- Jha J, Jayachandran C, Singh MK, Singh SD 1989 Pharmacokinetic data on doxycycline and its distribution in different biological fluids in female goats. *Veterinary Research Communication* 13: 11–16
- Kutler K L, Simpson J E 1978 Relative efficacy of two oxytetracycline formulations and doxycycline in the treatment of acute anaplasmosis in splenectomized calves. *American Journal of Veterinary Research* 39: 347–349
- Mitema E S 1993 Chemotherapy of contagious bovine pleuropneumonia using quinoline carboxylic acid, tylosin and doxycycline. Proceedings of the Pan African Conference on Mycoplasmas, Harare, Zimbabwe, 5–11 September 1993: 80–85
- Ole-Mapenay I M 1993 Effect of experimental Pasteurella haemolytica pneumonia in goats

on the pharmacokinetic profile of doxycycline. MSc thesis, University of Nairobi, Kenya

- 13. Pijpers A, Van Klingeren B, Schoevers E J, Verheijden J H M, Van Miert A S J P A M 1989 *In vitro* activity of five tetracyclines and some other antimicrobial agents against four porcine respiratory tract pathogens. *Journal of Veterinary Pharmacology and Therapeutics* 12: 267–276
- Riond J L, Riviere J E 1988 Pharmacology and toxicology of doxycycline. *Veterinary* and Human Toxicology 30: 431–444
- 15. Rosenblatt J F, Brodie J J, Kirby W N 1966 Comparison of *in vitro* activity and clinical pharmacology of doxycycline with other tetracyclines. *Antimicrobial Agents and Chemotherapy* 6: 134–141
- 16. Steel R G D, Torrie J H 1980 Non parametric

statistics. In Napier C, Maisel J W (eds) Principles and procedures of statistics. A biomedical approach (2nd edn). McGraw Hill, New York: 539–540

- 17. Tartaglione T A, Taylor T O, Opheim K E, See W A, Berger R E 1991 Antimicrobial tissue penetration in a rat model of *E.coli* epididymitis. *Journal of Urology* 146: 1413– 1417
- 18. Van Gool F, Santoul C, Raymond J P 1986 Characteristiques pharmacokinetiques et bilan des essais cliniques pour le traitement ou la metaphylaxie des bronchopneumonies infectieuses des veaux boucherie par le ronaxan. Proceedings of the 14th World Congress on Diseases of Cattle, Dublin: 627–631
- 19. Ziv G, Sulman F G 1974 Analysis of pharmacokinetic properties of nine tetracycline analogues in dairy cows and ewes. *American*

Book review – Boekresensie

Proceedings of a symposium on the African buffalo as a game ranch animal

Edited by B L Penzhorn

1996. South African Veterinary Association Wildlife Group, Onderstepoort, South Africa, 198 pp. Price: R70.00 (excl. postage). ISBN 1 875088 08 3.

The proceedings were bound and made available to delegates of the symposium at registration, on 26 October 1996, for which the editor should be complimented. This symposium held at Onderstepoort, was one of a series that deals with management and veterinary issues of one of the 'Big Five' game species as a game ranch animal. The 18 authors who contributed to the symposium were carefully selected experts in their field and they provide a comprehensive and balanced overview of current management practices and diseases that are pertinent to the African buffalo. Papers include aspects on socioecology, applied anatomy, hunting and meat production, management of large buffalo populations, capture, boma management and translocation, reproduction, diseases, parasites, and of particular interest, the breeding of 'corridor disease-free' buffalo.

Most South Africans reading this review will be aware that the African buffalo are carriers of foot-and-mouth disease (FMD), corridor disease (CD), brucellosis (CA) and more recently tuberculosis (TB), which due to veterinary regulations restrict the movement and therefore sale of buffalo in South Africa. With the growing tourist industry and the desire for game farmers to provide the 'Big Five' for the market, the so-called 'disease-free' buffalo are in great demand and fetch prices between R60 000 and R75000 per animal at auctions. This has stimulated research to establish and breed herds of buffalo that do not carry the four diseases mentioned above. The paper on breeding corridor disease-free buffalo reports on this aspect. The paper on reproduction mentioned the failure of embryo transfer from buffalo cows to domestic cattle. Even though two pregnancies out of 15 transfers were obtained, they supposedly failed owing to immune responses in the placenta. The possibility of overcoming this would be to use inner-cell-mass transfer, where the inner mass of the buffalo embryo is transplanted into the recipient species embryo so that the buffalo embryo will develop from the recipient's placenta. This is exciting research and has potential for many other scarce or endangered species. The paper on FMD gives details on current trends in FMD control and research relating to the buffalo, with the following summary: 'Although African buffalo are central to the FMD problem in southern Africa, there are developments in the international approach to the control of FMD as well as on the technological front that provide optimism for the old concept of "buffalo = FMD" being consigned to history.'

Included in the proceedings is an extensive bibliography of the African buffalo, consisting of 677 references, which was compiled by the Price Forbes Chair in Wildlife, Faculty of Veterinary Science, University of Pretoria. The index at the back of the proceedings is comprehensive and well structured using 'key-words', but the reader is left to guess that the numbers refer to the references in the bibliography and not to the page numbers in the text.

In conclusion, the papers are well written with diagrams and tables where required, with most having their own list of references for further reading. The proceedings succeed in bringing together and consolidating for the reader the most up-to-date information on the management and problems associated with the African buffalo as a game ranch animal, and I would therefore recommend this publication as a useful source of information for wildlife experts and the game rancher on this highly sought-after species.

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