

COHEN, ALLEN CARSON. 2004. *Insect Diets: Science and Technology*. CRC Press, Boca Raton, vii + 324 pp. ISBN 0-8493-1577-8. Hardback. \$129.95

This is a well-written book that will be useful to both experienced and novice workers with insect diets. It is not a "How to" book, not a description of diet formulations; the author's intent is to explain the basic nutritional needs of insects and the processing of diets. There are 15 chapters, 8 appendices, 13 pages of references, and an index. Four-page Chapter 2 gives some of the history of insect diet development and useful definitions encountered in the literature on insect diets. Appendix II near the back of the book is a listing of historical landmarks in insect diet development and could well have been included in Chapter 2, instead of as an appendix. One of the distractions I found in the book is the repetitive nature and disjunct distribution of related information in several different chapters. For example, Chapter 3 is a very good exposition of the nutritional requirements of insects, the chemistry of major nutrients, and explanation of how various dietary components supply nutritional needs, but additional nutritional information occurs in Chapters 4, 5, 8, and 9. Case studies in successful diet development for the screwworm fly and tarnished plant bug make good reading in Chapter 4. Chapter 5 describes the role of water in insect diets, pH effects, antioxidants, and some physical effects such as heating, cold or cool storage of components and diets. The author continues in this chapter with chemistry and possible interactions of various dietary components of diets that can occur during mixing and formulation. In Chapter 7 Cohen describes insect feeding biology and behav-

ior, and the mouthparts and aspects of gut structure and digestive processes in selected insects. Chapter 10, entitled "How to develop artificial diets" is an excellent outline for new workers in diets, as well as some good advice for more experienced researchers. Chapter 12 describes some of the equipment needed to scale-up diet work and processing necessary for mass rearing. Chapter 13 deals with microbial problems in diet work, and has good advice for preventing mold and microbial contamination of diet components as well as formulated diets. On page 240 there is an excellent table of antimicrobial agents used in insect diet work, with additional information and references about the antimicrobials. Chapter 14 covers safety practices and good insectary practice. Finally, in Chapter 15, Cohen discusses some of his ideas for future development and use of insect diets. A useful glossary of diet terms is in Appendix I. Other appendices supply useful information on mineral and vitamin mixes used in insect diets, quality control procedures, and advice on measuring dietary components. There are many references to the literature on insect diets, and an index at the end of the book. Overall, I recommend the book to those involved with insect diet development or management of rearing facilities in which synthetic or semisynthetic diets will be used.

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