

# Oxytocin release as good indicator of milking machine efficiency in camels

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## Introduction

There is still a strong traditional belief that it is not possible to milk correctly a camel by machine and without her young. This study aims to use the first Oxytocin EIA developed for camels (Marnet et al, 2018), to objectify the quality of stimulation induced by mechanical milking compared to suckling stimulations in maternal she-camels.

## Materials and Methods

Six multiparous (13,6year±5,9;439,16 kg±35,7) Maghrebi dairy camels in mid- lactation.

**Protocol:** camels were acclimated to frequent handling in order to reduce stress related to manipulation during blood sampling episodes.

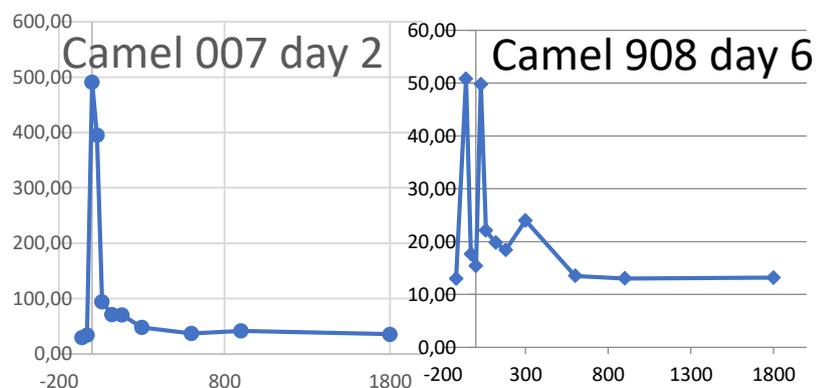
OT concentrations were determined before, during and after two different natural calf suckling episodes by jugular blood venipuncture at -2; -1; -0,5; 0; 0.5; 1; 2; 5; 10; 15 and 30 min (OT release patterns). Three weeks later, after training of camels to human manipulation, parlor entry, milking by hand then by machine in a mixed management of suckling and milking, blood sampling were done again during two episodes of machine milking in a new designed parlor, without young aside mothers, using the same sampling frame. Milking machine settings were 60 puls/min, 60% ratio and vacuum of 48 Kpa.



## Results

We found varied and significant patterns of OT release with one or two peaks of release of different amplitudes.

**Suckling** induced significant higher concentrations of OT at the peak ( $265.41^a \pm 41.26$  pg/ml), total OT quantity released ( $29935.00 \pm 4306.68$  pg/ml/30min), number of pre-stimulation releases (11/12 suckling) than **machine milking** ones ( $79.05^b \pm 45.18$  pg/ml and  $7895.42^b \pm 4717.73$  pg/ml/30min and 3/12 milking respectively).



## Discussion and Conclusion

We verified that **milking machine induce significant OT releases during milking in parlors and without calves presence**. Nevertheless, stimulations during mechanical milking were lower than during suckling probably due to the new environment and equipment for our camels and to inhibition in OT release due to maternal selectivity of some she-camels in this mixed management. Consequently, we need to better adapt machine settings, material and parlor conception to animals and we confirm the usefulness of OT release pattern recording to evaluate the quality of stimulation during machine milking.

MARNET P.G., PORTANGUEN J., ATIGUI M., HAMMADI M., 2018. First evidence of oxytocin discharge during machine milking in dromedary camels. In proceeding of the 5<sup>th</sup> conference of ISOCARD, 12-15 Nov. Layoune, Maroc.