the use of chlorinated phenols contaminated by dioxin. It would appear that chlorinated phenols are widely used. Can you get me a list or a description of all of the uses to which chlorinated phenols are put? Are these used directly by the consumer? How widespread is dioxin contamination of these chlorinated phenols? Could the average consumer come in contact with either the chlorinated phenols and/or the dioxins contained therein? Finally, are chlorinated phenols formed during the chlorination of drinking water? To what extent does this happen? Does the EPA have standards for chlorinated phenols and similar compounds in drinking water?

The second area of interest is YUSHO, a disease described by either Japanese or Formosans as related to exposure to PCBs and/or dioxins. What do you have in your file on this? Have you built any literature on this? Do we know where the exposure comes from? Does it, perhaps, come from pesticide use? I would like your help in better understanding YUSHO.

The third area (and final for this letter but no means final for the program) is in understanding the role played by iron metabolism in disease associated with dioxin and/or chlorinated phenols. It would appear that there is a delicate balance of nutritional iron in reducing and/or enhancing any disease process associated with these materials. Are you aware of any references and/or literature discussing this? Have you heard of any considerations of this interaction by the various medical groups involved in this? I do not know how this will work as yet but I would feel it is something we should understand in these cases.

Al, I would appreciate any input you have on these subjects.

Talk to you soon.

Very truly yours,


Myron S. Weinberg, Ph.D.

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