

**PHYSIOLOGICAL STUDIES ON THE DROMEDARY  
CAMELS UNDER EGYPTION ENVIRONMENTAL**

By

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## V- SUMMARY AND CONCLUSIONS

The current study was jointly planned by the Department of Animal Production, Faculty of Agriculture, Al-Azhar University, Cairo and the Department of Camel Research, Animal Production Research Institute, Agricultural Research Center, Egypt The Experimental work was carried out in the Center of Studies and Development of Camel Production, Marsa Matrouh Governorate, located in the North Western part of the Nile Delta (at distance of 500 km from Cairo) belonging to the Animal Production Research Institute, Dokki, Giza, Egypt through a period from January, 2013 till February, 2018.

Twenty Maghrebi dairy she-camels weighing ( $500.0 \pm 50.0$  Kg live body weight, 5.0 years of age were used in the present study.

Udder circumference (cm), teat measurements (teat length, teat diameter and distance between teats in the Rear or Fore teats and milk vein diameter were measured before and after milking.

Daily and total milk yield (liter) of the Maghrebi she-camels from the first parity to fifth parity were estimated. Milk composition of % Fat, Proteins, Lactose, Total solids and solids not fat of the Maghrebi she-camels from the first parity to fifth parity at early-lactation, mid-lactation and late-lactation during lactation period were also estimated.

Total protein, albumin, globulin, glucose, total cholesterol and Triglycerides concentrations in the blood serum of the Maghrebi she-camels in the different parities during the early-lactation, mid-lactation and late-lactation of the lactation period were recorded.

**The obtained results could be summarized as follow :**

### **1. Udder circumference (cm) of the Maghrebi she-camels**

- 1.1. Udder circumference (cm) significantly ( $P < 0.05$ ) increased before milking as compared with after milking in the different parities.
- 1.2. The highest ( $P < 0.05$ ) value of the udder circumference (cm) was observed at the fourth parity, while the lowest ( $P < 0.05$ ) value was observed at the first parity either before or after milking.

## **2. Teat measurements (cm) of the Maghrebi she-camels.**

- 2.1. The teat diameter (cm) did not significantly differ in the various parities either before or after milking in both rear and fore teats.
- 2.2. The highest value of the teat diameter (cm) was recorded in the rear teats, while the lowest value was recorded in the fore teats, either before or after milking with the different parities.
- 2.3. Teat length (cm) significantly ( $P < 0.05$ ) increased from third to fifth parity in both before and after milking.
- 2.4. Teat length (cm) significantly ( $P < 0.05$ ) higher in the fore than the rear teats in the different parities. Moreover, teat length was longer during before milking than after milking in the different parities.
- 2.5. The highest ( $P < 0.05$ ) value of the teat length (cm) was observed at the fifth parity, while the lowest ( $P < 0.05$ ) value was observed at the first parity in the different parities.
- 2.6. Distance between teats (cm) showed insignificantly higher in the rear teats than the fore teats either before or after milking in the different parities.
- 2.7. Distance between teats (cm) was insignificantly better before milking than after milking.
- 2.8. The milk vein diameter (cm) insignificantly different either before or after milking in the different parities and rear or fore teats. The milk vein diameter was better after milking than before milking in the different parities of the Maghrebi she-camels.

### **3. Milk yield of the Maghrebi she-camels (Liter).**

3.1. Daily milk yield and total milk yield (liter) significantly ( $P<0.05$ ) increased at the fifth parity as compared with the other parities.

### **4. Milk composition of the Maghrebi she-camels (%).**

4.1. Fat (%) content in milk significantly ( $P<0.05$ ) increased at the fifth parity as compared with the first parity of the lactation period.

4.2. Fat (%) content in milk significantly ( $P<0.05$ ) increased at the early-lactation parity as compared at the late- lactation of the lactation period. While, Fat (%) contained in milk during late-lactation was insignificant.

4.3. Protein (%) content in milk significantly ( $P<0.05$ ) decreased at the fifth parity as compared with the first parity of the lactation period

4.4. Protein (%) content in milk significantly ( $P<0.05$ ) increased at the early-lactation as compared at the late- lactation of the lactation period. While, proteins (%)in the milk during mid or late-lactation was insignificant.

4.5. Lactose (%) content in milk significantly ( $P<0.05$ ) decreased at the fifth parity as compared with the first parity of the lactation period.

4.6. Lactose (%) content in milk significantly ( $P<0.05$ ) increased at the early-lactation parity as compared with the late- lactation of the lactation period. While, lactose (%) in the milk during mid or late-lactation was insignificant.

4.7. Total solids (%) content in milk significantly ( $P<0.05$ ) decreased at the fifth parity as compared with the first parity of the lactation period.

4.8. Total solids (%) content in milk significantly ( $P<0.05$ ) increased at the early-lactation parity as compared with the mid-lactation and late- lactation of the lactation period.



4.9. Solids not fat (%) content in milk significantly ( $P<0.05$ ) decreased at the fifth parity as compared with the first parity of the lactation period.

4.10. Solids not fat (%) content in milk significantly ( $P<0.05$ ) increased at the early-lactation parity as compared at the mid-lactation and late- lactation of the lactation period.

#### **5. Some blood serum components of the Maghrebi she-camels.**

5.1. The total protein (gm/dI), albumin (gm/dI) and globulin (gm/dI) concentrations in the blood serum of she-camels insignificantly increased at the fifth parity as compared with the other parities.

5.2. The total protein (gm/dI), and globulin (gm/dI) concentrations in the blood, serum of she-camels insignificantly decreased at the early-lactation as compared at the mid-lactation or the late-lactation of the lactation period.

5.3. Glucose concentration (mg/dI) in the blood serum of she-camels insignificantly increased at the fifth parity as compared with the other parities.

5.4. Glucose concentration (mg/dI) in the blood serum insignificantly increased at the early-lactation as compared with mid-lactation and the late-lactation of the lactation period.

5.5. Total cholesterol concentration (mg/dI) in the blood serum of she-camels significantly ( $P<0.05$ ) increased at the fifth parity as compared with the first parity in the different lactation periods.

5.6. Total cholesterol concentration (mg/dI) in the blood serum significantly ( $P<0.05$ ) increased at the early-lactation and mid-lactation as compared with the late-lactation of the lactation period. However, total cholesterol concentration (mg/dI) between early-lactation and mid-lactation in the blood serum was not significantly.

5.7. Triglycerides concentration (mg/dl) in the blood serum of she-camels significantly ( $P < 0.05$ ) increased at the fifth parity as compared with the first parity in the different lactation periods.

5.8. Triglycerides concentration (mg/dl) in the blood serum significantly ( $P < 0.05$ ) increased at the early-lactation as compared with the mid-lactation and late-lactation of the lactation period. However, triglycerides concentration (mg/dl) between mid-lactation and late-lactation in the blood serum was not significantly.

The present results throw light on the previous relationship between udder or teat measurements and milk yield and its composition in the Maghrebi she-camels in the different parities. Milk yield and its composition showed higher at the first parity, especially in the early-lactation than at the fifth parity or the mid-lactation and the late-lactation of the lactation period.

Therefore, it can be recommended to evaluation of the milk productivity throughout the lactation season indicating a greater milk yield of the Maghrebi she-camels. Selection should be implemented to build up a nucleus camel herd with the improvement of the camel genotypes.

In addition, selection based on udder and teat types would be the best method of increasing milk yield in general for she-camels.