

RECENT KNOWLEDGE ON THE TOXICOLOGICAL PROPERTIES OF TOXAPHENE

Mahmoud A. Saleh

Environmental Chemistry and Toxicology Laboratory, Department of Chemistry
Texas Southern University, Houston, Texas, USA 77004

Toxaphene and toxaphene like formulations (Camphachlor, Polychlorocamphenes and Strobane) are complex mixtures of polychlorinated monoterpenes. Before its ban in 1982 it was the most heavily used insecticide in the U.S. and many parts of the world. Cumulative world use of toxaphene exceeded 400,000 metric tons (Saleh, 1991). Considerable quantities of toxaphene previously discharged into the environment of the past several decades may remain undegraded and potentially affecting humans and wild life. It is now realized that toxaphene represent a global threat similar to DDT, polychlorinated biphenyls (PCB) and other organochlorines. Despite the fact that toxaphene was the most heavily used insecticide, it is the least chemically and toxicologically understood agrochemical. However, significant amount of information has been published in the recent years regarding its chemical composition, mode of action and environmental fate. Toxaphene is made up of at least 200 isomers only 20 of them have been isolated and identified. The majority of toxaphene toxicity has been shown to be generally attributed to few of its components particularly those of hepta- and octachloro-bornanes. Recent toxicological evaluation showed that toxaphene can actually inhibit the GAP junction intercellular communication in humans (Kang et al. 1996); it binds specifically with GABA receptor (Cole et.al 1994; Saleh and Blancato 1993), it causes significant reduction in the phospholipid content in brain and liver (Chandra and Durairaj 1995).

Recent advances in the area of toxicity of toxaphene to humans and wild life will be presented.

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