

**Biodiversity characteristics of goats found in Poland based on microsatellite markers**

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Goat breeding in Poland has a very long tradition but is still incidental to livestock production. The goat population is estimated to be 176,000. The greatest proportion of the national population is represented by Polish White Improved goats, derived from local and Saanen goats as well as from German White Noble goats. Less numerous are Fawn Improved goats derived from German Fawn and Alpine goats, and imported breeds such as Saanen, Alpine and Anglo-Nubian. There is also a large group of scrub goats, which are classified as the general-purpose type, vary widely in appearance and production traits, but are extremely resistant to adverse environmental conditions. The Polish goat population was shaped by old local breeds of the general-purpose type, such as Carpathian and the extant breeds Sandomierska and Kazimierzowska. Goats are most often kept in backyard systems, in large specialized herds or for hobby purposes. Dwarf goats, considered as representatives of feral goats, are kept in zoological gardens.

The aim of the present study was to characterize the genetic structure of goats found in Poland based on microsatellite DNA polymorphism. Analysis was performed on samples of blood obtained from 215 goats of six breeds: Saanen, Anglo-Nubian, Alpine, Carpathian, White Improved and Dwarf. The polymorphism of microsatellite DNA sequences was analysed based on selected markers recommended by FAO for evaluation of goat biodiversity. Separation of the amplification products of the sequences analysed in the population studied helped to identify 47 polymorphic variants in 6 loci. The mean number of alleles per breed was the highest in Saanen (5.7) and the lowest in Dwarf goats (4.1). Heterozygosity was the highest in White Improved (0.7) and the lowest in Anglo-Nubian goats (0.5). Genetic differences between the breeds were calculated using the Unweighted Pair Group Method (UPGM). The greatest similarity was observed between Saanen and White Improved. The largest genetic distance was found between Carpathian and Dwarf breeds.