

Genetic parameters for reproductive traits in a strain of laying hens

Rosa, JO¹; Pires, BC²; Chud, TCS³; Buzanskas, ME⁴; Cruz, VAR⁵; Ledur, MC⁶; Schmidt, GS⁷; Munari, DP⁸

^{1,3,4,5,8}Universidade Estadual Paulista, UNESP, Jaboticabal, SP; ^{6,7}Embrapa-Centro Nacional de Pesquisa de Suínos e Aves, Concórdia, SC

jaquerosa@hotmail.com

Keywords: Genetic parameters, Laying hens, Bayesian, White leghorn, Selection

The knowledge of the genetic parameters estimates for economically important traits in laying hens is relevant because the selection should be practiced for improve these traits in breeding programs. The aim of this study was to estimate the genetic parameters for fertility (FER), hatchability (HAT) and birth rate (BIR) in a strain of laying hens (CC) developed by Embrapa Suínos e Aves. The genetic parameters for the traits studied were estimated by Bayesian inference. The model included the fixed effects of generation and additive and residual random effects. The data analyzed included 1086 animals of three generations. The mean of heritability estimates and their standard errors of Monte Carlo were 0.47 (0.01), 0.24 (0.00), 0.42 (0.01) for FERT, HAT and BIR, respectively. The results found evidenced the existence of additive genetic variability. Thus, the genetic progress is possible selecting individuals with high breeding values for fertility and birth rate. The genetic correlations and their standard errors estimated from Monte Carlo between HAT and BIR was 0.83 (0.01), FERT and BIR was 0.91 (0.00) and FERT and HAT was 0.58 (0.02). These estimates indicated that these traits are influenced of the same additive genetic effects. The selection toward fertility would increase birth rates and hatchability and to provide the response indirect selection, enabling increased productivity.

Financial support: CAPES, CNPQ.