The Recovery of Livestock Guarding Dog Breeds: Analysis of Polymorphic Microsatellites

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Abstract

In Europe, Livestock Guarding Dogs (LGD) have been used for centuries as part of an ancient traditional way of protecting flocks against predators, as the wolf. Nevertheless, this practice is being lost due to economical and social reasons. In Portugal some LDG breeds have now a reduced effectiveness of breeding individuals and are facing extinction due to a loss of genetic variability. The inbreeding promoted by some dog-breeders in their attempt to select pure individuals, has negative effects on the dog's individual viability and reproductive characteristics like fertility and fecundity. To prevent this situation a three year project is being implemented in order to recover two portuguese LGD - Cão de Castro Laboreiro and Cão da Serra da Estrela. These breeds are very distinct from one another and are thought to be some of the most ancient from the Iberian Peninsula. Originating from distinct regions and under different environmental and selective conditions they evolved separately. This project includes the assessment of consanguinity degree for each breed and the selection of those animals that should be crossed in order to increase genetic variability. Crosses between animals will be proposed to dog breeders at the end of the project. The use of genetic data is essential in the establishment of a management plan to recover these dog breeds. The polymorphism of 14 microsatellites *loci* is under study. So far, the alleles of 7 have been scored for an average number of 39 individuals/locus for Cão de Castro Laboreiro and 25 individuals/locus for Cão da Serra da Estrela. Genetic variability and inbreeding coefficient for each breed are calculated. Frequency differences were found for those alleles common to both dog breeds as well as exclusive alleles for each breed.

Poster
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