USE OF MILK PROGESTERONE ASSAYS FOR DETERMINING REPRODUCTIVE PERFORMANCE IN CAMEL UNDER FARMING SYSTEM

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INTRODUCTION

- Progesterone is produced and released into the blood by the corpus luteum on the ovary.
- The hormone is low during heat, and begins to rise after ovulation as the corpus luteum develops.
- When the cow becomes pregnant, progesterone in blood and milk remains high until just prior to calving.
- But when the cow does not conceive, the corpus luteum begins to degenerate on approximately day 17 of the cycle, and progesterone declines to minimal concentrations.
- Progesterone concentration in milk of female camel is expected to be an accurate indicator to monitor ovarian activity and, hence, reproductive status.

OBJECTIVES

- The aim of this study is:
- To use milk progesterone analysis as a new technique to detect the estrus and ovarian activity in she-camel within four months postpartum under farming system.
- Restricted suckling from lactating she-camel under semi-intensive system
- Lactating she-camel in different parity under intensive system

MATERIALS AND METHODS

- Eight lactating she-camels were divided into two groups (G1 and G2).
- Calves of (G1) were completely restricted from suckling after 60th days.
- Calves of (G2) were freely suckling.
- Another eight lactating she-camels were divided into group (GY and GA).
- (GY) included she-camels in first and second parity.
- (GA) included she-camels in third, fourth and fifth parity.
- Milk samples were collected from the 2nd week up to the 4th month postpartum.
- Progesterone level was measured by radioimmunoassay (RIA) apparatus.

RESULTS

- **Progesterone concentration was (7.84 ng/ml) in the 8th week postpartum in G1 compared to (6.23 ng/ml) in the 2nd week in G2.**
- **Only two she-camel of G1 became pregnant during the first four months postpartum.**
- **Progesterone concentration was (8.83 ng/ml) in the 6th week postpartum of GA compared to (4.7867 ng/ml) in 16th week of GY.**
- **only one she-camel of GY was suspected to be pregnant due to the increase of progesterone level from the 12th week up to the end of the experiment.**

Treatment	2nd week (ng/ml)	4th week (ng/ml)	6th week (ng/ml)	8th week (ng/ml)	10th week (ng/ml)	12th week (ng/ml)	14th week (ng/ml)	16th week (ng/ml)	Overall (ng/ml)
G1	5.23ab	2.38ab	0.26b	7.84a	0.43b	3.76ab	4.29ab	7.83a	4.03A
G2	6.23ab	4.33ab	0.167b	4.087ab	0.07b	0.14b	0.63b	2.73ab	2.29A
Overall	5.732A	3.36AB	0.212B	5.96A	0.25B	1.95AB	2.47AB	5.28A	3.15

Table 1. Progesterone concentration of camel milk under semi-intensive system during the experiment period (2nd -16th week postpartum).

* [ab]Letters on the same column bearing differ superscripts differ significantly (P<0.05).

Treatment	2nd week (ng/ml)	4th week (ng/ml)	6th week (ng/ml)	8th week (ng/ml)	10th week (ng/ml)	12th week (ng/ml)	14th week (ng/ml)	16th week (ng/ml)	Overall (ng/ml)
GY	2.63b	4.72ab	0.31b	3.03b	0.21b	1.98b	2.60b	4.79ab	2.53A
GA	8.05a	1.46b	8.84a	2.37b	0.09b	0.98b	1.0b	1.47b	3.03A
Overall	5.34A	3.09ABC	4.57AB	2.70AC	0.14C	1.48BC	1.8BC	3.13AB C	2.7811.0

Table 2. Progesterone concentration of camel milk during experiment period (2nd -16th week postpartum) under intensive system.

* [ab]Letters on the same column bearing differ superscripts differ significantly (P<0.05).

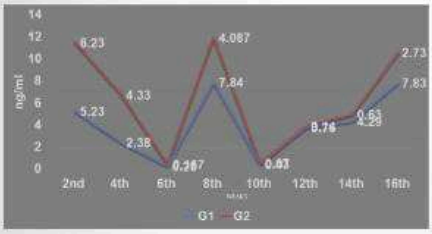

Fig 1. *Progesterone concentration of camel milk during (2nd to 16th weeks) postpartum under semi-intensive system. (G1): calves allowed to suckle freely during the first 30 days postpartum; (G2): calves freely suckling up to 75th – 80th day postpartum.*

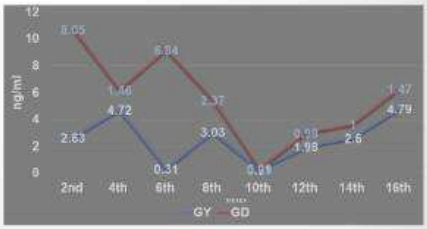

Fig 2. *Progesterone concentration of camel milk during (2nd to 16th weeks) postpartum under intensive system. (GY) she-camels in 1st and 2nd parity; (GA) she-camels in 3rd, 4th and 5th parity.*

CONCLUSIONS

- **The effect of restricted suckling, parity and age on progesterone concentration in camel milk was not significant ($p > 0.05$).**
- **Management practices focusing on restricted suckling and separating calves from their dam after one month postpartum succeed in reducing calving interval, early ovarian activity and high reproductive performance.**
- **Early estrus cycle and regular fluctuation of milk progesterone of young rather than adult she-camel have been observed.**
- **The concentration of milk progesterone is a good indicator of ovarian activity within the first four months postpartum.**
- **More studies need to be conducted using hormonal treatment and new reproductive techniques in camel pastoral system.**