ESDAR
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EFFECT OF THE pH PRE-ADJUSTMENT IN THE FREEZING AND THAWING EXTENDER ON POST-THAW BOAR SPERM QUALITY

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Introduction and Aim

The pH modification of the freezing extender can improve post-thaw sperm quality, but during thawing the pH is changed in the thawing extender. The aim of this study was to determine the effect of modifying the pH of the freezing and thawing extender on the post-thaw semen quality

Material and Methods

Pool sperm-rich fractions from 5 fertile boars (5 ejaculates/boar)

FREEZING at 0.5 mL straws (1 x 10^9 cells/mL) in a programmable freezer. Lactose-egg yolk-glycerol extender with pH pre-adjusted

Treatments in freezing extender

pH 4 | pH 5 | pH 6 | pH 7 | pH 8 | pH 9

THAWING
37 ºC/20 s in waterbath.
Incubation for 90 minutes

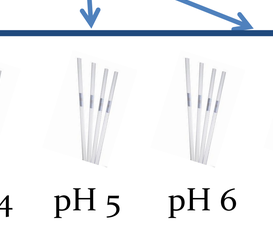
Treatments in BTS thawing extender

pH 4 | pH 5 | pH 6 | pH 7 | pH 8 | pH 9

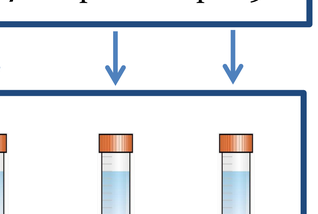
Sperm Assessment

Sperm with Normal Acrosomal Ridge (%NAR)

Phase Contrast Microscopy

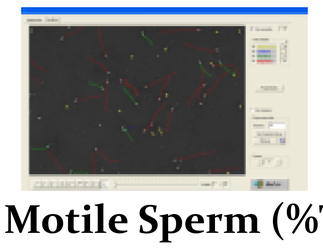


Live sperm (%LS)



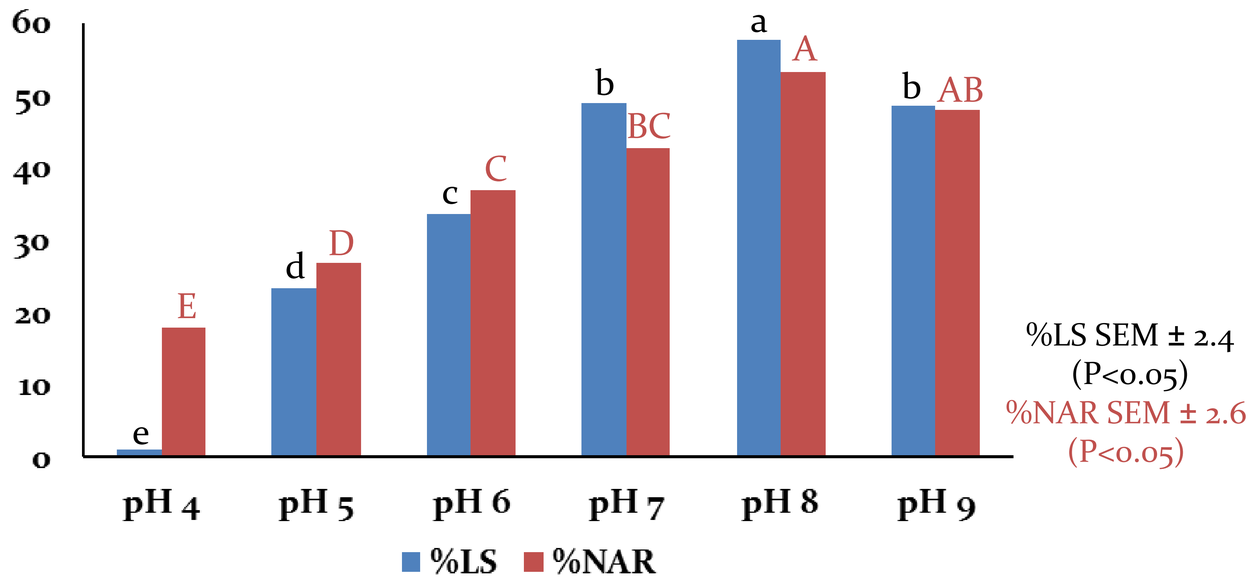
Fluorescence Microscopy (SYBR14/propidium iodide)

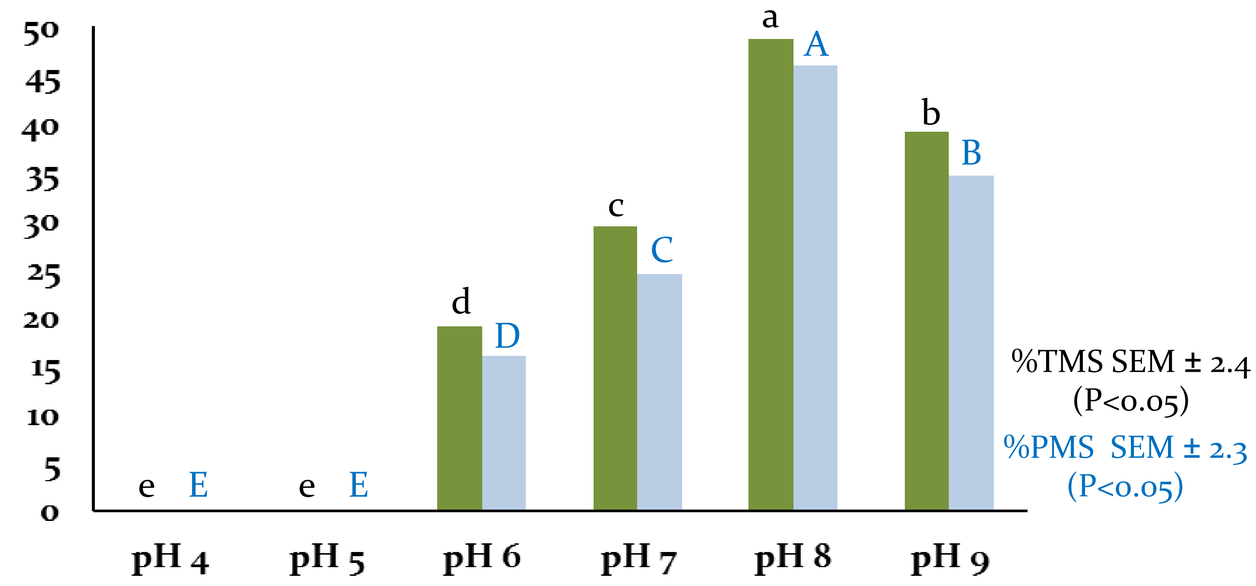
ISAS® (Proiser, Spain)



- **Total Motile Sperm (%TMS)**
- **Progressively Motile Sperm (%PMS)**
- **Kinetic Parameters**

Results





	pH 4	pH 5	pH 6	pH 7	pH 8	pH 9	SEM (P<0.05)
VCL (µm/s)	0^{c}	0^{c}	55.5^{b}	64.7^{a}	64.8^{a}	68.5^{a}	1.7
VSL (µm/s)	0^{d}	0^{d}	36.6^{c}	49.4^{ab}	47^{b}	51.7^{a}	1.5
VAP (µm/s)	0^{c}	0^{c}	42.3^{b}	57^{a}	57^{a}	58.3^{a}	1.7
LIN %	0^{c}	0^{c}	65.8^{b}	76.4^{a}	72.6^{a}	75.5^{a}	1.4
STR %	0^{c}	0^{c}	86.4^{a}	86.8^{a}	82.6^{b}	88.6^{a}	0.9
WOB %	0^{c}	0^{c}	76^{b}	88^{a}	87.9^{a}	85.2^{a}	1
ALH (µm)	0^{c}	0^{c}	2.25^{a}	1.97^{b}	1.9^{b}	2.27^{a}	0.05
BCF (Hz)	0^{c}	0^{c}	7.74^{b}	8.4^{a}	8.26^{a}	8.57^{a}	0.17

Conclusion

The pre-adjustment to pH 8 of the freezing and thawing extender would improve the post-thawing semen quality

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