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PEDIGREE ANALYSIS OF TRAKEHNER HORSES IN LITHUANIA

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The knowledge of population structure is one of the most important goals for the conservation of animal genetic resources, especially in the context of natural ecosystem stability. Trakehners are a transboundary riding horse breed bred in accordance with the principles of pure breed. The aim of this study was to evaluate the parameters of small population of Lithuanian Trakehner horses based on pedigree records.

3500 Trakehners pedigree data with birthdates since 1923 to 2018 were analyzed by software system POPREP. The average pedigree completeness, population size, number of inbred horses, inbreeding coefficient, generation intervals and effective population size were calculated.

The average pedigree completeness for Trakehners born within the last 10 years: 1 generations deep 100%, 2 generations deep – 96%, 3 generations deep – 89.6%, 4 generations deep – 82.7%, 5 generations deep – 75.6%, 6 generations deep – 67.6%. The average Trakehners population size is 1062 horses. Since 2008 population decreased by 34%. The effective population size was 73 in 2017. At an average 79 Trakehners were born per year and at an average 68% of them were inbred. The average inbreeding coefficient among inbred horses was 0.04 (SD – 0.03) in 2008 and 0.03 (SD – 0.02) in 2017. The generation interval has decreased from 13 to 10 years within 10 years period.

Performed parameters indicated that population of Lithuanian Trakehner horses is in endangered-maintained state. The conservation program should be continued to keep it on the safe state in the future.