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Book review

J. Lacey (Ed.), 1985. Trichothecenes and other mycotoxins. Proceedings of the International Mycotoxin Symposium held in Sydney, Australia, August 1984, organized by the Mycotoxicology Committee of the International Society for Plant Pathology. John Wiley & Sons, Chichester. 597 pp. Price £ 55.00.

The importance of mycotoxins in food and feed has gained increasing recognition in recent years and the knowledge in this field is extending rapidly. In 1983, two symposia were devoted to mycotoxins, three weeks after the meeting in Sydney, another was held in association with the Third International Mycological Congress in Tokyo (H. Kurata & Y. Ueno (Eds), 1984. Toxigenic fungi: their toxins and health hazard. Kodansha, Tokyo; Elsevier, Amsterdam). Both meetings contain a diversity of chapters on the present state of the art. In both meetings, emphasis was laid on trichothecene mycotoxins, toxins produced by species of *Fusarium* and *Myrothecium.* In the book from Tokyo, sections cover the ecology and taxonomy of mycotoxin-producing fungi, food and feed mycology, toxicology, and epidemiology of mycotoxins. In the Sydney symposium, chapters are as follows: 1. taxonomy and occurrence of toxigenic fungi (60

pp.); 2. natural occurrence of toxins (110 pp.); 3. mycotoxins in food and feed (50 pp.); 4. mycotoxin production in culture and the effect of environmental factors (50 pp.); 5. synthesis of mycotoxins (20 pp.); 6. chemistry and biological activity of mycotoxins (92 pp.); and 7. veterinary and medical implications of mycotoxins (178 pp.). There is an index of organisms, toxins and other keywords.

Because of the proximity of New Zealand, there is major information on toxic endophytes of grasses and on facial eczema caused by *Pithomyces chartarum*. The otherwise most important toxins from *Penicillium* and *Aspergillus* are treated in fewer contributions. An Australian phenomenon is the toxicity of *Lolium rigidum* seed-heads due to *Corynebacterium rathayi* associated with the nematode *Anguina agrostis*.

Apart from biosynthesis, biochemical aspects are underrepresented in this volume. In most parts, the relation with plant pathology is still rather vague. This review is no place to repeat all titles and major observations. Let just a few suffice.

The treatment of *Fusarium* taxonomy and toxicology by Marasas and colleagues is just a short extract from their recently published book (Pennsylvania State Univ. Press), supplemented for Australia by Burgess, and for Japan by Ichinoe, Uchiyama, Amano and Kurata. Temperatures around 30 °C and mechanical damage favour aflatoxin formation in maize and peanuts. *Fusarium* toxins in malting barley reduce germination and growth of yeast, but most of the toxin is lost during processing. *Penicillium* toxins in Britain are most important in cheese. Patulin production by *Penicillium griseofulvum* is decreased by high CO_2 concentrations but, for an efficient control of storage fungi, higher concentrations of CO_2 would generally be required than can be achieved in practice. The interaction between different micro-organisms may decrease or stimulate mycotoxin production. Agrochemicals may also increase trichothecene production in *Fusarium*, though fungal growth is inhibited. *Myrothecium* toxins have the positive aspect that macrocyclic trichothecenes may have anticancer effect, and their production was optimized. Moreover the mycotoxins aflatoxin, ochratoxin and some trichothecenes have different effects of immunosuppression. In the last section, veterinary implications of mycotoxins are reviewed for the United States. The patho-physiology of T-2 toxin, as well as its dermal toxicity is dealt with by animal models. The dynamics of experimental trichothecene mycotoxicosis are described.

The contributions give an up-to-date and, on the whole, a comprehensive picture of the topics treated. The book is carefully edited, though a certain amount of repetition, particularly in the introductory sections of each chapter, occurred. Such a book cannot be comprehensive on the multitude of mycotoxins known, but the present volume effectively covers some regional, biological and toxicological aspects. We expect that only with a certain degree of specialization, scientists and libraries will be able to keep up with such specialized publications, while many others will rather acquire more general and comprehensive textbooks.

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