Analysis of the contribution of founders and ancestors to the active dog population of German Shepherd in the area of Cracow branch of the Polish Kennel Club

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Summary

German Shepherd is one of the most popular dog breeds with versatile utility in the world and in Poland. The aim of the study was to examine the contribution of founders and ancestors to the active population of German Shepherd dogs from the registry of Cracow branch of the Polish Kennel Club. The research material consisted of four-generation pedigrees of 60 German Shepherds, 17 dogs and 43 bitches, born in years 1994-2005. The reference population for the analysis of the contribution of founders and ancestors included 60 animals from the active population. The effective number of founders (f_e) and ancestors (f_a) and the total number of founders and ancestors were estimated. The founders and ancestors with the highest gene proportion in the analyzed population were determined. Total number of founders for the reference population of 60 animals accounted for 277 individuals, and total number of ancestors – 60. The effective number of founders was 66, whereas the effective number of ancestors was 36. Seventeen individuals, including 8 dogs and 9 bitches, were the founders characterized by the highest gene contribution to the analyzed population. Five individuals from this group, i.e. 2 dogs and 3 bitches, had gene contribution in a range of 2% to above 6%. Following funders, i.e. 6 bitches and 6 dogs, had gene contribution in a range of 1% to approximately 2%. The number of ancestors with the highest gene contribution accounted for 43 animals, including 16 dogs and 27 bitches. Four dogs and 4 bitches from this group had gene contribution in a range of 3% to 7%, whereas the contribution from the other ancestors was up to 3%. Three individuals were included in both groups of the aforementioned main founders and main ancestors.

Key words: funders / ancestors / dogs / German Shepherd