

Gibbs, Lois Marie & Citizens Clearinghouse for Hazardous Waste. *Dying From Dioxin*. Boston: South End Press, 1995. (Reviewed by Pamela Johnston)

Chapter 3: Where Dioxin Comes From

Dioxin is emitted into the environment through a variety of human activities. One percent of estimated dioxin emissions in the U.S. come from water sources (mostly wastewater sludge), while 18% are from land use/landfills, 80% from air, and the other 1% due to commercial production. Although water provides only a small fraction of the total, it has a significant and direct impact on surrounding ecology because of the ease of bioaccumulation in aquatic habitats. In addition, dioxin from non-water sources may end up in surface water systems through natural processes. Examples are incinerator emissions contained in precipitation, or landfills leaching into nearby waterways. Dioxin and dioxin-like molecules are especially disconcerting because of their stability and tendency to remain in environmental "reservoirs" for long periods of time. Buildups in soil or aquatic sediment have potential for reintroduction into the environment long after they have been discharged.

Solid waste incinerators are cause of the greatest amounts of dioxin emissions, particularly during the combustion of chlorine-containing substances such as polyvinyl chloride. Pulp and paper industries are second on the list because of this similar use of chlorine components, in this case for bleaching processes. At least 14 U.S. paper mills at the time of publishing used chlorine-free methods during production, and the trend seems to be continuing.

Dioxin in wastewater has been shown to be decreasing since 1988, but tests for reduction have seldom been performed on contaminated sludge or pulp due to assumptions that dioxin in these materials would have decreased at the same rate. More tests need to be done to ensure that this is in fact the case. In addition, Table 3 - 3 shows wastewater discharges of dioxin in 1994, but has a measurement only for paper and pulp sources. Other potentials like sewage treatment plants, chemical manufacturing, and metal refineries were not estimated.

Critique

This book is a helpful tool for anyone looking into the scientific, environmental, medical or political aspects of dioxin and its sources. The theme is empowerment for how to deal with this threat to our well-being, and Gibbs and fellow activists seem to make their point that it is important to both find out how to deal with the dioxin that is already in the biological system and to end dioxin production altogether.

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