

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

**PHYSIOLOGICAL AND HORMONAL PARAMETERS OF LACTATION GOATS
SUBMITTED HEAT STRESS FED WITH DIFFERENT LEVELS OF ENERGY IN THE
DIET**

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Thermal stress resulting from high ambient temperatures can trigger changes in physiological and behavioral reactions, as well as changes in plasma concentrations of cortisol and thyroid hormones. The objective of this study was to evaluate the physiological and hormonal parameters of lactating goats submitted to heat stress fed with different levels of energy in the diet. The study was conducted at the Bioclimatology Research Unit, Federal University of Paraíba, Areia - PB. Twelve Alpine goats, housed in two climatic chambers, were kept in individual metabolic cages. The animals were distributed in a crossover experimental design in a subdivided 2 x 3 x 2 plots scheme (temperature of ambient x levels of energy in the diet x two periods). The environmental conditions were thermoneutral (26°C) and heat stress (34°C from 7 a.m. to 5 p.m., and 30°C from 5 p.m. to 7 p.m.). Experimental diets presented three levels of metabolizable energy, isoprotein, with different voluminous: concentrate ratio. For physiological parameters was evaluated respiratory rate, temperature of the exhaled air, hair coat, epidermal and rectal. For the hormonal parameters, the concentrations of cortisol, tetraiodothyronine (T4) and triiodothyronine (T3) were evaluated. The environment influenced all physiological parameters evaluated, presenting higher ($P < 0.005$) means for the heat stress environment. The highest plasma concentration of T4 was in the thermoneutral environment, and that of T3 was higher ($P < 0.005$) in heat stress, the environment did not influence ($P > 0.005$) plasma cortisol concentrations. The studied diets did not influence ($P > 0.005$) the temperatures of the hair coat and exhaled air, nor the hormonal parameters. The diet with the highest level of metabolizable energy presented higher respiratory rate, epidermal and rectal temperatures. There is an increase in the physiological parameters of lactating goats when submitted to a room temperature of 34°C, but there is no change in plasma cortisol levels. Different levels of metabolizable energy in the diet influence the respiratory rate, and the temperatures of the epidermis and rectal.

Keywords: cortisol, dairy goats, thyroid hormone

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