

BOOK REVIEW 2004 - #2

Barnes, R.F., C.J. Nelson, M. Collins and K.J. Moore (Editorial Authors). *Forages, Volume I: An introduction to grassland agriculture*. Sixth Edition. 2003. xixi + 556 pages; tables; figures; photographs; compendium of common forages; literature cited; appendix with common and Latin plant names; glossary; index. Iowa State Press, Ames, Iowa. ISBN: 0-8138-0421-3. Hard Cover. Price: \$79.99. Available from Iowa State Press, 2121 State Avenue, Ames, Iowa 50014-8300

Forages are defined as "edible parts of plants, other than separated grain, that provide feed for animals, or can be harvested for feeding." Forages are an integral part of sustainable agriculture contributing significantly to our national economy. Grasslands comprise more than half the land area in the United States. In the Great Plains alone, 63% of the area is in grazing lands. Forages serve as a major food source for both livestock and wild animals, contribute to soil erosion control, improve soil structure and fertility, contribute to water conservation, provide places for outdoor recreation and pleasure, and may play an increasing role in biomass production for conversion to energy as a renewable resource. As the authors state, "A sound national grassland philosophy must be supported by government policies. This book provides a technical foundation for sound and rational decision making."

The book is divided into three main sections. The first section ("Part I") begins in chapter one with a thorough and interesting history on the uses of forages and how their utilization has influenced humanity. Subsequently, this section continues with nine chapters on structural and morphological features of grasses, legumes and forbs, physiological characteristics of forage plants, environmental influences of forage management, and names of grasses and legumes recommended for both northern and southern climates.

"Forage Management" is the theme of the second section ("Part II"). This section of five chapters begins with the establishment of forage plants followed by the management of forage crops with respect to fertilization and nutrients. The next chapter provides ample coverage of integrated pest management principles for forages. Following is a noteworthy discussion about the plant associations that exist in naturalized grasslands. In addition, the discussion treats the interaction of chemical, physical and biological factors that help determine species composition, productivity and the dynamics of naturalized grassland ecosystems. Management of naturalized grassland ecosystems is covered in this chapter as well. In addition to seed production, the final chapter of this section includes ways to improve important characteristics of forage plants with respect to their yields and nutritive value. The material presented goes beyond forage production into the effects of the forages on animals, as well as the effects of animal feeding on forages.

The third section ("Part III") covers "Forage Utilization." The five chapters of this section encompass the quality and utilization of forages and animal disorders caused by forages. Also two chapters deal with hay and silage preservation and the management of grazing systems.

A compendium of forty eight common forages, by K.J. Moore, is placed between "Part I" and "Part II" It is beautifully printed on glossy paper with excellent photographs of each

species. The accompanying information for each species is concise while providing enough descriptors for species identifications with their common and Latin names, family names and origins. Also, the species descriptions include useful information about the environmental conditions for their growth and management. In addition, species distribution maps that indicate level of usage are included for the mainland United States. This noteworthy compendium could easily stand alone as a handy reference guide.

The subject matter covered in this volume is thorough. Even with four editorial authors and twenty four contributing authors, the editorial control is consistent throughout the book. Thus, information is easily accessible, which is an important feature of any textbook. In addition, this sixth edition has several improvements over previous editions, including increased coverage of plant morphology and more discussion on grassland ecology. Special emphasis is placed on use as a textbook for undergraduate students; and thus, authors were chosen who are involved in classroom teaching. At the end of each chapter is a list of questions that will benefit students in reviewing the subject matter covered. Also, the questions will guide students in thinking about the major topics discussed in the chapters.

In addition to a helpful glossary, selected terms within the text are in bold print and often accompanied by definitions. Numerous illustrations throughout the book are clear and easy to read. Many of them are line drawings, but graphs and black and white photographs are also included. Tables are clear and easy-to-read providing much useful information. Bibliographic information is readily available because each chapter includes the literature cited.

The impressive amount of information in this book is not only important to grassland agriculturists, but also to persons dealing with grassland conservational and environmental issues, ecological studies and land management programs. Hence, anyone who works in, or is active in, or in some way influences the management of grasslands, should familiarize himself or herself with the information provided in this book. Because, on their shoulders rest the future productivity of our grassland soils and the ability of these ecosystems to sustain biodiversity.

Reviewer: Mari M. Loehrlein, Department of Agriculture, Western Illinois University, Macomb, IL 61455.