

Effect of heat ameliorative measures on the growth and physiological response of buffalo heifers during summer.

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Abstract : The present investigations were conducted to study the effect of different ameliorative measures (shaded stall, wet bedding, mist cooling and fan) on the growth and physiological response of buffalo heifers during summer (May to September 2004). Murrah buffalo heifers (n=18) between 15 and 30 months of age were used for the study. The animals were randomly allocated to three groups of six animals each. Group I received shaded stall, Group II received wet bedding and Group III received mist cooling. The animals were fed ad libitum with a diet containing 10% concentrate and 90% roughage. The results indicated that the body weight gain was significantly higher in Group III than in Groups I and II. The rectal temperature, heart rate, respiratory rate, and lactate concentration were significantly higher in Groups I and II than in Group III. The lactation performance was also significantly higher in Group III than in Groups I and II. The results indicated that mist cooling was more effective than shaded stall and wet bedding in ameliorating the heat stress in buffaloes.

were divided into three equal groups based on age and body weight: T₁, provided with only fan; and T₃, provided with fan and sprinkling for 10 min a day. The average weight gain during the experimental period was highest in the control group (57.89 kg), followed by T₂ (56.67 kg) and T₁ (54.17 kg). The average daily gain was maximum in T₁ (501.36 g/day), followed by T₂ (460.71 g/day) and was least in T₃ (440.38 g/day). The difference in the rectal temperature between morning (00:09 h) and afternoon (14:00 h) of control group was significantly higher (0.34°C) than T₂ (0.22°C) and T₃ (0.18°C). The difference in pulse rate from morning to afternoon was also significant in T₁ (1.31 beats/min) when compared with T₂ (2.29 beats/min) and T₃ (1.31 beats/min). The difference in the rate of respiration between morning and afternoon period was significantly higher in T₁ (4.48 counts/min) when compared with T₂ (2.28 counts/min) and T₃ (1.06 counts/min). Results indicated that provision of sprinkling and fan protection creates a favourable macroenvironment and microenvironment to the animals.

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