

Book Reviews

Animal Health and Welfare in Organic Agriculture

Edited by M Vaarst, S Roderick, V Lund and W Lockeretz (2004). Published by CABI Publishing, CAB International, Wallingford, Oxon OX10 8DE, UK. 448 pp Hardback (ISBN 0 85199 668 X). Price £65.00.

In many ways this substantial and important book grew out of the 1999–2001 EC funded Network for Animal Health and Welfare in Organic Agriculture (NAHWOA) — an organisation set up among researchers from 17 different institutions in 13 European countries, to encourage the study and application of organic principles in animal agriculture, with a special emphasis to be placed on health and welfare, and the encouragement of veterinary preventive medicine and alternative animal health and management practices. Most of the authors and all four editors of the present work were drawn from the original network. The book project started as a number of separate group-written chapters but then, under the guidance of the editors and, presumably, with the permission of the original authors, some material was moved between chapters to give a more coherent structure. To a large extent this ‘heavy editing’ has been successful — the book is consistent, well-written and balanced, although there is, inevitably and perhaps rightly, some repetition. Each chapter starts with a most useful ‘boxed’ piece entitled ‘Editors’ comments’, which explains how that particular chapter fits in with other material in the volume.

The short Preface and Foreword is followed by some 426 pages, which are organised into 17 largely self-contained chapters, an Appendix on the objectives and accomplishments of the NAHWOA, and a useful eight-page Index. The 47 authors are based in mainland Europe (33), England and Ireland (11), and New Zealand, Canada and the USA (1 each). This distribution gives readers ready access to recent mainland European thought on animal health in organic systems — an important consideration as much good research has been carried out here, over the last few years, on many aspects of organic animal husbandry. Each of the chapters (except one) has its own list of references. In total, there are just over 1000 citations, that is an average of 2.5 references per page of text, although one short chapter (admittedly the final one, on what might be termed ‘summary and the way forward’ and therefore, perhaps, not needing much in the way of supportive documentation) has none, whereas another somewhat longer chapter has 269.

The material covered in the 17 chapters starts with a consideration of such matters as the origins, current status and control (ie production standards) of organic animal agriculture in Europe. The point is made that in the early days of the organic movement, interest was mainly concentrated on the health of the soil, the health of the crops grown on the soil and the health of the humans eating those crops. The farm animals were largely seen as tools to help run the organic enterprises. Serious research on the health and well-being of the organically reared animals themselves has only really been done over the last 20 or so years — a time, of course,

when there has been increasing interest in many aspects of farm animal behaviour and welfare. The initial chapters are followed by pieces on the role of humans in management, on animal behaviour and applied ethology, and on ethics and welfare. There are then chapters on breeding, feeding for health and well-being, general aspects of health and disease, the place of planning in disease control, the treatment of diseased animals, the dilemma of mutilations, and grassland management and parasite control.

This book will probably be used in two ways. If the chapters are read or browsed through in serial order, it makes a good general introduction to organic animal agriculture — even though it is largely directed towards health, welfare and disease. If, however, it is consulted for information on, for example, the organic approach to a particular disease problem, then its use will most likely be via a specific chapter and/or the index. Happily, individual chapters are largely self-contained and often give indications as to where, in other parts of the book, the relevant information can be found, and the index is well laid out and fully adequate.

The general thrust of the book is towards the positive welfare and health advantages of organic animal agriculture. However, it is accepted that, at the present time, disease risks are inherent in some organic systems and that there is currently little real evidence to condone or condemn certain organic practices. Under European organic standards, the general prophylactic use of antibiotics is prohibited, yet the treatment use, to limit animal suffering, is permitted — organic standards in the United States do not, seemingly, even allow that! Most, but not all, organic farmers prefer homeopathic remedies for disease to more orthodox allopathic treatments. This is an area where there is a difference of opinion — a conflict even — between many people in the organic movement and the majority of the veterinary profession. In the UK most practicing veterinary surgeons find it difficult to believe that homeopathic remedies really work, especially as most of the few published scientific papers appear to show little or no benefit from homeopathic treatment regimes. There are, however, a number of UK veterinary surgeons who do provide a homeopathic or homeopathic/allopathic animal health service (some 40 or so have even gained formal qualifications in homeopathy). This is in contrast to Sweden where, apparently, veterinarians are not allowed to practice homeopathic medicine! Some organic producers are reluctant to use vaccines to limit the effects of infectious disease in their stock and the UK organic standards largely forbid the use of prophylactic ‘treatments’ in the control of parasites in grazing animals. It is not difficult to see how misunderstandings over welfare can develop between some organic stock farmers and some veterinary surgeons! However, using the example of parasites in pastured animals, it must not be forgotten that some non-organic farmers using frequent dosing with a whole range of anthelmintics (sometimes under veterinary supervision)

can still be greatly troubled by gastro-intestinal disease in their grazing sheep. Whether you are a conventional or organic farmer, the basic husbandry skill of logically rotating your stock around your pastures is still needed.

This authoritative text, although obviously favouring the organic approach, does not avoid the welfare problems that can sometimes be found in some organic animal agriculture systems. These problems might become more common as the economic pressures wielded by the supermarket-dominated human food industry forces more organic producers to adopt intensive practices, which would seem somewhat foreign to the 'original' relatively small, largely self-contained, organic family farms. The issue of the increased production costs inherent in some organic systems is dealt with in a number of places in the text. The economic differences between organic and conventional largely depend, of course, on the width and depth of the actual comparison. When fully costed, many organic systems are competitive (or near competitive) to the more intensive conventional enterprises. Even so, many organically produced foods do seem relatively expensive to the shopper. In one section in the book there is a discussion of the animal welfare implications of these relative costs: this section is aptly headed "The consumer's role: to pay the price".

Reading this impressive volume makes one realise how much good old-fashioned common-sense was lost when animal production largely replaced animal husbandry in our agricultural and veterinary teaching institutions.

The many wide-ranging and often realistically presented ideas, and the masses of pertinent information in this book will be of great value not only to organic agriculturists and the veterinary professionals who have to help them deal with their welfare and disease problems, but also to the many others interested in the general concept of disease, in health planning and veterinary preventive medicine, and in the fascinating interplay between animal production, health, disease, welfare and environmental sustainability.

Roger Ewbank

Ealing, London, UK

The Mycotoxin Blue Book

Edited by D Diaz (2005). Published by Nottingham University Press, Manor Farm, Main Street, Thrumpton, Nottingham NG11 0AX, UK. 349 pp Paperback (ISBN 1 904761 19 4). Price £55.00.

The Mycotoxin Blue Book is, as its name suggests, a comprehensive and up-to-date text covering all aspects of mycotoxin production and the impact of these toxins on farm animals, companion animals and human health. As such, sections of the book will be of interest to a variety of professionals, including both large and small animal veterinary clinicians, and those in the fields of agriculture, animal nutrition, food hygiene, biotechnology and medicine.

The Mycotoxin Blue Book benefits from multi-authored chapters, written by specialists from a number of continents. Emphasis is given to the global significance of mycotoxins,

providing details of how climate dictates the key mycotoxins produced in geographical regions. Each chapter is well-referenced giving easy access to the current literature for those wanting to research certain aspects in greater depth. Specific points are illustrated with science-based examples and clearly annotated diagrams.

Mycotoxins are introduced as a complex group of toxic secondary metabolites produced by fungi. Historically, toxic effects associated with mycotoxins were first recognised when aflatoxicosis was diagnosed as the cause of Turkey 'X' syndrome in the UK in the early 1960s. Since that time, several hundred mycotoxins have been described, although extensive study has focused on groups such as the aflatoxins, ochratoxin A and the fusariotoxins (eg trichothecenes, zearalenone).

The mechanism of action and the pathological and observed clinical effects of each of the major classes of mycotoxins are summarised. Acute, subacute and chronic toxic effects are covered; the latter including a range of insidious effects on multiple body systems, for example, appetite and growth restriction, and immune suppression, which have become of increasing importance in production animal health.

A chapter on mycotoxin interactions explains that the outcome of exposure to mycotoxins is dependent on the dose, duration of exposure and interactions with factors such as age, gender, nutritional status, genetics, environmental factors, health status and the mix of mycotoxins. The complex effects of mycotoxins on antioxidant status and immune status are presented, covering mechanisms of action and options for use of supplementary antioxidants to mitigate their effect.

As a consequence of the ubiquitous nature of exposure to mycotoxins, and their toxic and sometimes carcinogenic potential, many countries have legislation that regulates the maximum permitted level of mycotoxin residues within feedstuffs. Given the economic and health implications of screening agricultural products for mycotoxins, and deciding whether they are fit for consumption, the importance of optimising the analytical procedures used is highlighted. Options for mycotoxin sampling plans are presented, covering the stages of sampling, sample preparation (including grinding and solvent extraction) and analysis. Potential for error and variability at each stage of the testing process are outlined, and methods to minimise these factors are discussed. The principles and applications of mycotoxin analysis are covered in detail in a chapter that explains the range of fully quantitative, semi-qualitative and qualitative methodologies available. The reader's attention is drawn to the importance of technique validation studies, quality assurance and laboratory accreditation schemes. This section enables the non-expert to gain a greater understanding of the general considerations for mycotoxin analysis and interpretation of the test results obtained.

The chapter on mould growth and mycotoxin production illustrates the range of factors that affect these processes, including environmental variables (eg temperature, aeration, moisture content) and physical variables (eg insect