

Hair coat and thermoregulation in Brangus heifers

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Heat stress is a major cause of economic loss for beef cattle producers in tropical and subtropical environments, as the animal's true genetic potential may not be expressed. Integrating *Bos Indicus* genetics into herds has improved the heat adaptability in crossbred animals but it has also introduced other challenges related to meat quality and reproduction. The overall goal of this study is to develop genomic tools to be used in selection programs to improve heat tolerance, while also improving production traits. Hair type is an important factor influencing thermoregulation in cattle, as it insulates the body, making heat exchange less efficient. The variation of length and thickness of hair both between and within breeds suggests the selection for a coat advantageous for improved thermotolerance in cattle is possible. Coat color, coat scores and daily body temperatures at 5-min intervals over a 5-day period were recorded on approximately 725 Brangus two-year old heifers during the summer of 2016. The coat was scored as excessively smooth (score 1, n = 526), fairly smooth (score 2, n = 189) or long coat (score 3, n= 7). A repeated measures mixed model was used to investigate the effect of coat score on body temperature and was shown to be significant ($P < .0001$). Heifers with an excessively smooth coat had lower body temperatures throughout the 3 full days of continuous body temperature measurements, indicating that coat type plays an important role in the control of body temperature.