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Seasonal Trends of Mineral Content in Forage of Range Grasses from Northeastern Mexico

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Abstract

For grazing ruminants, native grasses are important sources of inorganic nutrients; however, in some circumstances, they are deficient in one or more essential minerals. The aim of this study was to determine and compare, seasonally, during one year (from autumn 2001 to summer 2002), the Ca, K, Mg, Na, P, Cu, Fe, Mn, and Zn content 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* and *Tridens muticus* and cultivated *Cenchrus ciliaris* and *Rhynchelytrum repens*. Grasses were collected by hand as encountered in four sites, randomly located, in a rangeland (900 ha) grazed by beef cattle at General Teran County, Nuevo Leon, México. Mineral concentrations were estimated using an atomic absorption spectrophotometer with an air/acetylene flame. The P content was determined in a colourimeter. All minerals, in all grasses, were significantly different between seasons and between grasses within seasons. In general, during wet seasons all grasses had higher mineral content. In all plants, in all seasons, K (overall mean = 12.0 g kg⁻¹ DM), Mg (1.8 g kg⁻¹ DM), Fe (129.0 mg kg⁻¹ DM), Mn (40.0 mg kg⁻¹ DM) and Zn (49.0 mg kg⁻¹ DM) were higher to meet growing beef cattle requirements; however, P (1.2 g kg⁻¹ DM), Na (0.3 g kg⁻¹ DM) and Cu (4) were lower. The Ca (5.0 g kg⁻¹ DM) was higher only in wet seasons (summer and autumn). Grazing cattle in these regions have to be supplemented with P, Na and Cu throughout the year and with Ca in dry seasons.

Keywords: Macrominerals, microminerals, native mexican grasses, northeastern Mexico