

عنوان مقاله:

Genetic parameter estimation and model selection for hot carcass weight in matebele goat

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خلاصه مقاله:

Genetic parameter estimation for simple carcass traits has been confined to the improved goat breeds worldwide unlike in the unimproved breeds in developing countries where goats are numerous. Variance components for additive direct, additive maternal, permanent environmental maternal effects, the covariance between additive direct and maternal effects were estimated by restricted maximum likelihood, fitting five animal models from 2341 (1359 males; 982 females) hot carcass weight pedigree records collected over a period of 13 years (1984- 1997) of indigenous Matebele goat of Zimbabwe. All investigated models included a random direct genetic effect, but different combinations of random maternal genetic and permanent environmental maternal effects as well as direct-maternal genetic covariance. The analytical models included fixed effects of sex, age at slaughter and year of slaughter. The direct heritability (h^2_a) ranged from 0.14 to 0.26 when the maternal genetic effects were included in the model, whereas h^2_a estimate was 0.26 when maternal effects were excluded. The maternal heritability (h^2_m) was 0.00 when only maternal genetic effects were included in the model and were 0.05 and 0.10 when the permanent environmental effect of the dam was added. The permanent environmental effect of the dam was negligible. A positive covariances between direct and maternal genetic effects (σ^2_{am}) was observed when maternal genetic effects and permanent environmental maternal effects were accounted for in the model. A simple animal model with direct additive genetic effects as the only random effects other than the residuals was the best model for genetic evaluation of hot carcass weight in indigenous Matebele goat.

کلمات کلیدی:

Variance components, Animal model, Hot carcass weight, Indigenous matebele goat

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