

RELATIONSHIP BETWEEN THE SIZE OF THE PRE-OVULATORY FOLLICLES, SERUM CONCENTRATIONS OF OESTRADIOL AND PROGESTERONE, CORPUS LUTEUM DIAMETER AND PREGNANCY RATE IN CAMELS (*Camelus dromedarius*)

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ABSTRACT

Twenty-five clinically healthy female camels were used to investigate the relationship between pre-ovulatory follicle (POF) size, serum concentrations of oestradiol-17 β (E₂) and progesterone (P₄) with pregnancy rate in dromedaries. Each sexual receptive animal experienced trans-rectal ultrasound examination before mating by proved fertile male (day 0) to monitor the number and diameter of POFs and 24, 48 and 72 hours post mating to detect the ovulation. Serum E₂ and P₄ concentrations were assessed on day 0, 1, 2, 3 and 14 post- and also on day 60 in proved pregnant animals. Results revealed that the mean diameter of POF was 14.09 \pm 0.69 mm (7.6-19.4 mm). POFs were identified in 44% (n=11) and 56% (n=14) without significant difference on the right and left ovaries, respectively. Each sexually receptive female displayed overt oestrous signs. Seventy-six (n=19) and 24 (n=6) per cent of ovulations occurred until 24 and between 24 and 48 hours post-mating, respectively. The pregnancy rate was 76 % (n=19). No significant correlation was recorded between POF diameter and pregnancy rate (r= -0.04). On day 0, the mean E₂ concentration of the pregnant animals (61.90 \pm 2.86 pg/ml) was not significantly different from that of non-pregnant animals (60.03 \pm 3.82 pg/ml). No significant correlations have been observed between POFs diameter and E₂ concentrations on the day 0 (r= 0.30). The mean P₄ concentration varied significantly (P<0.05) on the day 14 post-mating between pregnant (3.16 \pm 0.09 ng/ml; range 2.51-3.54) and non-pregnant (0.38 \pm 0.02 ng/ml; range 0.31-0.44) animals. There was a significant correlation (r²=0.56, P<0.05) between the diameter of corpus luteum (CL) and P₄ concentrations. In conclusion, the POFs having diameters between 7.60 and 19.50 mm secrete enough E₂ to produce overt oestrous signs and possess the potential to ovulate.

Key words: Camels, oestradiol, corpus luteum pregnancy rate, pre-ovulatory follicle, progesterone