

# SPERM MOTILITY AND VIABILITY IN BOAR SPERM DILUTED IN LONG-TERM EXTENDER CONTAINING DIFFERENT TYPE OF KOFOLA

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## Abstract

The objective of this study was to evaluate the sperm motility and viability of boar sperm diluted in long-term extender containing different types of kofola. Eight sperm rich fractions from 4 fertile boars from one AI centre with motility  $\geq 80\%$  and the number of morphologically abnormal spermatozoa  $\leq 25\%$  were used in this study. Tested types of kofola: mix of spices – KS (cinnamon extract 100mg/l and clove extract 100mg/l) and honey – KH (honey extract 100mg/l) were added to boar semen extender Androstar plus (AS+). Semen was diluted in AS+ as a control (K) and AS+ with addition of different types of kofola in the dilution ratio 1+2. Samples were stored at 17°C and evaluated after 0h, 48h, 92h and 168h storage time for sperm motility and sperm viability. SCA system was used for determined sperm motility (total, progressive, non-progressive and immotile) and kinetic characteristics - straight line velocity (VSL,  $\mu\text{m/s}$ ), average path velocity (VAP,  $\mu\text{m/s}$ ), curvilinear velocity (VCL,  $\mu\text{m/s}$ ), straightness (STR, %), linearity (LIN, %), wobble (WOB, %). Statistically significant differences in total mean values of total sperm motility, progressive and immotile sperm ( $P < 0.05$ ) were recorded between K (94.47, 73.91, 5.53%) vs. KH (85.58, 59.85, 14.43%) and KS (87.10, 60.96, 12.91%). The sperm survival was significantly affected by storage time ( $P < 0.05$ ). Kinetic indicator of speed VCL and LIN reported significant differences between K (57.73  $\mu\text{m/s}$ , 36.16%) vs. KH (49.10  $\mu\text{m/s}$ , 39.52%)  $P < 0.05$ . No differences were found in percentage of sperm viability ( $P > 0.05$ ) between K (77.75%) vs. KH (77.88%) and KS (79.81%). In conclusion, application of tested types of kofola as a potential component to the boar extender unfortunately did not have a positive effect on boar sperm motility, but the sperm viability was not adversely affected.

**Key Words:** Boar semen, extender, kofola, honey extract, cinnamon extract, clove extract, sperm motility, sperm viability