



## Monitoring of forage mass of native pastures in permanent plots in the Pantanal

Sandra Mara Araújo Crispim\*<sup>1</sup>, Sandra Aparecida Santos\*<sup>1</sup>, Balbina Maria Araújo Soriano\*<sup>1</sup>,  
Oslain Domingos Branco<sup>2</sup>

\* <sup>1</sup>Scientific Researchers, Embrapa Pantanal; 21 de Setembro 1880 Street; Corumbá, MS, 79320-900 Brazil; <sup>2</sup>Embrapa Pantanal

\* sandra.crispim@embrapa.br

The livestock has been the main economic activity in the Pantanal region, based almost exclusively on native pastures. Introduction of exotic grasses in the region started in the 1990's, causing deforestation and/or replacement of pastures. Conservation of natural landscapes and native pastures is extremely important to provide sustainability to the wetland ecosystems. Therefore, monitoring of forage availability related to environmental conditions and anthropic activities is essential to establish best management practices. In order to improve management of native pastures, a comprehensive monitoring of the availability of forage mass was conducted in a grassland area over time. The evaluation of the herbaceous biomass fluctuation ( $\text{kg ha}^{-1}$  dry matter) was performed on two fixed points following land topography (A 1500 and A 3500, transects 1 and 2, respectively). From 2008 to 2012, ten field evaluations were carried out in April and September, corresponding to the rain and dry seasons, respectively. Grass samples were taken randomly by using a 0.5 m x 0.5 m square, totalizing 100 points per sample. In each square sample it was recorded the forage species present, the rank value (corresponding to the dry weight value, ranging from 1 to 5 and combinations) and soil coverage. The highest biomasses ( $\text{kg ha}^{-1}$  DM) recorded during the study were 4304 (transect 1) and 2830 (transect 2), both in the rainy season of the first year. A gradual decline in the forage availability was observed along the study, with the lowest value ( $1174 \text{ kg ha}^{-1}$  DM) being recorded at the transect 2 in September 2011. A similar tendency of reduction was observed in transect 1 along the study, although forage availability was higher in September than in April 2012 because a lower number of grazing animals in the area. This reduction in the availability of forage mass was directly associated with rainfall in the hydrological years and values were lower than the climatological normal, excepting for April 2008 and a flooding period in 2011. The number of forage species present in the samples ranged from nine in September 2010 to 34-36 species (transect 2 and 1, respectively) in April 2009. The "cerrado grass" (*Mesosetum chaseae*) was the most represented forage species in the grassland botanical composition during the whole study, with maximum rank values of 3924 (transect 2) and 1519  $\text{kg ha}^{-1}$  DM (transect 1), recorded in April 2008, which corresponded to the first year of assessment. Minimum rank values were 821  $\text{kg ha}^{-1}$  DM in the transect 2, recorded in September 2012, and 602  $\text{kg ha}^{-1}$  DM for transect 1 in April 2009. Percentage variation of soil coverage varied between 90 and 99 in transect 2, and from 81 to 97 in transect 1, evidencing a greater capacity of forage production. From such results, *Mesosetum chaseae* is considered a key species, providing a good soil coverage because its stoloniferous growing, besides its high preference by cattle. The gathered information is essential for establishing criteria for the sustainable management of native pastures and cattle raising in the region.

**Keywords:** Availability, dry matter, number of species, soil cover, sustainability

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