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## Introduction

For dairy intensification of camel farm, machine milkability has to be assessed. Efficient milking are related to good milkability of animal. The objective was to compare the effect of vacuum levels with different pulsation rates on machine milking efficiency in camel.

## Material and methods

- ❑ 14 multiparous dromedary camels in first and late lactation stage
- ❑ Two milking per day
- ❑ Two vacuum levels (45 and 50 kPa) and 2 pulsations rate (52 and 60 pulsations/min)
- ❑ Record of milk fractions at morning milking (2 days): (i) machine milk (MM), (ii) machine stripped milk (MSM), (iii) residual milk (RM)
- ❑ Use of lactocorder© for milk flow rate measurement
- ❑ Statistical analysis: Least Square Means procedure (SAS)

## Results and discussion

High vacuum level (50 Kpa) and 60 pulsation rate decreased MSM (15.2 to 5.9%) and RM (43.2 to 29.8%). Milking camels at 50 kPa and 60 pulsations per min (ppm) extract more milk in shorter time with higher milk flow rate. Vacuum level did not modify the lag time suggesting that 45 kPa is sufficient to open the teat sphincter and drain cisternal milk.



Vacuum level (kPa)	45		50	
Pulsation rate (ppm)	52	60	52	60
<b>Milk fraction (kg)</b>				
Machine milk yield	1.68 ± 0.39 <sup>b</sup>	1.89 ± 0.39 <sup>b</sup>	1.90 ± 0.40 <sup>b</sup>	3.15 ± 0.41 <sup>a</sup>
Machine stripping	0.37 ± 0.09 <sup>a</sup>	0.30 ± 0.08 <sup>a</sup>	0.30 ± 0.05 <sup>a</sup>	0.19 ± 0.05 <sup>b</sup>
Residual milk	1.63 ± 0.34 <sup>a</sup>	1.60 ± 0.34 <sup>a</sup>	1.47 ± 0.34 <sup>ab</sup>	1.16 ± 0.35 <sup>b</sup>
<b>Milk emission</b>				
Lag time (s)	1.93 ± 0.30	2.14 ± 0.32	1.82 ± 0.40	2.06 ± 0.40
Milk flow latency (min)	0.84 ± 0.10	0.76 ± 0.09	0.77 ± 0.09	0.68 ± 0.10
Milk ejection time (min)	2.23 ± 0.28	2.63 ± 0.30	2.03 ± 0.37	2.33 ± 0.40
Total milking time (min)	4.53 ± 0.42 <sup>a</sup>	4.16 ± 0.42 <sup>ab</sup>	3.94 ± 0.21 <sup>ab</sup>	3.70 ± 0.21 <sup>b</sup>
Average Flow Rate (kg/min)	0.71 ± 0.21	0.86 ± 0.18	0.86 ± 0.17	0.96 ± 0.17
Peak Flow Rate (kg/min)	1.91 ± 0.28 <sup>ab</sup>	1.78 ± 0.31 <sup>b</sup>	1.61 ± 0.27 <sup>b</sup>	2.31 ± 0.28 <sup>a</sup>

## Conclusion

Dromedary camels are readily to milk efficiently at 50 kPa and 60 ppm at early stage of lactation. The existing high residual milk (30%) needs further investigation.



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