ELSEVIER Journal of Hazardous Materials 40 (1995) 109–112

JOURNAL OF HAZARDOUS MATERIALS

Book Reviews

Chlordane Toxicity, No. 25, Case Studies in Environmental Medicine, US Department of Health and Human Services, Public Health Services, Agency for Toxic Substances and Disease Registry, Division of Health Education, E33, 1600 Clinton Road, N.E., Atlanta, GA 30333, 26 pages. (For more information, call the National Pesticide Telecommunications Network (NPTN) at 1-800-858-7378 or the 24-h hotline at the same number.)

For over 35 years, chlordane was used as an agricultural insecticide and for termite control in and around homes. EPA estimates that 19.5 million structures have been treated with chlordane, and that as many as 52 million occupants may be exposed. Chlordane can persist in the environment for more than 30 years; its residues are lipophilic and can remain in body fat stores for months.

With this overview, a Case History is presented, in which a young couple in their mid-20s moved to a southern rural community two years ago and purchased an old farm. They have not felt well since their first winter in the home, when they began to experience general malaise and loss of appetite. They both have had nasal congestion and severe headaches that lasted two to three hours, sometimes accompanied by lightheadedness. These symptoms are especially noticeable after they work in their basement workshop. Previous occupants, a young couple, had left the farm convinced that the wife's two miscarriages were due to termite fumigation of the house carried out three years previously. The question was raised as to whether the pesticide may have been associated with this, and the possible inability that the couple have not been able to conceive. Birth control has not been used for 18 months.

Chlordane was the most commonly used member of the cyclodiene family of chlorinated insecticides, including aldrin, dieldrin, and heptachlor. Chlordane manufactured before 1951 had a higher percentage of impurities than that produced later. Indoor air contamination by misapplication of chlordane is the greatest source of exposure risk for the general population. From 1950 until it was banned, chlordane was widely used as a spray to protect structures against termites and to control insects on lawns, turf, ornamental plants, agriculture crops and in drainage ditches. An estimate is that 200 million pounds were applied in 40 years; approximately 1.2 million homes were treated for termites. Use of chlordane on food crops was banned in 1978, while its use for termite control continued until April 1988. Chlordane may be found in food, air, water, and soil, and most people have some form of it in their adipose tissue.

Most chlordane water contamination occurs in surface water, from industrial releases, urban or rural runoff, or spraying near or over exposed bodies of water. In lakes or streams, chlordane absorbs almost completely to sediment in about 6 days. Contaminated food is another source of chlordane exposure; eating fish from chlordane-contaminated waters may add to a person's body burden. Infants may be at increased risk if the mother has had significant chlordane exposure. It is absorbed well by all exposure routes. Results of various epidemiologic studies in humans are conflicting and inconclusive. The International Agency for Research on Cancer (IARC) considers the evidence as limited in animals and inadequate in humans. Various blood dyscrasias have been studied but evidence is anecdotal and inconclusive.

Acute exposure — there is no antidote for chlordane poisoning. For chronic exposures, assessing the environment and preventing further exposures are essential. The National Pesticide Telecommunications network (24-h hotline 1-800-858-7378) can help locate companies that measure chlordane levels in indoor air and soil. No treatment specific for chlordane poisoning exists. Standards and regulations for chlordane in the US, as well as suggested readings, are included. For clinical inquiries, contact Office of the Director, ATSDR Division of Health Education, on 1-404-639-6204.

HOWARD H. FAWCETT

Transportation of Dangerous Goods: Assessing the Risks, by F.F. Saccomanno and K. Cassidy, Institute for Risk Research, University of Waterloo, Waterloo, Ontario, Canada, 1992, 631 pp

This is a compilation of 31 papers presented at the First International Consensus Conference on the Risks of Transporting Dangerous Goods, held in Toronto, Canada, April 6–8, 1992. The papers are collected in five chapters dealing with quantitative risk assessment models, release assessment, simple risk assessment methodology, uncertainty in risk estimation, and risk tolerance, communications and policy implications.

Some excellent papers and data tabulations are assembled, including papers on risk assessment for ship accidents in harbors, and for rail and road transport. Summaries are included of accident rates and probabilities of release following an accident for road and rail accidents for several countries in Europe and North America. Material loading/unloading and accidents at fixed installations are also treated.

In short, this is a high-quality reference book. All serious risk analysts should have it in their organization's if not their personal library. It is directed to technical specialists, but to a fairly broad range of specialists ranging from modelers and risk analysis to risk communicators.

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