MODELING OF THE CORPORAL DEVELOPMENT OF DOELING SAANEN GOATS: BODY LENGTH

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Mathematical modeling has been used both in research and in the field. The use of mathematical models associated with zootechnical data can serve as a tool to provide an early selection of animals. The objective of this work was to use statistical models to estimate the body length (BL) of growing Saanen goats. For this purpose 40 Saanen goats were used, with age of 109.1 ± 21.4 days, with live weight of 12.9 ± 2.9 kg. The work was carried out at the Experimental Farm Hélio Barbosa of the Universidade Federal de Minas Gerais, located in the city of Igarapé, metropolitan region of Belo Horizonte, in Minas Gerais. Diets predicted an average daily weight gain of 90, 130, 170 and 210 g according to the 2007 National Research Council. The diets were composed of: tifton hay, maize corn, soybean meal and mineral nucleus. The goats were measured fortnightly. The BL was evaluated by the distance between the cranial border of the scapula and the hip-femoral joint with the aid of a hipometer with a scale of 0.5 cm. For BL, three statistical models were used: Logistic, Gompertz and Michaelis-Menten generalized. In order to model the variance, the functions of homoscedasticity (homogeneous) and stepwise variance were used. To test the quality of the models the Akaike method was used. In addition to the Akaike method, the Akaike minimum method, likelihood ratio and the ratio of evidence. The model that best estimated BL was the generalized Michaelis-Menten, with a step-variance function. The treatment that presented the highest growth rate of BL was predicted a gain of 130g dia[-1]. The BL of goats Saanen can be estimated through the use of the Michaelis-Menten statistical model generalized in the step variance function.

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