Growth efficiency of Nellore cattle in the growing and finishing phases

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The objective of this work was to evaluate the growth efficiency of Nellore young bulls in the growing and fattening phases using the Kleiber index (KI). The experiment was carried out in the ABCZ experimental farm Orestes Prata Tibery Júnior, located at the MG-427 highway, Uberaba, MG, Brazil (lat. 19º 47´ 68´´ S; long. 47º 58' 50" W, 788 m asl). The local climate is tropical semi-humid presenting mean air temperature of 21.4°C, annual rainfall of 1,684 mm and relative humidity of 71.4%. Young bulls (n = 101) were submitted to 280 days of evaluation under grazing in *Brachiaria brizantha* cv. BRS Paiaguás pastures, 140 days during the wet season and 140 days during the dry season, measuring the weight of the animals and the average daily live weight gain (ADG). After this period, in the feedlot, the same animals were maintained in pens with automated troughs for 109 days to measure live weight and individual intake. It was estimated the feed efficiency (FE), the residual feed intake (RFI), the feed intake (FI), the dry matter intake (DMI) and the KI, dividing the average daily gain (ADG) by the average metabolic live weight (AMLW). Data were analyzed with Pearson's correlation at $P < 0.05$ using the software Action. Correlated data were observed for Kleiber index (KI) and FI (0.62), and for KI and ADG (0.86). The correlation between KI and gross FE was significant ($P < 0.01$) and of strong magnitude, with a value of 0.79. The KI did not correlated with RFI (0.012), but correlated negatively with FI (-0.80). There was no correlation between ADG, AMLW and KI, when the values obtained from cattle maintained at different phases were analyzed. Kleiber index can be used as a tool for animal selection in the feedlot, as it has high correlation with ADG and FE. However, studies on the Kleiber Index are still needed to validate this hypothesis, especially with regard to the selection of animals based only on the efficiency presented in confinement and how it will reflect on animals kept under the grazing system that is the most used in this country.

Keywords: Bovine, feed efficiency, kleiber index, residual feed intake.