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Genetic correlations between racing performance at different racing distances in Thoroughbreds and Arab horses

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[fulltext]

The purpose of this study was to find out whether abilities to win races of different distances are different traits. Data included information on 14 665 starts of 1 646 Thoroughbreds, aged 2 to 9 years

and on 10 862 starts of 1 145 Arab horses, aged 3 to 10 years. The data comprised seven racing distances for Thoroughbred horses, i.e. 1 000, 1 200, 1 300, 1 400, 1 600, 1 800, >1 800 m, and five for Arab horses, i.e. 1 400, 1 600, 1 800, 2 000 + 2 200, >2 200 m. Placings at the finish (square root) of different racing distances were treated as different traits and analysed by a two-trait animal model. The highest heritability (0.16) was obtained for the shortest distance in Thoroughbreds. Heritability for longer distances was much lower (0.04–0.09). The heritability estimates for Arab horses are very low for all distances (0.02–0.08). Genetic correlations between racing distances ranged from 0.54 to 0.98 in Thoroughbreds and from 0.95 to 0.99 in Arab horses. Genetic correlations in Thoroughbreds decreased as the differences of each racing distance increased whereas they remained high and constant in Arab horses. It means that we discuss very much the same trait measured only at different race distances for Arab horses but a little bit different in the case of Thoroughbreds.

Keywords:

Thoroughbreds; Arab horses; racing performance; genetic correlations; animal model

[fulltext]