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Genetic and phenotypic parameters of plane racing performance in Purebred Arabian horses in Poland

S u m m a r y

The aim of this study was to estimate genetic and phenotypic parameters of Polish Purebred Arabian horses based on their racing results from 2000-2006. The data include 14 086 performances of 1560 horses descended from 241 sires and 739 dams. To analyse the performance we applied two criteria: log of earnings per race and ranking value in a race. Genetic and phenotypic parameters were estimated by DFREML [7]. Decreasing number of Purebred Arabian horses participating in races was observed during analyzed years. Heritability for log of earnings per start was 0.20 (± 0.03) and for rank was 0.35 (± 0.04). Repeatability equaled to 0.29 (± 0.04) and 0.5 (± 0.05), respectively. The genetic correlation of the two criteria was 0.99 (± 0.01) and the phenotypic correlation was 0.38 (± 0.02). The genetic trends for both traits were positive: 0.033 and 0.031, respectively. Ranking value seems to be the appropriate criterion to be taken into account in genetic improvement of racing ability of Polish Purebred Arabian horses.