

Economic Values for milk production and quality traits of Guzerá cattle in Brazil

Viviane A. Ligorí*¹, Vera Lúcia Cardoso¹, Maria Gabriela C. D. Peixoto²,
Frank A. T. Brunelli², Lenira E. F. Zadra¹

¹Instituto de Zootecnia/São Paulo, Brasil; ²Embrapa Gado de Leite, Juiz de Fora/MG.

*Master Student – vivianeligori@hotmail.com.br

The objective of this study was to calculate economic values (EVs) for milk, protein and fat productions, which could be used to compose an economic index and rank animals from dual-purpose Guzerá herds. The genetic value of these animals are annually evaluated by the National Program for the Improvement of Guzerá Cattle. A socioeconomic questionnaire was applied to eight farms in the state of Minas Gerais. These farms collaborate with the progeny testing of Guzerá sires for milk traits, coordinated by Embrapa Gado de Leite and Centro Brasileiro de Melhoramento Genético do Guzerá. Four production systems were identified: rotational grazing on *Brachiaria brizantha* with corn silage supplementation (S1) or with sugarcane plus urea supplementation in the dry season (S2); rotational grazing on *Panicum maximum* cv. *Mombaça* with corn silage supplementation (S3) or sugarcane plus urea supplementation in the dry season (S4). The information on dry matter and total digestible nutrients, as well as the formula for calculating net energy for lactation provided by each component of the diet and the nutritional requirements for the milk yield and constituents (fat and protein) production, were based on the NRC (2001). The prices of the diet components were defined for each system based on information contained in ANUALPEC (2020) and/or directly from the market. Calculations of the feed costs per lactating cows were performed for each system, considering the prices, energy content and the amount of feed supplied to the animals. Excel spreadsheets were prepared to obtain the average net energy per food supplied to attend the requirements of each lactating animal, with their respective prices, taking into account the different diets and the rainy and dry seasons length. The average price of milk determined the base price of R\$ 1.72/L (CEPEA). The linear regression of the bonus (R\$) on the classes of % fat or % protein practiced by 10 companies was carried out to determine the additional received by quality. EVs were obtained using the profit equation, assuming stabilized herds. EVs for one extra kg of milk were calculated by the marginal difference between revenue and costs to produce one kg milk with a standard of 2.9% protein and 3.0% fat. EVs for the milk components were estimated by the difference between costs and revenue obtained after increasing 1% the average value of the milk contents for Guzerá breed (3.43% protein and 4.21% fat). Differences in profit due to the 1% increase in the productions of the components were multiplied by the average 305-day milk production-cow and production system to express the EVs in kg of each component. The EVs (R\$) for milk, fat and protein production were, respectively, 1.28, -1.66 and 4.53 (S1); 1.38, -0.21 and 5.39 (S2); 1.28, -1.69 and 4.51 (S3) and 1.38, -0.24 and 5.37 (S4). Due to the current economic scenario, with high input costs and the bonus practiced by the dairy industries, the selection for the fat content is not economically advantageous to herds, different from the selection for milk and protein production that would be economically advantageous to the producer.

Keywords: dairy cattle, beef cattle, bioeconomic models, selection objectives, selection index, zebu.