I-INTERNATIONAL MEETING OF ANIMAL SCIENCE IN SEMI-ARID REGIONS
Universidade Federal do Agreste de Pernambuco – UFAPE
July 03rd to 05th, 2024, Garanhuns-PE

Bioclimatology, ambiance, animal behavior and welfare

Assessment of bioclimatic conditions and welfare for buffaloes

Ygor Tállisson Xavier Trindade*[1], Thaís Fernanda do Nascimento[2], Rodrigo Barbosa de Medeiros[2], Keyla Laura de Lira Dos Santos[1]
[1]Universidade Federal Rural de Pernambuco, Serra Talhada/Pernambuco, Brasil; [2]Universidade Federal Rural de Pernambuco, Recife/Pernambuco, Brasil. *ygorxavier00@gmail.com

Among the livestock activities that operate in Brazil, buffalo farming is the economic activity that has stood out due to its expansion in milk and meat production. The Brazilian Association of Buffalo Breeders (ABCB) estimates a herd of more than 3 million animals, is present in all states of the country. This study aimed to evaluate the bioclimatic conditions, using the Temperature and Humidity Index (ITU) to assess the welfare of buffaloes in the city of Serra Talhada-PE. The temperature, humidity, dew point, solar radiation, and rainfall values were obtained from the A350 weather station, located in the Serra Talhada Academic Unit, during the period from June to December 2023. The data was subjected to descriptive analysis using the Microsoft Excel® program. To assess the Thermal Comfort Index, the following formula was used ITU = [(0.8 x temperature) + [(Humidity/100) x (Temperature - Dew Point)] + 46.5], where ITU below 72% is considered ideal, ITU between 72% and 78%, moderate thermal discomfort and ITU above 78%, severe thermal stress, which leads the animal to have losses in zootechnical indices. November was warmer, with an average temperature of 29.17°C, and July was milder, with an average temperature of 23.76°C. The average relative humidity was lowest in October and highest in June, at 41.16% and 68.08% respectively. Solar radiation was highest in October (2001.12 MJ/m²) and lowest in June (1102.22 MJ/m²). Concerning rainfall, there was a regressive drop in rainfall in September and October (0.00 mm) and an increase in December (0.15 mm). These values are to be expected for the region's climatic conditions, which see the highest rainfall from December to March. However, during the peak of solar radiation (October to December) the buffalo suffer from high temperatures, which can reach over 37.0°C throughout the day. In the months when radiation and temperature increased, so did the UTI, the main factor responsible for animal thermal discomfort. As for the UTI, November was the most severe period, with an index of 76.37%, while June was the most comfortable for the buffalo, with a UTI of 70.10%. It can be concluded that the months from September to December are critical for the animals, which suffer moderate heat stress. Therefore, understanding the variations and behavior of these variables is essential to optimize management and ensure animal welfare. In addition, proper management must be adopted to minimize stress and ensure the health of the herd, thus guaranteeing better animal performance and more satisfactory production rates within the herd.
Keywords: Bubalinoculture, Thermal comfort, Meteorology.