Book reviews

**Grass: Its production and utilization** edited by Alan Hopkins. Third edition. Published for the British Grassland Society by Blackwell Science Ltd. 1999. 440 p. Paperback ISBN 0-632-05017-9. No price given.

This book, the third edition of a well-known textbook sponsored by the British Grassland Society, has been completely reorganised and rewritten to reflect developments and changes in the management of grassland and its place in the countryside since the second edition was published in 1989. The new editor, Dr Alan Hopkins of the Institute of Grassland and Environmental Research, was given the brief to prepare “a book for the twenty-first century.” This was no small undertaking, given the current scope and speed of change in attitudes to grassland farming, perhaps particularly in Europe. The scope of the book is substantially increased, and the fifteen chapters now deal specifically with topics like grassland management for natural landscapes and wildlife, amenity grassland, control and utilization of livestock manures, and the role and management of grassland in organic farming, as well as more conventional topics like sward establishment and renovation, herbage production and utilization, herbage seed production, weeds, pests and diseases of grassland, grass conservation, foraging and grazing behaviour, grassland management and animal response, and economic aspects of grassland production and utilization.

Dr Hopkins has assembled a panel of international authorities to accomplish this task, though some of the names will be better known in Europe than in Australasia. However, the very breadth of the coverage means that inevitably there will be some unevenness in presentation. Thus, the chapters on the principles of pasture growth and utilization (Chapter 3, by A. J. Parsons and D. F. Chapman) and the feeding value of grass and grass products (Chapter 7, by D. E. Beaver, M. Officer, and E. M. Gill) are highly technical, reflecting the interests and status of the authors, and will tax the understanding of the best representatives of the student body for whom the book is intended, whereas chapters on sward establishment and renovation (Chapter 2, by R. D. Sheldrick), herbage production (Chapter 4, by A. Hopkins), herbage seed production (Chapter 5, by A. H. Marshall and D. H. Hides), and weeds, pests, and diseases of grassland (Chapter 6, by G. C. Lewis and A. Hopkins) are more pedestrian in nature. These contrasts reflect differences in subject matter and in recent research profile, and no criticism of individual authors is intended. The other “production” chapters, the conservation of grass (Chapter 8, by R. J. Merry, R. James, and M. K. Theodorou), principles of foraging and grazing behaviour (Chapter 9, by A. J. Rook), and grassland management under grazing and animal response (Chapter 10, by C. S. Mayne, I. A. Wright, and G. E. J. Fisher), provide competent and effective coverage of their subjects.

Chapters 11-14, dealing with amenity and conservation (environmental conservation, that is) are interesting in themselves, and provide an insight (to this reader at least) into the huge changes in the balance of attitudes to the production and conservation aspects of grassland management in Europe over the last ten years. The final chapter, Chapter 15, dealing with economic aspects of grassland production and utilization, should be obligatory reading for all students of economics and business, given the determination of the author, J. P. McInerney, to focus firmly on the concepts of public good and overall economic benefit—and to make the point that conventional business objectives often sit uneasily alongside these concepts.

The book is described in the Foreword by C. K. Mackie, BGS President 1998-99, as “essential reading for students in a range of disciplines, researchers, advisers and forward-looking farmers.” It probably does provide a solid base for a range of undergraduate courses though, as indicated above, there will be a need for further reading to augment some chapters and to aid understanding of others. In the broader audience, most people will probably want to dip into specific chapters rather than read the book cover-to-cover.
And how relevant is the book to pastoral agriculture in New Zealand and Australia? Though the chapters dealing with biological principles are clearly directly referable (and indeed Chapter 3 is written by two authors with very extensive experience of New Zealand pastures), many chapters provide a sobering impression of the extent to which the application of principles is "captured" by local content and convention. This may be an inevitable problem in a book of this kind. Certainly it was our experience in producing a text book with similar objectives for a New Zealand context (White & Hodgson 1998). The emphasis in this book, against the background of a depressed pastoral industry in Europe, with declining income, is very much on cost reduction and alternative uses for grassland, whereas the emphasis in a buoyant industry in New Zealand is very much on increasing input and enterprise intensification. For how much longer?

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REFERENCE

White, J.; Hodgson, J. ed. 1998: New Zealand pasture and crop science. Auckland, Oxford University Press. 323 p.

The use of drugs in food animals: Benefits and risks by Members of the 1999 Committee on Drug Use in Food Animals, Panel on Animal Health, Food Safety and Public Health National Research Council US. CAB International in Association with National Academy Press. 1999. 290 p. Hardback. ISBN 0-85199-371-0. Price £24.95 ($US45.00).

This book is heavily weighted towards the subject of controlling the use of antibiotics in food producing animals. Quoting from this book: "The present report stems from concerns expressed by professionals in human and animal health care, producers of food animals and segments of the general population, regarding the beneficial and detrimental effects of using antibiotics in food-animal production". It is an important subject that is currently receiving a worldwide airing because of increasing concern about the rate of development of antibiotic resistance in bacteria responsible for diseases in humans and the possible contribution to this situation that the use of these drugs in food-producing animals may have.

The book is divided into eight sections under the following headings:

1. Drugs used in Food Animals, Background and Perspectives
2. Food-Animal Production Practices and Drug use
3. Benefits and Risks to Human Health
4. Drug Development, Government Approval and the Regulatory Process
5. Drug Residues and Microbial Contamination in Food: Monitoring and Enforcement
6. Issues Specific to Antibiotics
7. Costs of Eliminating Subtherapeutic use of Antibiotics
8. Approaches to Monitoring Antibiotic Use in Food-Animal Production.

None of the sections has specified authors. It must be noted that the concern felt in many countries, including New Zealand, has led to the setting up of committees that have produced similar and independent reports in their respective countries. All have been hampered by a lack of precise data preventing these committees from making unequivocal and science-based recommendations. It has been stated in this US report that there are risks associated with using antibiotics in animal production as well as in not using them. The relationship between these two classes of risk is dynamic and could change, especially as more information is gathered.

The book has a great deal of interesting data based upon years of using antibiotics in animal production, but little of it provides the precise information that will allow irrefutable risk analyses to be carried out. However, the present climate of opinion suggests that caution must be exercised, and those charged with the responsibility of using antibiotics in animals have to take especial care with their administration.

It is certainly interesting to see the data giving the beneficial side of using such drugs in animal production. For example, in 1928 before modern breeding began, it took 112 days and 22 kg of feed to get broilers to 1.7 kg market weight. In 1990 it took only 42 days and less than 4 kg of feed to reach a market weight of 2.0 kg. Just how much of this
can be attributed to antibiotics and how much to “modern breeding” is difficult to say but their use no doubt plays a part. Better animal management methods and the use of new and improved vaccines to control specific diseases rather than relying upon antibiotics are now and will become increasingly important means by which improved food animal production can be achieved. Constraint on the use of antibiotics in the animal production scene will add pressure to further develop animal vaccine production. Reduction in human health risks from foods of animal origin is another reason given for adding antibiotics to production-animal foodstuffs. The increasing level of resistance to antibiotics in human diseases of bacterial origin makes the continued unrestricted use of these drugs in animal production unwise and untenable. Although major reasons for this marked rise appear to be traceable to medical use in humans, the animal industry cannot be complacent. In the past much effort has been wasted with one side accusing the other of being responsible for the increase in drug-resistant pathogens. As the book acknowledges, all users must take a share of the blame. Cases are on record of infections in humans that are resistant to a range of antibiotics and that are of animal origin. Also, the fact that more antibiotics are used on animals than on humans must be borne in mind. These two facts alone make it imperative that both veterinary and animal production interests take a cautionary approach to the use of antibiotics in order to preserve the use of those vital to the preservation of human health.

The last two chapters deal with the cost of eliminating sub-therapeutic use of antibiotics in animal production and approaches to minimising antibiotic use in food-animal production. In the first of these an attempt is made to prepare an economic analysis of the result of putting in place a ban on sub-therapeutic use of antibiotics. The last chapter deals with a number of issues related to animal management that might lead to minimising of antibiotic use in animal production including topics such as probiotics and other competitive exclusion products and the possible use of methods of enhancing natural mediators of immune function. The committee recommends that increased investment be made into research into the influences of nutrition and other management practices on immune function and disease resistance in all species of food animals. They also recommend increased research funding for development of new vaccination techniques and a better understanding of the biochemical basis for antibody production and manipulation in vivo.

“The use of drugs in food animals” is interesting and imperative for any well-stocked library. Easy to read, this collection of articles provides relevant information supporting the argument for restricting the use of antibiotics in food-animal production. It takes a conservative approach to the subject and recommends possible avenues of action to alleviate the consequences of over reliance on antibiotics in food-animal production. It is well worth reading to get the views of this group of well-informed people on a topic that is full of subjective views. It is a topic that will possibly always have a large element of subjectivity and be short on conclusive scientifically proven data. The book has a worthwhile collection of references that have been cited in the text and that are invaluable to anyone seriously interested in this topic.

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