

The study of health of large animals in the activities using animals

Abstract of Doctoral Thesis

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Recently, various types of activities involving animals such as horses and cattle have attracted attention owing to their beneficial effect on the mental, physical, and social health in humans. However, there are inadequate reports about the stress on and welfare of animals, especially large animals such as cattle and horses used in such activities. In the first chapter of the present study, the cortisol (COR) level and several serum biochemical marker levels were assessed in dairy cows before and after the student practical training to investigate stress in these animals. The second chapter describes a study conducted in horses that are widely used in such activities. Differences between breed and serum biochemical marker levels were clarified. Finally, a survey was conducted among the members of an equestrian club regarding their perception of offering treats to horses.

In the first chapter, a significant difference was noted in serum COR level in dairy cattle ( $n = 29$ ) before and after the training. Thus, contact with many unfamiliar people may induce stress in dairy cattle. However, the increase in serum COR level after the practice was not particularly high when compared to other stress conditions such as transportation and hoof shaving. This was assumed to be because of the usual feeding and milking pattern of the animals during the training. Individual differences were noted among the cattle in this study with one group exhibiting decreased stress with experience and another group being very sensitive to stress.

In the second chapter, serum biochemical marker levels in thoroughbred ( $n = 50$ ), ponies ( $n = 49$ ), and miniature horses ( $n=14$ ) were investigated. Principal component analysis was conducted using the results obtained, which were divided into three groups based on the breed. The determination rate of thoroughbreds, ponies, and miniature horses by discriminant analysis was 96.0%, 79.59%, and 92.86%, respectively.

The questionnaire survey for the members ( $n = 43$ ) of an equestrian club was conducted using the information obtained from the previous results in horses. The approval of feeding treats to horses significantly decreased after informing the members regarding triglyceride levels in horses. Proper knowledge of horses resulted in members not excessively feeding treats and becoming aware about feeding management in horses. In the comparison between members owing a horse (owner) and those not owing a horse (general), the approval of feeding treats to horses was significantly lower in owners irrespective of the information provided. It was thought that treats for horses are the significant agita factor for owner. Supporting knowledge acquisition regarding feeding is important for maintain the health of horses.