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Compound Called Rival To DDT As Deadly Pollutant

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WASHINGTON — Two federal government agencies claim that another chemical element may pose a greater danger to the nation's environment than the controversial DDT.

It's called poly-chlorinated biphenyl—or PB for short.

The government says PCB is used in paints, adhesives and as an additive to many plastic products.

It seems that few researchers at this point know exactly how PCB has entered the environment or to what extent.

As puzzled as anyone else is the sole United States producer of PBC—the Monsanto Co. of St. Louis, Mo. Other manufacturers are located in Europe and Japan.

The Interior Department's Bureau of Sports Fisheries and Wildlife and the Food and Drug Administration charge that PCB is a significant factor in pollution of the air, water and ground.

Monsanto disagrees and has turned its own researchers loose to try to support its stand.

The firm contends—and the government agencies concur—that the molecular structures of PCB and DDT are so nearly alike that both chemicals could be confused by researchers.

It is upon this point that the argument seems to turn.

DDT, which now is showing up in the environment from pole to pole, has been accused of being one of the greatest dangers to the survival of mankind and wildlife. It has been outlawed by Michigan and several other states.

But PCB is being suspected with such frequency in federal laboratory studies that Dr. Joseph P. Linduska, associate director of the Bureau of Sports Fisheries and Wildlife, warns that:

"PCB over the long pull may be the greatest problem compound we have." He said that in fact, it "may be the greatest problem of any chemical age."

He said the chemical is increasingly being found during bureau analysis of dead animals and fish. Linduska said indications are that PCB leaches out of the materials to which it has been added and thus gets into the soil and water.

"Discarded plastics add to the store of this poison that eventually makes its way into the tissue of animals and birds," Linduska said. "We don't know yet how this translates into a danger to humans."

PCB is virtually insoluble in water and may last longer in the environment than DDT, which takes 10 years or more to break down. This long life also applies to other "hard" pesticides.

One of the difficulties is trying to single out PCB as an environmental culprit — even under intense laboratory scrutiny.

Thus the controversy about the limits set by the FDA on the "parts per million" of chemicals in food products, including Michigan's coho salmon, could become more intense.

The contaminants in food could be DDT or PCB, or other elements which haven't even been identified, researchers say.

Nevertheless the storm signals about the possibility of PCB being a pollutant are being raised throughout the nation. But other substances also are suspect.

Dr. Rene Jules Dubos of New York City, an internationally recognized bacteriologist, says that approximately 70 per cent of contaminants in urban air "are still unidentified and their biological effects are unknown."

He also says that several substances which produce cancer have been found in urban air samples.

Dr. Dubos says that there apparently is no way to "diminish the release of asbestos (from automobile) brake linings or the production of the immense amount of colloidal stuff generated by tires grinding on pavement."

Particles of brake lining residue have been found in the lungs of city dwellers, according to Dr. Dubos.

Monsanto says that to its knowledge PCB is not being used in brake linings. And the chemical firm and large tire manufacturers deny that it is being added to tire rubber compounds.

More than 206 million tires were sold in 1968. Much of the tread, which comprises 37 per cent of a tire, is ground off by wear and thereby is released into the environment, government agencies say.

Monsanto has issued a 51-page technical manual listing hundreds of possible uses for its chlorinated biphenyls and chlorinated polyphenyls, marketed under the trade name "Aroclor."

Among the suggested uses are as an additive to automobile paints, sealers and brake linings and to both synthetic and natural rubbers.

A statement issued by Monsanto says: "To our knowledge PCB is not used in tires, house paint, household products, epoxy resins or major vinyl plastics, as has been charged."

Yet its technical bulletin suggests Aroclor plasticizer applications for all those products and many more, including insulating materials and coatings for concrete storage tanks for gasoline and fuel oils.

A company spokesman said Monsanto does not know exactly how many manufacturers are using Aroclor in their products as suggested by the manual.

"We have evidence that PCB probably is being used in many products," declared Calvin Menzie, biochemist and acting toxicologist in the Bureau of Sports Fisheries and Wildlife Division of Pesticide Registration.

"We are at the point where we have to consider PCB as a major environmental pollutant," Menzie said.

"We are very concerned and are trying to learn more about PCB and how it affects animals, because the next step, then, is to try to determine its effect on humans."

Menzie said studies indicate that PCB, like DDT, tends to produce enzymes in the liver of animals. These enzymes, he said, appear to speed up the absorbance by an animal's body of drugs and chemicals, often to the point of causing death.

Menzie says PCB could be detected in the laboratory "if appropriate procedures are followed." But he and Dr. Henry Fishback, director of the Food and Drug Administration Division of Pesticides, agree that no method has yet been devised for absolutely detecting the difference between PCB and DDT, even in the laboratory.

Fishback's division sets the "parts per million" limits of DDT and other pesticides in marketable foods. He's pretty sure, but not quite, that his lab workers can separate the two chemicals.

The division uses gas chromatography, which "prints" chemicals by their colors as detected by the instrument. "If PCB hasn't been separated before it goes before the instrument, it could be confused with DDT," Dr. Fishback said.

"Other things are showing up in our tests for DDT, but we're not sure what they are," he said. "But we are satisfied that our methods of testing are the best that can be obtained at this time."

Dr. Fishback said he is convinced that "plastics and paints are how PCB is getting into our environment."

Monsanto is concerned about the escalated attack of government agencies on PCB as a major environmental pollutant.

"Polychlorinated biphenyls are not sprayed or dusted on crops, woodlands or any other areas, as are pesticides," a company statement said.

"It is therefore not only puzzling, but extremely difficult to conceive how commercially produced PCB can show up in wildlife in the quantities reported." the statement continues.

The chemical firm said it is continuing studies to determine the effect of PCB on fish and wildlife. "Monsanto has always cooperated, on a regular basis, with federal state and university laboratories in their analysis of chlorinated hydrocarbon residues," the company said. "We will continue to do so."

The company claims that it is technically correct that no tolerance levels for PCB have been set for human food and that their cancer-causing properties, if any, remain to be determined.

Meanwhile, the agricultural chemical companies, who want to continue selling DDT, and Monsanto, which says that PCB is "not guilty," are continuing to argue which chemical is the most dangerous to the environment.

But federal government agencies charged with protecting the population and the environment seem to be saying that PCB is a potent new factor to be reckoned with.

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