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### Association analysis of novel SNPs in *BMPR1B*, *BMP15* and *GDF9* genes with reproductive traits in goats

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Being a high prolific and early maturing breed, Black Bengal goats are interesting genetic materials to underpin the genetic mechanism of prolificacy and sexual precocity. In the present study, novel SNPs in *BMPR1B*, *BMP15* and *GDF9* genes were genotyped to evaluate their association with the reproductive traits. PCR-RFLP and tetra primer ARMS-PCR based protocols were developed for genotyping six novel SNPs viz., T (-242) C in *BMPR1B*, G735A and C808G in *BMP15* and C818T, A959C and G1189A in *GDF9*. Linear mixed model for association of these SNPs with litter size and linear fix model for other traits was employed. The effect of season and parity was highly significant ( $p \leq 0.01$ ) on litter size but effect varied with change in locus combination. However, effect of genotype and year of birth was non-significant on litter size. For age at first heat, age at first service and age at first kidding, effect of year of birth and genotype was found non-significant. The effect of season of kidding was found non-significant on age at first heat and age at first service but significant ( $p \leq 0.05$ ) on age at first kidding for all loci except combined genotype. The regression of age at sexual maturity on age at first service and regression of age at first service on age at first kidding was highly significant ( $P \leq 0.01$ ) indicating the influence of preceding reproductive events on subsequent ones. Further studies with more number of breeds and animals exploring association of these novel SNPs with reproductive traits might be fruitful.

#### Biography

Sonika Ahlawat is working as a scientist in National Bureau of Animal Genetic Resources, India. She has published more than 15 research articles in reputed journals.

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