

Abstract

In order to investigate the relationship between the temperament of calves and their performance, body type and some blood parameters, 43 calves (19 females and 24 males) were used from Sistani cattle echotypes. The temperament tests were performed by using pen score, chute exit score and chute score methods, at three ages; two months, four months, and weaning. Also, at yearling, temperament test was performed using the exit score and chute score methods. The traits were body temperature, heart rate, hand length, waist circumference, tail size, chest circumference, leg and foot diameter, forehead and ear size, as well as glucose concentration, total protein, creatinine, triglyceride Glucose, Insulin, HDL, LDL, and thyroid hormones (T3 and T4) in the serum. The results of statistical analysis using R-3.3.2 software showed the growth rate and the conversion coefficient in calm calves were better than other two groups ($P < 0.05$). In the calm group, heart rate and body temperature were lower than the other two groups. Also, the measurement of body measurements showed that the calm calves had greater bone size under the same age and weight conditions. In the calm group, the level of insulin in serum was higher, whilst the level of triglycerides, HDL, LDL and glucose were lower than the other two groups. Average daily gain and the time to reach the proper weight of penetration in the calm group were also significantly better than other two groups, so that the calm calves reached a good weight of about one month faster than the other groups. Although, in the two-month period after gutting, the oral conversion ratio was better in cam claves than the other two groups, the difference in feed intake was not significant between various groups. Correlation coefficients between temperament tests were high and significant at each stage of the process, which indicates that each of these methods can be used with high confidence to determine the type of temperament at different ages. Also, the temperament type at different ages had high and significant correlation, indicating the relative stability of calf behaviour at different ages, and also, by determining the type of temperate at an early age (two months old), the calf's temperament can be predicted at high ages, to a great extent. The results of this study showed that considering the kind of livestock behaviour in breeding and selection programs, could help to increase the productivity of Sistani's cow in the long time.

Keywords: Body type, Blood parameter, Calf, Native cattle, Temperament, Performance



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**Comparison of relationship between temperament and
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