STRUCTURE OF TANZANIA GRASS FERTILIZED WITH NITROGEN DOSES IN THE AMAZON

Nauara Moura LAGE FILHO*, Daiane Pantoja de SOUZA2, Breno Fernandes MEIRELES2, Nayla Rúbia Ribeiro COSTA2, Thiago Thome da SILVA2, Jessica Alane Neves de ALENCAR2, Vitor Hugo Maues MACEDO3, Ebson Pereira CÂNDIDO2

*corresponding author: nauara.zootecnia@gmail.com
1Universidade Federal do Pará, Castanhal, Pará, Brasil
2Universidade Federal Rural da Amazônia, Capanema, Pará, Brasil
3Universidade Federal Rural da Amazônia, Belém, Pará, Brasil

The objective of this study was to evaluate the structural characteristics of Panicum maximum cv. Tanzânia fertilized with nitrogen rates in the Amazon. The experiment was conducted from February to July 2017 at the Federal Rural University of Amazonia, at Igarapé-Açu School Farm, in a region that has an Am climate according to Koppen classification. The experimental design was randomized blocks with five blocks and six treatments (0, 100, 200, 300, 400 and 500 kg of nitrogen.ha$^{-1}$.year$^{-1}$), applied in the form of urea and parcelled out in six applications. Each plot has a size of 4 m x 3 m (12 m²), with corridors between 1 m plots. The population density of tillers was performed with the help of a frame of 0.075 m², where monthly was performed at two counts per plot of all the tillers that were inside the frame, averaged and estimated the population to 1 m². For evaluations of number of live leaves (NLL) and final leaf size (FLS), two evaluations per week were performed on five tillers per plot. The NLL was made from the average number of leaves completely expanded by tiller, and the FLS by the average size of the expanded leaves of the tiller. The data were analyzed using PROC MIXED SAS procedure. The population density of tillers showed growth until application of 300 kg of N.ha$^{-1}$ with production of 363 tillers.m², presenting decrease with addition of larger doses, reaching 341 tillers.m² for the dose of 500 kg of N.ha$^{-1}$. The final leaf size presented linear growth according to the addition of higher doses of nitrogen, increasing from 22.2 to 25.9 cm for the doses of 0 and 500 kg of N.ha$^{-1}$ respectively. The number of live leaves presented a quadratic behavior, with a growth until application of the dose of 200 kg of N.ha$^{-1}$, and a decrease according to the increase of the dose of nitrogen, with values of 3.06; 3.87 and 3.08 leaves.tiller$^{-1}$ for the doses of 0, 200 and 500 kg of N.ha$^{-1}$ respectively. It is recommended to apply doses of up to 300 kg.ha$^{-1}$ of nitrogen, considering that it presents a good foliar growth together with the number of live leaves and the population density of tiller.

Keywords: canopy, leaves, Panicum maximum, tillers