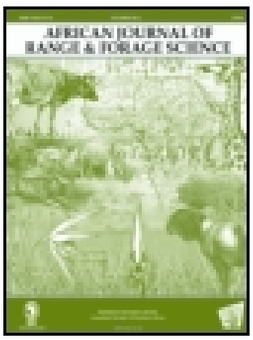

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Improving Grassland Pasture Management in Temperate Agriculture

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Book Review

Improving Grassland Pasture Management in Temperate Agriculture

Edited by Athole Marshall and Rosemary Collins

2018, Burleigh Dodds Science Publishing, 82 High Street, Sawston, Cambridge, CB22 3HJ, UK
466 pages, illustrations (chiefly colour), hardcover and Ebook
ISBN-13: 978-1-78-676200-9. Price £210

This book is comprehensive and deals with many of the important aspects of grassland and pasture management or what is referred to as cultivated grasslands. The various chapters are written by authors from several countries around the world that can be considered leading scientists in their fields.

The book is divided into three parts: Grassland functions and dynamics, Management of grasslands, and Sustainability and wider uses of grasslands. The first part starts by discussing biogeochemical cycles and biodiversity of grasslands, then discusses ruminants and plant–animal interactions in grazing systems. The second part consists of 10 chapters dealing with various aspects of grassland management with regard to cultivated grasslands. The various chapters are very wide-ranging, starting with sowing of grasslands through to various aspects of production and management including legumes. Topics that are addressed are environmental and animal health, soil health, water resources, biological weed control, restoration of degraded grasslands and monitoring using remote sensing. The third part consists of five chapters covering aspects of climate change and protecting biodiversity. There are two chapters dealing with the use of grasslands for silage and for bioenergy production. The final chapter covers aspects of organic grasslands and includes two case studies.

The book has authors from both the Northern and the Southern Hemispheres where temperate cultivated grasslands are utilised for animal production. This is a positive aspect of the book that it covers work from various regions in the world. It also shows how universal this topic is and that the principles of managing these grasslands have a universal aspect to them. The opening chapter draws on the general aspects of grassland function, be it natural grasslands or cultivated grasslands. This is an important aspect as cultivated grasslands are increasingly seen as ecosystems in their own right or agroecosystems and managed accordingly. There is increasingly a move away from monospecific cultivated pastures to more complex systems that encompass sustainability.

Looking more specifically at some of the chapters in Part 2 of the book, Chapter 5 gives a good overview of what is required for planning and sowing of grasslands. The steps described can form a good practical basis for the planning phase. There is a comprehensive section on species and cultivar selection and includes tables on drainage, waterlogging, soil pH, aluminium and salt tolerance. Information on crop water requirements is also given as are seasonal growth profiles and yield distribution on a monthly basis. The chapter gives a good overview of species and variety selection tools from around the world that have been developed in different countries.

Chapter 6 is an overview of managing grasslands for forage production. There is a useful list given of key considerations for selecting seed mixtures. Aspects of mixed swards are covered in various chapters. Pasture mixtures may have warranted a separate chapter considering the complexities.

Management of grasslands for livestock production is covered comprehensively in Chapter 7. Herbage allowance and concentrate feeding are covered in reasonable detail and a substantial part of the chapter covers pasture measurement and allocation systems. The chapter on the persistence of pasture legumes is largely devoted to red clover (*Trifolium pratense*) and could possibly have included more information on other pasture legumes as well.

Chapter 9 addresses important environmental aspects and incorporates the importance of genetic resources. The authors also point out the precarious situation of insufficient funding for genetic resources research. Mention is also made of the importance of investing more in genomic research in future and the various uses and benefits thereof. Chapter 10 address aspects of soil health and ecosystem services. A table of soil health indicators is provided. Under future trends, the use of precision agriculture methodologies is mentioned. This will most likely become an integral part of cultivated grassland farming to ensure greater efficiency of resources and inputs.

Biological weed control in pastures is covered in Chapter 12 and includes biological herbicides. The chapter has some useful tables of information and discusses some specific examples. There is a comprehensive reference list and where to find additional information. The remaining chapters of Part 2 focus on restoration of degraded cultivated grasslands, which is covered in a fair amount of detail, and lastly information is given on some aspects of remote sensing to monitor forage production.

In the third part of the book, topics of sustainability and alternative uses of grassland are addressed. The chapter on organic grassland production makes for interesting reading and contains some useful information that has already been well developed in other parts of the world, especially Europe.

Most of the chapters have a section on future trends, which is a good feature of the book. Another really useful aspect of this book is the number of references that are listed. In addition to the reference list for each chapter, most of the authors have also included a section on where to look for further information. The comprehensiveness of the book will make it extremely useful as prescribed literature for grassland and pasture students. In addition, it has value for anyone interested in a wide range of aspects of cultivated grasslands ranging from biodiversity through to productivity with a strong focus on plant–animal interactions. The layout

of the book is relatively compact, especially in terms of the font and can at first look intimidating. It mainly consists of text with some figures and tables with very few pictures. This book would likely be most suitable for scientists and students that have an interest in grasslands rather than casual readers and it is a valuable source of information for cultivated grasslands in a single book with a good balance between detail and subjects covered.

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