



## Evolution of live weight of beef cattle raised in two pasture production systems during the summer in the Southeast of Brazil

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In the tropical region, strategies to minimize the effects of hot weather on animals and increase their welfare have been a constant concern. The crop-livestock-forest integration system (ICLF) is a technology that proposes to improve animal thermal comfort by reducing the incidence of direct solar radiation in pastures and currently it is adopted in 18 million hectares in Brazil. Thus, the objective of this work was to evaluate the weight gain of beef cattle raised in two pasture production systems during the summer. The experiment was carried out at Embrapa Pecuária Sudeste, in São Carlos-SP, in two production systems: 1) full sun system (FS Group) and 2) forested system (ICLF Group), both with *Urochloa brizantha* cv. Piatã pastures. The local climate type is Cwa, according to Koppen. Twenty uncastrated Nelore males (*Bos indicus*) and 20 Canchim males (5/8 *Bos taurus* x 3/8 *Bos indicus*) were used with a mean age of 15 months and mean live weight of 320.6 kg, being equally distributed in the two treatments. The animals were managed in intensive rotational grazing (average of 3 UA/ha) with grazing cycles of 36 days. The animals were weighed monthly on an electronic scale from December 2021 to March 2022, and live weight and weight gain data were evaluated. Statistical analysis included analysis of variance, followed by Tukey's test, using the Bioestat 5.4 program, with a significance level of 5%. There was a significant evolution in live weight of the animals in both systems during the evaluated period ( $P < 0.05$ ). The mean live weight in the ICLF Group in January, February, and March were, respectively,  $300.3 \pm 4.7$ ;  $323.4 \pm 5.2$  and  $338.2 \pm 6.0$  kg. In the FS Group were, respectively,  $292.8 \pm 7.4$ ;  $326.5 \pm 5.8$  and  $342.7 \pm 6.5$  kg. In February and March there was no reduction in the live weight gain of the animals that remained in unshaded pasture, as previously reported (Aranha et al., 2019; Arq. Bras. Med. Vet. Zootec., 71:1686-1694). In January, there was a difference ( $P < 0.05$ ) in daily weight gain between treatments: ICLF ( $0.857 \pm 0.22$  kg/d) vs FS ( $0.594 \pm 0.27$  kg/d). The average daily weight gain of the animals that remained in shaded pasture are shown to be larger when compared to animals exposed to the full sun. But, there was no difference ( $P > 0.05$ ) between ICLF and FS in February ( $0.695 \pm 0.33$  vs  $0.860 \pm 0.24$  kg/d, respectively) and March ( $0.502 \pm 0.29$  and  $0.579 \pm 0.32$  kg/d, respectively). It is possible to conclude that the forested system (ICLF) did not limit the performance of the animals, providing an average of greater weight gain in the month of January, which makes it an effective alternative for implementation in properties located mainly in regions with a tropical climate, as a way to minimize heat stress, during warmer times of the year.

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