Book reviews

The Use of Drugs in Food Animals: Benefits and Risks. Committee on Drug Use in Farm Animals. National Research Council and Institute of Medicine, USA. Wallingford, Oxon: CABI *Publishing*. 1999. Hardback, pp. 290. £24.95 (US $45.00) ISBN 0 85199 371 0

You only have to read the tabloid press to observe that the public and press interest in the safety of food shows no sign of diminishing. Within this context the safety issues, both real and imagined, associated with the use of drugs in food animals looks likely to remain a highly contentious subject. It is, thus, of interest to read views from outside Europe, where the subject perhaps raises less public hysteria. *The Use of Drugs in Food Animals: Benefits and Risks* published by CABI *Publishing* on behalf of the National Research Council is a report produced in response to the requirement of the US congress in the legislation of the 1990 Farm Bill, for a study in this area to be commissioned. The book is a report by a committee of academic, industry and consumer representatives, and perhaps it is the greatest inherent weakness of the book that any report produced by a committee, which attempts to report the consensus view, almost inevitably lacks a certain degree of focus. This is not a book to be digested in a single sitting and this is perhaps unfortunate as it contains much useful information and ultimately provides an overview that differs in focus from that commonly put forward in public within Europe.

The book provides a comprehensive overview of the usage of both antibiotics and other drugs in various livestock sectors, together with an outline of the regulatory procedures associated with the introduction of new drugs into the US livestock industry. The authors stress the need to reform and streamline the regulatory framework if new drugs are to be introduced to support the industry. It is pointed out that a new drug will typically take 10–12 years to gain regulatory approval with the cost of safety testing ($5–8 million) representing 50–70 % of the total cost of developing the drug. Interestingly, the development of antibiotic resistance within the farm animal population is identified as a major factor in the need to develop new antibiotics for on-farm use.

The book considers the risks to man of drug use in animals and identifies antibiotic resistance together with toxicity and allergic reactions associated with residues as the major concerns. The authors argue that these risks have to be balanced against the perceived benefit, that antibiotic use in farm animals will reduce microbial contamination of animal products destined for human consumption. The monitoring and occurrence of residues in animal products is reviewed in depth and it is clear that with adequate monitoring and enforcement residues can be held at acceptable levels with only small numbers of samples testing positive for drug residues. Clearly the issues regarding the development of antibiotic resistance remain the major area of concern.

The authors estimate that animal food production accounts for approximately 25 % of the antibiotic use in the US and that the vast majority of this (over 90 %) is at sub-therapeutic levels associated not with treatment of disease but with improvements in animal productivity. It is clear that this widespread use of antibiotics has been associated with an increase in the occurrence of antibiotic resistance in the bacterial population, which as the authors point out, is of concern in the treatment of animal as well as human diseases. It is noteworthy that there are considerable differences in the definitions of antibiotic resistance between the US and Europe, with the minimum inhibitor concentration used to define resistance often being considerably higher in the US. It is also clear that the occurrence of direct transfer of antibiotic resistant pathogens from farm animals to man is low. What is less easy to quantify is the transfer of antibiotic resistance from commensal organisms in the animal to bacteria in the wider environment and thence human pathogens; while the authors consider this area they fail to reach any concrete conclusion, deciding perhaps not surprisingly that more research is required.

The authors move on to consider the economic cost of an antibiotic ban to the consumer, concluding that the average annual per capita cost to the consumer would be between $5 and $10. Lastly, there is a rather brief and somewhat incomplete review on possible approaches to minimizing antibiotic use in animal agriculture.

In conclusion this is an interesting if somewhat densely written book, which will provide a useful perspective to all those interested in this highly topical area.

Jamie Newbold

Nutricines: Food Components in Health and Disease, 1999. Clifford A. Adams. Nottingham University Press. £19.50. ISBN 1 897676 905

This is an intriguing book which, according to the cover, introduces a ‘wholly new concept in food components’. I must confess that I had not come across the term ‘nutricine’ before. Essentially they appear to be any dietary component apart from carbohydrates, fats, proteins, minerals and vitamins. They thus include antioxidants, antimicrobials, oligosaccharides, enzymes, emulsifiers, flavours and colours. These are all said to have an important role in establishing and maintaining health in humans and other animals. They are seen to do this through a variety of traditional nutritional biochemical mechanisms but in discussing these, in certain areas the author has strayed from his original classification by incorporating, amongst the antioxidants for

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