Abstract

The aim of the study was to analyse selected behavioural reactions (traits) and their potential use in the farm breeding of fallow deer (Dama dama). The main objective of the analysis was to demonstrate the influence of sex, age and weather conditions on the variability of these traits, as well as to take into account the interactions between individuals. It was also planned to analyse the possibility of using thermal imaging during basic zootechnical and veterinary procedures on deer farms in order to determine the occurrence of stress in fallow deer.

The research was conducted at the deer farm of the Research Station of the Polish Academy of Sciences in Kosewo Górne. The observations covered 17 fallow deer. The research covered two research seasons: season I (from the beginning of June to September 2021) and season II (the same period in 2022). The animals were subjected to behavioural observations during a planned 'feeding test' described in the study. An ethogram of basic behaviours was developed, focusing on timidity and aggression exhibited during feeding ('feeding test').

The analysis of timidity, aggression and secondary traits reveals the importance and, at the same time, significant diversity of fallow deer behaviour as an element in assessing the suitability of specific individuals for farm breeding. The results obtained indicate significant individual and seasonal variability in these traits, which makes them a valuable selection tool, but one that requires a multi-faceted and comprehensive interpretation combined with breeding practice. The analysed atmospheric factors influenced the behaviour of fallow deer, which confirms the need to take them into account when interpreting animal behaviour. The results indicate that the body temperature of fallow deer measured *per rectum* was 39.5-39.8^{o}C, while thermally it was 39.8-40.3^{o}C. The high correlation coefficients between the results obtained by the two measurement methods confirm the practical applicability of thermal imaging during basic zootechnical and veterinary procedures on deer farms.

Key words: *Dama dama*, behaviour, farm breeding, thermal imaging, stress