



Tropentag, October 6-8, 2009, Hamburg

“Biophysical and Socio-economic Frame Conditions  
for the Sustainable Management  
of Natural Resources”

## Effect of Machine-milking Regimes on Lactation Performance and Oxytocin Release in Syrian Shami Cattle

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### Abstract

Two different machine-milking regimes were used to evaluate the lactation performance and Oxytocin (OT) release in primiparous Syrian Shami cows. For this purpose 12 Shami cows were investigated and divided randomly into two equal groups. Six cows were milked in the presence of the calves (PC) and subsequently suckled, whereas the remaining six cows were exclusively machine milked without the presence of their calves (WC). Milk yield and milk composition were measured each week from day 7 until day 91 of lactation during two milkings (morning and evening).

Blood samples were taken during the two milking times from each individual cow between days 43 and 65 of lactation. A day before blood sampling, cows were catheterized in jugular vein. Sampling was performed before, during and after milking. Blood samples were anticoagulated with K3-EDTA, cooled on ice, centrifuged at 3000 g for 15 min. Plasma was separated and stored at -20°C until used for radioimmunological determination of OT concentration. The degree of udder evacuation was determined by the succeeding removal of residual milk

For statistical evaluation, analysis of variance was calculated based on least-square means using the MIXED procedure of SAS (SAS, 8.1). Results are presented as means  $\pm$  SEM.

PC released OT during the milking process, whereas in the WC group no OT release was detected throughout the milking process. Consequently, the residual milk fraction was much lower in PC than in WC (11 v. 58 %,  $p < 0.05$ ) and daily milk yield until day 91 post partum was higher in PC than in WC ( $12.6 \pm 0.3$  v.  $7.1 \pm 0.4$  kg,  $p < 0.05$ ). In conclusion, Syrian Shami cattle are not suitable to be exclusively machine milked without the presence of their calves.

**Keywords:** Oxytocin, residual milk, suckling, Syrian Shami cattle