CORRELATION OF INFRARED THERMOGRAPHY WITH PERFORMANCE MEASURES OF DORPER LAMBS

CORRELAÇÃO DA TERMOGRAFIA INFRAVERMELHA COM MEDIDAS DE DESEMPENHO EM CORDEIROS DORPER

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Abstract

The development of new tools for animal production studies has been increasing at a fast pace in the areas of nutrition and well-being. Infrared thermography is a non-invasive technique with accessibility and practicality, which can be used to obtain results from the selection of animals in intensified sheep farming. The experiment was carried out at the Instituto de Zootecnia de Nova Odessa, with the objective of correlating the average temperatures of different regions of the body through infrared thermography with measures of consumption in a food efficiency test. We evaluated 26 male Dorper lambs, weaned, not castrated and with average initial weight of 28.9 ± 3.2 kg. Thermographic images were obtained from each animal at a fixed distance of 60 centimeters (cm), at the following sites: eyeball (TMEDOC), snout (TMEDFOC), distal region of the hind limb (hoof) (TMEDC), testis (TMEDT) and rumen (TMEDRUM), with the aid of a FLIR E96 thermographic camera, calibrated to emissivity of 0.95, with subsequent analysis and adjustment using the FLIR Thermal Studio software. In each image, a marker with localized average temperature was used, with the shape of an ellipse for all regions. Subsequently, the animals were confined in a shed with an Intergado® System with 9 automated troughs to measure individual food consumption for 45 days, after adaptation to food and the environment for 15 days. Pearson's correlation coefficients were calculated using the average temperature of the body sites, initial age and consumption (SAS). The averages obtained for the eye, snout, hoof, testis and rumen temperatures were 36.37 ºC ± 0.76 ºC, 30.26 ºC ± 4.75 ºC, 24.69 ºC ± 4.14 ºC, 30.06 ºC ± 1.69 and 30.71 ºC ± 1.91, respectively. The averages of initial age (IDINIC) and consumption (CONS) were 123.30 d ± 16.30 d and 1.15 kg ± 0.26 kg, respectively. TMEDRUM presented a coefficient of 0.52 with IDINIC (P<0.05), while. TMEDFOC showed a medium-high and positive correlation (r = 0.51) with consumption (P<0.05). TMEDOC, TMEDC and TMEDT showed no significant correlations with any of the characteristics evaluated. The correlations obtained from the average temperatures in the snout and rumen regions of the animals with the initial age and consumption, respectively, indicated that these sites can be selected to capture and analyze thermographic images in Dorper lambs, in studies related to animal feeding, corroborating research results in ruminant nutrition.

Keywords

Thermography, feed efficiency test, lamb, sustainability.

Acknowledgments

CNPq Scientific Initiation Scholarship (Process 127373/2021-7 and 118207/2022-9, FAPESP Scientific Initiation Scholarship (Process 2020/15115-6) and Capes (001), ABCDorper.