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M. Sc. Thesis on Genetic and Breeding animal

Subject:

Estimation of genetic parameters of growth traits in Kurdi sheep using Bayesian method

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Abstract

The objective of the present study was to comparison different models for estimate direct and maternal heritability in Kurdi sheep of North Khorasan by Bayesian approach via Gibbs sampling. For this purpose, data of birth weight (BW), 3 (3W), 6 (6W), 9 (9W) and 12 (12W) month weights that collected during 23 years (1990 to 2013) by Sheep Breeding Station of Shirvan were used. Estimation of genetic parameters for growth traits by using of six animal models was carried out by ThrGibbsf90 software. The most suitable model for each trait was determined based on Deviance Information Criterion (DIC). The estimated direct heritability for BW, 3W, 6W, 9W and 12W traits were 0.172± 0.0007, .0.257± 0.0007, 0.351± 0.0006, 0.120± 0.0007 and 0.131± 0.0009, respectively. In this research the genetic material effect was significant on BW, 3W and 6W traits and proportion maternal permanent environmental variance of phenotypic variance was varied of 0.055 (12W) to 0.186 (BW). Although estimated heritability of maternal effects for body weight was lower in older ages, but the result of this research show that using the maternal fix effects (maternal genetic gain and permanent environmental effect) in the statistical model could cause in more accurate estimation of genetic parameters for growth traits in all ages.

Keywords: Animal Model, Body Weight, Gibbs Sampling, Heritability, Kurdi sheep.