

2nd International Conference on **Animal & Dairy Sciences**

September 15-17, 2014 Hyderabad International Convention Centre, India

Comparison of temperature humidity index models to identify the best model for pregnancy rate of Murrah buffaloes in a subtropical climate

Soumya Dash, A K Chakravarty, Avtar Singh, Arpan Upadhyay and Pushp Raj Shivahre
National Dairy Research Institute, India

Objective of this study was to identify the best temperature humidity index model (THI model) among seven different THI models for analyzing the effect of heat stress on pregnancy rate of Murrah buffaloes in a subtropical climate. Fertility data on 581 Murrah buffaloes under four lactations and weather information on dry bulb temperature (Tdb), wet bulb temperature (Twb) and relative humidity (RH) spanned over 20 years (1993-2012) were collected from NDRI and CSSRI, Karnal. Monthly averages of temperature humidity index values were computed with seven THI models. A regression analysis was performed to identify the best THI model indicating the maximum decline in pregnancy rate with per unit increase in THI value. The lowest monthly average THI value was found in January, while either June or July shows the highest average THI value for all seven THI models. Overall least squares mean for pregnancy rate of Murrah buffaloes was estimated as 0.38 ± 0.02 . A negative association was found between THI and pregnancy rate. THI model 1 [$\text{THI} = [0.4 \times (\text{Tdb} + \text{Twb})] \times 1.8 + 32 + 15$] indicates the maximum decline (-0.761 %) in pregnancy rate with per unit increase in THI value and therefore, identified as the best THI model for studying the effect of heat stress on pregnancy rate of Murrah buffaloes in a subtropical climate.

Biography

Soumya Dash is a PhD scholar and continuing the PhD programme in National Dairy Research Institute, Karnal, India.

dr.soumya10@gmail.com