



## Book review

**Occupational and Residential Exposure Assessment for Pesticides. Edited by Claire A. Franklin and John P. Worgan.**

For persons with general or specific interests in “Occupational and Residential Exposure Assessment for Pesticides” the comprehensive 421 page volume edited by Claire A. Franklin and John P. Worgan is a must. Following an Introduction and Overview by the editors that strongly reflects their research and regulatory experiences in Health Canada, the book is divided into 4 sections and 10 chapters.

The expressed purpose of the editors was to document the current state of knowledge in the field of occupational and residential exposure assessment and to outline ways that exposure data are used in assessing the risks of pesticides to humans in occupational and residential settings.

Exposure Assessment Methodologies are comprehensively catalogued by Fenske and Day in the first chapter. Their extensive insight and experience will make this chapter particularly useful to persons entering the field. Whitmyre et al. next addressed critical restricted entry topics in agriculture including use of dislodgeable foliar residues, transfer coefficients, risk mitigation, and database development. Many of the same subjects are addressed by Lewis in the following chapter on residential exposure monitoring. The chapter includes methods and techniques for environmental air and surface sampling. The chapter, “Residential (Non-Dietary) Post-Application Exposure Assessment,” selectively gathers regulatory and research experience in the final chapter of this section. Driver et al. deliver a succinct presentation including an especially useful appendix on dermal exposure monitoring that will be valued by persons who must plan, prepare or evaluate residential exposure assessments.

Databases and Models are represented by two chapters that include several generic means to estimate human pesticide exposure. Von Hemmen and van der Jagt address operator (applicators) and mixer/loader exposures that when in a suitable format, can be extrapolated for “similar-use” scenarios. Models used in the US, UK, The Netherlands, and the EUROPOEM database are included. The chapter by Mitoba and van Veen represents the strong dependence of some persons on models for residential exposure assessment, particularly airborne chemicals. The authors provide helpful discussion of impact of a limited database and present suggestions for future improvements.

Epidemiology is often not included in discussions of occupational and residential exposure assessment. The

chapter by Heederik and Teschke highlights many exposure issues that can contribute to the development of comprehensive studies of the distribution and determinants of disease. Descriptions of study designs and exposure assessment strategies will be valuable to non-specialists.

Selected Advances in Data Interpretation represent 3 chapters that complete the volume. Silken discusses probabilistic approaches to residential and occupational exposure assessment and provides an instructive series of case studies in his chapter, “Probabilistic Approaches to Aggregate and Cumulative Risk Assessment.” This chapter is followed by Hakkert et al. “Dermal Absorption of Pesticides.” A description of skin and some factors related to exposure is followed by an overview of experimental methods and uses of data. Finally, the reader is confronted with the reality of regulation, “Occupational and Residential Exposure Assessment for Pesticides—Towards a Harmonized Regulatory Approach.” In this area where semantics and conventions prevail, Norman has given the reader a long list of areas of concern and developing action. This chapter will be particularly useful for persons in the regulatory sector at all levels and across the oceans where risk assessment is practiced.

The Glossary is a useful element of the text, particularly when words are attributed to particular sources. It could be expanded, e.g., toward a harmonized regulatory approach. Also risk is defined as the “likelihood that an individual will develop a specified adverse effect.” Unfortunately, “likelihood” is not something determined by measuring factors that can influence an individual’s exposure. The concepts of risk and exposure need clarification to mitigate “all-or-none” thinking that occurs too often when some persons learn of their chemical exposures. Books are a good place to start.

Overall, this book will be very helpful to persons seeking comprehensive coverage of a many-faceted subject and to practitioners looking for background material on the operating principles of the field.

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