Abstract

Genetic improvement of livestock through breeding (select superior animals as next generation parents), is a sustainable approach to increase animal production. The success rate of breeding depends on the role of genetics in making differences between animals, identify animals with desired genotypes, and the selection for the next generation parents. Each progress on animals economic traits takes place in according to the availability of genetic information, the usage of aproprate selection methods and genetic trends estimation. It should be noted that animal genetic stractures is influenced by genetic process and it will be different by years that will cuase doubts in genetic basis variance homogeneity assumptions; hence, using an animal model with the effects of genetic groups mabe able to consider the effects of animals with unknown pedigree.

The registered records of National Livestock Breeding Center (1346 to 1392) were used. Data preparation and analysis were down by R-3-2. reproductive traits were the interval between calving to first service (CTFS), the interval between first service to conception (FSTC), calving interval (CI).

The analysis of genetic parameters showed the affect of genetic groups in variance analysis decrease genetic variances and estantard errors of all traits in three lactatin periods; as the residual variance do too. The heritability of CI and CTFS were decreased by affecting genetic groups in the model, but had no effects on FSTC and obtained a constants a numerical results (0.003).

According to the obtained results, the estimation of spearman correlation changes in this traits between model 1 (animal model without genetic groups) and model 2 (animal model with genetic groups) had a significant effect (p<0.0001). therefore, it was determined the slight changes in the variance components between model 1 and 2 had a significant effect on the animals ranking, and also it had a reduction trend from first to third calving period.

The mean of standard error and the accuracy of breeding values was significant (p<0.001) in both models evaluations of all traits. Most of results obtained in model 1 was lwss than model 2, but there was no systematic trends in different calving periods of desired traits. The results of genetic ternds show that all traits except of FSTC, had a reduction in their trends of both models, otherwise, estimated values (both negative and positive) of model 2 for all three traits were higher than stimated values in model1.

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Estimation of Genetic Trends of Reproductive Traits of Iranian Holstein Cattle by Animal Model with Genetic Groups

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