

THE IMPACT THERMAL STRESS ON SOME PHYSIOLOGICAL, ENDOCRINE PROFILES AND HSP IN LOCAL MALE CALVES

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(Received 22 June 2020 , Accepted 5 May 2020)

Keywords: Thermal Stress, Endocrine Profile, Male Calves.

ABSTRACT

This study was conducted in the field cattle in Al-Qurna, north of Basra Governorate, in the period between July 2018 to February 2019 and included the following seasons, the monthly summer season (July and August of 2018), the monthly autumn season (October and November of 2018) and the winter season is monthly (January and February of 2019). This experiment was designed to reveal the effect of the THI value on some physiological and hormonal values on the local male Holstein. The studied group include 20 calves and with age between (one year to one year and eight months), twenty blood samples were collected per month from male Holstein calves subjected to a different value of temperature and humidity in different months and seasons. The results of the first experiment showed: A significant ($P \leq 0.05$) increase in the values of THI, respiratory rate, and heart rate, where a significant ($P \leq 0.05$) increase was noted in months and the summer season except for the rectal temperature, which showed no significant difference ($P > 0.05$) among different seasons. The antioxidants CAT, MDA, SOD, and GPX also showed a significant increase ($P \leq 0.05$) during the summer months and seasons compared to the autumn and winter months and seasons. Also significant increase ($P \leq 0.05$) in cortisol and HSP70 during the summer and season months. The levels of testosterone and thyroid hormone (T_4) and triiodothyronine (T_3) decreased significantly ($P \leq 0.05$) during summer and season compared to other months and seasons, but the level of insulin in the blood showed a significant decrease ($P \leq 0.05$) during the summer season than the other seasons.