

## ARTIFICIAL INSEMINATION IN PIG BREEDING IN ESTONIA

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**Abstract.** The role of a male breeding animal is highly significant in livestock breeding, particularly in pig production due to a very rapid turnover rate of pigs. Application of artificial insemination (AI) is increasing from year to year: in 1997 6 % of the total number of pigs were inseminated artificially, whereas in 2001 the percentage was high (46.5 %). Data of 6601 sows and 1015 boars with 10 411 litters, obtained from database of Animal Recording Centre from 1999 to 2001, was used to analyze heritability of litter size and effect of mating method on fertility traits. The following breed combinations were investigated: Estonian Landrace (EL), Estonian Large White (ELW), Hampshire (H), Pietrain (Pi), EP♂xELW♀, ELW♂xEP♀ and Pi♂xH♀. 9.80 piglets per litter were born by using AI, which was significantly lower (-0.44) than in case of natural mating. Significantly smaller litter size was observed in purebred EL (-0.39) and ELW (-0.62) breeds by using AI ( $P < 0.001$ ). H and Pi♂xH♀ combinations had larger litters at birth when AI was used. Natural mating showed superiority over parities, giving significantly larger litters from 1<sup>st</sup> to 6<sup>th</sup> parities. A rapid increase in application of AI shows that farmers have calculated advantages of AI and found that even in case of a smaller litter size, they do not lose their profit, as they can use better genetic material.

**Keywords:** artificial insemination, natural mating, litter size, breeds, parities.