

## CHANGES IN POPULATION SIZE AND BREEDING PECULIARITY OF LITHUANIAN NATIVE HORSE BREEDS

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**Summary.** At present, the main problem in horse breeding is to conserv Lithuanian native horse breeds. In Lithuania there are three native horse breeds, i.e. old type Žemaitukai, large-type Žemaitukai and Lithuania Heavy Draught. In study population size was expressed as: total number of individuals of a breed alive at a time, total number of animals of breeding age, effective population size. The conservation of the Žemaitukai horse population started in 1994 and the number of stallions and mares in recent years is increasing. The horse breeds developed in 20<sup>th</sup> century have a very dangerous risk status and therefore the numbers of stallions, mares and breeding herds in recent years are decreasing. Population size and its trends are decisive factors in determining the vulnerability of a given population and the need and kind of special conservation actions. Since  $N_e$  largely determines the levels of random genetic drift and inbreeding in a breed both before and after conservation. The effective population size of Lithuanian native horse breeds is low and satisfies of the endangered risk status category. Effective population size for Large-type Žemaitukai and Žemaitukai are below 50, there is the driftless reproduction and, therefore, the survival of the population is uncertain. If the effective population size for our native breeds were above 200, there is would be generally no danger of genetic drift. Therefore, activities have been started to conserve these horse breeds by reproducing herds or animals and to keep mating rules and special mating schemes in order to delay inbreeding and prevent single individuals from getting extreme levels of inbreeding. Adopting of special mating schemes for subdivided populations into at least 4 non-related groups allows to minimize the increasing coefficient of inbreeding for a longer time.

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