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**Czech Journal of Animal Science**

**Genetic diversity and relationship between genetic distance and geographical distance in 14 Chinese indigenous chicken breeds and red jungle fowl**

Bao W.B., Shu J.T., Wu X.S., Musa H.H., Ji C.L., Chen G.H.:

**Czech J. Anim. Sci., 54 (2009): 74-83**

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Genetic diversity and the relationship between genetic distance and geographical distance in red jungle fowl and 14 Chinese indigenous chicken breeds were evaluated using 29

microsatellite loci. The number of alleles per locus ranged from 2 to 25 and the average expected heterozygosity and PIC of all loci were 0.6683 and 0.50, respectively. The average number of alleles per locus ranged from 3.41 in Gushi chicken breed to 6.28 in Wannan Three-yellow chicken breed. The overall expected heterozygosity of 15 Chinese chicken breeds was  $0.6686 \pm 0.0254$  and all breeds showed relatively large heterozygosity. The average of genetic differentiation among populations was 16.4% ( $P < 0.001$ ). Red jungle fowl and Gushi chicken had distant genetic relationship from other breeds, while Huainan Partridge and Tibetan chicken were more closely related with other breeds. The results did not provide enough support for a significant correlation between the genetic and geographical pair-wise distances.

**Keywords:**

genetic diversity; microsatellite; genetic distance; geographical distance; chicken

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