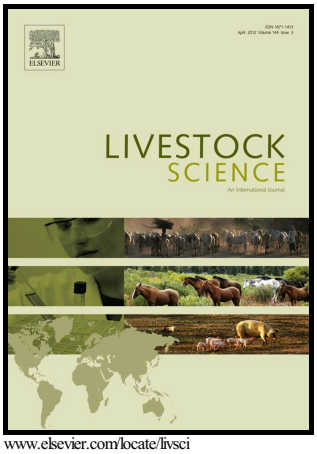

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Genetic and Phenotypic Parameters for Feed Efficiency in Indigenous Chicken in Kenya

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Abstract

This study aims to determine the genetic and phenotypic parameters of net feed efficiency (NFE) traits namely Residual feed intake (RFI), residual gain (RG), and residual intake and gain (RIG) along the growth curve of indigenous chicken in Kenya. Feed intake and body weight data was collected on 107 experimental birds on a daily and weekly basis, respectively from 77 days to 140 days of age. Random regression sire model was used for analysis, fitting Legendre polynomials as basis function. Sex, hatch group and interaction between sex and cluster constituted fixed effects in the model while additive genetic and permanent environmental effects were fitted as random variables. A heteroscedastic residual variance was modelled by grouping the test period into nine classes. The orders of polynomial fit for additive genetic and permanent environmental effects in the model were 4 and 5; 3 and 4; and 5 and 5; for RFI, RG and RIG, respectively. The additive genetic variances for RFI and RG were higher at the