

USE OF TRIS AND LACTOSE EXTENDERS IN PRESERVATION OF CAMEL SEMEN AT REFRIGERATED TEMPERATURE

S. Vyas, P. Goswami, A.K. Rai and N.D. Khanna

National Research Centre On Camel,
Post Box 07, Bikaner - 334001

Camel is an important livestock component of arid and semi arid zones. It has low reproductive efficiency and is a seasonal breeder (Khanna *et al.*, 1990). Development of artificial insemination in this species will greatly help in genetic improvement of this species. The technique of artificial insemination was reported in bactrian camel by Chen *et al.* (1984) and in dromedary by Musa *et al.* (1990). Sieme *et al.* (1990) have reported 11% lactose extender to be best for camel semen preservation in liquid state. In the present study, an attempt was made to use tris and lactose extenders for preservation of semen of Indian camel at refrigerated temperature (+5°C).

Materials and Methods

A total of 48 split semen samples of 24 ejaculates, 8 each from three adult male camels aged 10 to 12 yrs and maintained under intensive management conditions at the National Research Centre on Camel, Bikaner were included in the present investigations. A she camel restrained in sitting posture was used as dummy. The ejaculates were collected in the bull A.V., whose inner temperature was kept at 40-42°C. The semen was collected twice a week during

breeding season. The ejaculates were evaluated for pH, volume, presence of gel (consistency) and sperm concentration. Thereafter, the semen sample was split into equal parts and were extended (1:3 ratio) using tris and 11 per cent lactose (Sieme *et al.* 1990) extenders. The extended semen was then preserved in a refrigerator at +5°C for 72 hrs. The preserved semen was re-evaluated for sperm motility and live sperm count using conventional methods at 0, 24, 48 and 72 hrs. of preservation. The statistical analyses of the data was done as per Snedecor and Cochran (1967).

Results and Discussion

The color of the semen varied from yellowish white to creamy white and white. Thick gel was present in 87.5 per cent of the ejaculates, which persisted after extension in tris and 11 per cent lactose extenders. The pH varied from 7.5 to 8.5. Fifty eight per cent ejaculates were observed to be static. Mass motility in rest of the ejaculates was also not vigorous. However, addition of tris and lactose extenders in ejaculates rendered them motile. The mean values of volume (ml), motility (%), and sperm concentration (X10⁶) in neat semen of three bulls were 5.91 ± 1.49, 38.33 ± 11.58 and 146.40 ± 78.24

Table 1: Means±S.E. of motility and live spermatozoa of semen in two different extenders at different hours of preservation at +5°C.

	Extender	0h	24h	48h	72h
Motility	Tris	51.48 ± 5.94	30.0 ±5.54	17.92 ±4.90	12.92 ± 4.78
	Lactose	29.90 ±5.77	11.66 ±3.96	9.69 ±3.93	7.08 ±3.61
	Media	*	**	NS	NS
Live sperm	Tris	80.40 ±1.80	75.23 ±2.25	68.40 ±2.68	62.14 ±2.96
	Lactose	78.56 ±1.75	71.50 ± 2.24	63.94 ±2.80	54.21 ±3.06
	Media	NS	NS	NS	NS

(* - $P < 0.05$, ** - $P < 0.01$, NS - Non Significant)

respectively for B₁ (No. 188); 7.50 ± 1.38 , 16.87 ± 7.75 and 68.53 ± 26.37 respectively for B₂ (No.66) and 2.78 ± 0.54 , 13.75 ± 9.20 and 127.35 ± 67.73 for B₃ (No.153) respectively. The values for mass motility and sperm concentration varied from ejaculate to ejaculate of the same camel. Agarwal *et al.* (1995) and Khan and Kohli (1973) reported higher sperm concentration but no motility in neat semen. The mean (\pm S.E.) values for motility and live sperm on preservation at 0, 24, 48 and 72 hrs. in tris and lactose extenders are shown in Table 1.

The mean values for motility for tris extender were significantly higher than those for lactose extender at zero hour ($P < 0.05$) and 24 hrs ($P < 0.01$) of preservation. The difference in the percentage of live spermatozoa on preservation were not significant. Tris extender was observed to

be superior to lactose extender for camel semen preservation at +5°C. It was found to preserve camel semen upto 48 hrs of preservation at +5°C.

Summary

Tris and lactose extenders were used to extend the camel semen for preservation at refrigerated temperature. A total of 48 split semen samples of 24 ejaculates from 3 adult male camels were examined. The preserved semen samples were evaluated for motility and live sperm at 0, 24, 48, and 72 hrs of preservation. Tris extender was observed to be superior to lactose extender.

REFERENCES

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