

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

## NITROGEN SOURCES AND APPLICATION NUMBERS IN RESPONSE OF CHARACTERISTICS PRODUCTION OF GRASS MASSAI

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The nitrogen fertilization modifies plant growth, implying structural changes and dry mass of forage, and even though nitrogen is applied to the soil, it can lead to loss of efficiency of use by the plant, since a part of what is applied to the soil is lost. In order to minimize losses of N in the soil nitrogenous sources with an inhibitory character were developed, which could reduce these losses and contribute to an increase in the dry mass of forage and reduce fertilization. The objective of this study was to study the effect of nitrogen sources (urea and protected urea) and application numbers (2 and 4) in response to total forage dry matter kg ha ha<sup>-1</sup> (FDM- forage harvested 17 cm apart of soil) and cultural growth rate kg DM ha<sup>-1</sup> day<sup>-1</sup> (CGR). The experiment was conducted at the Federal University of Tocantins (UFT) at the campus School of Veterinary Medicine and Animal Science (EMVZ), beginning on 12/16/2015 and ending on 05/14/2016. The design was completely randomized with four treatments and three replications in a 2 x 2 factorial arrangement scheme and all comparisons were made through the Tukey test at 5,0% significance. Twelve plots of Massai grass with a size 3 x 3 and area of 9m<sup>-2</sup> were used. All treatments were dosed with 200 kg ha<sup>-1</sup> of N and were applied according to the application number of each treatment. There was no interaction for nitrogen sources and application numbers for the FDM and CGR variables with Pr> F of 0.66 and 0.46, respectively. The FDM was not influenced by the application number (Pr> F 0,07) and nitrogen sources (Pr> F 0,34); however, the protected urea treatment four applications presented higher values for FDM with 3.322,49 kg MS ha<sup>-1</sup>, and when analyzing the averages comparing application numbers, it was verified that the higher fertilization rate guaranteed greater FDM, although this value was not significant, presenting values of 2,463.21 and 3,093.6 kg MS ha<sup>-1</sup> for 2 and 4 applications, respectively. For CGR, there were significant results only for application numbers (Pr> F 0,05), with values of 81,07 and 100 kg DM ha<sup>-1</sup> day<sup>-1</sup> for 2 and 4 applications. Thus, when dividing the nitrogen fertilization in two installments decreases the FDM and CGR independently of the nitrogen source used.

**Keywords:** fertilizing, installment, protected urea

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