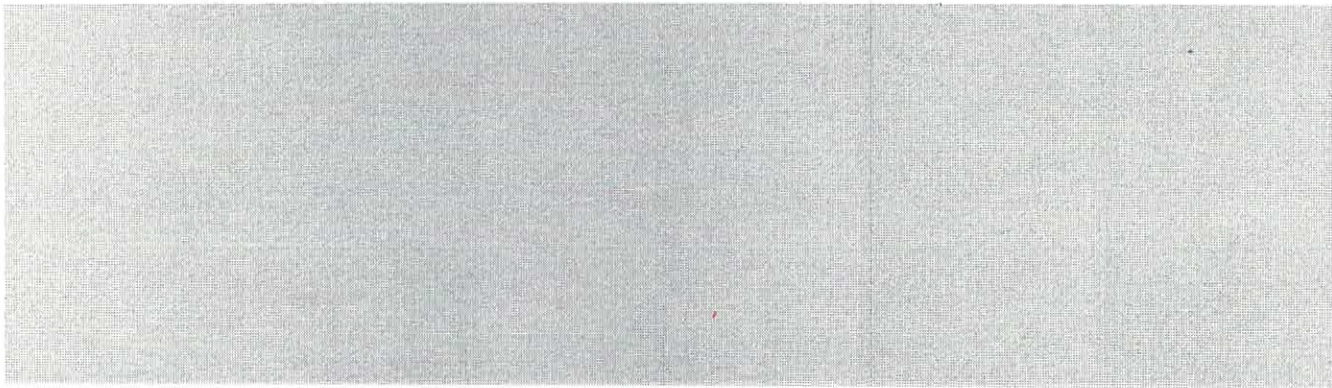


MONITORING THE FLUX OF NITROGEN IN *BRACHIARIA DECUMBENS* PASTURES IN MONOCULTURE AND IN A SILVOPASTORAL SYSTEM

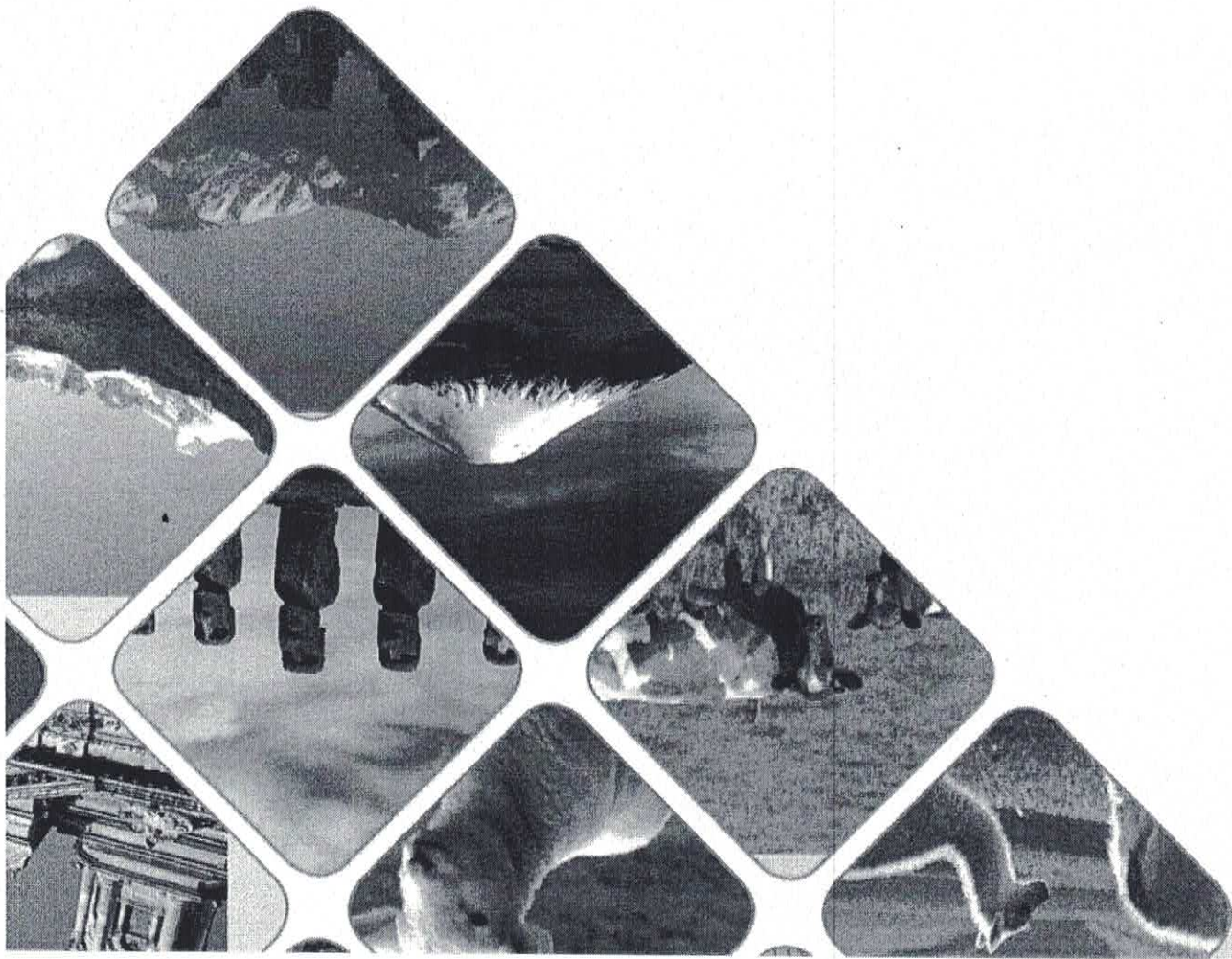
Deise Xavier^{1,2}, Francisco Ledo³, Robert Boddey⁴

¹Embrapa Gado de Leite, Embrapa - CNPGL, Juiz de Fora, ²Fapemig, Fapemig, Belo Horizonte, ³Embrapa, Embrapa - CNPGL, Juiz de Fora, ⁴Embrapa, Embrapa Agrobiologia, Seropedica, Brazil

Nitrogen is a key element for the sustainability of pastures, principally those established in soils of low fertility. Silvopastoral systems could well be a viable alternative to increase the availability of N in pastures of *Brachiaria decumbens* cv. Basilisk in mountainous regions of the southeast of Brazil. In pastures of *B. decumbens* with and without trees established in Coronel Pacheco, Minas Gerais, an experiment was carried out to monitor the inputs and outputs of N. In the silvopastoral system (SSP) the tree species planted were *Acacia mangium*, *Mimosa artemisiana* and *Eucalyptus grandis*. The management of the pastures was rotational with five heifers per paddock. The two treatments, *B. decumbens* cv. Basilisk in SSP and in monoculture (BM), were divided into six paddocks of 0.5 ha. Animal forage intake was determined in the two seasons of the year utilizing chromic oxide as an external marker and animals equipped with esophageal fistulae. Existing litter and litter deposited in 14 day periods were also evaluated. After obtaining the information on forage intake, the change in forage biomass during the year and the total annual litter deposition, an estimate was made of the Net Aerial Primary Productivity (NAPP) of the two pastures. The NAPP of the SSP was greater than that calculated for the pasture without trees (BM), with values of 26.202 e 20.133 kg/ha/year, respectively. The quantity of N exported from the pasture in the weight gain of the animals was 8 and 7 kg/ha. The values corresponding to 16 and 18 % of the total N consumed by the animals in the SSP and BM, respectively. The N deposited in the SSP in the form of faeces and urine were 31 and 10 kg N/ha/year, respectively, and in the BM, 23 and 8 kg N/ha/year. In the total N balance of the two pastures, as the losses of N from the animal excretion and that exported in the weight gain were similar, the great difference observed between the two systems (SSP and BM) was in the N recycled via the litter of the trees and grass. It is reasonable to suppose that the input of N from biological nitrogen fixation can guarantee the sustainability of the animal productivity.



WBC 2010 congress website: <http://www.kenes.com/buiatrics/>



WBC 2010 Congress Abstracts

- Home
- Authors
- Short Lectures
- Orals and Posters Presentations
- Symposium
- Search
- Browsers

XXVI World Buiatrics Congress 2010

We look forward to seeing you in Santiago

Santiago, Chile | November 14 - 18, 2010