COMPARISON BETWEEN RECTAL AND EYES TEMPERATURES OBTAINED BY DIGITAL AND NON-CONTACT INFRARED THERMOMETERS IN ZEBU CATTLE

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Introduction: The rectal temperature (RT) is the most diffused method for body temperature measurement in Veterinary Medicine, being the mercury thermometer considered the most precise, although you have to wait two minutes to obtain reliable RT, which is impracticable in face of a large animals number. In this case the digital thermometer (DigT) can provide RT more quickly, about 30 s, but injuries can occur at this time. The use of infra-red thermometers (IRT) in veterinary is recent and its principal advantages are the speed of measurement, be a non-invasive method and present a small capacity to act as a fomite. The non-contact IRT reads the irradiation of heat from a determined area without the needed of physical contact. Studies indicate that the temperature from the eyes of large animals can be similar to the core temperature.

Objective: The purpose of this study was compare the rectal and eye temperatures obtained by two different types of thermometers, DigT and non-contact IRT in real conditions of use.

Material and methods: One hundred zebu beef cattle were used in this study, in which two readings of RT with DigT were performed. Other two measures of the right and left eyes temperatures, RET and LET respectively, through the non-contact IRT (Fluke 66) were made. The RET and LET were taken by positioning the IRT five centimeters from the animals’ eyes; the readings were performed in 1 second in average mode. The time for RT readings were estimated using a digital chronograph. The persons who used IRT; one person for each eye, were presented to equipment at the time of use with explanations to how to operate it.

Results and discussion: All data had normal distribution. DigT and ocular temperatures differed by Tukey test (P< 0.0001), with the averages of 39.8±0.4°C (DigT), 35.9±0.8°C (RET) and 36.1±0.8°C (LET). Although retal and ocular temperatures were different, there was a positive correlation between both (r² = 0.2012). The time to measure RT with DigT was 38.3±8.6 s against 1 s for IRT (P< 0.0001).

Conclusion: Although statistic difference between DigT and IRT exists, the use of IRT in the clinical practice is acceptable when the number of animals to be examined is large and the body temperature is used as one of the parameters for animal health screening, due to the reading speed, the easy access to the animals’ eyes and no necessity of operator specific training.

Keywords: Thermometry, eye temperature, infra-red temperature, bovine