



Thermal comfort index and physiological parameters of crossbred Boer goats fed sunflower pie

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Introduction

Goat breeding in Brazil is mainly concentrated in the northeast region, which is situated in the tropical zone and is defined as a hot semi-arid area. This fact, besides from affecting the animal's physiological parameters, also affects the herd nutrition. The search for alternative foods with lower cost is a challenge. In this context, the sunflower pie, provided from oil extracting for the biodiesel industry, appears to be a promising soybean substitute.



Objective

The objective of this experiment was to evaluate the best level of sunflower pie relative to the bioclimatologic and physiologic parameters of crossbred Boer goats.

Material and Methods

Thirty two crossbred Boer goats have been used, with an average BW of 15.3 kg. They were confined and distributed in four treatments, constituted by levels of sunflower pie (0%, 33%, 67% and 100%) in substitution of soybean. The experiment lasted for 60 days. Diets were offered *ad libitum* and composed by 50% of hay and 50% of concentrate. Measurements of Respiratory and Cardiac Frequency (RF and CF), and Rectal and Surface Temperature (RT and ST) were taken. The Temperature and Humidity index (THI), as well as Black Globe Temperature and Humidity Index (BGTHI) were also measured. The experimental diets were distributed in a completely randomized design, and the data was subjected to variance and regression analysis.

Results

The values found for THI and BGTHI were, respectively, 78.5 and 78. These values are to be treated as warning values. There were no significant differences between the measured physiological parameters among treatment diets. The measurements for the treatments 0%, 33%, 67%, and 100% were, respectively; 41.7, 40.8, 38.8, and 40.4 movements/minute, for the RF; 92.3, 91.9, 92.2, and 92.3 beats/minute for the CF; 38.5, 38.6, 38.5, and 38.5 °C for RT; and 31.3, 31.2, 31.4, and 31.3 °C for ST. All measurements are within the normal physiological range for goat species. Therefore, sunflower pie can be added to crossbred Boer goat diet up to 100% without causing changes in the animals physiological parameters, and is a valid option for substitution of soybean meal.

Conclusion

Sunflower pie can be added to crossbred Boer goat diet up to 100% without causing changes in the animals physiological parameters, being a potential source of dietary protein in substitution to soybean meal.