New *Panicum maximum* cultivars for intensive milk production

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Introduction

The efficient exploitation of the potential forage production of tropical grasses can be beneficial in some ways. Besides the increase in production per area, it is possible to increase the area necessary to produce forage for the dry season. In addition, the intensive management of pastures is a strategy that can accommodate the expansion of food and biofuel crops without the opening of new agricultural frontiers (Martha Jr. et al, 2012). Most of the Brazilian intensive grazing systems are based on species of *Panicum maximum* grasses. In this context, Embrapa has recently launched two cultivars with a greater production potential and other favorable characteristics. This study was carried out to evaluate canopy characteristics and milk production of cows in pastures of two *Panicum maximum* cultivars (BRS Zuri and BRS Quênia) managed under rotational stocking during the rainy season.

Material and Methods

- Randomized blocks with three replicates of the area;
- Paddocks with 830 m^2;
- Rotational stocking: 3 days of occupation period and rest period = 95% of LI;
- Canopy retraction of 40-50%;
- Four Holstein X Zebu cows per paddock + extra cows when necessary;
- Four grazing cycles (rainy season of 2016-2017);
- Variables: average rest period, canopy height, leaf-stem ratio, pre-grazing forage mass, tiller density, milk production per cow e per area;
- Repeated measures using Mixed Procedure of SAS®;
- LSMEANS command and Student t-test with 10% significance level.

Results

- Both cultivars presented very fast regrowth during the rainy season ;
- The rest period od the paddocks was 15 days for BRS Zuri and 16.5 days for BRS Quênia (2 cycles with 15 days and 2 cycles with 18 days);
- The cultivar BRS Zuri present a higher canopy height and thicker stems;
- The BRS Quênia presented tiller density 48% higher than BRS Zuri;
- Short rest period allows a reduction in the number of paddocks used during the growing season, providing an increased stocking rate and milk production per area (Moura et al., 2017).

Table 1 – Canopy characteristics of two *Panicum maximum* cultivars pasture under rotational stocking

	BRS Zuri	BRS Quênia	SE
Rest period (days)	15	16.5	---
Canopy height (cm)	96.9a	86.6b	1.44
Forage dry mass (kg/ha)	6,209a	5,988a	208.8
Leaf-stem ratio	2.1a	1.5b	0.06
Tiller density (number/m^2)	285b	422a	10.6

Means followed by the same letter, do not differ by T test at 10% probability. / SE – standard error.

Table 2 – Stocking rate and milk production (per cow and per hectare) of two *Panicum maximum* cultivars pasture under rotational stocking

	BRS Zuri	BRS Quênia	SE
Stocking rate (Cows/ha)	10	10.4	---
Milk production (L/cow.day)	13.9a	13.2a	0.63
Milk production (L/ha.day)	139.5a	137.3a	6.11

Means followed by the same letter, do not differ by T test at 10% probability. / SE – standard error.

BRS Zuri

BRS Quênia

Conclusions

- ✓ The cultivars presents differences in canopy structure with higher canopy height for BRS Zuri while BRS Quênia presents higher tiller density.
- ✓ Both cultivars, BRS Zuri and BRS Quênia, demonstrated a high forage mass production and potential for intensive pasture-based milk production systems.
- ✓ The low rest period resulted in high stocking rate and a great potencial for daily milk production (around 138L/ha.day).

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