

## Organic matter digestibility and fibers of natural grassland, improved natural grassland, and cultivated pasture in highlands of Santa Catarina State

Fábio C. Garagorry \* <sup>1</sup>, Cassiano E. Pinto<sup>2</sup>, Newton B. da Costa Junior<sup>2</sup>, Tiago C. Baldissera<sup>2</sup>,  
Vanessa R. Favaro<sup>2</sup>

<sup>1</sup>Embrapa Pecuária Sul, Rodovia BR-153, Km 603, CEP: 96401-970, Bagé, RS.

<sup>2</sup>EPAGRI, Estação Experimental de Lages, SC.

\* e-mail: fabio.garagorry@embrapa.br

Chemical composition characterization of pastures is essential to formulate technical recommendations on the need for strategic supplementation in certain seasons throughout the year. So, the organic matter digestibility as the fibers evaluation may indicate the possible points that restrict forage intake. This study aimed to evaluate organic matter digestibility (OMD), acid detergent fiber (ADF) and neutral detergent fiber (NDF) of natural grassland (NG), improved natural grassland (ING), and winter cultivated pasture (WCP) in six sites representing the Santa Catarina highlands. These data will be used to assist in pasture management recommendations for technical and local producers. In the fall of 2012, fifteen observation units were installed on private properties in areas ranging from 1.5 to 10 ha. The municipalities are São José do Cerrito (SJC), Capão Alto (CA), Lages (L) Paineira (PA), Bom Jardim da Serra (BJS) and São Joaquim (SJ), in order to represent climate and the soil of the different regions of the Santa Catarina highlands. Observations were carried out on NG and ING in L, PA, and BJS. The municipalities of SJC, CA and SJ have added WCP. The evaluation period was from January 2014 to February 2015. The correction of soil fertility was based on soil analysis of ING and CP. The species introduced were: rye (*Secale cereale*) oat (*Avena sativa*), annual ryegrass (*Lolium multiflorum* Lam), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), dactyl (*Dactylis glomerata*) meadow soft grass (*Holcus lanatus*) and birdsfoot trefoil (*Lotus corniculatus*). Samples were collected by hand-plucking in four seasons throughout the year. Posteriorly the samples were sent to laboratory for analyze OMD, ADF and NDF using Tilley & Terry and Van Soest protocols. NDF in NG was between 60 to 70% over the year. However FDA was increased (41.8%) during autumn and winter compared to spring-summer (38.8%) resulting in decline in nutritional quality. This confirms the low OMD values (average 34%). ING provided a reduction in fiber content (55.4% NDF and ADF 36.6%) and thus increase in OMD (55.4%) in all seasons of the year. WCP have higher nutritional quality with 45.2% NDF, 29.4% of FDA and 65.3% of OMD. In BJS and SJ were edaphoclimatic conditions are more restrictive to pasture growth and animal production the ING was not efficient because the OMD was only 42.5%. In this municipalities the use of WCP is more recommended.

**Keywords:** cool season species, pasture quality, overseed, nutritive value

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