**Estimation of genetic parameters and detecting major genes for some growth traits in northern Khorasan Kordi sheep using different statistical methods**

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**Abstract**
In this study, a total of 7518 records of body weights at birth weight, 3, 6, 9 and 12 months in the Kordi sheep of North Khorasan breeding station, Hossein Abad, Shirvan, were used for genetic analysis. In the first part, 6 univariate animal models were compared for estimation of heritability and the most appropriate model was determind based on Akaike Information Criterion for each trait. Genetic and phenotypic correlations of the studied traits were estimated using bivariate animal model. In the second part, the probability of segregation for major genes was studied using simple tests (Normality, Bartlet, Levene and Fain) for residuals and Bayesian analysis iBay software. Direct heritabilities based on the most appropriate model for birth weight, 3, 6, 9 and 12 months weights, estimated 0.12, 0.41, 0. 34, 0.0009 and 0.21, respectively. Genetic correlations between 6, 9 and 12 month weights were highly positive. So, to improve the economic characteristics should be considered in selection index. Segregating major genes for all traits were approved. So, mixed inheritance model, was better than the only poly-gene model for these traits. According to the approved segregating major gene with Bayesian analysis, molecular techniques to map the major genes involved in these traits can be used successfully.

**Key words:** Sheep, Major gene, heritability, Bayesian methods