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„Value-chain based bio-economy 2“

Managing boars in an artificial insemination centre

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The objectives of this study were to analyse some of the aspects of managing boars in the AI centre of the Estonian Pig Breeding Association. The dataset contained records of 133 culled boars between March 2019 and May 2022. Most of them were Duroc (D) boars (85), followed by the Landrace (L; 30) and Large White (Y; 18). Results are presented as means \pm SD. The first ejaculate was collected from the boars at the age of 220 ± 35 days. The youngest was D boars (216 ± 33 days), followed by L (221 ± 33 days) and Y boars (237 ± 44 days). The age for collecting the first ejaculate was more similar over the last three years and the variation between animals was also smaller. Economically it is profitable that boar stays longer in the herd as they then produce more ejaculates during their life span ($r = 0.907$, $P < 0.001$) and therefore, the total number of doses was higher. Longevity was higher for the Y boars (519 ± 180 days), followed by L (472 ± 242 days) and D (420 ± 194 days). The life span of the D and L boars decreased year by year. A total of 6,331 ejaculates were collected from 122 boars, from which 164,001 doses of semen were produced. This means that a mean of 51.9 ejaculates and 1,344 doses of sperm per boar were obtained; 23.6 ± 8.1 doses were produced per ejaculate. A similar number of ejaculates on average was collected from D and L boars (52.7 ± 37.4 and 52.6 ± 2.1 , respectively). The frequency of the ejaculates collection was 3.6 ± 0.80 per month; there was the highest frequency for the D boars (3.9 ± 0.68 ejaculates per month), followed by L and Y boars (3.2 ± 0.85 and 3.0 ± 0.51 ejaculates, respectively). A mean of 23.6 ± 8.1 doses of sperm were produced per ejaculate and the correlation between these was strong ($r = 0.909$; $P < 0.001$). The highest number of doses of sperm per ejaculate was 284 ± 8.5 for Y and the lowest for the L boars (20.3 ± 80 sperm doses per ejaculate). A mean of 23.8 ± 7.5 doses of sperm per ejaculate were obtained from the D boars. The results showed that a significantly smaller number of sperm doses per ejaculate were obtained from the younger boars (<10 months) compared to the older (>12 months) boars of all breeds.