



Management of graduate education
School of Agriculture
Department: Animal Science
Dissertation for obtaining a specialized doctorate degree
Genetics of livestock and poultry breeding

Title:

**Genetic investigation of reproductive traits of Iranian
Holstein cows and determination of their most suitable
level based on production performance**

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January 2023

Abstract:

Fertility is one of the most important economic traits in dairy cattle breeding, and neglecting it, in addition to negative effects on functional traits such as milk production, reduces the profitability of the dairy cattle breeding industry. For this purpose, by searching the databases of articles, 38 articles related to fertility in different herds of dairy cows were collected and various parameters including heritability, repeatability, descriptive characteristics of traits including average, minimum, maximum, The standard deviation as well as the genetic correlations between traits that were present in at least three reports were extracted as a new variable and statistically analyzed with SAS version 2.9 and Comprehensive Meta-analysis software. The studied traits include age at first service (AFS), age at first calving (AFC), calving interval (CI), days open (DO), number of service (NS), gestation length (GL), first service leading to conception (FSTC) and no recurrence rate at 56 days (NRR). The average traits of the number of open days, age at first calving, age at first service, calving interval and length of pregnancy period in terms of days and traits of first service leading to conception and non-return rate in percentage and number of services per pregnancy They were equal to 139/2, 888/3, 501/6, 411/8, 278/8 days, 62/8, 21% and 2.1%, respectively. Also, the heritability of the mentioned traits was estimated as 0.06, 0.2, 0.3, 0.06, 0.1, 0.1, 0.07 and 0.08 respectively.

Key words: genetic evaluation, production index, heritability, heat-humidity index