

# Ovarian activity, biochemical changes and histological status of the dromedary she-camel as affected by different seasons of the year

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### Abstract :

Abstract: The present study aimed to investigate the effect of different seasons of the year on body thermoregulation (rectal temperature, respiration rate and pulse rate), blood hematology (hemoglobin, packed-cell volume, red blood cells and white blood cells counts), blood components (total protein, albumin, globulin, aspartate-aminotransferase, alanine-aminotransferase, alkaline phosphatase, acid phosphatase, cholesterol, sodium, potassium, calcium, total phosphorus, testosterone and oestradiol-17 $\beta$  hormone concentrations of the dromedary she-camel. Histological changes of the right and left ovaries were also recorded. The obtained results showed that, rectal temperature and respiration rate in the dromedary she-camels increased significantly ( $P<0.05$ ) during summer as compared to the other seasons. However, pulse rate showed significantly ( $P<0.05$ ) lower during winter than other seasons. The highest ( $P<0.05$ ) values of hemoglobin, packed-cell volume and red blood cells count were recorded during summer, while the lowest ( $P<0.05$ ) value of the white blood cell's was recorded during autumn season. Total protein, albumin and globulin concentrations (mg/dl) were increased insignificantly during summer season as compared to other seasons. Aspartate-aminotransferase, alanine-aminotrasferase enzymes, sodium and calcium concentrations of the dromedary she-camels increased significantly ( $P<0.05$ ) during summer, while potassium and total phosphorus concentrations (mg/dl) increased significantly ( $P<0.05$ ) during spring as compared to other seasons. The lowest ( $P<0.05$ ) value of alkaline phosphatase and acid phosphatase enzymes were recorded during winter season. Testosterone, oesterdiol-17 $\beta$  hormone and cholesterol concentrations were significantly ( $P<0.05$ ) higher during winter than other seasons of the year. The histological examination of the left and right ovaries in different seasons of the year revealed higher activity in spring and winter than summer and autumn seasons. The left ovary showed more growing and mature follicles and higher activity than the right one. In conclusion, the female dromedary camels display ovarian activity during the non-breeding season. So, the environmental temperature, relative humidity and daylight length seemed to play the major role in the regulation of seasonal ovarian activity in the female dromedary camels. [Nature and Science. 2010;8(5):54-65]. (ISSN: 1545-0740).

### Key Word :

Seasons, She-camel-ovaries, testosterone, oesterdiol-17 $\beta$ , cholesterol