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Genetic and phenotypic parameters of racing performance in Thoroughbred horses in Poland

S u m m a r y

Genetic and phenotypic analysis of the Thoroughbred's racing performance was the aim of this study. Variance components were estimated by DFREML method. The data consisted of 2042 horses running and 17 208 runs over the period of 2000-2006. The distances of flat races ranged from 1000 to 3200 m. The population descended from 240 sires and 1054 dams. Pedigrees were at least three generations deep. Fixed effects of season, age, sex and trainer were significant. Heritability of the log of earnings per race was 0.128 (± 0.028) and per rank was 0.206 (± 0.040). Repeatability was 0.349 (± 0.052) and 0.552 (± 0.08), respectively. The racing career of three groups of horses with regard to age was analyzed. The genetic correlation between log of earnings and rank was very high 0.993 (± 0.018). The genetic trends for both traits were positive: 0.014 and 0.015, respectively.