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ASSOCIATION BETWEEN THE PROLIFICACY OF ROMANOV SHEEP BREED AND FECUNDITY GENE, GROWTH DIFFERENTIATION FACTOR 9 GENE AND PROLACTIN GENE GENOTYPES

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ABSTRACT

Prolificacy data of Romanov sheep breed were retrieved from Sekhra Station (Jordan) through five parities. The data were used for studying the effect of Fecundity (FecB), Growth Differentiation Factor 9 (GDF9) and Prolactin genes on the prolificacy of Romanov ewes. GDF9, FecB and Prolactin genes genotypes were investigated in Romanov ewes by using the PCRRFLP technique. The Mixed Model of SAS software was used for analyzing the data. The different gene genotypes and the parity were inserted in the Model as fixed effects while the dams were inserted as Random. Fecundity gene was observed to be monomorphic, the wild type genotype of Fecundity gene was found in the Romanov ewes. Prolactin and GDF9 genes were observed to be polymorphic in Romanov. The results revealed non-significant differences in the prolificacy of the ewes that carry AA and BB of Prolactin gene genotypes. The GDF9 gene genotypes showed significant ($P<0.0001$) differences in prolificacy. The homozygous MM genotype ewes produced 0.792 more lambs born per lambing than the heterozygous NM genotype. Selection based on GDF9 mutation may help in improving the prolificacy of Romanov

sheep.

Key words: Romanov Sheep, fecundity, gene association