



Short Communication

Implementation of a parentage control system in Portuguese beef-cattle with a panel of microsatellite markers

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Abstract

A study was conducted to assess the feasibility of applying a panel of 10 microsatellite markers in parentage control of beef cattle in Portugal. In the first stage, DNA samples were collected from 475 randomly selected animals of the Charolais, Limousin and Preta breeds. Across breeds and genetic markers, means for average number of alleles, effective number of alleles, expected heterozygosity and polymorphic information content, were 8.20, 4.43, 0.733 and 0.70, respectively. Enlightenment from the various markers differed among breeds, but the set of 10 markers resulted in a combined probability above 0.9995 in the ability to exclude a random putative parent. The marker-set thus developed was later used for parentage control in a group of 140 calves from several breeds, where there was the suspicion of possible faulty parentage recording. Overall, 76.4% of the calves in this group were compatible with the recorded parents, with most incompatibilities due to misidentification of the dam. Efforts must be made to improve the quality of pedigree information, with particular emphasis on information recorded at the calf's birth.

Key words: cattle, genetic markers, microsatellites, parentage control.

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