

Supplementary Table S1. ANOVA results showing the effects of boar and sperm source, SRF (sperm-rich fraction) and whole ejaculate (WE) on the quality of fresh, pre-freeze (PF) semen

Sperm parameters	Boar	Sperm source	Boar × Sperm source
	<i>p</i> -Value	<i>p</i> -Value	<i>p</i> -Value
Total motility (TMOT)	0.313	0.177	0.626
Progressive motility (PMOT)	0.072	0.637	0.932
Velocity straight line (VSL)	0.885	0.580	0.217
Velocity average path VAP)	0.317	0.572	0.518
Velocity curvilinear (VCL)	0.472	0.184	0.149
Straightness (STR)	0.742	0.303	0.519
Linearity (LIN)	0.065	0.105	0.933
Amplitude of lateral head displacement (ALH)	0.290	0.190	0.958
Beat cross frequency (BCF)	0.696	0.251	0.367
Mitochondrial membrane (MMP)	0.259	0.281	0.414
Plasma membrane integrity (PMI)	0.071	0.562	0.491
Normal apical ridge (NAR) acrosome integrity	0.799	0.535	0.541
DNA fragmentation (DF)	0.385	0.364	0.366

VSP, VAP, VCL, ALH and BCF parameters were log-transferred prior to analysis. Significant at $p < 0.05$

Supplementary Table S2. Quality characteristics of fresh pre-freeze (PF) boar sperm from the sperm-rich fractions (SRFs) and whole ejaculates (WEs). GSF – good semen freezability; PSF – poor semen freezability

Sperm parameters	SRFs (mean \pm SEM)		WEs (mean \pm SEM)	
	GSF (<i>n</i> = 33)	PSF (<i>n</i> = 35)	GSF (<i>n</i> = 31)	PSF (<i>n</i> = 29)
Total motility (TMOT, %)	87.82 \pm 0.65	86.60 \pm 0.68	87.97 \pm 1.25	88.17 \pm 0.70
Progressive motility (PMOT, %)	63.52 \pm 0.98	65.06 \pm 1.23	64.23 \pm 1.22	65.34 \pm 1.13
Velocity straight line (VSL, μ m/s)	72.82 \pm 1.38	71.29 \pm 1.40	70.43 \pm 1.48	74.50 \pm 1.63
Velocity average path (VAP, μ m/s)	90.38 \pm 1.67	87.67 \pm 1.75	88.95 \pm 1.82	93.47 \pm 2.28
Velocity curvilinear (VCL, μ m/s)	117.74 \pm 2.66	118.85 \pm 2.48	110.07 \pm 1.92	120.14 \pm 3.11
Straightness (STR, %)	80.92 \pm 1.33	81.52 \pm 0.89	79.63 \pm 1.41	80.13 \pm 1.34
Linearity (LIN, %)	62.39 \pm 1.26	60.41 \pm 1.07	64.21 \pm 1.12	62.42 \pm 1.16
Amplitude of lateral head displacement (ALH, μ m)	7.22 \pm 0.26	7.34 \pm 0.19	6.97 \pm 0.32	6.98 \pm 0.26
Beat cross frequency (BCF, Hz)	31.44 \pm 0.82	29.54 \pm 0.77	31.36 \pm 1.08	29.58 \pm 0.83
Mitochondrial membrane potential (%)	88.68 \pm 0.65	89.74 \pm 0.52	86.87 \pm 0.59	88.04 \pm 0.67
Plasma membrane integrity (PMI, %)	88.30 \pm 0.61	87.29 \pm 0.73	85.35 \pm 0.62	84.56 \pm 1.65
Intact acrosome integrity (%)	92.84 \pm 0.71	91.97 \pm 0.56	92.16 \pm 0.61	93.90 \pm 0.74
DNA fragmentation (DF, %)	2.20 \pm 0.29	2.12 \pm 0.27	1.84 \pm 0.32	1.68 \pm 0.57

Differences among the parameters were analyzed with the Tukey HSD post *hoc test*