

**Table S2.** Quality parameters of red deer epididymal spermatozoa ( $n = 5$ ) stored in a liquid state at 5 °C that were used for the *in vitro* fertilization of oocytes and artificial insemination of hinds.

Sperm quality parameters	Storage time (days)				
	Day 1	Day 5	Day 7	Day 10	Day 11
MOR (%)	71.9 ± 1.3 <sup>a</sup>	62.2 ± 2.9 <sup>b</sup>	63.2 ± 3.8 <sup>b</sup>	64.5 ± 3.9 <sup>bc</sup>	56.0 ± 3.7 <sup>c</sup>
NAR (%)	84.8 ± 2.2 <sup>a</sup>	81.8 ± 1.6 <sup>ab</sup>	82.7 ± 2.2 <sup>ab</sup>	84.0 ± 2.0 <sup>b</sup>	79.5 ± 1.6 <sup>b</sup>
HD (%)	11.5 ± 1.5 <sup>a</sup>	14.5 ± 0.8 <sup>ab</sup>	14.0 ± 0.8 <sup>ab</sup>	15.4 ± 1.7 <sup>ab</sup>	15.5 ± 1.5 <sup>b</sup>
MD (%)	1.8 ± 0.3 <sup>a</sup>	2.2 ± 0.6 <sup>a</sup>	2.5 ± 0.7	1.0 ± 0.2 <sup>a</sup>	1.5 ± 0.3 <sup>b</sup>
TD (%)	7.5 ± 1.2 <sup>a</sup>	15.7 ± 4.4 <sup>ab</sup>	15.1 ± 4.7 <sup>ab</sup>	14.2 ± 3.7 <sup>b</sup>	23.6 ± 5.6 <sup>b</sup>
PNA <sup>-</sup> /PI <sup>-</sup> (%)	76.2 ± 3.4 <sup>a</sup>	71.2 ± 1.8 <sup>ab</sup>	67.5 ± 2.2 <sup>ab</sup>	60.5 ± 3.8 <sup>b</sup>	61.6 ± 5.1 <sup>b</sup>
SYBR <sup>+</sup> /PI <sup>-</sup> (%)	90.5 ± 0.1 <sup>a</sup>	86.0 ± 2.0 <sup>ab</sup>	86.0 ± 3.2 <sup>ab</sup>	82.0 ± 1.6 <sup>ab</sup>	80.2 ± 1.3 <sup>b</sup>
MMP (%)	93.1 ± 2.0 <sup>a</sup>	90.1 ± 2.4 <sup>ab</sup>	88.1 ± 3.4 <sup>ab</sup>	81.2 ± 4.1 <sup>b</sup>	78.7 ± 3.3 <sup>b</sup>
AO (%)	94.9 ± 1.2	91.5 ± 3.4	94.3 ± 1.8	93.4 ± 0.7	89.2 ± 1.6
YOPRO <sup>-</sup> /PI <sup>-</sup> (%)	88.2 ± 2.0 <sup>a</sup>	67.0 ± 3.0 <sup>b</sup>	66.1 ± 2.5 <sup>b</sup>	67.8 ± 2.2 <sup>b</sup>	59.7 ± 4.2 <sup>b</sup>
YOPRO <sup>+</sup> /PI <sup>-</sup> (%)	3.5 ± 1.2 <sup>a</sup>	15.8 ± 6.3 <sup>b</sup>	15.5 ± 6.5 <sup>b</sup>	12.4 ± 4.3 <sup>b</sup>	18.4 ± 5.7 <sup>b</sup>

MOR, normal sperm. NAR, normal apical ridge acrosomes. HD, head defects. MD, midpiece defects. TD, tail defects. PNA<sup>-</sup>/PI<sup>-</sup>, acrosomal status. SYBR<sup>+</sup>/PI<sup>-</sup>, viability. MMP, mitochondrial membrane potential. AO, DNA integrity. YOPRO<sup>-</sup>/PI<sup>-</sup>, viable, non-apoptotic sperm. YOPRO<sup>+</sup>/PI<sup>-</sup>, apoptotic sperm. Values are expressed as means ± SEM. Differences between means were determined by Student Newman–Keuls post hoc test. <sup>a-c</sup> Values within a row with different superscripts differ significantly at  $p < 0.05$ .