

Monsanto

FROM
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DATE : August 12, 1983

SUBJECT : DIOXIN ARTICLE

REFERENCE :

TO : Sarah Collins - BIND
William Papageorge - B3NA

cc. G. F. Knollmeyer
R. J. Fogerty

HMK
8-16-83
Please work with Sarah on this.

See attached
4/17

Attached is an article on the subject of dioxin which we think is appropriate for our employees given the large amount of publicity in recent weeks.

We plan to run the article in our employee newsletter "What's New at JFQ" in the next few days. Please advise if you have any serious problems.

Erick Koshner
Erick Koshner

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Attachment

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WHAT'S NEW AT JFQ

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DIOXIN CONTROVERSY

In recent weeks a substance called dioxin has gained prominence in the news. The reporting has ranged all the way from hysteria to statements down-playing any danger associated with the chemical. Given all the controversy and conflicting opinions, "What's New" is devoting this issue to try to put this timely and important issue into perspective.

JUST WHAT IS DIOXIN?

Technically, dioxin is any of 75 chemicals in eight different families resulting from the combinations of chlorine, hydrogen, and carbon. The most hazardous form is 2,3,7,8 tetrachlorodibenzo paradioxin (TCDD), produced during the manufacture of several insecticides and herbicides - including Agent Orange, a powerful defoliant used in the Vietnam War. Dioxin also is a byproduct in the making of plastics, wood preservatives, and many other chemical products.

WHY ALL THIS PUBLICITY?

Much of the publicity began last year with the Times Beach, Missouri story. The town was sprayed with dioxin-contaminated oil in the 70's and last February the Federal Government offered to buy all the homes and businesses there for 33 million dollars.

Recently, much of the publicity surrounding Monsanto and dioxin has stemmed from documents made public as a result of a suit filed by Vietnam War veterans against Monsanto and four other makers of the defoliant Agent Orange. The veterans claim that they suffered a wide-range of permanent and health problems, including a rare form of cancer called soft tissue sarcoma as a result of their exposure to Agent Orange.

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To further complicate things, the Post-Dispatch recently alleged that Monsanto and other dioxin makers knew of and disregarded scientific evidence warning of human health hazards associated with dioxin dating back to the 1960's when Agent Orange was actually manufactured. Monsanto has strongly denied both the assumption that dioxin exposure causes adverse health effects and that the Company intentionally sought to mislead government authorities and the general public with regard to dioxin.

HOW DANGEROUS IS DIOXIN AND WHAT ARE THE LONG-TERM HEALTH EFFECTS?

The question of harmful long-term effects on human health from dioxin exposure will be determined by scientists and the courts. However, most experts agree that dioxin is one of the most toxic substances made by humans. Less than one part per billion is enough to kill guinea pigs (U. S. NEWS). The lethality, however, varies from animal to animal. Hamsters can tolerate 5,000 times more dioxin than guinea pigs can, and human sensitivity remains unknown (NEWSWEEK). In short, guinea pigs are very susceptible to dioxin, other animals are less sensitive, still others are barely affected, and the evidence of its impact on man is very sketchy.

In regard to cancer, Dow Chemicals' toxicologists found that female rats fed one ten-millionth of their weight of dioxin developed tumors of the liver, mouth, and lungs (NEWSWEEK). Swedish researchers reported in 1978 that forest workers who used herbicides contaminated with dioxin had a five-to-sixfold increase in soft tissue cancer (NEWSWEEK). Many scientists, however, questioned the methodology of the study and its validity. Monsanto officials have pointed out that the Swedes' study is not only questionable in terms of its methodology, but four other studies of workers similarly exposed in Finland, New Zealand, Washington State and the U. S. Air Force have failed to find any evidence to support the conclusion of a link between exposure to dioxin and soft tissue cancer.

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The U. S. Air Force Ranch Hand Study, recently released, shows that the rate of deaths of U. S. Air Force personnel who sprayed Agent Orange in Vietnam has not been higher than that for a comparative group of veterans who were not involved in aerial spraying missions. Those men, according to the Air Force, were the most heavily herbicide-exposed group of U. S. military personnel in Southeast Asia. The study involved surveying over 1,200 pilots and crew members who has been exposed to Agent Orange. In addition, even those individuals who spent up to 72 hours a week defoliating Vietnamese jungle hideouts had the same death rates and died from causes no different or more unusual than men not exposed to the herbicide (NEW YORK TIMES).

Finally, scientists are studying potential long-term effects of dioxin exposure on birth defects. Although mice fed one-billionth of their weight of dioxin per day produced offspring with birth defects, many scientists dispute the applicability of such animal tests to humans (NEWSWEEK). Residents of Seveso, Italy, where a chemical plant accidentally released dioxin in 1976, have reported more spontaneous abortions and birth defects since the mishap (NEWSWEEK). But in the U. S. there has been no such increase among workers at Dow and Monsanto plants that produced herbicides and were exposed to dioxins (NEWSWEEK).

CONCLUSIONS

To summarize what we know about dioxin, there seems to be an agreement that it can cause death and injury to laboratory animals. The crucial question is: How does it affect human health? Here we know that dioxin is highly toxic if swallowed. However, no human deaths have been attributed to dioxin and the only scientifically confirmed health problem is a skin disease called chloracne which usually clears up in time. What most experts do seem to agree on, is that further study is needed to determine the extent of dioxin's threat to our health.

Even the American Medical Association feels that the media has greatly overstated the danger associated with dioxin and that public

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fears of dioxin are overblown. A resolution recently passed by the Missouri delegation for the House of Delegates of the American Medical Association is as follows:

"RESOLVED, That the American Medical Association institute an active public information campaign to get accurate information on dioxin before the public to prevent irrational reaction and unjustified public fright and to prevent dissemination of possible erroneous information; and be it further

"RESOLVED, That the AMA Council on Scientific Affairs be requested to update its 1981 report on dioxin."

Perhaps most important is not to let the stories and media coverage about this highly publicized chemical convince you to draw hard and fast conclusions. Although further study and scientific investigations are clearly high-priority items, it is premature to either act or react until we are presented reliable, valid findings by the scientific community. Overreaction now will only add to the existing confusion and cause the national scare to escalate to panic proportions.

Monsanto's position on the dioxin controversy is as follows:

"There was and is no credible scientific or medical evidence supporting claims of long-term human health effects other than the skin condition, chloracne. Dioxin is probably the most tested chemical substance in the world, and there is still no evidence that it has caused the long-term health problems claimed by some Vietnam veterans."

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