

Aug. 15, 2006

Contacts: Laura Lessnau, U-M News Service, (734) 647-1851, llessnau@umich.edu

Tony Collings, U-M Dioxin Study, (734) 417-2067, collings@umich.edu

EMBARGOED FOR RELEASE AT 9:30 A.M. EDT TUESDAY, AUG. 15, 2006

EDITORS: David Garabrant and other scientists in the study are available for interviews. The report is available at: www.umdioxin.org.

Some residents near Midland Dow plant have higher levels of dioxins

U-M study finds age, certain fish consumption, recreational activity and occupations are major sources of exposure; living on contaminated soil also contributes

ANN ARBOR, Mich.---People living in parts of Midland and Saginaw counties near the Dow Chemical Co. plant have higher levels of dioxins in their bodies than a control group of people elsewhere in Michigan, according to a University of Michigan study released today.

In the Tittabawassee River floodplain near Dow, one of the geographic areas studied, people had 28 percent higher median levels of total dioxin-like chemicals in their blood than people in a control group in Jackson and Calhoun counties. Dioxins are toxic chemicals.

They had 32 parts of dioxins for every trillion parts of blood, compared to 25 in people living in Jackson and Calhoun counties.

The Jackson/Calhoun region was used as a comparison because it is similar to Midland/Saginaw but is more than 100 miles away from the Dow plant. Dioxin levels in Jackson/Calhoun residents are close to the national median level.

Much of the increased amount of dioxins in Midland/Saginaw residents was related to age, the study found. Nationally, older people have higher dioxins levels. People in Midland/Saginaw tend to be older than people in Jackson/Calhoun.

Some of the increase was associated with eating certain foods such as fish from local waters contaminated by Dow and other sources, engaging in recreational activities on or near contaminated waters, or having worked at the Dow plant from 1940 to 1959.

A small portion of the increase was related to living on soil contaminated by Dow, the study found.

The \$15 million U-M Dioxin Exposure Study was financed by a grant from Dow Chemical and was controlled and conducted entirely by U-M researchers. Research decisions were reviewed by an independent scientific advisory board.

Dow is required under agreements with the state of Michigan to provide data about contamination of Midland/Saginaw, including identifying how dioxins enter people's bodies. Dioxins are a family of toxic chemicals produced by combustion or industrial processes. One of the chemicals, TCDD, is known to cause cancer in humans.

Because combustion and industrial processes are widespread in the United States, the study said, all Americans have some dioxins in their blood. The questions for the U-M study were: Do people living near the Dow plant in Midland have higher levels than are found in other Americans? If so, how did dioxins enter their bodies?

U-M researchers spent two years studying residents in five geographic areas:

---The Tittabawassee River floodplain, extending from the Dow plant in the city of Midland through Midland and Saginaw counties, an area known to be contaminated by emissions from Dow and other sources.

--Areas near the floodplain.

--An area downwind of the Dow plant in the city of Midland.

--Other areas of Midland and Saginaw counties, and nearby Williams Township in Bay County.

--For comparison, Jackson and Calhoun counties, with similar demographics (and dioxin levels in residents similar to national averages) but no nearby Dow plant.

U-M scientists studied levels of dioxins in people's property soil, household dust and blood samples, and interviewed residents about their age, body mass, dietary habits, land use, occupation, and other personal details. A total of 695 Midland/Saginaw residents and 251 Jackson/Calhoun residents gave blood samples. Participants in the study were at least 18 years old.

The researchers found that the median level of dioxins in soil in Jackson/Calhoun, the control area, was 4 parts per trillion -- 4 parts of dioxins for every trillion parts of soil. The median levels in Midland/Saginaw ranged from 4 parts per trillion in the near-floodplain area to 13 in the floodplain and 59 in the area downwind of Dow.

These were median levels at which half the soils had larger amounts of dioxins and half had lower amounts. Some individual properties had soil with dioxins that were above 1,000 parts per trillion. Most of these were below 5,000 and one was above 10,000.

The researchers found that people who lived in Midland/Saginaw on property with contaminated soil had higher median levels of dioxins in their blood. If the dioxins in their soil increased by 1,000 parts per trillion, the dioxins in their blood increased by about 0.7 parts per trillion (a 2 percent increase over the average level of blood dioxin for most people).

Fish consumption was an important factor. “People who eat fish from the Tittabawassee River, Saginaw River and Saginaw Bay have higher levels of dioxins in their blood than people who do not eat fish from these areas,” the report said. “Most of these people live in Midland/Saginaw.” People who ate fish from the contaminated area had increases of certain dioxins that ranged from 1 to 2 percent per year that they ate fish.

As for age as a factor, some younger people (ages 18 to 29) in the Tittabawassee floodplain had a median level of total dioxin-like chemicals that was lower than people their age in Jackson/Calhoun. It was 8.4 parts per trillion parts of blood, compared to 9.2 in Jackson/Calhoun.

But older people in the floodplain had higher levels than in Jackson/Calhoun. For example, those aged 60 and older in the floodplain had 46.1 parts per trillion, compared to 45.5 in Jackson/Calhoun.

Other factors include weight and gender, depending on certain circumstances. For example, overweight men had higher levels of some dioxins than other men. Weight differences in women did not affect their dioxin levels.

“This is the first major study to show exactly how much exposure to dioxin people have in this area, and how the dioxins get into their bodies,” said Dr. David Garabrant, head of the study. Garabrant is professor of occupational medicine, professor of epidemiology, and associate professor of emergency medicine at the University of Michigan.

The U-M study looked at the extent of human exposure to dioxins, not the health effects of that exposure.

The study was conducted by U-M researchers from the School of Public Health, College of Engineering, Center for Statistical Consultation & Research, and the Institute for Social Research.

More details of the study’s report and related information may be found on the U-M study’s website, www.umdioxin.org. It includes links to other websites, including that of the Centers for Disease Control and Prevention, which has general information about dioxins and health.