Milk production and quality of cows grazing intensive and extensive pasture areas

Teresa Cristina Alves*[1], André de Faria Pedroso[1], Alexandre Mendonça Pedroso[1], Amanda Prudêncio Lemes[2], Leticia Figueiredo Passeri[2], Lucas Rafael da Silva[3], Carlos Felipe Bacaro[3], Patricia Perondi Anchão Oliveira[1]

* Embrapa Sourtheast Livestock, Rodovia Washington Luiz, Km 234, PO Box 339, São Carlos, SP, 13560 970 Brazil; [1]Researcher, Embrapa Sourtheast Livestock, São Carlos, SP; [2]Sponsored by CNPq, Embrapa Sourtheast Livestock, São Carlos, SP; [3]Undergraduate, UNIARA, Araraquara, SP.

*teresa.alves@embrapa.br

The aim of this study was evaluate milk production and quality of cows allocated in 2 grazing system. The study was conducted at EMBRAPA's (Brazilian Agricultural Research Corporation) experimental station, located in the Southeast region of Brazil. Treatments were a combination of two factors, two breeds (Holstein - HOL and ½Jersey½Holstein - JH) and two grazing conditions systems: extensively grazed pastures with low stocking rate (ELS) or irrigated pastures under intensive management and high stocking rate (IHS). Pastures in the ELS system were composed mainly of *Brachiaria decumbens* and *Cynodon nlemfuensis* (10.5% CP; 49.8% DMD) while the IHS system was composed of 27 paddocks of *Panicum maximum* cv Tanzania (21.0% CP; 62.8% DMD). Forage availability was 22.2 and 37.2 kg DM/AU respectively for ELS and HIS. Forage availability on ELS was lower because was necessary support 2 cows/ha, independent to forage accumulation, also in periods of lower plant growth. At start of this study, a total of 24 dairy cows (days postpartum: 5.75 ± 1.11; age: 31.17 ± 14.68) were grouped according to age, stage of lactation and level of milk production. Cows were kept at pasture and supplemented with minerals and concentrates in accordance with milk yield (1 kg of concentrate/3 kg of milk produced). ELS pasture was continuous managed, while IHS pasture was rotationally managed and both IHS and ELS were managed under variable stocking rate ("put-and-take"). Forage production and animal performance variables were measured in order to subsidize environmental, technical and economic assessments. Milk production was measured each 15 days and samples were monthly evaluated for composition of contents fat, protein, total solids and somatic cell count. Statistical analysis was performed by PROC MIXED of SAS® and results presented as least square means ± standard error. There no differences in milk production between breeds (HPB: 132.67 ± 8.87 vs JH: 137.03 ± 8.66 L.ha.day, $P>0.05$) however the grazing system affected milk production (ELS: 56.96 ± 8,87 vs IHS: 212.74 ± 8.66 L.ha.day, $P<0.0001$), total solid of milk (ELS: 12.11 ± 0.09 g/100g vs. HIS: 11.87 ± 0.09; $P=0.0571$ g/100g) and milk protein (ELS: 3.34 ± 0.03 g/100g vs. HIS: 3.23 ± 0.03 g/100g; $P=0.0178$). Fat content and somatic cell count were not different between breeds and grazing system ($P<0.05$). For this study, although HIS system was not efficient for increase protein and total solids of milk was more efficient to produce milk, increasing 3.7 times milk production per hectare compared with the ELS.

Keywords: lactating cows, pasture, milk quality

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