

Book review

Plant nematology. R. N. Perry and M. Moens. 2006. 447 pp. CABI, Wallingford, UK. ISBN 1-84593-056-8. £55.00/US\$100.00.

There are more than 2000 species of plant-parasitic nematodes, which globally cause crop losses estimated to be worth €60 billion each year. The problem is increasing, with developments such as the spread of root-knot nematodes into western Europe, and the banning of many nematicides. The latter phenomenon means that other control and management methods need to be developed, and these, in turn, require a more detailed understanding of the nematodes and their interactions with the biotic and abiotic components of agroecosystems.

‘Plant Nematology’, then, is a timely publication. Edited by two very eminent nematologists, it includes contributions from experts in Belgium, the UK, the Netherlands and the US. Interestingly, this book developed almost by necessity from a Master’s course in plant nematology run by the University of Ghent; the organisers of the programme recognised that no up-to-date book on the subject suitable for senior undergraduates and postgraduates was available, and set out to rectify that omission.

The book is split into three parts, dealing with taxonomy and the principal genera, nematode biology and quantitative nematology and management. Throughout, the emphasis of the book is on the practical significance and applications of the knowledge contained therein to the management of plant-parasitic nematodes. The chapter on nematode distribution and its implications for sampling procedures by Corrie Schomaker and Thomas Been, for example, should be required reading for anyone involved in the management of plant nematodes, so well does it summarise this vital but often neglected topic. Another important but frequently overlooked topic is that of regulatory systems for international plant health, covered in an excellent chapter written by European and American experts in this field.

Those interested in how nematodes function will not be disappointed, with first-class chapters on

the biochemistry, physiology and behaviour of plant-parasitic nematodes, while a well-written account on the molecular basis of plant-nematode interactions (by Godelieve Gheysen and John Jones) leads into a concise but valuable chapter on targets for transgenic nematode-resistant plants (by Chris Thomas and Amanda Cottage); the latter even includes a brief discussion of suitable sample sizes needed for assessing quantitative resistance in transgenic populations, another important topic rarely touched upon.

Multi-author textbooks provide the benefit of allowing experts in each field to contribute; disadvantages can be inconsistencies of style and problems of repetition. In this book, there is clear evidence of a firm (but, I’m sure, benign!) editorial policy which leads to a coherent whole. In the four chapters on the principal genera of plant-parasitic nematodes, for example, each uses a different structure, but the information presented is comparable. For each nematode group, there is a brief description on the appropriate structure, life cycle, diagnostics and management strategies, while other chapters deal with these topics in more detail.

The editors have targeted this book at postgraduates and senior undergraduates, in the developed and developing world; my only substantive issue with this book is whether it will be appropriate for this target audience. At over 400 pages and €80 for a paperback book, I think it unlikely that it will find a significant undergraduate market, especially where the number of relevant undergraduate courses is declining. On the other hand, it is an excellent account of plant nematology for postgraduates, extension officers, researchers, crop protection scientists and other groups. Because of its goal as a teaching tool, rather than a specialised research text, the number of references has been deliberately restricted, which may be frustrating for this particular audience. Having said that, I was impressed to see that this book, with a mid-2006 publication date, cited a number of 2006 references. I would also like to have seen a chapter specifically aimed at the management of nematode pests in developing countries.

Overall, I found this to be a very well written and organised book. The presentation is clear and generally of a very high standard, although some of the black-and-white photographs are of rather mediocre quality. At a time when a clear understanding of nematode pests of crops has never been more important, this book is an excellent guide to the topic.

PETER W. JONES
Department of Zoology
Ecology and Plant Science
University College Cork
Butler Building
North Mall, Cork
Ireland
e-mail: p.jones@ucc.ie