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Rogerio M. Mauricio
*Pontifícia Universidade Católica de Minas Gerais, Brazil*

N. M. Rodriguz
*Universidade Federal de Minas Gerais, Brazil*

L. F. Sousa
*Universidade Federal de Minas Gerais, Brazil*

E. O. S. Saliba
*Universidade Federal de Minas Gerais, Brazil*

L. C. Gonçalves
*Universidade Federal de Minas Gerais, Brazil*

*See next page for additional authors*



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*R .M . Mauricio[1] , N .M . Rodriguz[2] , L .F . Sousa[2] , E .O .S . Saliba[2] , L .C . Gonçalves[2] , G .R . Moreira[2]*
*[1] FUNED , Fundação Ezequiel Dias and PUC-MG , Pontifícia Universidade Católica de Minas Gerais ,[2] EV-UFMG , Escola de Veterinária da Universidade Federal de Minas Gerais , Brazil . E-mail : rogerio .mauricio@ funed .mg .gov .br*

**Key words** : intake ,silvopastoral system ,shaded ,tree

**Introduction** In Brazil , the Savannah bioma has been cut down and substituted for either pastures or crops . The Silvopastoral systems are agroecologycal options which are based on economic , social and environmental principles that could improve sustainable animal production practices . In this context , the study of forages that could be used in low light conditions-under the trees-is needed . Graminaceous forages of the *Braquiaria* genus are largely used in Tropical areas and have potential for use under shade conditions . Therefore , the objective of this study was to evaluate the potential use of *Brachiaria brizantha* by *in vivo* trial in a silvopatoral system (SPS) composed by trees of the *Zeyheria* genus .

**Materials and methods** The SPS was composed by *Brachiaria brizantha* cv . Marandu (forage) and *Zeyheria tuberculosa* (tree) , and was formed in the Brazilian Savannah , latosoil , 19° , 35′ , 36″ South 43° , 51′ , 56″ West ; 747m , Minas Gerais State , Brazil . The treatments were : T1 = *Brachiaria brizantha* cv . Marandu under *Z . tuberculosa* trees and T2 = *Brachiaria brizantha* cv . Marandu under the influence of the sun only (no trees) . The experiment was installed in a completely randomized design using 18 sheep , being nine per each treatment , under continuous stocking and fixed daily 3% body weight allowance of dry matter as green leaf from only pasture forage . The animals also received pure water and a mixture of mineral and salt *ad libitum* . For each animal , one pill of LIPE ® (internal marker) (2) was introduced into the mouth during 2 days for adaptation before the 5 days of faeces collection at intervals of LIPE ® administration , 3 times . On the fifth day , forage was collected for *in vitro* dry matter digestibility (IVDMD) and bromatological analysis (DM , dry matter ; CP , crude protein ; Ash ; NDF , neutral detergent fibre ; ADF , acid detergent fibre) . In addition , the climatic parameters were also measured ( PAR , photosynthetic active radiation ; GR , global radiation ; MaAT , maximum and Temperature ; MiAT , minimum air temperature ; DBT , dry and bulb temperature ; WBT , wet bulb temperature ; BBT , black bulb temperature ; RH , relative humidity) .

**Results and discussion** Although there was greater ADF concentration in the forage in the shaded areas ; T1 (Table 2) , the intake was higher (Table 3) , probably due to higher CP level and better climatic conditions promoted by the shade . In addition , the time spent on feeding in T1 was higher during the day and water consumption was lower compared to T2 .

**Table 1** *Climatic parameters of the experimental area ( PAR , photosynthetic active radiation ; GR , global radiation , MaAT , maximum and MiAT , minimum air temperature , DBT , dry and ; WBT , BBT , black bulb temperature , wet bulb temperature ; RH , relative humidity .)*

| Climatic parameters | T1 | T2 |
|---|---|---|
| PAR ($\mu$mol de fóton .$s^{-1}$ .$m^{-2}$) | 700 .3 | 1354 .9 |
| GR (Watts .$m^{-2}$) | 396 .4 | 728 .7 |
| MaAT-MiAT (℃) | 28 .2-20 .2 | 33 .5-20 .5 |
| DBT-WBT-BBT (℃) | 24 .7-21 .6-27 .5 | 25 .5-21 .8-31 .6 |
| RH (%) | 75 .6 | 71 .3 |

**Table 2** *Dry matter production (DM) , crude protein (CP) , Ash (ash) , neutral (NDF) and acid (ADF) detergent fibre (NDF) of* Brachiaria brizantha *cv . Marandu (forage) under Z .* tuberculosa *tree (T1) and control ; no tree (T2)*

| Treatments | Parameters | | | | | | |
|---|---|---|---|---|---|---|---|
| | DM (ton/ha)[1] | CP (kg/ha)[1] | DM (%) | CP* (%) | NDF* (%) | ADF* (%) | Ash* (%) |
| T1 | 1 .2 | 118 .7 | 22 .1 | 9 .7 | 67 .7 | 34 .2 | 8 .1 |
| T2 | 1 .7 | 117 .5 | 26 .6 | 6 .9 | 68 .0 | 32 .1 | 7 .9 |
| CV (%) | 20 .2 | 24 .0 | 6 .4 | 9 .0 | 1 .9 | 4 .5 | 6 .5 |

1-Mean from each harvest , CV Coefficient of variation , * % in DM

**Table 3** *Herbage intake of sheep on* Brachiaria brizantha *cv . Marandu (forage) under Z .* tuberculosa *tree (T1) and control ; no tree (T2) .*

| Treatments | Intake (% body weight) | Intake (g / $kg^{0.75}$) |
|---|---|---|
| T1 | 3 .89 | 88 .28 |
| T2 | 3 .52 | 79 .92 |
| CV (%) | 6 .87 | 7 .01 |

CV-Coefficient of variation

**Conclusions** *Although the effect of the shade promoted by Z . tuberculosa* tree in the SPS reduced the DM production of *B . brizantha* cv . Marandu , the results demonstrated higher CP levels and also increased intake of the sheep maintained in pasture .

**References**

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