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# Assessment of genetic variability in Marwari breed of Indian meat goat using microsatellite DNA

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Marwari goats, a highly prolific breed distributed widely in the western part of Rajasthan of India is well adapted to the arid environment, grows faster, bred efficiently, can tolerate higher salt loads, and requires less water than many other species of livestock in the region. These unique characteristics of this breed require its molecular characterization, genetic differentiation and relationships with other breeds.Fifteen microsatellite markers selected on the guidelines of ISAG and FAO's DADIS (Domestic Animal Diversity Information System) MoDAD program. The allele and genotype frequencies, heterozygosities and gene diversity were estimated. A total of 74 alleles were contributed by Marwari goat across all 15 microsatellite loci. The number of alleles per locus varied from two (ILSTS-087) to 9 (ILSTS-058) alleles, with a mean of 4.93 whereas the effective number of allele varied from 1.35 (ILSTS-005) to 3.129 (ILSTS011) with a mean of 2.36. The effective number of allele is lesser than observed number at all the loci. Allelic sizes ranged from 125 bp (ILSTS-028 and ILSTS-033) to 650 bp (ILSTS-011 and ILSTS-019). The expected heterozygosity ranged from 0.240 (locus ILSTS-005) to 0.681 (locus ILSTS-011), with an average value of 0.544. The observed heterozygosity (Ho) ranged from 0.1428 (locus ILSTS-087) to 0.9285 (locus ILSTS-034), with an average value of 0.5485 indicates substantial and very good number of heterozygotes, in the population. The highest polymorphic information content (PIC) value (1.1886) was observed at ILSTS-044 locus and least (0.0768) at ILSTS-065 locus for Marwari goat. Reasonably high PIC values observed for most of the marker with an average of (0.78096) are indicative of the usefulness of microsatellites biodiversity evaluation in this breed.

## Biography

G C Gahlot is currently Professor (ABG) and Incharge of Molecular Genetics Laboratory, Department of Animal Breeding & Genetics, Principal Investigator of All India Coordinated Research Project on Goat Improvement and Nodal Officer, RAJUVAS, Bikaner (Rajasthan), India. He has completed his BVSc & AH (1984) from University of Udaipur, India and PhD (2001) from Rajasthan Agricultural University, Bikaner (Rajasthan) India. He has more than 25 years teaching/research experience. He guided 7 MVSc students out of which 5 students worked in the field of Molecular Genetics. To his credit he has 38 research publications, 46 Research articles presented/published in symposium/conferences, 9 Technical reports published, 10 T.V. and Radio broadcast, 10 popular hindi leaflets/article, life member of 5 professional associations. He also worked as Principal Investigator of ICAR Research Schemes and DBT projects.

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