

Monsanto

Monsanto Company
800 N. Lindbergh Boulevard
St. Louis, Missouri 63167
Phone: DId 894-1000

August 19, 1982

Dr. Raymond R. Suskind
Institute of Environmental Health
Kettering Laboratory
3223 Eden Avenue
Cincinnati, Ohio 45267

Dear Ray:

In response to your request, I am providing you with the following information as to levels of "dioxin" in the 2,4,5-T Monsanto manufactured at its Nitro, West Virginia plant. As you know, the chemical 2,4,5-T is the subject of certain litigation including Agent Orange and the suits brought by a number of former and current Nitro employees, so this information should be treated sensitively.

The information we have is sparse. We have no information as to the levels of dioxin which may have been present in the materials emitted in the 1949 process accident. Similarly, we have no information on dioxin levels in the 2,4,5-T produced from 1947-1959.

Beginning in 1965, Monsanto obtained the capability, crude and non-specific by today's standards, to conduct analyses for dioxin. However, that technology could not separate out the 2,3,7,8 tetrachloro isomer, or even the TCDD's. Accordingly, the dioxin data generated in the testing of 2,4,5-T samples probably constitute for each sample a gross measure of a mix of dioxin isomers and differing chlorine content measured as one.

Using the limited technology obtained, Monsanto in 1965 analyzed six or seven still-available samples of 2,4,5-T it had manufactured during the period 1959-1965. While the testing of samples of 2,4,5-T manufactured during the period 1965-1969 was more extensive, the samples were not collected on any sort of regular, periodic basis. Thus, for that period we do not have a sample from each batch, or from each day's production, or anything of that nature. Rather, samples were tested on an irregular basis with no discernible pattern.

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In addition to the foregoing, any effort to draw conclusions about the levels of dioxin to which Monsanto employees at Nitro may have been exposed must take into account at least two other factors:

- (1) Monsanto made numerous changes in its 2,4,5-T manufacturing process, with the result that, in general, in the mid and late 1960's as Monsanto's production of 2,4,5-T increased, the level of dioxin in its product declined; and
- (2) At numerous intervals, Monsanto made major changes in the type of equipment and operation modes employed in its production of 2,4,5-T, thereby significantly reducing employee exposure to any dioxin produced in the process.

Subject to the caveats stated above, I can tell you that, overall, the samples tested showed dioxin ranging from undetectable levels to 18 ppm, with occasional excursions to levels near 25 ppm. During one very brief period in 1965, dioxin levels in three samples measured between 40 and 55 ppm. On average, and I repeat the samples were not analyzed on any regular, periodic basis, dioxin levels in the samples tested were in the area of 6-8 ppm in the 1966-1969 period.

Sincerely,



George Roush, Jr., M. D.
Director, Dept. of Medicine
and Environmental Health

GR/ln

bcc R. T. Berendt - E2ND
C. F. Callis - B3CA

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