

## New method to detect fertility on dairy cows using milk P4

Reproduction management is always a challenge on productivity and profitability of dairy farms. The prompt detection of estrus, pregnancy, embryonic death and ovarian problems are the priority of veterinarians and farmers to reduce economic losses. Milk progesterone (P4) tests are widely used on farms to detect these fertility problems. However, the current milk P4 analysis is prone to errors due to the difficulty to interpret the data.

Recently, a study realized in Belgium developed a new method to detect luteolysis based on the readings of milk P4, farm data (insemination and parturition dates) and a mathematical process. The study was conducted on 38 dairy cows from which estrus (result of luteolysis) was successfully detected (100%) with this method and then confirmed by experts. In that study, 25 to 32 days after insemination, high values of P4 (no luteolysis detected) of 13 cows indicated the diagnosis of pregnancy, contrary the low values of P4 (luteolysis) confirmed the embryonic loss. The system could also detect the presence of persistent corpus luteum (CL) (delay luteolysis) and other follicle problems. The authors of the study affirm that the amount of data collected is not enough to justify its use in an on-line monitoring system. However, the results show good evidence that this method should be further researched and implemented.

**Our conclusion:** This study has shown on a limited number of cows that the using P4 in combination with other information is efficient in the diagnosis of estrus, pregnancy embryonic loss and detecting ovarian problems. However, further studies need to be done regarding number of cows, sampling frequency and to refine the diagnosis of ovarian abnormalities as well as to validate it in a field trial with several farms and with different management strategies. (jc)

Source: Adriaens et al. (2018), J. Dairy Sci. 101:8369-8382.