# Genetic parameters for somatic cell score in Croatian Holstein cattle

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## Abstract

Somatic cell score is an important indicator of udder health and the prevalence of clinical and subclinical mastitis in dairy herds. The objective of this study was to estimate genetic parameters for somatic cell score in the Croatian Holstein cattle. Data consisted of 656,272 test-day records for 45,953 Holstein cows. Production data was recorded using the AT4 or BT4 method and taken from the central database of the Croatian Agricultural Agency. The number of animals in pedigree was 94,294. In order to obtain a normal distribution, logarithmic transformation for somatic cell score was performed. A single-trait repeatability fixed regression test-day model was used to estimate genetic parameters. Fixed effects in the model were: parity, region, and calving season. Days in milk was fitted using Ali-Schaeffer lactation curve nested within parity, while age at first calving was modelled as quadratic regression. Direct additive genetic effect, herd-year of test-day, and permanent environmental effect of cow within parity were included in the model as random effects. Variance components were estimated using Residual Maximum Likelihood method as implemented in the VCE-6 program. The estimated heritability was 0.182±0.002. Permanent environmental effect explained 20% of phenotypic variation, while herd-year of test accounted for another 7% of variability. Results provide genetic parameters for the application of genetic evaluation for somatic cell score in Croatian Holstein cattle.