Tropentag, September 16-18, 2015, Berlin, Germany

"Management of land use systems for enhanced food security: conflicts, controversies and resolutions"

Agronomic Biofortification of *Brachiaria brizantha* Stapf. cv. Marandu with Selenium in Urea Coating

Letícia de Abreu Faria[1], Adibe Luiz Abdalla[1], Felippe Hoffmann Silva Karp[1], Patricia Pimentel Righeto[1], Adibe Luiz Abdalla Filho[1], Ronaldo C. Lucas[1], Andressa Santanna Natel[1], Leandro Carolino Gonzaga[2]

[1] *University of Sao Paulo, Centre for Nuclear Energy in Agriculture, Brazil*
[2] *Fac. of Higher Education and Training Integral, Brazil*

Abstract

Application of Selenium (Se) as coating of urea allows homogeneous application in grazing with low environmental risks besides to contemplate benefits to animals in quality and digestibility of forage plants with consequent, reduction of greenhouse gases. The goal was evaluate production and quality, besides degradability and gas production of *Brachiaria brizantha* cv Marandu grown in greenhouse with Se application of 0, 10, 20, 40, 80 and 160 g ha^{-1} as sodium selenate through coating of urea with the mixing boric acid and copper sulfate in N application of 100 kg ha^{-1} under two cuts. This study was conducted at Laboratory of Animal Nutrition, CENA/USP, in Piracicaba, São Paulo, Brazil. Experimental design was a randomised block with four replicates in greenhouse. The forage plant showed no visual influence or dry matter production of shoots and roots, for Se application. The crude protein (CP) resulted in quadratic adjustment for interaction Se levels × cuts. There was reduction of CP in the larger levels of Se for the first cut, and opposite effects in the second cut. The fibrous fraction as ADF, NDF, cellulose and hemicellulose were not influence by Se levels, exception of lignin, that it was larger than control with 40 g ha^{-1} of Se. The organic matter degradability (OMD) was adjusted in a quadratic curve with peak in 59.5 g ha^{-1} of Se. Gas production/ DM decreased linearly with Se levels. The gas production/ OMD presented effects for interaction Se levels × cuts, and it was lower with increasing Se levels in the second cut to 60 days. The methane production, gas production/ NDF and NDF degradation had no influence of treatments. The ammonia-N content was adjusted in a quadratic curve with lower values in highest Se levels, however positive effects was observed with Se levels up to 40 g ha^{-1}. Se levels up to 40 g ha^{-1} were favourable for production and quality of forage considering to parameters quantitative and qualitative for animal feed.

Keywords: Animal nutrition, fertilisation, grazing, sodium selenate

Contact Address: Letícia de Abreu Faria, University of Sao Paulo, Centre for Nuclear Energy in Agriculture, Av. Centenário N° 303 Caixa Postal 96, 13400-970 Piracicaba, Brazil, e-mail: evazoot@yahoo.com.br