

Monsanto

DEPARTMENT OF MEDICINE &
ENVIRONMENTAL HEALTH

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May 23, 1983

Dr. Robert A. Neal
President, CIIT
P. O. Box 12137
Research Triangle Park, N.C. 27709

Dear Bob:

As you well know, the problem of a tolerable level of TCDD in soil is ultimately to be based on the bioavailability of the dioxin. I asked George Levinskas to write down an outline of a bioavailability study. His protocol outline is attached.

We learned last week that there was a site at Quail Run where the concentration was alleged to be 1,000 parts per billion. I am going to attempt to get a sample of this soil and if in fact the concentration is over 1,000 ppb, I then would like to do the bioavailability study. I shall be attempting to obtain a soil sample. If the soil contains less than 1,000 ppb, I doubt whether a negative study in guinea pigs would have meaning.

I will be getting in contact with you again after I have obtained a soil sample worthy of such a study. Obviously, if I am that successful, I will need to have you tell me whether you think you could do the study or should do the study, or whether Monsanto should attempt to do it.

In addition, I do want your thoughts regarding modification of Levinskas' protocol.

Thank you for your continuing help.

Sincerely,

George Roush, Jr.

George Roush, Jr., M.D.
Director

Encl.

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C04175

TCDD experiments

Rationale:

Demonstrate that dioxin bound to soil is not as hazardous as an equivalent amount of free dioxin, i.e., its bioavailability is reduced. Since dioxin which has "aged" on soil may be more tightly bound than dioxin recently mixed with soil, contaminated soil with the highest possible level of dioxin will be used.

General Outline:

The dioxin content of the soil will be determined. Animals will be dosed with soil containing dioxin. Other animals will be dosed with an equivalent amount of dioxin, preferably extracted from the soil itself. The biological effects of the soil/dioxin and dioxin groups will be compared.

Some animals may need to be dosed with soil without dioxin to assess the effects of soil alone.

It may be possible to monitor excreta or tissues to show non-absorption, minimal absorption, or degree of absorption of dioxin.

Test Systems:

Guinea pigs - oral dose
soil, soil plus dioxin, dioxin
End point is death or survival.
Feces, urine analyzed for dioxin?

Guinea pigs - dermal dose
soil, soil plus dioxin, dioxin
End point is death or survival.
Skin assay for dioxin?

Rabbits - ear dose for chloracne
soil, soil plus dioxin, dioxin
This test could provide some semiquantitative data as to the amount of dioxin required to produce chloracne.