This CD-ROM provides users with rapid access to 712 photographic images of infectious and non-infectious diseases of barley (144), corn (maize, 183), sorghum (129), rice (139) and wheat (117). The list of ‘responsible agents’ is most comprehensive, including viruses, bacteria, fungi, nematodes, wireworms, nutrient disorders, herbicide damage and bird damage.

Installation of the CD-ROM is simplicity itself, taking only a few minutes. System requirements are Windows 95, 98 or 2000 or Windows NT 4.0 plus 25 MHz processor or above with minimum 16 MB of RAM, a VGA monitor set to 65,536 colours or more, and double speed CD-ROM drive. Once installed, access to the photographic library is rapid and all pictures are of excellent quality. The system is fairly easy to navigate once you have spent a short while mastering the search procedures. I expected to see an index of diseases for each crop, but this was not present. I believe inclusion of this would help people to search the system more effectively, especially as each picture has a unique number in the file structure. Provision of an electronic or even hard copy index giving the slide identity numbers and a facility to go direct to specific pictures I have often seen in the past. Pictures can be exported for use in presentations in other media, or printed. For the cost involved, it is excellent value and far superior to the amateur pictures I have often seen in the past. Pictures can be used, it is extremely efficient and fast to locate specific diseases.

The results of a search are presented as six thumbnail pictures to a screen. Selecting a picture takes you to an enlargement containing further, albeit brief, details. I was particularly impressed by the pictures for wheat brown rust that included host resistance reactions to the infection. The search also produced a picture of theaecidialstageonThalictrum, a disease I have never seen in real life. Also, not all pictures are of the actual disease. Search for ‘ergot’ and you will find slides showing the plant symptoms plus microscopic details and a summary of life cycles. All very impressive.

Who could use the CD? It’s obvious use is for teaching and the preparation of presentations where a clear picture of disease symptoms is required. For this use it is excellent and far superior to the amateur pictures I have often seen in the past. Pictures can be exported for use in presentations in other media, or printed. For the cost involved, it is excellent value and can be thoroughly recommended.

P. E. Russell


This CD contains c. 600 digital colour images of a wide range of macro and micro-nutrient deficiency
and toxicity symptoms in 37 different agricultural and horticultural crops. The CD can be run using Windows 95, Windows 98 or Windows NT.486/25 MHz microprocessor or higher, with a minimum of 8MB of RAM. Each image is in jpeg file format which can be exported into presentation slideshows or documents. The images can be selected either by scrolling through thumbnail images or using the search system which is simple and easy to use. Each thumbnail can be enlarged on screen for closer inspection when some additional information is shown. However, this only provides a very brief description of the symptoms but no other information which might usefully have been included – e.g. circumstance and nutrient analysis of image, typical occurrences, diagnostic methods, control methods. Bearing in mind that nutrient-related symptoms in plants are notoriously difficult to diagnose and are commonly not simply related to single nutrient factors, confirmation of how each diagnosis was reached would have been useful. The collection appears to have been put together using mostly existing material from a range of sources. Some images are field shots, some of pot-grown plants and some close ups of plant leaves. It is unfortunate that there are gaps in the collection where there are no examples of common plant/nutrient deficiencies/toxicities. This may annoy those users seeking a comprehensive collection.

This collection is a useful initiative using electronic technologies which many potential users will have access to. It contains some useful material which should help educationalists who have already have a background in nutrient management. However, for the farmer or agriculturalist dealing with real-world crop problems, more supporting information is really needed.

P. Dampney


This book is a revised edition of the excellent 1981 publication. It is somewhat shorter in length due to the omission of sections on seed certification and aphid identification together with a reduction in the number of sections on potato viruses. The latter change has been compensated for by a detailed table on viruses and viroids affecting the crop. The number of colour illustrations has been increased, from 87 in the first edition, to 193 in the new edition, all of which are of very good quality. There is a new section on mechanical damage and an expanded section on chemical injury.

There are sections covering 30 fungal diseases, 5 bacterial, and 12 viral, as well as 6 on nematodes. Equally comprehensive are the 26 sections dealing with non-pathogenic disorders due to physiological causes. Each section covers symptoms, cause, epidemiology and management in sufficient details for the general user and has selected references for further reading on each topic. The book also contains a detailed glossary of terms and index. This volume is of immense value to anybody working on diseases of potato, particularly those involved in disease diagnosis and consultancy. At US$49.00 it is outstandingly good value in these times of budgetary restraints in agricultural science.

The contributors and publishers are to be congratulated on maintaining the high standards of the APS Disease Compendium Series.

T. Locke

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The first chapter is a practical introduction to plant parasitic nematodes including the major genera, their economic importance, biology and general morphology. Of particular use to readers new to nematology are the figures showing the relative size and morphology of genera and the practical procedures involved in identifying nematodes using light microscopy. Chapter 2 gives practical advice on how to sample soil and plants and subsequently extract nematodes from these media. Methods to prepare nematodes for microscopy, including protocols for fixing and preparation of slides are detailed.

The main section of the book concerns the classification of nematodes, including detailed descriptions of class, order, family and genera. Descriptions of genera typically include a list of host plants, parasitism and habitat and a detailed morphological description.

Each chapter is well supported by relevant references for further reading. Of particular value to those newly introduced to the plant nematology is the comprehensive glossary where nematological and related terms are explained in a concise, jargon-free manner.

In the last decade molecular diagnostics have
become more widely used and have in many cases become the standard technique for species identification, e.g. the use of PCR for the identification of Globodera to species level in the UK. This book concentrates on traditional taxonomy without discussion of molecular methods. Its readership would be considerably wider if molecular methods had been included, even if only as a list of references to guide the interested reader.

The text is broken throughout by the inclusion of line diagrams. Those of nematodes and equipment are generally of good quality but the diagrams of damage symptoms lack clarity. This shortcoming is partially counteracted by the inclusion of 39 small colour plates but these are insufficient to provide the reader with reliable diagnostic features for identification of symptoms in the field. The restriction in the use of colour plates is probably due to the need to minimize the cost of the book to make it accessible to as many interested people as possible. At $79 this book represents good value for money, but I would rather pay extra to have more quality plates of disease symptoms. A way forward would be to produce this book as an interactive CD-ROM enabling the inclusion of many more images, searchable identification keys and glossary etc.

The authors have managed to give this book global appeal by the inclusion of most of the important genera of plant parasitic nematodes found in the world. This text would be of benefit for those with little or no nematological experience through to the interested reader. P. P. J. HAYDOCK

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This book is one of a series in the general area of humic substances in soils and is actually the proceedings of a conference, held in Northeastern University (USA) in March 2001, under the auspices of the International Humic Substances Society. Unlike previous volumes (1998, 1999, 2000), it is organized by themes, namely, History, Philosophy and Spectroscopy; Data Mobility and Stability; Masses, Similarities and Properties; Models and Theories; Images, Oxidation and Humification, Organic ores and Analysis of Commercial HSs; and, finally, Plant Growth Stimulation and Antimitogenesis. There are 30 papers and a comprehensive index. Outstandingly, there is also a long preface by the editors that almost bounces with enthusiasm for the subject and which summarizes each of the major areas listed above. Thus, the reader can dip into the preface and get a snapshot of a section and then go for the detail. Perhaps all readers should start with the chapter by MacCarthy, who basically sets out the ‘guiding principles that account for the chemical nature and environmental roles of [HSs]’. If you read nothing else, then this chapter is reward enough. It is the clearest exposition I can recall about why this kind of research is done and is important. The pace does sharpen considerably after that. Almost inevitably, the book is dominated by data derived from various forms of spectroscopy (mostly forms of NMR and MS), but also with various molecular size fractionation techniques, studies of metal binding/complexation, computer-assisted structure elucidation/molecular modelling, atomic force microscopy. If your chemistry is not happy with this kind of thing, then much of the book might not interest you. However, there are several papers that put this kind of chemistry into a practical focus, such as those looking at organic matter in river waters, changes in humin under different soil management regimes, the effects of clear cutting on humic substances in forests, and a few papers that consider the effects of HSs on plant growth. It is these latter papers that will perhaps most interest the readers of this Journal. That by Paré and co-workers, for example, concludes that, using alfalfa as a target crop, foliar-applied Ca-lignite fertilizer has ‘considerable potential for correcting Ca deficiency and ... stimulating ... absorption of other nutrients’, performing better than EDTA-Ca or calcium chloride. Seyedbagheri and Torell demonstrate fairly convincingly that many of the benefits claimed for ‘commercial humic products ... can be just as well obtained by soil management practices that produce these substances with the agroecosystem’. More speculatively, Ferrara and his co-workers consider whether HSs have, or can have, antimitogenic properties with either monocotyledon or dicotyledon plants and conclude that the evidence is that they do, and that the potential for the use of such substances in this area is large. Overall, the grouping by themes is very successful and brings order to what has tended, in the past, to become a rather rambling field of (mostly) increasingly sophisticated organic chemistry. Thus, this book is likely to be much more attractive to agricultural soil scientists than some of its predecessors. It is generally well-produced, although I think some of the figures are over-reduced, and seems free of serious errors. It should form part of the library stock of any organization with a serious interest in soil science.

P. J. LOVELAND

Compared with the number of journal articles and books published on biological and particularly chemical control methods in plant protection, there are relatively few journal articles and no books providing a thorough overview of physical control methods. This is despite the fact that physical methods such as hand weeding have been practised since the advent of agriculture. This book attempts to provide a comprehensive overview of a range of alternative methods divided into the four categories of thermal, electromagnetic, mechanical and pneumatic control. Where it potentially falls down is the limited geographical spread of its contributors. With Canadian and French editors it seems inevitable that many of the contributors might come from these countries. Less than a handful of contributors come from elsewhere and only one paper focuses specifically on developments elsewhere in the world – Israel. One can’t help but think that the book would be an even better contribution to the subject if it could have been more global in its approach. However, this does not detract from the overall value of the book and each chapter includes a wealth of references that would enable the reader to use it as an ideal starting point for further investigation of the subject.

Each of the four sections begins with an initial chapter that provides an overall summary and introduction to the subject of the particular control method. This is followed by three to five further chapters that give more detail on a particular aspect of the control method including specific practical examples. Of course the current level of development of each method and its range of applications varies and so some can give more practical examples than others. The use of pneumatics was dominated by examples of its use for the control of Colorado Potato Beetle whilst the section on electromagnetics comprehensively covered weeds, disease and insects. The quality and consistency of the chapters varies to some degree with some being extremely detailed technically whilst others provide little more than an overview.

The book manages to strike the right balance between portraying physical control methods as an alternative to biological or chemical control without over-selling it as a panacea to some of the problems seen with these other methods, such as pesticide resistance. It regularly acknowledges the role that physical methods can play as part of an Integrated Pest Management programme but it was perhaps disappointing that so few chapters gave any analysis of the cost. It also acknowledges that there are potential issues with physical control in terms of efficacy, selectivity to the crop and also undesirable side-effects such as on beneficial insects.

One excellent feature is that some chapters included separate text boxes that provide more detailed explanation of particular topics relevant to the chapter, without distracting from the main subject itself. Topics such as ‘Non-ionising radiation; Supercooling point; How does cultivation destroy weeds’ help those less familiar with the subject understand what is often a multidisciplinary topic.

If you have either a passing interest in alternatives to biological and chemical control of agricultural pests or are seeking a more detailed starting point for further investigation, this book provides a useful overview.

A. Straszewski