Nutritive value of *Panicum maximum* genotypes under grazing in the Amazon Biome

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The *Panicum maximum* breeding program of Embrapa released three cultivars (Tanzânia, Mombaça and Massai) from 1990 to 2001. Due to its advantages over the older cultivars (e.g. Colonião and Tobiatã), these are currently the most planted *P. maximum* cultivars in Brazil. In its second phase, the program is currently trying to select even superior genotypes to be released as new cultivars in the next few years. The objective of this work was to compare the nutritive value of two new *P. maximum* genotypes with cultivar Tanzânia when managed under rotational stocking in the Amazon biome. This grazing experiment was carried out between October 2010 and September 2012 in Rio Branco, State of Acre, Brazil. Three genotypes (accession PM32, hybrid PM46 and cultivar Tanzânia) were tested in a randomized block design with two replications. Each experimental unit was an area of 1.0 ha divided into three paddocks of 0.33 ha, managed under rotational stocking with three Aberdeen Angus x Nelore heifers used as tester animals. Additional animals (regulators) were placed or removed from each paddock according to pasture height targets (PM32 and Tanzânia, pre-grazing 70-75 cm and post-grazing 30-35 cm; PM46, pre-grazing 50-55 cm and post-grazing 25-30 cm). Each stocking cycle lasted 42 days, with a rest period of 28 days. Pasture fertilization included 240 kg ha^{-1} of reactive rock phosphate, 100 kg ha^{-1} of simple superphosphate and 50 kg ha^{-1} of potassium chloride at establishment, and annual maintenance application of 300 kg ha^{-1} of urea. Forage samples were collected by hand-plucking at the end of the rest period in two grazing cycles, during two rainy (October-April) and two drought (May-September) seasons. These samples were taken observing the stubble height of the pasture in the former grazing cycle, and analyzed for chemical composition (crude protein, neutral and acid detergent fiber, cellulose, acid sulfuric and permanganate lignin, and silica) and *in vitro* organic matter digestibility (IVOMD), using the near infrared spectroscopy (NIRS) technique. Data were analyzed according to a randomized block design, in a split-plot in time design. No significant interactions ($P>0.05$) were found, so least square means were compared using Fisher's protected LSD ($P<0.05$). The hybrid PM46 presented a forage with superior ($P<0.05$) nutritive value than that of the accession PM32 and cultivar Tanzânia, with higher IVOMD (mean of 63.4% vs. 59.4% and 58.6%, respectively) and lower acid detergent fiber (ADF; mean of 38.3% vs. 40.2% and 40.4%, respectively) and permanganate lignin (PL; mean of 5.5% vs. 6.5% and 6.3%, respectively). The genotypes did not differ ($P>0.05$) for the other chemical components, with the following mean values: crude protein (CP; 12.8%), neutral detergent fiber (NDF; 76.3%), cellulose (29.6%), acid sulfuric lignin (ASL; 2.9%) and silica (4.9%). However, the great advantage of the hybrid PM46 in terms of animal daily gain, when compared with accession PM32 (+26%) and Tanzânia (+32%), could be only partially attributed to its better nutritive value, as this hybrid also have a better plant architecture, with smaller plant size than traditional cultivars, maintaining a pasture structure more favorable to high forage intake, with higher density of green leaves and lower percentages of dead material. This study found a strong tendency for superior nutritive value results during the drought season, especially for IVOMD, NDF, ADF, cellulose, PL and silica ($P<0.05$). We conclude that pastures of the hybrid PM46 offers to the grazing animals a less fibrous and more digestive forage than accession PM32 and cultivar Tanzânia in the Amazon biome.

Keywords: digestibility, guineagrass, lignin, plant fiber, protein, silica

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