Estimation of genetic diversity in Morada Nova sheep breed in São Paulo countryside

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The Morada Nova is one of the main sheep breeds of Brazil, presenting characteristics such as adaptability to edaphoclimatic conditions, rusticity, little or no reproductive seasonality. Due to these characteristics of zootechnical importance the breed was brought to the southeast to be used in the crossing with exotic breeds mainly aiming the production of meat. Considering the influence of genetics under the production index and the risk of loss of genetic diversity of naturally adapted breeds in Brazil, this study aimed to evaluate the genetic diversity of Morada Nova sheep in a population in countryside of São Paulo state. DNA samples extracted from the blood plasma of the animals were used for subsequent analysis of the genotypes using 14 microsatellite markers recommended for paternity identification in sheep by the International Society for Animal Genetics (ISAG). These were: CSRD24, ETH152, ILSTS08, ILSTS87, INRA05, INRA06, INRA172, MAF65, MCM42, MCM527, OARAE129, OARCP49, OARFCB20, OARFCB30). The polymorphic information content for all markers was above 0.5 and were considered highly informative. The value of allele richness and the effective number of alleles were 4.51 and 3.68, respectively, suggesting uneven distribution of allelic frequencies with the presence of low alleles frequency. The fixation index was 0.048. The Bayesian grouping analysis separated the population in K = 2 (subpopulations) being 50.81% representative of genotype 1 and 36.07% of genotype 2, it is also possible to observe that 13.11% represent the miscegenation of both groups. According to the results, there is moderate genetic diversity in the studied population, it is suggested the implementation of genetic improvement and conservation programs aiming at maintaining the diversity observed. The results obtained in this study will be of great importance in the structure of the herd besides contributing with possible conservation projects of the species.

Key word: genetic improvement, Ovis aries, microssatélite

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