RELATION BETWEEN PHYSIOLOGICAL PARAMETERS AND THERMOGRAPHIC MEASUREMENTS IN SIX BREEDS OF SHEEP

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The aim of this study is to analyze the relation between the physiological changes with changes in temperature, in six sheep breeds. We used three males of each race and they are: Hampshire Down, Texel, Dorper, Santa Inês, Bergamácia and Ile de France. We measured rectal temperature, heart rate and breathing. The animals were photographed by a thermograph (InfracAM), and a thermometer (Raytek), both techniques using infrared (IR). Measurements and photos were taken from 8 am until 10 am, in a covered shed, and from 14h to 16h, in the pasture. We also measured ambient temperature using infrared and black globe. Data were evaluated using the procedures CORR (correlation) PRINCOMP (principal components), DISCRIM (discriminant) and TREE (dendrogram) of SAS ®. With increasing ambient temperature increased in the physiological parameters as expected, but the correlations with the infrared temperatures were lower than those measured in animals. Correlations between the temperatures measured by IR were high (> 0.80). But the correlation between temperatures Raytek with the physiological measures were higher than those of Infracam. The first principal component showed that an increase in ambient temperature increased all parameters and temperatures. The second component showed an increase in black globe temperature-related increase in physiological measurements and temperatures Raytek, with a decrease in temperatures Infracam. This can be explained with the technology used in both techniques, where the Raytek IR uses eight points and made the media, while InfracAM IR takes a picture. The animals were correctly allocated in their races in more than 66% of cases, with the best settings for Texel, Dorper and Santa Inês. The Texel and Santa Inês formed two separate groups of other races, and the other races were together. There is a need to better investigate the use of infrared thermography to infer heat tolerance in sheep.