

*Herbage intake handbook*—Ed. Leaver, J. D. (1982). The British Grassland Society, Grassland Research Institute, Hurley, Maidenhead, Berkshire. U.K. 143 pp. £U.K.13-00.

The objective of this well presented, readable handbook is to document and discuss the techniques used to study the intake of grass by ruminant livestock. While a number of publications on grassland research techniques are available which include chapters or parts of chapters outlining techniques used in measuring herbage intake, this Handbook brings together under one cover the various techniques available. It should therefore prove extremely useful to both students and scientists interested in studying the intake of pasture herbage by ruminants.

The production of the Handbook was undertaken by the British Grassland Society following recommendations made by the European Grazing Workshop Group. Physically it is sturdily bound, legibly printed, easy to use and contains few errors. As a reference it has an appropriate index with a list of references at the end of each chapter. The list of chapter authors denotes a group whose expertise can hardly be disputed; and their contributions show a uniformity of approach as consistent as it could be while respecting the needs of particular topics.

The Handbook's contents are arranged in six chapters. The first is an historical introduction to intake measurement and warns prospective experimenters that most of the techniques are laborious and errors leading to biased results may go undetected unless checking procedures are built into experiments. The next two chapters discuss the various sward and animal-based techniques for estimating herbage intake. The appendix to chapter three contains details for the determination of chromium and helpful hints for the routine care of animals fistulated at the oesophagus. Chapter four presents and discusses the use of feeding standards in estimating herbage intake, while in chapter five the ground rules for successfully measuring herbage intake using housed animals are detailed. The final chapter considers the components of ingestive behaviour, the techniques used to measure these components together with the magnitude and source of variation associated with them.

All chapters contain clear straightforward presentation of formulae and equations with a sensible use of figures and tables.

In summary, this Handbook achieves its objective of presenting the techniques used to study the intake of grass by sheep and cattle and discussing the advantages and disadvantages of them. I will not labour the point. It is simply that, if you need a book of this kind—it is hard to imagine how you could do better than to buy this particular one.

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*"Nutritional limits to animal production from pastures"*—Ed. J. B. Hacker, (1982). ISBN 0-85198-492-4 Commonwealth Agricultural Bureaux: Farnham Royal Slough. SL2 3BN, U.K. 536 pp. £U.K.16-00.

This book reports on the Proceedings of a Symposium which examined the "state of the art" of various aspects of animal production from pastures. The Proceedings are subdivided on the basis of limitations to animal production due to pastures, chemical composition and digestibility, intake, digestion and utilization, and then considers ways in which these limitations may be overcome.

The organizers of the Symposium adopted an ambitious aim in attempting to cover the complete spectrum of animal production from pasture. It is both a strength and a weakness. The strength comes from the scope of the coverage which provides an opportunity for assessing the relative importance of various limitations and for discerning a common thread through the diverse ecological zones of pasture growth and the different fields of research. The weakness comes from the necessity to generalize in some sections in order to provide the ambitious coverage. A related