3 RESULTS

Total and progressive motilities of fresh sperm samples varied between the bulls and averaged 58 ± 17 % (mean ± SD, range 33-80 %) and 35 ± 21 % (range 10-60 %) respectively.

Different equilibration times did not influence the post-thaw motility, when using Triladyl™. The results for total motility immediately after thawing varied from 49 ± 13 % (mean ± SD) to 59 ± 8 % for an equilibration time of 8 hr and 4 hr respectively. Progressive motility values measured at the same time (t0) were between 10 ± 8 % after 2 hr of equilibrating and 23.3 ± 7.67 after 4 hr (see FiguresFigure 3.1,Figure 3.3Figure 3.5).

Different equilibration times did also not influence the post-thaw motility, when using AndroMed®. The results for total motility immediately after thawing varied from 42 ± 20 % to 51 ± 14 % for an equilibration time of 5 hr and 4 hr respectively. Progressive motility varied from 11 ± 10 % to 19 ± 13 % for 2 and 7 hr of equilibration time respectively (see FiguresFigure 3.2Figure 3.4 andFigure 3.6).

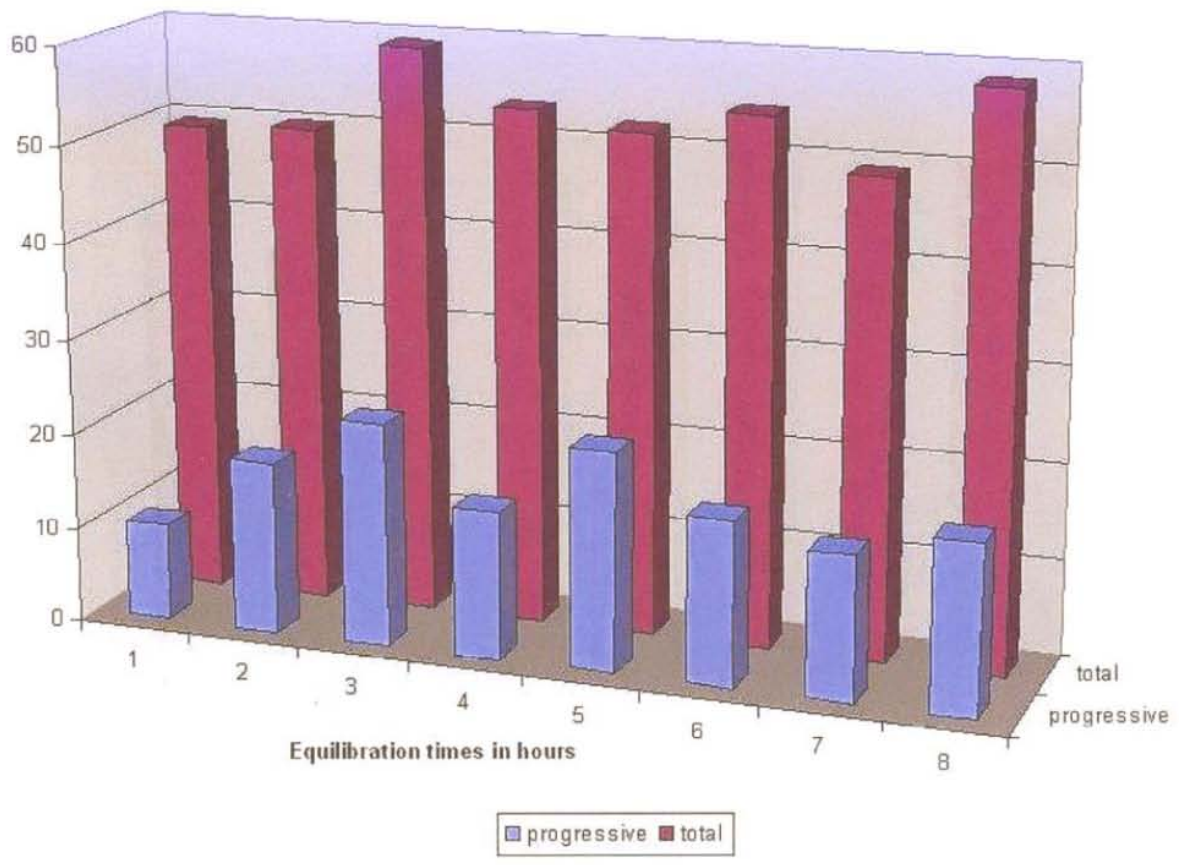

Figure 3.1 Progressive and total motility for epididymal sperm frozen with Triladyl immediately after thawing (mean values of samples taken from 11 buffaloes)

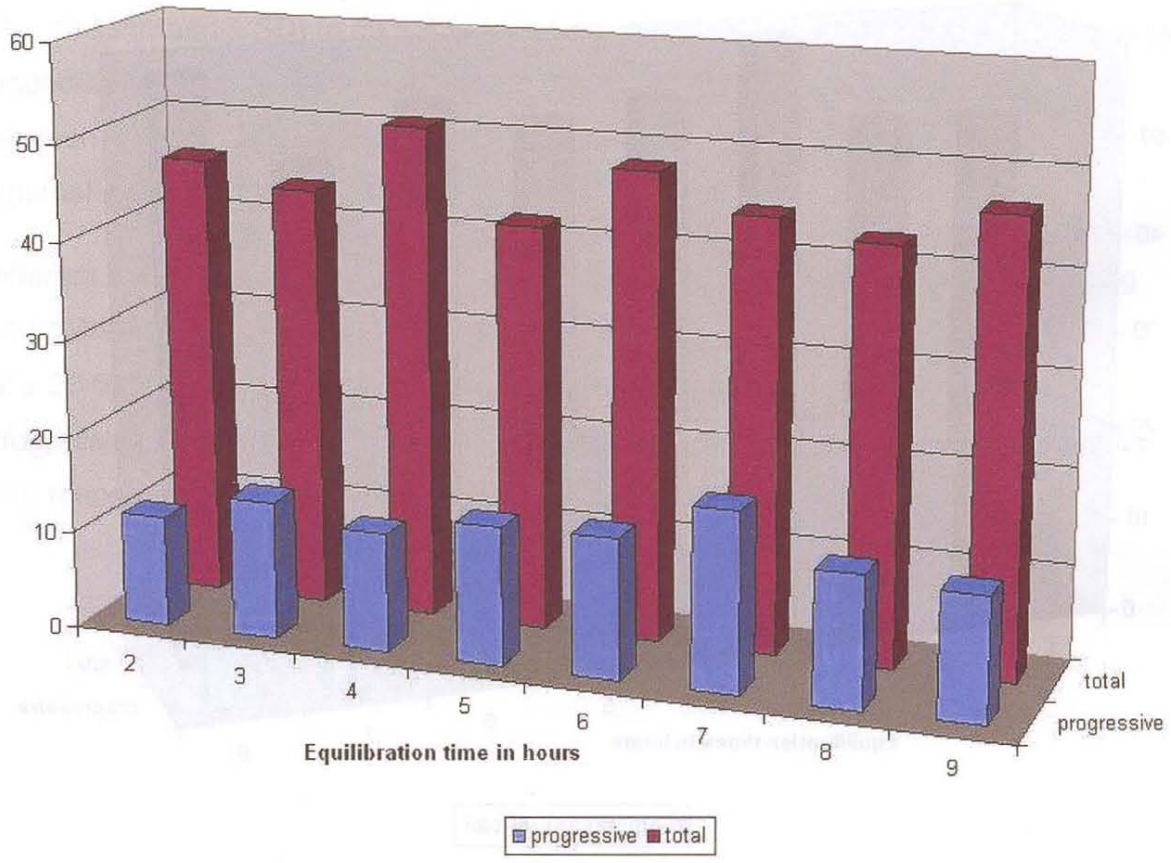

Figure 3.2 Progressive and total motility for epididymal sperm frozen with AndroMed immediately after thawing (mean values of samples taken from 11 buffaloes)

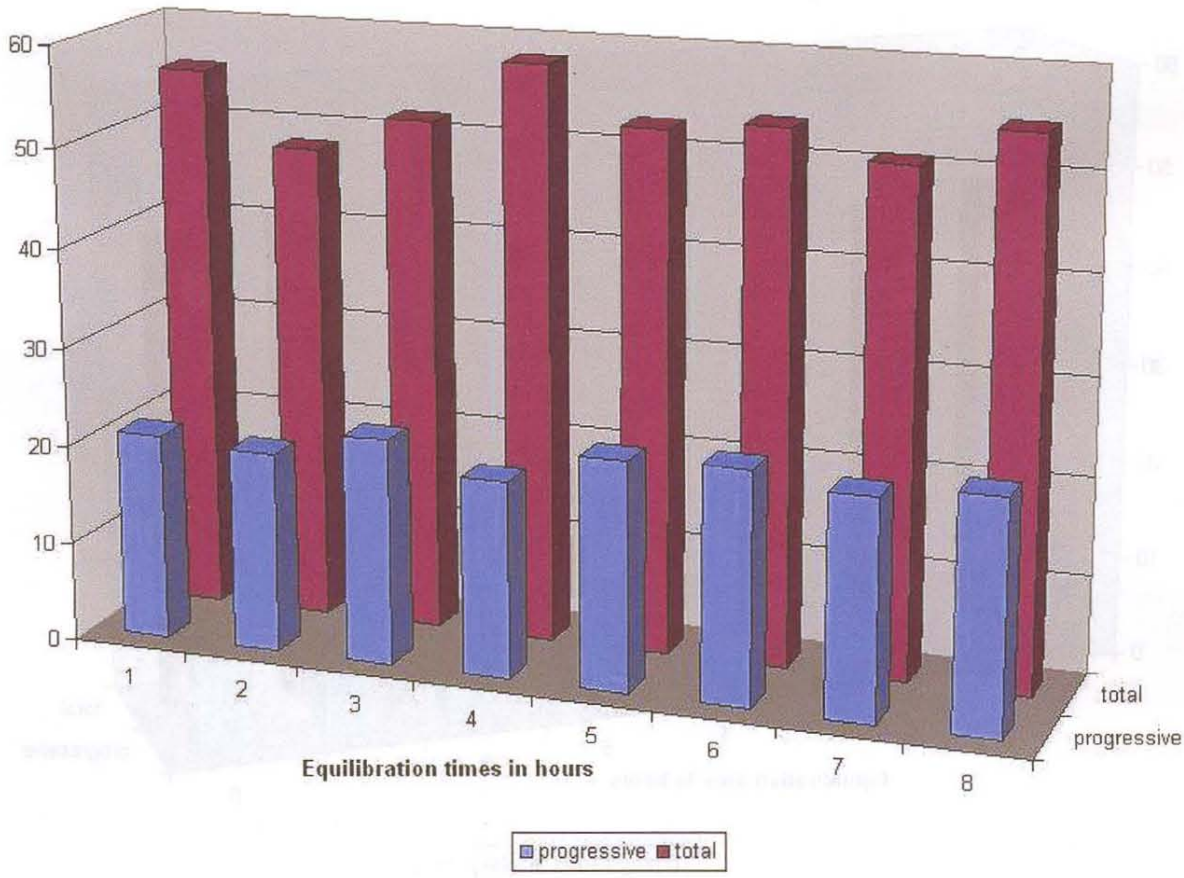

Figure 3.3 Progressive and total motility for epididymal sperm frozen with Triladyl one hour after thawing (mean values of samples taken from 11 buffaloes

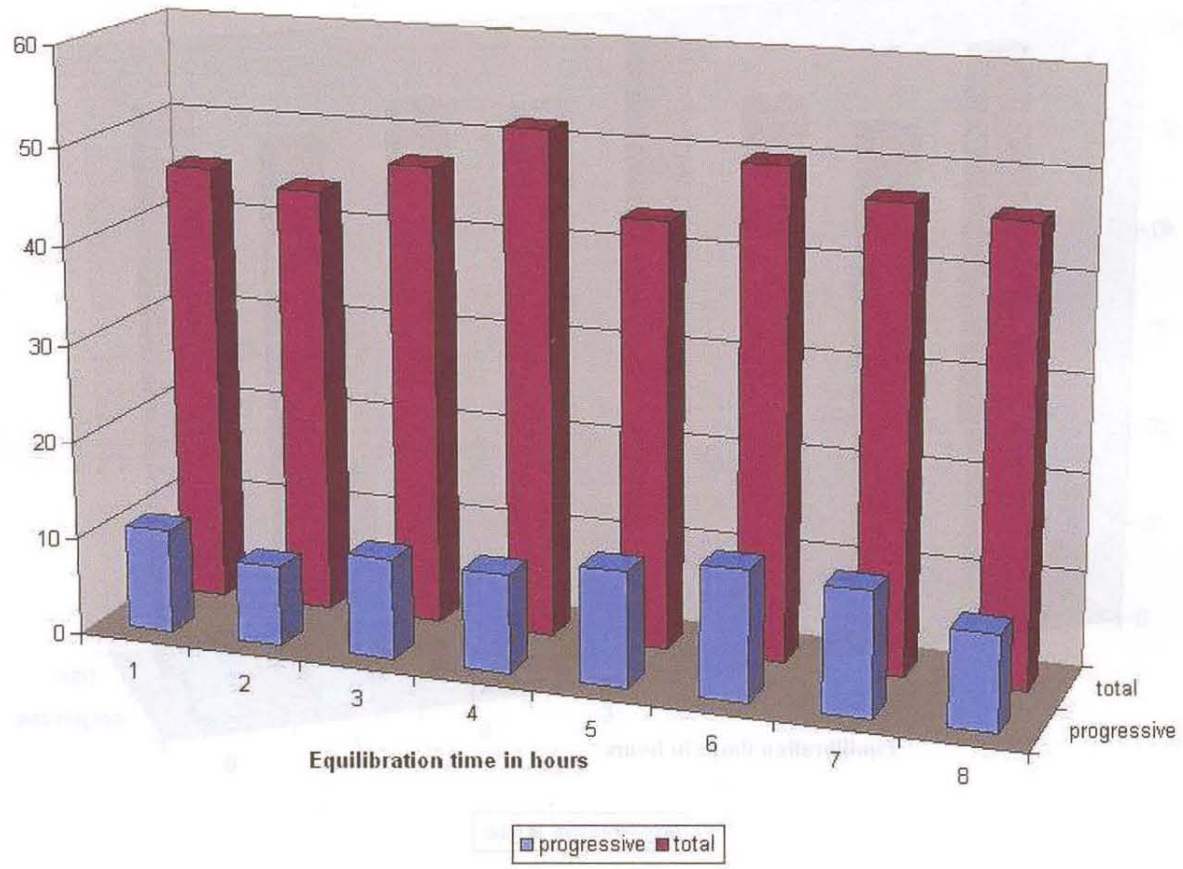

Figure 3.4 Progressive and total motility for epididymal sperm frozen with AndroMed one hour after thawing (mean values of samples taken from 11 buffaloes)

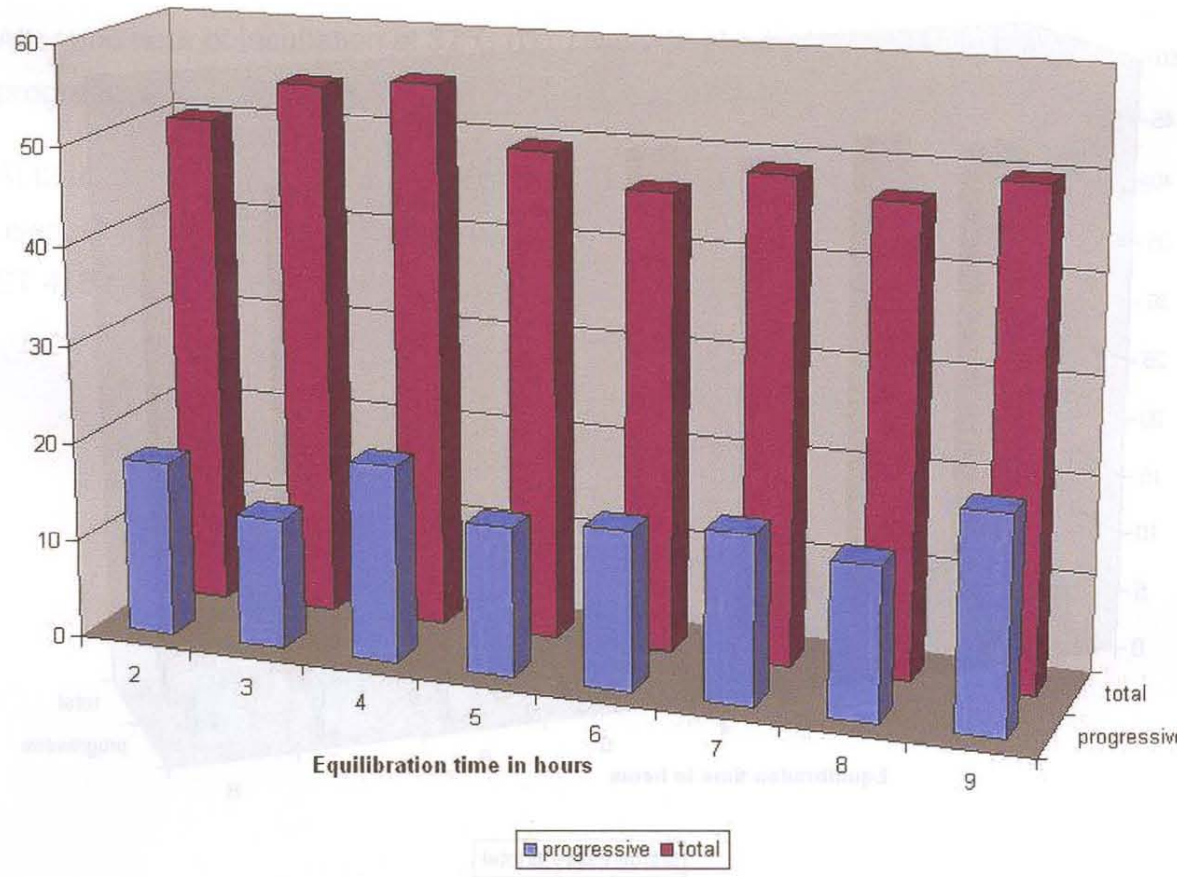

Figure 3.5 Progressive and total motility for epididymal sperm frozen with Triladyl two hours after thawing (mean values of samples taken from 11 buffaloes)

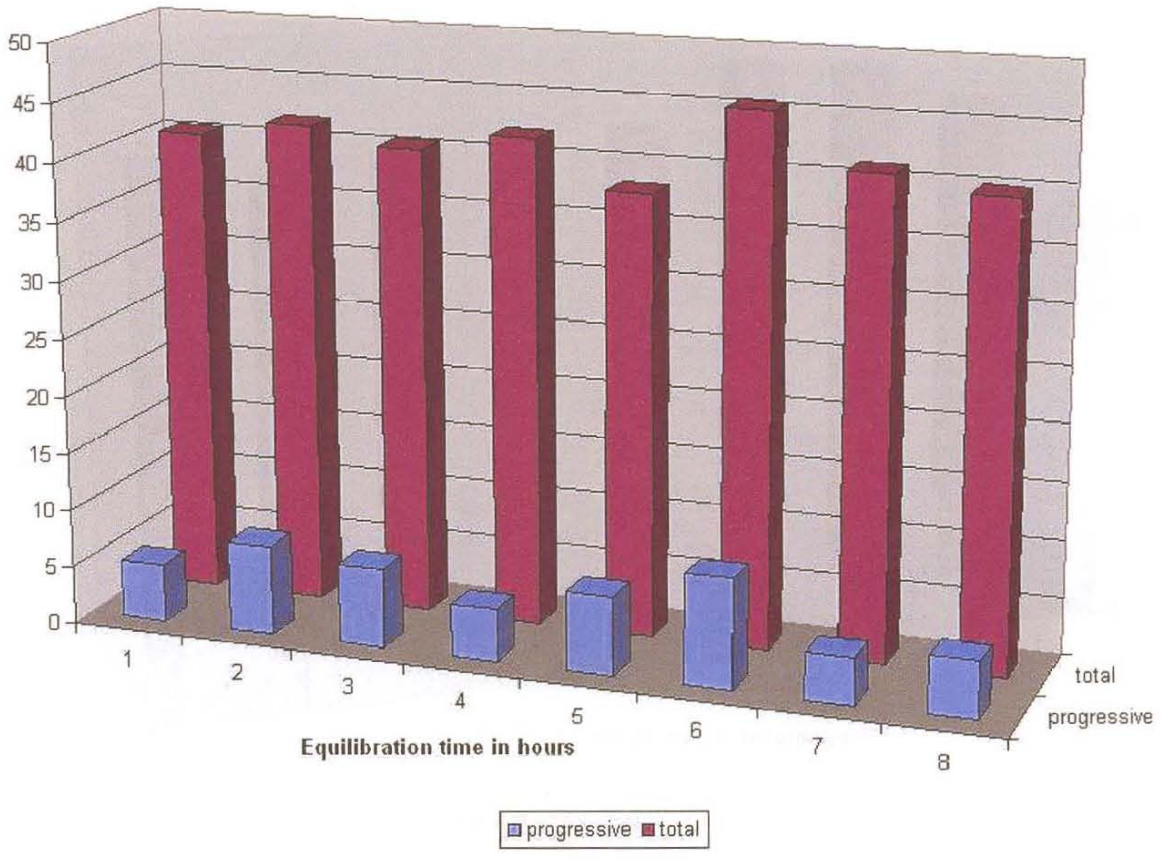

Figure 3.6 Progressive and total motility for epididymal sperm frozen with AndroMed two hours after thawing (mean values of samples taken from 11 buffaloes)

When AndroMed® and Triladyl™ were compared for each ET at t0, t1 and t2 Triladyl™ yielded almost always higher motilities. The differences were however not always significant. (see Table 3.1 and FiguresFigure 3.8Figure 3.9).

Immediately after thawing (t0) the use of Triladyl™ resulted in significantly higher total motility for ET 9. Samples frozen with Triladyl™ also showed significantly higher progressive motilities at t0 for ET 4.

After one hour of incubation at 37°C (t1) Triladyl™ showed significantly higher progressive motility for ET 2, ET 3, ET 4, ET 6 and ET 9 h.

At t2 total motilities for ET 2 and ET 4 were significantly higher when Triladyl™ was used. Progressive motility was significantly higher for the use of Triladyl™ at ET 2, ET 4, ET 5, ET 6, ET 8 and ET 9.

Table 3.1 Comparison of Triladyl™ (T) and AndroMed® (A) when the same equilibration times were used to freeze epididymal sperm (figures are mean values of samples taken from 11 buffaloes). Tot.0, Tot.1 and Tot.2 = total motility (in % ± SD) immediately, one and two hours after thawing respectively. Pr.0, Pr.1, Pr.2 = progressive motility (in % ± SD) immediately, one and two hours after thawing respectively. Differences are marked with asterisks when significant (* when p<0.05, ** when p<0.01 and * when p<0.001).**

	Medium	Tot.0	Pr.0	Tot.1	Pr.1	Tot.2	Pr.2
	T	50 ± 12	10 ± 8	56 ± 14	21 ± 15	50 ± 8	18 ± 11
2h	A	46 ± 9	11 ± 10	46 ± 11	11 ± 10	41 ± 10	5 ± 7
					*	**	**
	T	50 ± 16	18 ± 12	48 ± 15	20 ± 14	55 ± 16	13 ± 10
3h	A	44 ± 17	14 ± 15	44 ± 13	8 ± 10	42 ± 13	8 ± 9
					*		
	T	59 ± 8	23 ± 8	52 ± 14	23 ± 18	56 ± 14	20 ± 15
4h	A	51 ± 14	12 ± 13	47 ± 14	10 ± 10	41 ± 14	7 ± 9
			*		*	*	*
	T	54 ± 12	16 ± 11	58 ± 11	20 ± 15	50 ± 8	15 ± 11
5h	A	42 ± 20	14 ± 14	52 ± 21	10 ± 13	42 ± 18	5 ± 9
							*
	T	52 ± 13	23 ± 12	53 ± 14	23 ± 14	46 ± 10	16 ± 9
6h	A	48 ± 13	15 ± 17	44 ± 12	12 ± 10	38 ± 15	7 ± 7
					*		***
	T	55 ± 12	17 ± 11	54 ± 11	24 ± 7	49 ± 10	17 ± 8
7h	A	45 ± 14	19 ± 13	50 ± 17	13 ± 17	46 ± 13	10 ± 13
	T	49 ± 13	15 ± 14	51 ± 8	22 ± 13	47± 13	16 ± 11
8h	A	43 ± 11	14 ± 13	47 ± 22	13 ± 18	41 ± 18	4 ± 9
							*
	T	59 ± 11	18 ± 12	55 ± 13	24 ± 14	50 ± 9	22 ± 12
9h	A	47 ± 13	13 ± 11	46 ± 15	10 ± 12	40 ± 14	5 ± 8
		*			*		**

Equilibration time did not significantly affect post-thaw motility. Therefore the mean values of all equilibration times of each buffalo were used for further analysis. Triladyl™ always showed higher means for progressive motility at t0, t1 and t2 being always significant except for progressive motility immediately after thawing (t0) (see Table 3.2 and Figure 3.7).

Table 3.2 Comparison of Triladyl™ (T) and AndroMed® (A) irrespective of the equilibration times used to freeze epididymal sperm (figures are mean values of samples taken from 11 buffaloes). Tot.fr.,Tot.0, Tot.1 and Tot.2 = total motility (in % ± SD) of fresh sperm and immediately, one and two hours after thawing respectively. Pr.fr., Pr.0, Pr.1, Pr.2 = progressive motility (in % ± SD) of fresh sperm and immediately, one and two hours after thawing respectively. Differences are marked with asterisks when significant (* when p<0.05, ** when p<0.01 and * when p<0.001).**

Medium	Tot.fr.	Prog.fr	Tot.0	Pr.0	Tot.1	Pr.1	Tot.2	Pr.2
T	61 ± 15	21 ± 9	53 ± 12	17 ± 11	53 ± 13	22 ± 14	50 ± 11	17 ± 11
A	58 ± 17	35 ± 21	46 ± 14	14 ± 13	47 ± 16	11 ± 12	41 ± 14	6 ± 9
P			***		**	***	***	***

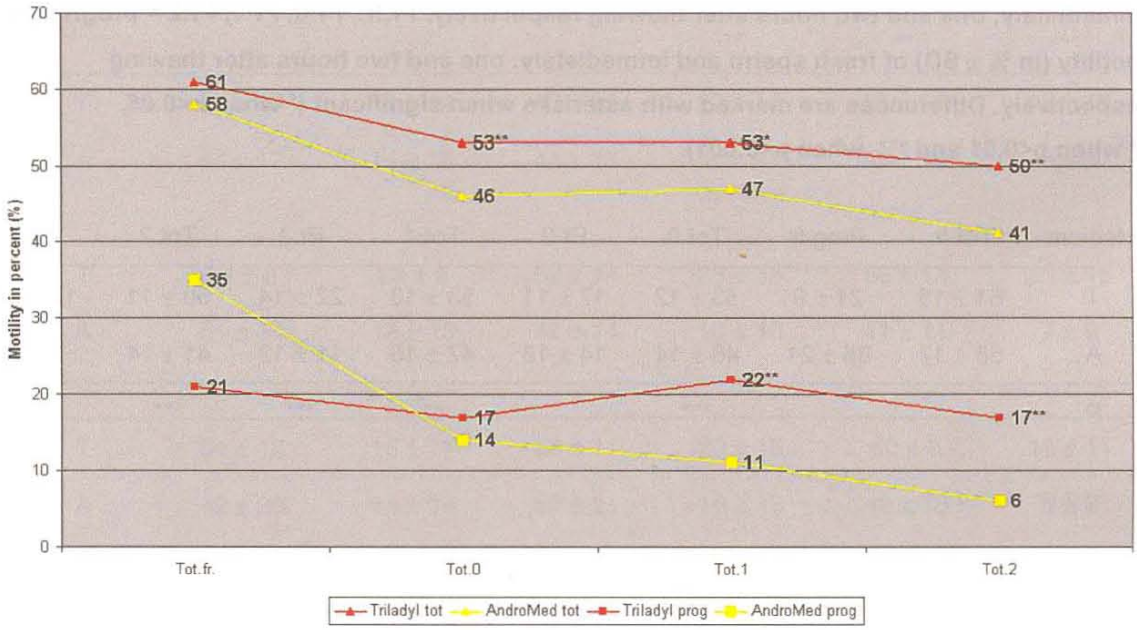

Figure 3.7 Comparison of longevity in respect of total and progressive motility for epididymal sperm frozen with AndroMed® and Triladyl™ (figures are mean values of samples taken from 11 buffaloes). Percentages marked with asterisks differ significantly (* = $P<0.01$, ** = $P<0.001$)

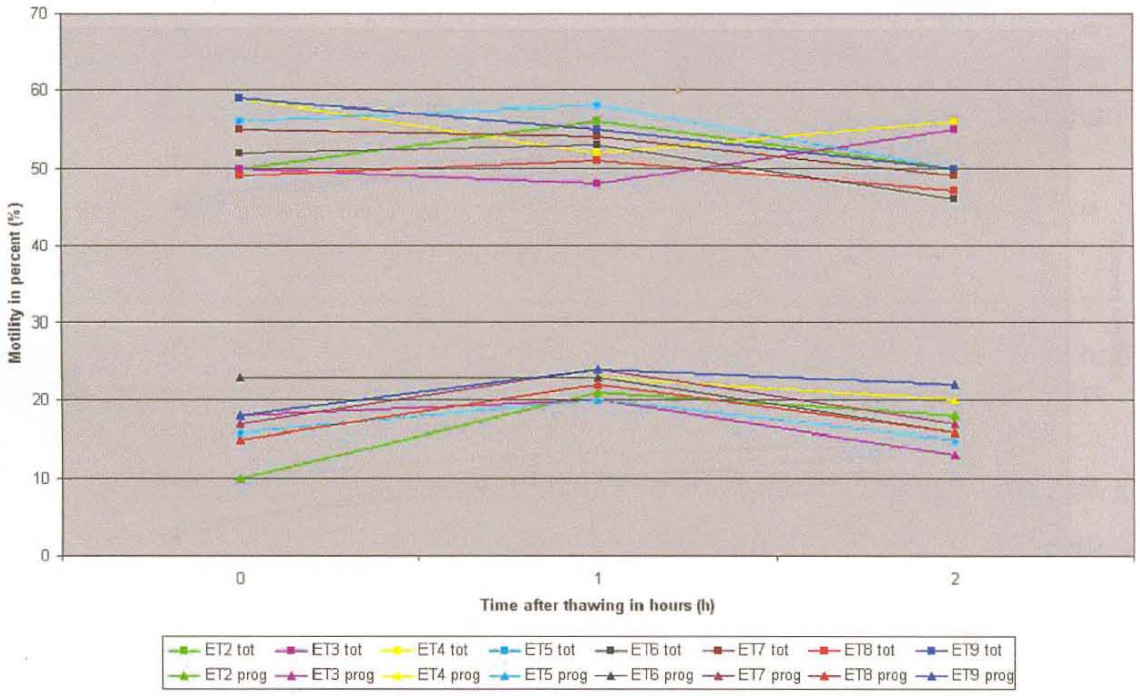

Figure 3.8 Comparison of total (tot) and progressive (prog) motility (%) in respect of different pre-freezing equilibration times (2-9h, ET2-ET9) for epididymal sperm frozen with Triladyl™ (figures are mean values of samples taken from 11 buffaloes)

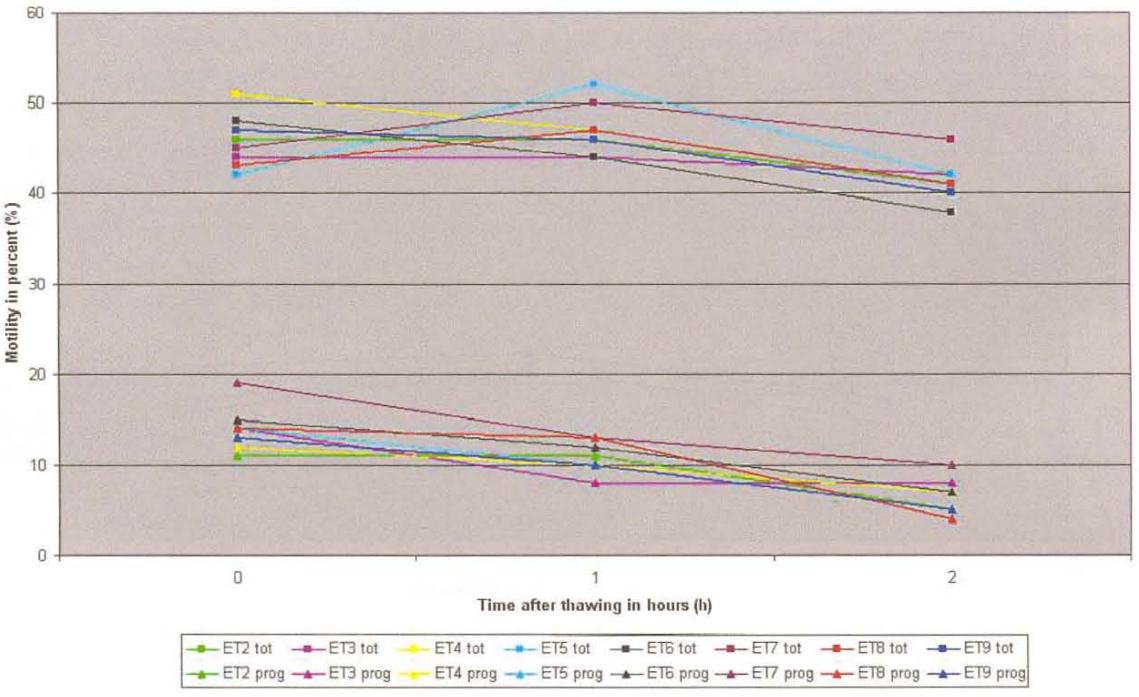

Figure 3.9 Comparison of total (tot) and progressive (prog) motility (%) in respect of different pre-freezing equilibration times (2-9h, ET2-ET9) for epididymal sperm frozen with AndroMed® (figures are mean values of samples taken from 11 buffaloes)

As ET had no influence on acrosomal integrity the mean values of all ET's from each buffalo were used to compare AndroMed® and Triladyl™. The use of Triladyl™ resulted in 56 ± 6 % intact acrosomes. This was significantly higher ($P<0.05$) than the results recorded for the use of AndroMed® (54. ± 6 %).

When lost acrosomes were compared an equilibration time of 6 hr resulted in significantly higher values than 4 or 8 hr (7 %, 4 % and 4 % respectively) using Triladyl™. Furthermore, the use of Triladyl™ resulted in significantly higher percentages (7 %) of lost acrosomes than AndroMed® (5 %), when equilibrated for six hours. AndroMed yielded significantly higher numbers of lost acrosomes after an equilibration time of 8 hours (7% and 4% respectively).

Total and progressive motility did not significantly decline within two hours after thawing. This was the case for both media. The progressive motility for samples frozen with AndroMed® after two hours were nevertheless less than half of what had been recorded immediately after thawing (6% and 14% respectively).

Total motility was significantly lower at t0 and t2 (46 % and 41 % respectively) than it was before freezing (58 %), using AndroMed®. Total motility did not differ between any time of evaluation when Triladyl™ was used.

Progressive motility was significantly lower at t0, t1 and t2 (14 %, 11 % and 6 % respectively) than it was before freezing (35 %), using AndroMed®. Progressive motility did not differ between any time of evaluation when Triladyl™ was used.