EFFECT OF RECOMBINANT BOVINE SOMATOTROPIN (RBST) IN DAIRY PRE PUBERTAL HEIFERS: INFRARED THERMAL IMAGES AND HEAT LOSS

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The aim of this study was to evaluate the recombinant bovine somatotropin administration in pre pubertal dairy heifers on thermal regulation. ThirtyHolstein heiferwith average weight of 131.95 ± 26.72 kg and age of 6.2 ± 0.35 months were usedThe animals were randomly divided into 2 groups, which received the following treatments: Control (without application of somatotropin); rBST (equivalent to 250 mg of recombinant bovine somatotropin). The somatotropin (rBST) was applied to the animals every 15 days. The total experimental period was 90 days, and data were collected every 30 days. Diets were formulated to achieve an average daily gain of 700.0 g d^{-1} by NRC, 2001 software. Infrared thermal images and retal temperature were performed on days 0, 30, 60 and 90 of total experimental period always at 0800 AM before the morning feeding using a thermal infrared camera (Testo 880). The anatomical regions assessed by thermal camera were: left flanks and head. Total sensible heat loss (Q) was calculated as function of heat loss by radiation (Qr) and by convection (Qc). Temperature and humidity index (THI) were calculated for monitoring the environmental conditions. Data were submitted to analysis of variance and analyzed by repeated measures byPROC MIXED by SAS, version 9.0. Data obtained at time 0 were used with covariate in the model.According to the data THI collections throughout the experimental period heifers were subjected to moderate thermal stress, presented average of 74.8 of THI.Thermostasis is the process by which cows attempt to keep their body temperature constant in spite of changes in environmental temperatures. Heat stress occurs when the cow is incapable of dissipating enough heat to maintain its core body temperature below 38.8°C.Somatotropin not influenced ($P>0.05$) infrared thermal images, retal temperature and heat loss by radiation, convection and total heat loss.There was no interaction ($P>0.05$) effect between time and somatotropin. However it was observed time effect ($P<0.05$) for infrared thermal images, retal temperature and heat loss by radiation, convection and total heat loss. The utilization of infrared thermography to monitoring the heifer heat losses may be an important tool to perform dietary adjustments and alleviate the heat stress in tropical conditions. Somatotropin (rBST) not influenced the thermal regulation of pre pubertal dairy heifers.

Keywords: Cattle. Heat stress. Hormone.

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