NEWS

Monsanto

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STUDY FAILS TO LINK AGENT ORANGE TO DEATHS OF INDUSTRIAL WORKERS

ST. LOUIS, Oct. 9 -- Monsanto Company today reported that no apparent relationship exists between TCDD, the toxic dioxin contaminant in "Agent Orange," and the cause of death of 58 employees potentially exposed to it during 2,4,5-T herbicide production at the company's Nitro, W. Va., plant.

This finding was among those reached in a new study, co-authored by Monsanto epidemiologists Judith A. Zack and William R. Gaffey. Their investigation examined the cause of death of all hourly workers who had been active employees of the plant for one or more years between 1955 and 1977 and have since died from any and all causes. The entire group was successfully traced and all deaths verified by death certificate.

Monsanto produced 2,4,5-T at its Nitro plant from 1948 until 1969. It is currently the subject of widespread controversy centering on its use in the defoliant Agent Orange during the Vietnam War.

This is the second major effort undertaken to examine the mortality (cause of death) of Nitro plant workers, either exposed or potentially exposed to TCDD. Mrs. Zack and Raymond R. Suskind, M.D., of the University of Cincinnati Medical Center, earlier this year co-authored a separate but related study of employees who had experienced high peak exposure to

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TCDD during an industrial accident at the plant in 1949. The results of that investigation, published in the January, 1980 issue of The Journal of Occupational Medicine, indicated no excess in total deaths or in deaths from cancer or cardiovascular disease.

In this larger, follow-up effort, the mortality experience of the total Nitro plant workforce was analyzed by the modified life-table method using the U.S. population as the standard. Of the 884 men identified for study, 721 (82%) were verified as still alive and 163 (18%) were confirmed dead by death certificates. The study found no statistically significant excess in total deaths or deaths due to cancer or disease of the nervous system, circulatory system, respiratory system or digestive system.

The study did confirm and quantify an apparent excess in bladder cancer among Nitro Plant workers (nine observed vs 0.91 expected) which has been known for many years. This finding reflects the established and previously documented association between exposure to Para-aminobiphenyl (PAB) and cancer in man. PAB was used at Nitro from 1941 through 1952, for use as a rubber antioxidant and dye intermediate. Its use was discontinued when its cancer-causing potential was confirmed.

The author pointed out that an intensive screening program was instituted by the company about 1955 to examine, on a continuing basis, all workers exposed to this chemical.

Seven PAB-related deaths from bladder cancer have occurred among Nitro Plant employees enrolled in this program over these 25 years. These seven deaths are included in this study.

A review of the work history records of the 163 decedents further revealed that 58 (35.6%) had been exposed to 2,4,5-T and potentially to TCDD. One hundred four (63.8%) were considered non-exposed and the exposure of one decedent was not determined. The mortality experiences of these two subgroups were then compared using the proportional mortality method. This was done to test whether any relationship existed between potential TCDD exposure and proportional mortality. No such relationship was observed nor were any unusual patterns of mortality found in this exercise other than the PAB-related deaths described earlier.

The expected number of deaths in the 2,4,5-T subgroup was calculated on the basis of the percentage of deaths from various causes in the U.S. general population. Specifically, cancer deaths among 2,4,5-T workers (nine observed versus 10.94 expected) were found to be lower than in the non-exposed group (25 observed versus 20.43 expected).

Deaths due to disease of the nervous system, respiratory system and digestive system were also found to be lower than one would expect to find in a group of this size.

While not statistically significant, deaths due to disease of the circulatory system (largely arteriosclerotic heart disease) were elevated at 31 versus 26.48 expected.

The analysis of the total Nitro plant population found a similar excess in deaths from arteriosclerosis. In the discussion section, the author pointed out that these excesses most likely reflect the higher mortality from heart disease which has been observed for Charleston and Kanawha County, W. Va.

A third study, based on health information gathered from extensive physical examinations of over 400 present and former Nitro plant employees is currently being conducted solely by Dr. Suskind and his medical team from the University of Cincinnati's Institute of Environmental Health.

Included in this ongoing study are both those workers exposed during the 1949 accident as well as those exposed during normal 2,4,5-T operations between 1948 and 1969 when the unit was shut down. A control group of employees who worked in other areas of the plant during that time frame is also being studied for comparative purposes. The results of this study are expected later this year and will be submitted for publication in an appropriate medical journal.

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