

Forage accumulation of *Panicum maximum* cv. Mombaça under nitrogen fertilization in Af climate.

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Low production and pasture quality occurs due factors such as inadequate management of pasture and lack of soil fertility maintenance, especially with nitrogen. This study was to evaluate the accumulation and volumetric density of forage Mombaça grass under different levels of nitrogen. The work was conducted in the experimental area of the Faculty of Veterinary Medicine of the Federal University of Pará (UFPA), in the city of Castanhal, whose climate is classified as Af by Köppen. The trial took place between 01.07.2015 and 08.31.2015. We used an experimental design of randomized blocks with four replications and six treatments: 0, 10, 20, 30, 40 and 50 kg ha⁻¹ N application⁻¹ is the application made after each cut with N as urea, having a total of 24 plots of 12 m². They evaluated the diary accumulation of dry mass (DADM) and the volumetric density of forage (VD). For samplings, forage was harvested above 40 cm in 0.5 m² of the plot. Data were submitted to analysis of variance and regression, the maid significance was 5% of linear and quadratic coefficients and the coefficient of determination. For the statistical analysis was performed using the program R (R Core Team, 2015). The Mombaça grass presented positive linear increase ($p < 0.05$) in herbage accumulation during the trial period, with values of (65.38; 84.34; 90.07; 90.41; 94.55 and 102 82 kg DM day⁻¹) at doses of 0, 10, 20, 30, 40 and 50 kg of N, respectively, according to the regression equation ($Y = 72.3452 + 0,6233x$) where the increase in the higher dose production represented an increase of 61.61% compared to the control treatment. The VD also showed a positive increase ($p < 0.05$) in response to fertilization with densities of (155.58, 200.43, 223.30, 229.32, 239.92 and 256.98 kg MS m⁻³) in respective doses of N, according to the equation ($Y = 172.484 + 1.804x$) this answer relates to the acceleration of plant growth generated by the use of nitrogen. The total accumulation and volumetric density increases linearly with fertilization, showing that soil fertilization has positive effect on forage production, contributing to more efficient use of pastures.

Keywords: Forage, volumetric density, doses of nitrogen.