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State tries to trace, minimize use of PCBs

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Polychlorinated biphenyls (PCBs), the newest addition to the alphabet of environmental hazards, burst into public awareness recently after more than 30 years of unsung use.

In Minnesota, where the toxic compounds have been found in fish and turkeys, efforts are under way to broaden detection and minimize use of the substance.

But both business and public officials now describe PCBs as more a cause for concern than for alarm. They add, however, a great deal remains unknown.

"We'll have to start looking for more PCBs, and probably on a broader basis in the state," said Russell Frazier, chief of analytical services for the Minnesota Department of Health.

This summer, Health Department chemists found PCB traces in some fish taken in 1969 from the St. Louis River, near its mouth, and from the Mississippi River, south of the Twin Cities. The amounts varied from one-half part to 44 parts per billion, about a hundred times less than a federal danger level of 5 parts per million for commercially sold fish.

But interestingly, the fish with PCBs came only from the two spots downsteam from large industrial areas, underscoring the use of the compound.

An odorless, colorless, syrupy chemical, PCBs were used until recently as softeners in plastics, paints, and rubber; as additives in printing ink and papers; and for transformer, capacitor, and heat-exchange uses.

First produced in 1920 and now manufactured only by the Monsanto Co., PCBs are stable and inert, highly insoluble compounds that tend to accumulate in the environment, much like DDT, although they are generally considered less toxic than that.

PCBs' widespread use multiplies the difficulty of pinpointing the sources.

"We know it's a man-made chemical compound, and it's been used for a long time," said Dr. John Moyle, technical assistant to the game and fish division of the Department of Natural Resources.

"But where the stuff is that's been used, no one knows."

Among the known users, however, is the Chemolite plant of Minnesota Mining & Manufacturing Co. (3M), which has discharged PCBs into the Mississippi River.

3M began using the substance more than a decade ago to add to resins. But a company spokesman said the firm now is "phasing out" its use of the compound by employing a substitute. Within a few months, 3M should be using none at all.

At one point, a Health Department sample showed a 3M discharge of 9 parts per billion of PCBs, the highest level measured at the firm's discharge point but still what Frazier called "awfully low."

"Undoubtedly," he said, "there are a lot more sources than 3M."

For example, Frazier stated, the Health Department has never checked the effluent from the metropolitan area sewage treatment plants for PCBs.

In the other case of Minnesota detection, the U.S. Department of Agriculture (USDA) reported last month that 50,000 turkeys have been voluntarily withheld from market. The fowl in some cases contained PCBs levels "quite higher" than the recommended upper limit of 5 parts per million.

The birds still remain quarantined but agriculture officials said last week that traces of PCBs in other turkeys belonging to the same Wadena, Minn., grower are diminishing.

"In the live birds we're testing prior to slaughter, the amount of residue is decreasing," said Dr. C.C. Hamilton, acting deputy director of USDA's meat and poultry inspection for the six-state northern region.

"It looks better all the time" for eliminating further contamination, he said.

Checks on other flocks in the Upper Midwest showed no PCB contamination, and officials think the problem may be limited to a specific quantity of feed.

"We possibly could be completely out of this (situation) in a month or six weeks," Hamilton said, if samples continue to show decreasing amounts.

Reseach is sparse, but studies have shown that the compounds can cause liver damage and possibly reproductive problems in laboratory animals. However, federal scientists have said they doubt that any harm to man is likely in the infrequent and sporadic food contaminations noted thus far.

"We do know that as a toxic substance PCBs are a potential but not immediate health hazard," said Dr. Charles Edwards, commissioner of the Food and Drug Administration.

"We do know that its background level in the environment is not high.

"But we do not know how long-term exposure to PBC might effect human health and we cannot yet explain the inconsistent presence of the chemicals in certain areas of the environment," he stated.

While predicting that other PCB "incidents" will surface, Dr. Edwards rejected a ban on PBCs as not being "in the best interest of the consumer." But he did add in a recent statement that uses will be restricted.

Industry already has imposed some restrictions. Monsanto, for example, has stopped selling PCBs unless they are to be used in a closed-cycle, or recirculating, system without likelihood of discharge. They also are restricted to non-food uses.

The Food and Drug Administration also said that carbonless carbon paper, believed to have been recycled into PCB-contaminated food packaging, will no longer contain the substance.

Meanwhile, Minnesota officials say increased surveillance is getting under way. Moyle, for example, said the Department of Natural Resources will begin analyzing for PCBs the fish regularly taken from around the state for insecticide testing. The Pollution Control Agency also has begun testing some water samples for the compound.

Dr. Rollin Demuzzoun, administrator of plant and environmental [illegible] the Minnesota Agriculture Department, also said a program of [illegible] testing for PCBs has begun on animal feeds.

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