Persistent Organic Pollutants (Pops) Encyclopedia Article

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Persistent Organic Pollutants (Pops)

Persistent organic pollutants (POPs) are a subset of the more comprehensive term *persistent bioaccumulative and toxic chemicals* (PBTs). POPs commonly stands for organic (carbon-based) chemical compounds and mixtures that share four characteristics. They are semivolatile, stable under environmental conditions (**half-lives** of years to decades), fat-soluble, and possess the potential for adverse effects in organisms. Many POPs are organochlorine compounds. Among the twelve priority POPs defined by the United Nations Environmental Programme (and referred to as the "dirty dozen") are the pesticides aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, and toxaphene (chlorobornanes); the industrial chemicals polychlorinated biphenyls (PCBs) and hexachlorobenzene; and the unintentional by-products dioxins and furans.

POPs' resistance to chemical and biological degradation and their propensity to evaporate led to their global distribution. By a constant process of deposition and reevaporation, POPs are transported by air and water currents to regions far from their sources until they ultimately gather in colder climates. Because of their **lipophilicity**, many POPs concentrate in organisms and accumulate to high levels in the top members of the food web such as predatory fish and birds, mammals and humans. Certain chemicals possess the ability to cross the placenta, while others are retained. Several contaminants present in the mother's body are thus handed down to the developing embryo in the womb—they are transferred to offspring across the placenta and through mother's milk. Adverse effects include cancer, endocrine disruption, reproductive dysfunction, behavioral abnormalities, birth defects, and interference with the immune and nervous systems.

Bibliography

Harrad, Stuart, ed. (2001). *Persistent Organic Pollutants: Environmental Behaviour and Pathways of Human Exposure.* Boston, MA: Kluwer.

Internet Resource

United Nations Environmental Programme. "Persistent Organic Pollutants." Available from http://irptc.unep.ch/pops.