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Obraz reakcji behawioralno-fizjologicznych koni w warunkach zaburzonego życia stadnego i wsparcia socjalnego podczas izolacji

Image of Behavioral and Physiological Reactions of Horses in Herd Life Disturbed by Separation and Social Support Introduced

SUMMARY

The main research objective of the series of publications was to evaluate the behavior, locomotor activity and physiological parameters in horses during disturbance of the herd hierarchy, forced social separation and interaction with representatives of other species of herbivorous animals considered as possible social support during confinement. The material for all studies consisted of 79 clinically sound adult warmblood horses: 12-27 individuals depending on the study. Five main behavioral tests were performed (dominance hierarchy disorder test, new object test: living/inanimate moving object, approach to an object test: living/inanimate moving object, species association test, separated horse test) and, additionally, a test to determine the position of the horse in the herd hierarchy. The tests usually consisted of several stages and research phases, with the use of repeating the scheme of various combination of the same test. Domestic cattle were used in the test of the new object and approach to the object, and a mini-herd of polled goats in the species association test. The main methods included the measurements of physiological characteristics as well as the measurements of behavioral and locomotor characteristics. Measurements of heart rate/heart rate variability (HR/HRV) parameters were performed using Polar ELECTRO OY, type RS800CX with H2 transmitter or stethoscope, and then Kubios HRV software and/or PolarProTrainer 5 software. One to six heart rhythm parameters were analyzed in a study. Behavior (five to thirteen traits) and locomotor activity (three to five traits) were determined by direct observation or recording with Sanyo Xacti VPC-WH1 digital cameras. In addition, a visual analog scale (VASf) and observational respiratory rate measurements were used in one study. Selected results were presented in the form of algorithms depending on the obtained data structure. The statistical analyses were performed using STATISTICA 13.3, R 4.0.3 and SAS 9.4 softwares. It was found that temporary separation and disturbance of the herd life of horses always evokes negative emotions and behavioral reactions indicating stress. Return of the separated horses to the herd

does not result in a quick calming of undesirable emotions in the herd. Hence, horse owners should take into account the this fact when separating some of its members, and provide appropriate conditions for such an action. It is also worth emphasizing that providing substitute social support can only partially mitigate the effects of horses' social separation. The company of goats only partly prevents solitude whereas the presence of a cow causes quite negative reactions in horses. However, it can be added that the goats can be a desirable element of diversifying the living environment of the horse herd. Unfortunately, it is difficult to predict the severity of separation stress symptoms in horses based on e.g. physiological measurements conducted at rest. Therefore, it is necessary to continue research on procedures used to mitigate this phenomenon in horses. However, it should be taken into account that probably it will never be possible to achieve a complete relaxation in horses separated from the herd.

Keywords: horses, herd, separation, social support, behavior, physiology