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PCB Synopsis

There has been increased interest in the contamination of meat, poultry, and milk products by persistent environmental pollutants. One group of halogenated compounds known as polychlorinated biphenyls (PCBs) have been found to oe widespread in the environment. In North America, PCBs are sold exclusively by the Monsanto Company and are marketed under the trade name of Aroclor.

Examples of the wide variety of uses to which PCB are put are as follows: fire retardants, surface coatings for improvement of water and alkali resistance, electrical insulating products, fluids for hydraulic, gas turbine, and vacuum pumps, and heat-exchange fluids. Polychlorinated biphenyls have also been used in the past to prolong the insecticidal action of compounds such as lindane, aldrin, dieldrin, and toxaphene. The stability of these compounds, combined with the property that PCB are fat soluble and ubiquitous in the environment, has resulted in their accumulation and biomagnification throughout the food chain.

The exact sources of PCB contamination which affect the agricultural industry are not known. In many cases the cause is subtle. The use of silo sealants containing PCB resulted in contamination of silage through migration of these compounds into the silage liquor. Polychlorinated biphenyls also enter the environment through waste disposal systems. Contamination of a stream in southern Ontario in 1971 was believed to be the source of contamination for several affected cows. In addition, industrial spills or leakage of PCB from heat-exchange and hydraulic systems into commercial feeds have contributed to the contamination of livestock and agricultural products. In the course of one investigation into milk samples contaminated with PCB, it was found that an electric company had allowed a right-of-way sprayer to use discarded transformer oil for defoliant spraying. The drift of the spray to adjacent dairy pastures resulted in the contamination of dairy cows. The veterinary clinician may be asked to recommend corrective action for animals which have survived exposure to PCB. The quantity of chemical residue which may be present in the animal's body is dependent upon length of time that the animal has been exposed, concentration of the contaminant, and route of exposure.

Treatment of contaminated dairy cows with charcoal or phenobarbital has not significantly increased the rate of PCB elimination from the animal's body. Since the rate of PCB elimination is known to be slow, it is not economically feasible to maintain contaminated animals until residue levels decline to acceptable levels.—*D. H. Jones* et al in Can Vet J, 16, *(Dec, 1975): 349.*

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