

INBREEDING IN THE HUNGARIAN THOROUGHBREDS**BOKOR, Á.¹, SEBESTYÉN, J.², SZABARI, M.¹, STEFLER J.¹**¹Univeristy of Kaposvár, Faculty of Animal Science, H-7400, Kaposvár, Guba S. út 40.²Univeristy of Kaposvár, Health Center, Deer Branch, H-7475, Bőszénfa, Malom u. 3.
bokor.arpad@ke.hu

Since the 19th century Hungary has numerous Thoroughbred imports. The number of stallion, broodmare and yearling import were decreased after the 2nd World war. The number of racehorses (Thoroughbreds) also decreasing in the last two decades. The population is getting smaller; however the import of the yearlings was increasing in the last years. The aim of the authors was to calculate inbreeding coefficient for all Thoroughbred that raced between 1998 and 2002 in Hungary and find out the effect of inbreeding on the racing performance. During the examined period (1998-2002) 17 448 runs of 1 131 Thoroughbred horses competing in 1 856 races were considered. The final general handicap weight by year was considered as a performance trait. Horses were progeny of 243 sires and 467 dams, ages ranged from 2 to 12 years, race distances were 900 to 3 200 meters. The pedigree information covered all the available generations and the total number of animals in the pedigree was 13 019. Inbreeding coefficients of the 1 131 raced animals were calculated with different considered generations, like 2-3-4-5-6-7-8-9 and 10; pedigree completeness' (the number of equivalent complete generations) were also computed. The total number of animals were 13 019 and 11 740 ($F > 0$) inbred animals were found. The mean inbreeding of the inbred individuals was 0.08162 and the maximum noted inbreeding was 0.2851. The calculated pedigree completeness of the Thoroughbred horses born in Hungary between 1986 and 2000 was 14.61. The change of the inbreeding status of the population is very small and it's decreasing (-0.002/year); however 13.83% of the examined population has an inbreeding coefficient more then 0.125. This trend will continue because of the numerous imports of broodmares, yearlings and stallions. General handicap weights were collected from the annuals for the examined years. The effect of inbreeding on the general handicap weight was examined as a performance trait of Thoroughbreds to find out some inbreeding depression on it. Effects of sex, racing season and inbreeding coefficients of a given animal were examined via statistical analysis. The inbreeding level of the animal is not showed significant effect on the general handicap weight in any age; however there was an effect of racing season.

Keywords: Thoroughbred, inbreeding, pedigree, general handicap