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New Pollutant

PCBs From Benzene Turn Up in Fish, Fowl

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Washington

Environmental scientists are concerned about some man-made chemicals which, because of their volume, could become more threatening pollutants than DDT.

Called "PCBs," for polychlorinated biphenyls, they have proved toxic to fish and some other forms of marine life and birds. Scientists are still unsure of their long-term effects on man.

Because they are used in the manufacture of products ranging from pesticides to ink to plastics to hydraulic fluid, as well as in the burgeoning field of electronics, they are scattered throughout the environment.

As the products in which they are incorporated decompose and oxidize, the PCBs remain intact, to be picked up in the human food chain in a way not yet clearly understood.

The pollutant first came to light in Sweden in the last decade. Scientists routinely monitoring pesticides in the carcasses or nests of prey, primarily eagles, found the DDT tests becoming confused. The DDT was there — but so was something else. By 1966, Soren Jensen and Gunnar Widmark had isolated the new pollutant and identified it.

Later, they found it in other birds, fish and evergreen needles. Now it has been found in man.

These findings were considered serious enough by government scientists to warrant a conference, which met here recently.

It concluded so little is known that the size and gravity of the PCB threat cannot be stated.

PCBs pose a chemical problem because of their resistance to breakdown, either biological or electrical. Made of benzene, a petroleum derivative, PCBs are used primarily as a dielectric material, or fluid insulator.

Smaller to Bigger

Like DDT, the PCBs — which are relatively insoluble in water — get concentrated in marine organisms, and their travel through the food chain is similar to that of DDT.

Little creatures collect and concentrate the pollutant, then are eaten by larger creatures, which, in turn, are eaten by something else — including man.

No one knows precisely how the PCBs get into the water, how they make their way up the food chain to man or the extent of their toxicity at low levels.

It also is difficult to measure the threat PCBs pose because the sole U.S. manufacturer, Monsanto Chemical Co., refuses to disclose production figures — past or present — without an ironclad government guarantee of absolute secrecy. Unofficial estimates indicate that hundreds of millions of pounds are produced each year.

John Mason, assistant general manager of the firm's organics division, does not agree that PCBs can be proven toxic to fish in low amounts, despite the fact that leakage from a plant on the Escambria River in Alabama produced a major fish kill.

How They're Used

However, he admitted "concern that they are building up in the environment and the hazard to certain species of birds. . ."

The firm has two plants, one at Anniston, Ala., and the other at Sauget, Ill. Its products with PCB are all trade-named Aroclor and identified by number.

"We're just as concerned as anyone else about PCBs," Mason said. "But if they were banned, we'd have some very serious problems in the electrical industry."

He said that apartment house transformers in places like New York would be impractically noisy and large if they were cooled by oil instead of PCBs or as big as the buildings themselves if cooled by air.

Monsanto is taking steps to reduce any threat, including a recovery and reprocessing process in which it collects spent transformer fluid containing PCBs and reprocesses it, Mason said.

The company also is warning potential users of PCBs' hazards and trying to sell them other means of doing the jobs PCBs do. It is studying a high temperature incinerator in which the PCBs can be completely eradicated. The Department of Agriculture, at Monsanto's request, is striking three products with PCBs from its approved list.

Wildlife Affected

Scientists, meanwhile, are studying the extent of PCB residue. At the Patuxent Research Center of the Fish and Wildlife Services, ecologist Lucille Stickel says that the concern is well founded.

"We analyze whatever bald eagles are found dead in this country," she said, "and all contain PCBs in approximately the same amounts as pesticide residues."

Dr. Thomas Duke, an ecologist working at the Bureau of Commercial Fisheries pesticide laboratories in Gulf Breeze, Fla., said PCBs are being found in shrimp, crabs and juvenile fish.

The Food and Drug Administration's chief of compliance, Ren Duggan, said PCBs come under the general provisions of the Food, Drug and Cosmetic Act even though they are not used directly for those purposes.

The FDA has refused to consider several requests for approval for packaging materials containing PCBs, he said, not because of any danger but due to incomplete testing.