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Morphometric evaluation of Saanen goats at different seasons of the year

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Body measurements allow the characterization of the productive potential of a breed or group of animals. The information obtained from this evaluation enables the producer to compare animals, thus serving as a tool for genetic improvement. Measurements such as weight, body length, chest circumference, and withers height are essential, as they can indicate the animals' digestive, respiratory, and productive capacity. Morphometric assessments can make it possible to evaluate losses in performance in small ruminants, for example, in the Northeast region, due to the irregular rainfall regime, characterized by long periods of drought that cause the forage support of production systems to be compromised in different periods of the year. Appropriate food management measures can be adopted to minimize losses. Therefore, the present work aimed to evaluate the morphometric characteristics of Saanen dairy goats and their changes during different periods of the year. The experiment was carried out in the Department of Animal Husbandry goat sector at the Federal Rural University of Pernambuco. It was carried out in two phases, one in the summer, which includes the dry period, and the other in the winter, referring to the rainy period. We used 20 adult, multiparous Saanen goats and fed a diet consisting of roughage and concentrate formulated to meet maintenance requirements. Measurements of body length (BL), withers height (WH), chest circumference (CC), and body weight (BW) were taken with the support of a measuring tape, wooden ruler, and scales, with a capacity of 150kg, being evaluated after 4 hours of feeding. The data were subjected to normality and homoscedasticity and subsequently to analysis of variance and Tukey's test at 5% probability. There was no significant effect of the period of the year on the weight and height at withers ($p>0.05$) of the goats. However, a significant effect was observed for chest circumference and body length ($p<0.05$). The thoracic perimeter and body length are necessary measurements when dealing with the adaptation capacity of these animals since the more significant the body length, the greater the body surface will be, thus helping in heat exchange, and the thoracic perimeter reflects the respiratory capacity. Related to productivity, females with more considerable body lengths tend to be more productive, an attractive characteristic to be evaluated in herd selection. No significant differences were observed regarding weight, as the animals remained under a confinement system offering roughage and concentrate during both periods assessed. Therefore, the morphological variations are variables capable of explaining the adaptation of animals to seasonal changes and, consequently, the management carried out. It is essential to highlight the need for a holistic approach to the morphometric analysis of animals, considering not only individual measures but also the environmental context and group characteristics.
Keywords: animal breeding, performance, adaptation.

The experiment carried out was authorized by the Ethics Committee on the Use of Animals with code 3503110321.