the current soil issues in many parts of the world such as soil pesticide contamination and effects of salinization. The author also gives many practical management solutions, although, at times, these are buried in unrelated text. Extensive coverage is given to the management of saline soils. In the current discussion of climate change, the book contributes some ideas about carbon dynamics and stresses the important potential impacts on coastal lowlands, salinization, and desertification. A very thorough discussion of heavy metals in the soil environment follows in Chapter 8 while the following chapters on soil geochemistry explore such topics as the health implications of soil iodine deficiency. A few more current references would have contributed to the issues raised in the book.

Dr. Aswathanarayana writes knowledgeably and in a very readable, sometimes even anecdotal style. Many issues and points are well illustrated, particularly with examples from developing countries which are rare in soil texts and afford the book a refreshing angle. The book does, however, suffer from trying to cover too much of a vast topic in one volume, which renders it unfocused and disorganized at times. It is suggested that the book will be useful to students and professionals in many disciplines, yet it is difficult to understand how this might be the case with broad, sweeping generalization of such topics of soil biota, yet very in-depth, complex discussions of soils as engineering materials. The question, Who is the audience?, arises.

Given the existence of many good introductory soil texts for the university level, the author should have expanded the latter sections of the book and dropped the introductory chapters. This would have narrowed the audience to professionals in environmental and soil sciences or graduate students. As it is, topics that professionals would like more depth on, such as effects of denitrification in soils on climate change or biomagnification of heavy metals, receive little mention. A better approach might have been to focus on topics such as soils and climate change as well as soil geochemistry in relation to health and disease, where the author’s expertise is clearly evident. Still, the valuable examples and applications of soil issues in the setting of developing countries make Soil Resources and the Environment a good complement to other soil texts.

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Pesticide Formulations and Application Systems
Edited by Alan K. Viets, R. Scott Tann, and Jane C. Mueninghoff, ASTM, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428. 2001. 187 p. ISBN 0-8031-2877-0.

Pesticide formulations and application systems directly affect the efficiency and uniformity of pest control. These techniques are also becoming increasingly critical in our society’s effort for reducing off-site effects of pesticides to the environment and human health. This book, as a product of the 20th symposium on Pesticide Formulations and Application Systems (New Orleans, LA; 26–27 Oct. 1999), contains articles that discuss up-to-date issues and research and development progresses under a variety of topics.

This book consists of seven topics. While the topics do not seem to be closely interrelated, they cover almost all the areas related to pesticide formulations and application. The topics cover regulatory impacts on formulation development, factors affecting application and spray drift, testing methods, efficacy effects of adjuvants, and new or improved formulation approaches. The discussion on regulation presents priority issues and anticipated difficulties from the implementation of the Food Quality Protection Act (FQPA). Specifically, the enactment of FQPA will expand the pesticide list to include formulation inerts. However, the USEPA has yet to define policies for data review of formulation inerts. R.W. Magin of Albermarle Chemical Co. presents the need and approach for codifying inerts based on their chemical characteristics and for developing a searchable database. The other contributions are more technical in nature, dealing with the different aspects of pesticide formulation and application mechanisms. Some of the more significant developments include enhancement of cuticular penetration of herbicides by surfactants, the use of branched alcohol ethoxylates as wetting agents in formulations, the discovery of water-soluble antiform based on perfluorooalkylphosphinic and perfluorooalkylphosphonic acids, and the development of a nozzle-adjuvant system for low volume pesticide application that has significant improvements in limiting pesticide drift and enhancing efficacy.

Overall, this book covers specific information that will be of interest to formulation chemists, pesticide applicators, regulators, and chemical manufacturers. In addition, environmental scientists who are interested in developing reduced-risk practices for pesticide use should find this book informative and helpful.

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