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Forage Nutrition of Range Grasses Growing in Northeastern Mexico

ROQUE G. RAMÍREZ LOZANO¹, ROCIO MORALES-RODRIGUEZ¹, ANDREA CERRILLO-SOTO²,
HUMBERTO GONZÁLEZ RODRÍGUEZ³, ARTURO JUÁREZ-REYES³, MARIBEL
GUERRERO-CREVANTES²

¹University of Nuevo León, Department of Food Sciences, Mexico

²University Juarez of the State of Durango, Medicine Veterinary School, Mexico

³University of Nuevo León, Faculty of Forest Sciences, Mexico

Abstract

The quality of range grasses is correlated with season and plant phenology. There are usually parts of each year when the nutritional value of vegetation is high and low. Typically, plants are of highest quality during their growing season. However, within the growing season there may be significant differences in nutritional quality. The objective of this study was to quantify the differences in nutritive value, over four seasons, of native grasses such as *Bouteloua curtipendula*, *Bouteloua trifida*, *Brachiaria fasciculata*, *Digitaria insularis*, *Chloris ciliata*, *Leptochloa filiformis*, *Panicum hallii*, *Panicum obtusum*, *Paspalum unispicatum*, *Setaria macrostachya*, *Setaria grisebachii*, *Tridens eragrostoides*, TRIDENS MUTICUS and naturalised *Cenchrus ciliaris* and *Rhynchelytrum repens* that are used as forages for range sheep. *Cenchrus ciliaris* was included as reference grass of good nutritional quality. Plants were collected in autumn of 2001 and winter, spring and summer of 2002. The nutritive value was assessed in terms of nutrient content, effective rumen degradable dry matter (EDDM) and crude protein (EDCP), metabolisable energy (ME) and metabolisable protein (MP). Most grasses had CP content comparable to the reference *C. ciliaris* grass (global annual mean = 12.0%) and some of them were higher (14.0%). Cell wall (NDF) and lignin content were lower in *C. ciliaris* (65.0%, 3.0, respectively) than other grasses (mean = 70.0%, 6.0, respectively). All grasses had less EDDM (mean = 42.0%) than *C. ciliaris* (47.0%). However, half of them were higher in EDCP. All grasses had ME content (mean = 1.33 Mcal kg⁻¹ DM) that was lower for maintenance requirements for growing grazing beef cattle. Conversely, mean MP values (6.8 g kg⁻¹ DM) were sufficient. All grasses, in all seasons, had sufficient CP and MP content to meet the maintenance requirements of growing beef cattle; higher levels were observed in summer and autumn. The same pattern occurred in EDDM and EDCP. Because of their higher nutritional quality, grasses such as *B. fasciculata*, *C. ciliata*, *P. hallii*, *P. obtusum*, *S. grisebachii*, *S. macrostachya* and *T. eragrostoides* can be considered good forages for grazing beef cattle.

Keywords: Chemical composition, range grasses, metabolizable energy, metabolizable protein, rumen degradability