Abstract

The aim of the current study was to estimate breeding value and genetic trend of milk yield, fat and protein traits of Holstein cattle population based on an animal model ignoring genetic groups (Model 1) and including genetic ones (Model 2). The software R 3.0.2 was used. For the animals with unknown parents, the genetic groups were defined according to birth year and sex. The data of Iranian Holstein cattle collected from Center of Animal Breeding of Iran since 1994 to 2014. The findings of current study indicated that including genetic groups in Model resulting in decrease of additive genetic variance. The Spearman correlation between breeding values in all 3 traits in 3 periods of calving demonstrated a significant difference in cattle sex. In corporative genetic groups (10 per cent of males), rank correlation between Models 1 and 2 was estimated less than pure sex groups (males and females). And breeding value mean tended to reduction in all of the periods. The rate of genetic trend in first period with including Model 2 was estimated 63.06, 1.346 and 1.542 for milk yield, fat and protein traits, respectively. The results evinced that adding genetic groups in populations with unknown records results in accurate evaluation of breeding values.

Keywords: Holstein cattle, Genetic groups, Genetic trend, Rank correlation

Zabol University
Faculty Of Agriculture
Department Of Animal Science

The Thesis (Msc) Submitted to the Graduate for the Degree of Msc
in Genetic and Animal Breeding

Title:

Estimated genetic trends for production traits of cows Iranian Holstein using animal models With consider genetic groups

Supervisor:
Dr. Mohammad Rokouei

Advisor:
Dr. Ahmad Moghimi Skand Abadi

By:
Yahya Khaleghi far

September2014