
Consequences of extending the voluntary waiting period for insemination on ovarian cyclicity and reproductive performance in dairy cows

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Extending lactation length in dairy cows is of interest because it reduces the number of calving events per cow per time unit and herewith possibly reduces the risk for health and fertility problems associated with calving and start of lactation. Extending lactation length can be realized by deliberately delaying first insemination, i.e. extending the voluntary waiting period for first insemination (VWP). Moreover, it can be hypothesized that insemination later in lactation is related with improved ovarian cyclicity. The aim of the present study was to evaluate the effect of an extended VWP on ovarian cyclicity and reproductive performance of dairy cows. Holstein-Friesian dairy cows (N=150) were blocked by parity, calving season and expected FPCM. Within blocks, cows were randomly assigned to one of three VWP (50, 125 or 200 days). Cows were artificially inseminated at first estrous after end of VWP. Milk samples were collected three times a week until pregnancy and analysed for progesterone concentration. At least two succeeding milk samples with progesterone concentration of 2 ng/mL or greater were used to indicate the onset of luteal activity (OLA) and to classify ovarian cycles. Ovarian cycles were classified as: normal (ovarian cycles of 18 to 24 days in length), short (ovarian cycles <18 days) and prolonged (ovarian cycles >24 days). Extended VWP of 200-d and 125-d VWP was related with increased number of cycles within first 100 DIM compared with 50-d VWP (2.6, 2.8 vs 1.6, $P < 0.01$). During 100 DIM around the end of VWP (-50 till 50 d), 200-d VWP treatment had greater percentage of cows with normal cycles (90.55 vs 53.48, $P < 0.01$) and lower percentage of cows with short (0.79 vs 11.24, $P = 0.02$) or prolonged cycles (8.66 vs 35.28, $P = 0.01$) compared with 50-d VWP treatment. Cows with 200-d VWP had less days till pregnancy after end of VWP compared with cows with 125-d or 50-d VWP (31.17 vs 54.78, 58.33 d, $P = 0.04$). In conclusion, extended VWP could improve reproductive performance, which was related with shorter intervals to pregnancy after end VWP, greater cycle number before insemination and greater percentage of normal cycles around VWP.