

## SUSTAINABILITY FACTORS THAT INFLUENCE MILK PRODUCTIVITY

### FATORES DE SUSTENTABILIDADE QUE INFLUENCIAM A PRODUTIVIDADE DE LEITE

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Sustainability may be considered a tripod formed by social, environmental and economic dimensions, according to the literature. In this sense, dairy production has social importance in Brazil because it is present in a significant number of family labor. However, low productivity is a feature of Brazilian dairy farms, which goes against economic dimension of sustainability. Increase in productivity is necessary, but it must happen through sustainable environmental practices. The aim of this study was to evaluate the influence of different factors on milk productivity, based on data obtained from structured interviews with owners of each participating farm (n=45) in the Birigui micro-region of the state of São Paulo. The farms were equally sorted in three levels, according to daily milk production (small: up to 100 L; medium: from 101 to 300 L; large: above 300 L). Only farms with grazing or semi-feedlot system for roughage feeding base (RFB) were included. Multivariate regression and multivariate analysis of variance, with Tukey's post-test, were performed. Productivity (L.ha<sup>-1</sup>.year<sup>-2</sup>) was the response variable. The predictive variables were: zootechnical register; non-compulsory vaccines; time in this activity; DCI (days of calving interval); age at the first parturition; daily MP (milk production) per LC (lactating cow); MP per DCI; percentage of LC; percentage of cows in the herd; percentage of LC in the herd; if MP is the main activity; if they have other activities; technical assistance; schooling degree; if the family works in MP; if they are part of an association of rural producers; RFB; if they sort cows into lots; supply of concentrate; kind of mating. For each response for the categorical predictive variables, we assigned a categorical value, which was greater when the characteristics of the variable were more favorable to higher productivity. The observed productivity was 6,274.9 ± 4,981.4 L.ha<sup>-1</sup>.year<sup>-2</sup> on average. Roughage feeding base and MP per DCI positively influenced the productivity, according to multivariate regression (p = 0.0346 and p = 0.0001, respectively) and multivariate analysis of variance (p = 0.0170 and p = 0.0002, respectively). There was no difference in productivity between farms that used short-duration grazing system and RFB in the trough (p>0.05), but both had higher productivity (p<0.05) compared to farms that used continuous grazing system and alternated grazing system, which did not differ from each other (p>0.05). These results demonstrate the viability of milk production from pasture, because it can bring productivity per area similar to other feeding systems, such as semi-feedlot, if a short-duration grazing system is used. Milk production from pasture can reduce the use of agricultural machines in forage harvest and provide better animal welfare conditions, because the animals remain in an environment closer to their natural one. The influence of MP per DCI on productivity indicates the importance of reproduction management. Aspects of sustainability in dairy farms can be improved by these results. Farms using a short-duration grazing system showed higher productivity, not differing from farms based on RFB in the trough, compared to farms based on continuous grazing system or alternated grazing system. Productivity was positively influenced by MP per DCI.

Keywords: dairy cattle, familiar agriculture, grazing.

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