



# EFFECT OF SEMINAL PLASMA ADDITION AFTER THAWING ON FROZEN-THAWED BOAR SPERMATOZOA



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## OBJECTIVE

This study evaluated whether the addition of different concentrations of seminal plasma (SP) could improve the frozen-thawed (FT) boar sperm quality

## MATERIAL AND METHODS

SP was obtained during the cryopreservation process. Ejaculates from 2 boars were centrifuged (500g for 15 min) and the supernatant collected and stored frozen at -20°C. Frozen semen doses (500x10<sup>6</sup> spermatozoa/ 0.5 ml) from 3 Pietrain boars were used. For each treatment, six straws from different boars were thawed and resuspended in BTS supplemented with SP at 0, 10, 20 and 50% (v/v) and then diluted with the same media to reach a volume of 10 ml. Total motility, progressive motility (CASA), viability, hypoosmotic swelling test, acrosome status and capacitation percentages determined by chlortetracycline (CTC) were assessed at 5, 30, 120 and 240 min after thawing.

## RESULTS

No significant differences were found ( $p>0.05$ ) in the studied parameters, except in acrosome integrity (mean±SEM) at 120 min (0%SP: 18.2±1.6, 10% SP: 18.5±1.5, 20% SP: 26.7±1.7, 50% SP: 20.6±3.0%). According to the CTC staining, the percentages of uncapacitated, capacitated and acrosome reacted (AR) spermatozoa did not differ among treatments. However, significant differences were recorded in the number of uncapacitated spermatozoa regarding time, 16.1±1.5 at 5 min vs 6.5±1.4 at 120 min.

Test	% of SP	N	5 minutes	Sig.	30 minutes	Sig.	120 minutes	Sig.	240 minutes	Sig.
MOT	0%	8	58,13±6,586		49,63±7,623		30,13±8,869		19,88±6,810	
	10,00%	8	63,25±6,469		59,25±8,126		41,00±7,214		22,38±4,602	
	20,00%	8	64,63±7,590	0,32	50,00±5,471	0,799	24,00±7,164	0,26	7,13±3,324	0,145
	50,00%	8	75,63±5,889		53,50±9,065		20,25±7,146		10,75±5,460	
PROG	0%	8	35,63±5,234		33,25±6,293		17,00±5,431		8,38±3,955	
	10,00%	8	35,25±5,031		40,13±7,229		14,50±3,105		4,88±1,469	
	20,00%	8	35,38±6,422	0,807	27,13±4,518	0,298	8,63±3,223	0,191	2,63±1,253	0,411
V/M	0%	8	42,13±6,699		24,25±6,477		6,50±2,732		3,88±2,287	
	10,00%	8	52,25±13,966		46,25±11,847		61,00±6,959		45,75±4,300	
	20,00%	8	54,00±11,276		51,00±7,672		57,25±5,070		44,25±5,483	
ENDO	0%	8	48,13±9,574	0,978	52,50±8,550	0,851	60,00±3,606	0,864	49,00±3,761	0,897
	10,00%	8	48,50±10,012		58,00±9,095		63,50±4,656		48,25±5,921	
	20,00%	8	48,25±8,645		39,00±6,279		31,63±4,053		21,25±2,297	
ACRO	0%	8	47,00±7,121		35,00±4,884		25,88±3,884		15,75±2,250	
	10,00%	8	51,00±5,305	0,91	36,00±4,018	0,91	26,25±4,447	0,699	21,25±3,358	0,395
	20,00%	8	43,75±7,015		39,50±5,500		30,25±4,182		21,38±2,872	
Reaction	0%	8	32,25±2,274		25,63±1,908		18,25±1,666 <sup>a</sup>		21,13±3,210	
	10,00%	8	36,13±4,249		27,00±2,383		18,50±1,535 <sup>a</sup>		19,38±2,420	
	20,00%	8	40,38±4,606	0,459	31,63±2,070	0,177	26,75±1,729 <sup>b</sup>	0,026	28,88±6,303	0,24
Descapac.	0%	8	34,00±3,290		24,38±3,017		20,63±3,070 <sup>a</sup>		18,38±2,283	
	10,00%	8								
	20,00%	8								

	% of SP	N	Media± Error Std	Sig.
Descapac.	10,00%	10	13,20±3,058	
	20,00%	10	14,80±2,719	0,854
	50,00%	10	15,40±2,172	
	Control	10	12,40±2,872	
Capacitacion.	10,00%	10	81,60±3,081	
	20,00%	10	80,80±2,480	0,919
	50,00%	10	82,80±2,603	
	Control	10	83,20±2,653	
Reaction	10,00%	10	2,20±0,867	
	20,00%	10	4,40±0,980	0,173
	50,00%	10	2,40±0,933	
	Control	10	4,40±0,884	

	Significat	Time	N	Media±Error std
Descapac.		5	16	16,13±1,543 <sup>a</sup>
	0,015	60	16	15,50±2,493 <sup>a</sup>
		120	8	6,50±1,402 <sup>b</sup>
Capacit.		5	16	79,75±1,590 <sup>a</sup>
	0,063	60	16	81,50±2,507 <sup>a,b</sup>
		120	8	88,00±1,890 <sup>b</sup>
Reaction		5	16	3,63±0,712
	0,836	60	16	3,00±0,707
		120	8	3,50±1,350

## CONCLUSION

The results suggest that addition of [seminal plasma](#) to the [thawing extender](#) does [not improve](#) semen parameters after thawing.

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