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New Bacteria Dines On PCB Pollutants

WASHINGTON (AP) – A Canadian government research scientist has isolated a new strain of bacteria with a hearty appetite for one of the most persistent worldwide environmental pollutants – polychlorinated biphenyls (PCBs).

Dr. Dickson Liu of the Canada Center for Inland Waters in Burlington, Ontario, says the bacteria – a variety of common bacteria found in sewage – have been shown to reduce PCB concentrations in laboratory solutions from 300,000 parts per billion (ppb) to less than 20 ppb in about a week.

Liu, who has been researching methods for treating toxic, insoluble substances in sewage for several years, says the bacteria are not of a disease producing type. He says the bacteria break down PCBs into harmless carbon dioxide gas and lightweight organic acids which are normally found in nature.

"We introduce the bacteria into PCB-contaminated sewage which has been emulsified (broken into tiny particles) with ultrasonic sound and a chemical called lignin sulfonate," Liu said in a telephone interview. "The bacteria then thrive on the tiny particles of PCBs."

PCBs, which are valued for their low flammability and insulation properties, hve been used since the 1930s in a wide variety of electrical products including transformers and fluorescent lights as well as in various types of inks, paints and "carbonless" carbon paper.

The compounds are chemical cousins of DDT and have been implicated in birth defects in Japan. In the United States, PCB contamination has been responsible for the closing of the Hudson River to New York state's commercial fishermen this year. Scientists say the chemical has been found in the river's fish, especially types which are bottom feeders.

The sole U.S. producer of PCBs, Monsanto, has voluntarily restricted sales to mnufacturers who use the chemicals in systems that prevent PCBs from escaping into the environment. Despite this and other recent restrictions, Liu says that the amount of PCBs in the environment has not dropped appreciably. He said his process may prove useful in preventing further contamination.

Liu refused to speculate on whether the process would work on DDT, but said it is "likely" to have promise in degrading a wide variety of chemically similar pollutants.