

BOOK REVIEWS

HALL, F. R., AND J. J. MENN (eds.). 1999. Biopesticides. Use and Delivery. Humana Press; Totowa, NJ. xiii + 626 p. ISBN 0-896-03515-8. Hardback. \$119.50.

This book has 31 chapters contributed by 59 authors from Australia, Canada, China, France, Switzerland, UK and USA. Some are academicians, some are employed by industry, some by national and international research agencies, and some by national and international regulatory agencies. After an overview by the editors, the remaining chapters by other authors are grouped into 7 parts. Part 1, with 5 chapters, is called projections on opportunities for biopesticides in crop protection. Part 2, with 3 chapters, is on biofungicides. Part 3, with 10 chapters, is on bioinsecticides. Part 4, with 2 chapters, is on bioherbicides. Part 5, called "Other biorational technologies", has a single chapter on the use of pheromones. Part 6, with 4 chapters, is on registration of biopesticides, and addresses requirements in the USA and Europe. Part 7, with 6 chapters, is on management protocols.

As is obvious from Part 5, the book is not just about biopesticides. It reviews natural and synthetic plant-derived chemicals (such as azadirachtin and pyrethroids) and natural and synthetic chemicals derived from bacteria (such as delta entotoxins from *Bacillus*, and spinosyns from *Saccharopolyspora*); although these are chemicals, they sometimes are called "biorational pesticides." It discusses the use of synthetic pheromones and of transgenic crop plants; these both are sometimes called "other biorational methods." The discussion on transgenic plants is a small part of the book. The book thus reviews not only biopesticides (which are part of biological control), but also what elsewhere are termed "biorational pesticides" and "other biorational methods" (which are not part of biological control). A more descriptive title such as "Biopesticides and Biorational Methods" might have attracted wider sales from readers wanting a sourcebook of information on biorational methods. Transgenic crop plants are not part of biological control. But transgenic baculoviruses (when used as living organisms), which are discussed in this book, or transgenic entomopathogenic nematodes or predatory mites **are** part of biological control. The line between biological control and "biorational methods" is becoming more complicated but, wherever it is drawn, I find it useful that all this information should be revealed in one handy volume.

There has been voluminous coverage in the scientific literature of the development and management of transgenic plants, and voluminous criticism of this use in the scientific and popular press. The scientific literature is primarily concerned with trying to delay the development of resistance by pests to the toxins expressed in the transgenic plants, wherewith will be lost the natural regulation of pest populations afforded by naturally-occurring pathogens of pests. The popular press is more concerned with largely irrational fears by the public that consumption of genetically-modified food plants may somehow be harmful to human consumers. A third issue, in the realm of ethics, is the patenting of plant genomes by commercial interests. This book deals with all kinds of issues for the biopesticides and biorational methods, and is to be commended.

This book has something for many. For the research scientist who wants information, it deals with the origin, composition, and biological effects of biopesticides and biorational methods. For the agriculturist/horticulturist, it deals with availability, efficacy, and safety to the user of these materials. For the environmental specialist it deals with environmental safety. For commerce, it deals with opportunities in the production and marketing, as well as with governmental regulation in the USA, Europe, and elsewhere. And for everyone, it deals with human social issues and provides facts.

The editors and/or publishers have done their job well in curtailing verbosity, although some jargon has slipped by them (e.g., the word “impact”, decried by the CBE Style Manual, rears its head). There are some typographical errors (e.g., “phero-mone” in the Table of Contents and “*Beauveria bassiana*” p. on 47). Each chapter has its own References, and there is an 18-page Index. The Index manages to pick up the reference to *Beauveria bassiana* on p. 47, but erroneously attributes it to p. 147. It misspells the name *Paecilomyces fumosoroseus* which was given correctly on p. 32. It repeats the incorrect name “*Phthorminaea*” from p. 221. It omits the incorrect name “*Cnaphalocrosis medinals*” of p. 222 and the correct name *Xenorhabdus* of p. 273 and several other names. It does not consistently place names of genera and species into italics, and it introduces new errors such as “*Scapteriscus riobravis*” which should be *Steinernema riobravis*. The Index could have used more work, and the editors might have done better to include in it the name of the authority (describer) for each species mentioned, because the chapter authors have not done this consistently and have made errors. Better still, the editors might have provided the names of these authorities in a classificatory table of all organisms mentioned.

J. H. Frank
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