CORRELATION BETWEEN SUPERFICIAL BODY TEMPERATURES MEASURED WITH AN INFRARED THERMOMETER AND RECTAL TEMPERATURE IN ALPACAS

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Introduction:
Temperature measurement is essential during physical examination since it helps to detect abnormalities in animal health. Moreover, measurement should be done within the shortest possible time to avoid stress. The objective of this study was to determine the correlation between rectal temperature and the superficial body temperature using a digital infrared thermometer.

Materials and methods :
Ten Huacaya alpacas from the DESCOSUR Center of Alpaca Development in Toccra, located in the Arequipa region, Perú at 4,365 m above sea level (MASL), and eight Huacaya alpacas from the Zootechnical and Technological Unit of the Universidad Cientifica del Sur, in Lima at 5 MASL, were studied. Rectal temperatures were obtained using a veterinary clinical thermometer for one minute. Superficial body temperature measurement was carried out with a CENTER 350® infrared thermometer, at a distance between 10 to 25 cm from the measured site. Six measuring points were used. Rectal temperatures were measured at the same time as the superficial body temperatures. (Figure 1).

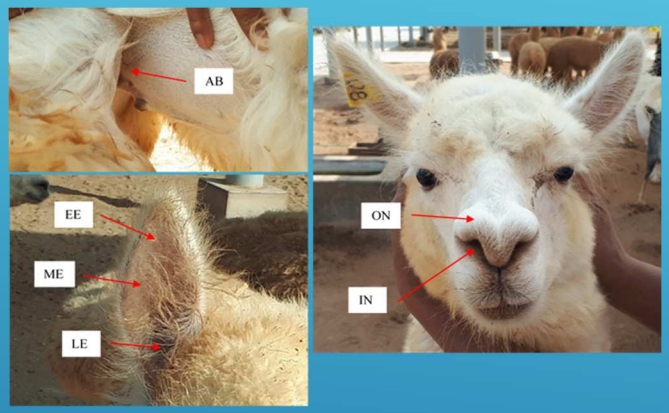

Figure 1. Arrows indicate the location of infrared temperature measurements points. ON: Outer zone of the nose, IN: Inner zone of the nose, EE: End zone of the ear, ME: Middle zone of the ear, LE: Lower zone of the ear, AB: Abdomen

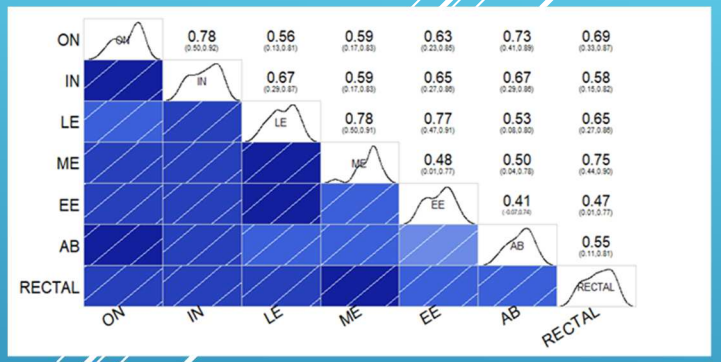

Figure 2. Correlations, confidence intervals (parenthesis) and distribution of each variable (on diagonal). Colour intensity is proportional to the correlation coefficients. ON: Outer zone of the nose, IN: Inner zone of the nose, EE: End zone of the ear, ME: Middle zone of the ear, LE: Lower zone of the ear, AB: Abdomen, RECTAL: Rectal temperature

Results and discussion:
All the correlations obtained are presented in Figure 2. The mean rectal temperature ± standard deviation (SD) in the UZYT and CEDAT-DESCOSUR groups were 38.03 ± 0.37 and 37.46 ± 0.35 °C. These results show a significant correlation between RECTAL and ME (0.75), followed by ON (0.69). Temperatures, which may be due to the absence of fiber on the skin surface of ME and ON leading to similar RECTAL values. ME and ON measurements by IRT could be considered as reference anatomical points for body temperature (De Lima et al., 2013). Lower correlation coefficients were found between RECTAL and EE (0.47) and AB (0.55). Similar results have been reported previously due to hairy skin zones making it difficult to obtain accurate IRT values (Kreissl and Neiger, 2015).

Conclusions:
The results in the present study indicated a significant positive correlation between rectal and infrared temperatures at different anatomical points in alpacas. Highly significant correlations were observed between the rectal temperature and the middle zone of the ear and the outer zone of the nose. These results could be used to perform an alternative method to predict body temperature by infrared temperature in alpacas, however, further testing is required in the field to validate these estimates.

References:

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