

## Heritability and variability of bromatological traits evaluated in *Panicum maximum* hybrids in the Western Amazon

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The knowledge of the genetic parameters of bromatological traits in forages is essential to support the selection of genotypes that will be released as new cultivars. The objectives of this study were to estimate the heritability coefficients and verify the existence of genetic variability of bromatological traits in *Panicum maximum* hybrids, evaluated in the Western Amazon in different harvests over the year. The experiment was established in December 2012 at Embrapa Acre experimental field, following the conventional tillage practices, with liming and fertilizing based on soil analysis. The design was a randomized block and four replications with 20 intraspecific hybrids originated from crossings performed at Embrapa Gado de Corte and two cultivars, Tanzânia and Mombaça, as controls. Six harvests were performed at 25 cm height aboveground in May, June, July, October, November and December 2013, with harvesting intervals of 42, 35, 36, 69, 36 and 34 days, respectively. The variables analyzed in leaf dry matter were crude protein (CP), neutral detergent fiber (NDF) and in vitro organic matter digestibility (IVOMD). The analyses were performed by Near Infrared Reflectance Spectroscopy (NIRS) technique. Genetic parameters were estimated by restricted maximum likelihood using mixed models methodology. Deviance analyzes were performed for each trait using the Selegen software. Mean heritabilities of harvests were of high magnitude such that 0.43 (0.29 to 0.56) for CP, 0.58 (0.44 to 0.75) for NDF and 0.45 (0.02 to 0.62) for IVOMD. Mean accuracy was 0.65 (0.54 to 0.75) for CP, 0.76 (0.66 to 0.88) for NDF and 0.63 (0.16 to 0.84) for IVOMD, where 44% of them were high, 44% were moderate and 12% were low. Although some low values were found for accuracy and heritability, a significant genetic variability was observed for all characteristics, except for IVOMD in the October and December harvests. The lowest heritability and accuracy values were observed in the October harvest, with a cut interval of 69 days, caused by a slow growth of plants in this dry period, indicating that this season would be less suitable for selection of these traits. There is variability for bromatological traits among *Panicum maximum* genotypes, which enables selection on breeding programs. CP, NDF and IVOMD mean heritability coefficients vary among harvests, showing, in most cases, high magnitude.

**Keywords:** crude protein, forage breeding, genetic parameters, in vitro organic matter digestibility, neutral detergent fiber

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