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PHYSIOLOGICAL RESPONSES OF HEAT LAMBS IN FACILITIES WITH DIFFERENT ROOFS

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Abstract

Impacts of thermal stress on animals have provided significant damage in lamb confinement in tropical regions, one of the crucial points in this regard lies in the type of cover of the sheepfold, since it directly receives the solar incid ence. Therefore, physiological responses of respiratory frequency (RF) and rectal temperature (RT) of lambs and the environment (Temperature and Humidity Index (THI), Black Globe Moisture Temperature Index (BGHI) and Thermal Load of Radiation (TLR) of sheepfold with different types of roofing [asbestos cement roofing (ACR), painted asbestos cement roofing (PACR) and babassu straw roofing (BSR)] at 8am, 11am, 2pm and 5pm o'clock to determine the effect of the type of cover used in the sheepfolds on the thermal environment and the physiology of thermoregulation of lambs. We used 30 lambs with 7 months of age and average weight of 28.64 ± 2.89 kg and masonry sheepfold with aerial 15 m² and 2 m high which the only difference was the roof type on the roof. It was adopted the completely randomized design in subdivide plost (plots: covers and subplots: schedules). Data were submitted to analysis of variance and compared by the Tukey test (P <0.05). BSR and PFCR provide more favorable thermal environment conditions for lambs. Thus, the use of asbestos cement roofing technique is an efficient strategy to optimize thermal comfort conditions for lamb confinement installations. The hours of 11am and 2pm are the most challenging to the thermoregulation mechanism of lambs, however, the increase in the respiratory rate of the animals kept the animals' homeothermic, even in the sheepfold with asbestos cement roofing.

Keywords: Ambience, Bioclimatology, Confinement, Thermal stress, Rural Buildings.

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