

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

## PHYSIOLOGICAL RESPONSES OF F1 LAMBS (DORPER X SANTA INÊS) IN SEMI-ARID EQUATORIAL ENVIRONMENT

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In tropical regions, solar radiation levels are high throughout the year; this climatic element is the component of the thermal environment of greater influence on the physiological responses of animals to the field. Thus, the purpose of this study was to evaluate the physiological responses of lambs managed to pasture in a semiarid equatorial environment. The experimental trial was approved by the Ethics Committee on the Use of Animals of the Federal University of Paraíba (Protocol 108/2017). The study was conducted at the Benjamin Maranhão Experimental Station in Tacima, PB (6 ° S, 35 ° W, 188 m altitude) belonging to the State Agricultural Research Company of Paraíba from October to November 2016. Twelve lambs F1 Dorper x Santa Inês (6 with predominance of black fur and 6 with predominance of white fur and  $18 \pm 1.2$  kg of body weight) were randomly distributed in two pasture areas. The respiratory rate (FR, resp.min<sup>-1</sup>) and the surface temperature of the pelt (TS; ° C) were measured in all animals from 06:00 to 16:00 at one hour intervals. The respiratory rate was measured by the observation of the number of movements of the animal's flank, with the help of a digital chronometer for fifteen seconds. After, the values found multiplied by four to obtain the number of respiratory movements per minute (res.min<sup>-1</sup>). The surface temperature of the pelt was measured by means of a digital laser infrared thermometer (model Fluke 568®) in the region of the right side of the animal at a distance of approximately 2 m. The least squares method was used to test the effect of predominance of hair coloration, time classes and solar radiation on the physiological variables. There was no difference ( $P > 0.05$ ) in the respiratory rate of lambs with predominance of white pelts ( $15.60 \pm 5.18$  to  $99.13 \pm 4.23$ ) and black ( $16.71 \pm 5.42$  to  $86$ ,  $95 \pm 4.45$ ). On the other hand, predominantly black animals showed higher average surface temperatures; ranging from  $32.48 \pm 1.16$  to  $40.03 \pm 1.05$  and from  $32.80 \pm 4.16$  to  $44.85 \pm 1.43$  for lambs with white and black pelts, respectively. It is important to emphasize that there is difficulty in collecting these data in the field and studies evaluating physiological and behavioral responses of animals in a semi-arid environment should be encouraged.

**Keywords:** respiratory rate, surface temperature, sheep

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