

## CORRELATION OF PROGESTERONE CONCENTRATION IN LITHUANIAN RED COW MILK WITH MILK YIELD AND MILK COMPOSITION DURING OESTROUS

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**Abstract.** Concentration of progesterone during oestrus is associated with cow fertility and success of the inseminate. The aim of the study was to evaluate milk yielding, milk composition and number of lactation relation with cow milk progesterone concentration during oestrus.

Clinically healthy Lithuanian Red (LR) breed cows without reproduction disorders, and 90–100 days after calving (n=30) during oestrus were divided by milk yield (20% less – first group, average – the second and the third 20% higher) and by lactation number (the first, the second and the third). Milk samples for progesterone and milk composition determining were taken during oestrus, after milking and stored in plastic containers (50 ml), not preserved. Milk was taken once, when oestrous was observed. Progesterone has been determined using the set HORMONOST MILK produced by BIOLAB GmbH company (Munich). Milk composition (fat, protein) was determined by device EKOMILK M, based on ultrasonic technology. Somatic cells were measured EKOMILK SCAN analyser.

Progesterone concentration in cows' milk Group II of cows was by 30.34% higher than in Group I, but by 17.65% lower than in group III ( $P>0.05$ ). Difference of mean of progesterone compare III was by 40.79% higher than in Group I ( $P<0.05$ ).

The highest concentration of progesterone was determined in the milk of cows of third and more lactation – (by 55.4% higher than of cows the second lactation and by 26.4% higher than cows of the first lactation. Progesterone concentration during oestrous correlated with milk yield  $r=0.50$  ( $P<0.01$ ), and milk protein concentration  $r=-0.46$  ( $P<0.01$ ).

Milk yield and lactation number of LR cows associated with inadequate progesterone concentration during oestrous and it may be the cause of decreased fertility of high yielding cows.

**Keywords:** milk yield, milk composition, fertility, progesterone