ANALYSIS OF TROPHY PARAMETERS IN FALLOW DEER (*DAMA DAMA*) IN HUNGARY, 1998-2016

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Nowadays, trophy hunting is considered one of the most important aspects of big game conservation and management. Trophy hunting of Fallow deer (*Dama dama*) provides not only remarkable income source for many game managers, but specific antler parameters can also be used as bioindicators of the populations. Therefore, it is essential to examine the trends of the trophy size and quality in this species. Assessment of the trophy quality is often based on the measured values of the individuals with the strongest (e.g., heaviest, longest) antlers. However, there is little knowledge about the reliability and representativity of this approach.

In Hungary, it is compulsory to present each antler for evaluation (scoring), and the long-term datasets collected by the hunting authority are available in the National Game Management Database. In the present study, we used the dry weight of the Fallow deer antlers and the mean of main beam length on the two sides of the antlers, as these had been measured on each buck. We have analyzed the trend of the annual number of evaluated trophies between 1998 and 2016 and the temporal variation in the values of dry weight and main beam length during the study period on the population level and in the case of the shot bucks with the best quality antlers.

The annual number of the presented trophies (n=42,059) increased from 894 to 3,795 with an exponential trend (Pearson-correlation, R=0.97, P<0.001). The measured values were examined in 3 estimated age classes (young: up to 4 yrs, middle-aged: 5-9 yrs, old: from 10 yrs). As distributions of annual data differed from the normal distribution in most cases (Shapiro-Wilk test), the groups (year × age class) were characterized by the median. The largest values were picked in each group by selecting the lowest value among the individuals belonging to the upper 1%, 5% and 10% of the sample size. In many cases, the top values and the group median did not follow the same trend, which resulted in the variability of the difference between the group median and the largest values. In general, the difference between the group median and the largest values showed the highest variability in case of the 1% threshold. Our results suggest that in

Fallow deer, the assessment of the quality of an entire population based on the largest trophies may be misleading.