



Use of microsatellite markers to assign goats to their breeds

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ABSTRACT. We investigated the potential of 17 microsatellite markers for assigning Saudi goat individuals to their breeds. Three local breeds, Bishi, Jabali, and Tohami were genotyped using these markers, and Somali goats were used as a reference breed. The majority of alleles were shared between the breeds, except for some that were specific to each breed. The Garza-Williamson index was lowest in the Bishi breed, indicating that a recent bottleneck event occurred. The overall results assigned the goat individuals (based on their genotypes) to the same breeds from which they were sampled, except in a few cases. The individuals' genotypes were sufficient to provide a clear distinction between the Somali goat breed and the others. In three factorial dimensions, the results of a correspondence analysis indicated that the total variation for the first and second factors was 48.85 and 31.43%, respectively. Consequently, Jabali, Bishi, and Tohami goats were in separate groups. The Jabali goat was closely related to the Bishi goat. Somali goats were distinguished from each other and from individuals of the other three goat breeds. The markers were successful in assigning individual goats to their breeds, based on the likelihood of a given individual's genotype.

Key words: Goat; Microsatellite; Individual assignment test; Conservation