*Journal of Hazardous Materials*, 27 (1991) 351–353
Elsevier Science Publishers B.V., Amsterdam


## Book Reviews

*Chemicals in the Human Food Chain*, by Carl K. Winter, James N. Seiber and Carole F. Nuckton (Eds.), Sponsored by The University of California Agricultural Issues Center, Van Nostrand Reinhold, New York, NY, 1990, ISBN 0-442-00421-4, 276 pp., $41.95.

*Chemicals in the Human Food Chain* is the product of a University of California study entitled: "Chemicals in the Human Food Chain: Sources, Options, and Public Policy." This book is designed for the nontechnical reader, and would serve as an excellent tool for risk education. It puts human health risks from chemicals in the food chain into realistic terms, generally concluding that with proper monitoring and processing, even the controversial veterinary pharmaceuticals are an acceptable risk. This book gives a broad overview of the status of chemicals in our food chain in its four chapters: Pesticides in Our Foods: Assessing the Risks; Sources of Chemicals in Animal Products; Food Additives in the Human Food Chain; and Industrial and Environmental Chemicals in the Human Food Chain.

The first chapter gives a thorough look at what pesticides are used, in what quantities, what the resulting risks from these pesticides are, and the rationale for regulating these risks. The author notes that the Food and Drug Administration (FDA) and the California Department of Food and Agriculture (CDFA) have been "soundly criticized" for their sampling rates and for their inabilities to detect certain pesticides in their routine screening. However, by doubling the sampling (from 1% to 2%) millions of dollars would be required while 98% of violative residues would still go undetected. In answer to this problem, the author cites efforts to explore innovative techniques, such as immunoassay and automated chromatography.

Sources of Chemicals in Animal Products, chapter 2, broaches the subject of antibiotic resistant bacteria in animals. The author views the advantages of appropriately used veterinary pharmaceuticals as a necessity for maintenance of healthy animals. Chapters 2 and 3 both point out the importance of weighing the risks of not using veterinary pharmaceuticals and additives in food processing.

James Sieber addresses in the last chapter the problem of providing quantitative estimates of exposure for most organic contaminants of environmental origin. As a point of research for the future, he suggests studying whether there are plant-derived oils that could replace the synthetics used in packaging that leave chemical residues in human foods. He also notes a lack of information about chemicals that enter food during cooking. Siebert says an assessment of the risks that cooking processes might pose in relation to risks from environmental contamination, pesticide residues, and food additives is needed.

Because of its nontechnical language and comprehensive nature, this book would be useful to the public, toxicologists, nutritionalists, food processors, environmental regulators, risk assessors, and many others.

CURTIS C. TRAVIS and VICKI GAMBLE

*Developmental Toxicology: Risk Assessment and the Future*, by Ronald D. Hood (Ed.), Van Nostrand Reinhold, New York, NY, 1990, ISBN 0-442-00422-2, 279 pp., $49.95.

This book addresses areas of needed research outlined by the U.S. Environmental Protection Agency's Guidelines for the Health Assessment of Suspected Developmental Toxicants (1986). In *Developmental Toxicology*, state-of-the-art information on practical applications provides a step above a mere iteration of the problems involved in the risk assessment of developmental toxicology.

The book is divided into several sections: Executive Summary, Introduction, Summary of Research Needs, and essays by experts in the field. The Executive Summary, Summary of Research Needs, and essays work together to identify assessment problems, resulting research needs, and the importance of these research needs. The Executive Summary suggests possible project areas for future research, funding, and prioritization. In the Summary of Research Needs, each topic's research possibilities are elaborated on and given a ranking of high, medium, or low priority.

There are 19 essays in the book, ranging in topic from Maternal vs. Developmental Effects to Mathematical Modeling of Teratogenic Effects. The authors analyze new research areas, some of which are: paternally mediated effects, nonbehavioral functional effects, pharmacokinetic and physiologically based models, structure-activity relationships, and mathematical modeling.

Each chapter discusses problem areas and potential solutions in developmental toxicology. For example, Ronald Hood, the book's editor, questions "blind acceptance" of the use of the A/D (adult/developmental) ratio and the RTI (Relative Teratogenic Index), the use of NOELS and LOELS, and the use of statistical rather than biological significance of data. Todd Thorslund questions using mathematical models that are commonly employed in cancer risk assessment for teratogenic risk assessment. Hood offers no apparent solutions to the gaps in knowledge he identifies, but Thorslund presents five specific ways to improve current mathematical modeling and also provides two example models.

The book's organization makes information easily accessible, with each section amplifying the previous sections. There are adequate figures and tables and a good index. The individual essays are concise and clearly presented. The