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Heretability estimate and breeding values of dairy cows

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The objectives of this study are to estimate genetic parameters and breeding values for dairy cows. Data were consisted of 602 records of 231 dairy cows from 03 dairy farms. These cows were born between 2005 and 2010, ranging from first to eighth lactation and included pedigree information. Animal model, based on the REML method, is applied to estimate the heritability, genetic correlations for production and fertility traits. The BLUP technique is used to estimate breeding values for 305- milk yield. The results show that heritability of birth weight, first calving weight, 305-milk yield, fat and protein percentage and calving interval are approximately 0.54, 0.24, 0.37, 0.28, 0.27 and 0.33, respectively. In addition, genetic correlations between birth weight and first calving weight, 305-milk yield and fat, 305-milk yield and protein percentage, among fat and protein content and between 305-milk yield and calving interval are about 0.77, -0.46, -0.24, 0.19 and 0.06, respectively. Genetic correlations among milk production traits and between 305-milk yield and calving interval show a weak association whereas the strong positive genetic correlation is between birth weight and first calving weight. Subsequently, the breeding values for 305-milk yield increase only 23.5 kg per lactation per year.

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