

## THE DAIRY COWS HEAT ABILITY ASSESSMENT BY CHANGES OF PROGESTERONE CONCENTRATION AT POSTPARTUM

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**Abstract.** The objectives of the current study were to determine clinical value of changes in progesterone levels when evaluating cow's ability to estrus. Overall, 25 Lithuanian Holstein cows from one commercial dairy herd in Lithuania were studied. The progesterone level fluctuation (profile) in milk was detected with semi quantitative methods every five days, over the 20 to 90 DIM periods. Cows were monitored for estrus an hour before the morning milking, an hour after evening milking and 15 minutes after the noon milking. Cows in heat were identified by common clinical signs. Cows were divided into two groups of 25 animals: group 1 – estrus was observed up to 90 days after calving, group 2 – estrus was not detected until 90 days after calving. Milk yield was collected and its composition determined during milking every 30 days starting on day 30 after calving.

The peak concentration of progesterone was observed on the average on the 30<sup>th</sup>, 45<sup>th</sup>, 70<sup>th</sup> and 90<sup>th</sup> day after calving. Progesterone concentrations varied in a similar way in both groups. In the group with estrus, the concentrations of progesterone (8.2 proc.  $p < 0.05$ ) and milk yield (5.6 %  $p > 0.05$ ) were higher. Statistical correlation between progesterone levels and cows yielding was not determined ( $r = 0.2$ ,  $p > 0.05$ ). Atypical (unrepresentative on estrus cycle) rise in progesterone levels was detected on the 70<sup>th</sup> day after calving. This might be associated with higher milk yield. Progesterone changes are indicative of cows ability to estrus. If elevated progesterone levels characteristic to estrus cycle are detected and reach maximal values, one might expect that cow's estrus will start on the 90<sup>th</sup> day after calving.

**Keywords:** progesterone, estrus cycle, cow