



Genetic diversity analysis of an indigenous Chinese buffalo breed and hybrids based on microsatellite data

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ABSTRACT. Chinese native buffaloes have faced the threat of extinction, along with an increase in crossbreeding with domesticated river buffaloes; consequently, conservation of local buffalo genetic resources has become a priority. A Chinese native breed, Jianghan, is often crossed intentionally and unintentionally with imported breeds from India and Pakistan, Murrah, and Nili-Ravi. A total of 128 buffaloes of the breeds Jianghan, Murrah, and Nili-Ravi and their presumed hybrid offspring were genotyped for 10 microsatellite markers. Heterozygosity and Wright's F-statistics were calculated to determine the genetic variation in those populations. The observed average heterozygosities ranged from 0.836 (Murrah) to 0.986 (Jianghan), higher than the expected heterozygosities and all the inbreeding values within the populations were negative. The genetic distances between the presumed hybrid buffaloes and the two imported river type dairy buffalo breeds (Murrah and Nili-Ravi) were lower than with the native Jianghan, indicating strong contributions of the imported breeds to this presumed hybrid buffalo population. This information will be useful for

the development of rational breeding for the dairy buffalo industry and for conservation strategies for the Jiangnan buffalo.

Key words: Chinese indigenous buffalo; Microsatellite; Conservation; Hybrid offspring