

# DYPE

## Eventos

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Genetic and phenotypic parameters for age at first calving and calving interval of Holstein cows

### **Genetic and phenotypic parameters for age at first calving and calving interval of Holstein cows - (Jonas Costa Dotta (Universidade Federal do Tocantins), Alencariano José da S. Falcão, Cláudio Nápolis Costa, Glaucyana Gouvea dos Santos, Altair Antonio Valloto, Vítor Hugo Martinez Pereira)**

The herd reproductive performance has a direct effect on profitability of a dairy farm. Records related to reproductive traits are usually used in dairy herd management but their inclusion in selection decisions are still limited. The objective of this study was to estimate genetic and phenotypic parameters as well as genetic and phenotypic trends for age at first calving (AFC) and calving interval (CI) in Holstein cattle in Brazil. Data used in this study were made available by the Brazilian Association of Holstein Cattle Breeders. After edited, they included records from 46,395 cows calving in 589 herds between 1991 and 2012. Variance components were estimated by restricted maximum likelihood using the MTDFREML program. Model for AFC included the fixed effects of herd-year and season of birth and random effects of sire by herd interaction, animal and residual. For CI, the model included the fixed effects of herd-year and season of calving, age at first calving and 305d-milk yield as covariates and the random effects of sire by herd interaction, animal and residual. Averages for AFC and CI were  $25.9 \pm 3.53$  mo and  $394.1 \pm 47.58$  days, respectively. The heritability for AFC was  $0.36 \pm 0.015$  and for CI  $0.13 \pm 0.01$ . The phenotypic trend was favorable and significant for AFC ( $-0.16 \pm 0.03$  mo yr<sup>-1</sup>;  $R^2 = 0.63$ ) but not for CI. The genetic trends were positive and significant for AFC in cows ( $0.008 \pm 0.002$  mo yr<sup>-1</sup>;  $R^2 = 0.39$ ) and in bulls ( $0.21 \pm 0.059$  days yr<sup>-1</sup>;  $R^2 = 0.41$ ) and for CI in cows ( $0.35 \pm 0.07$  days yr<sup>-1</sup>;  $R^2 = 0.90$ ). Estimates of phenotypic trends showed a decrease in AFC but no change in CI during the period. However, genetic trends revealed unfavorable increase in AFC and CI, suggesting attention to these traits in selection programs to increase gains observed by herd management strategies because heritability estimates indicating genetic variability in the population would be make possible to obtain genetic gains by selection for AFC and CI in Holstein cattle.

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# Reunião Anual da Sociedade Brasileira de Zootecnia

01 a 04 de agosto de 2016

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