

## BODY SURFACE TEMPERATURE IN CROSSBRED DAIRY COWS ON TRIÂNGULO MINEIRO/BRAZIL CLIMATIC CONDITIONS

### TEMPERATURA DE SUPERFÍCIE CORPORAL EM VACAS LEITEIRAS MISTIÇAS EM CONDIÇÕES CLIMÁTICAS DO TRIÂNGULO MINEIRO/BRASIL

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Cattle, when in heat stress, deflect energy to increase dissipation to environment, compromising productivity. Thus, in dairy production system it is important to maintain thermal comfort to ensure homeothermy and full performance. One of the physiological measures to evaluate thermal comfort of domestic animals is hair coat surface temperature. Knowing this temperature allows the understanding whether animal performs thermal exchanges by convection through the activation of heat dissipation latent mechanisms. This study aimed to evaluate body surface temperature in crossbred dairy cows on Triângulo Mineiro climatic conditions. This was carried out at Estação Experimental Glória of Universidade Federal de Uberlândia using 53 lactating crossbred cows. Cows were housed in shaded pen for artificial insemination and after it was performed body surface temperature measurements. Temperature was measured from body surface at four different regions: forehead, withers, groin and hock using an Instruterm infrared thermometer model TI-890. The statistical model used the region to test the effect of surface temperature comparing means by Tukey's test, with a significance level of 5%. Means and standard deviations of ambient temperature, maximum temperature, minimum temperature and relative humidity were respectively  $23.96 \pm 2.57^{\circ}\text{C}$ ;  $29.43 \pm 2.50^{\circ}\text{C}$ ;  $17.54 \pm 2.38^{\circ}\text{C}$ ; and  $67.18 \pm 15.39\%$ . Temperature data from body surface are presented in Table 1. Considering seasonal climate variation in Triângulo Mineiro region, it can be concluded that body surface temperature varies among different body regions and was higher at body central region (withers) than in periphery (forehead, groin and hamstring) because it is the greatest solar radiation exposure area.

Table 1. Maximum, minimum and least square means (standard error) of crossbred dairy cows body surface temperature

Body Regions	Maximum (T°C)	Minimum (T°C)	Mean $\pm$ Standart Error
Forehead	38.7	25.2	31.48 c $\pm$ 0.32
Withers	39.8	30.7	33.68 a $\pm$ 0.37
Groin	37.4	28.9	32.58 b $\pm$ 0.34
Hock	36.0	22.3	32.29 bc $\pm$ 0.36

Means followed by different letters in the same column differ by Tukey Test ( $P < 0.05$ ).

Keywords: physiological parameters, heat dissipation, thermal comfort.

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