

Effect of time to resumption of ovarian cyclicity postpartum on fertility and survival of Holstein Cows.

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Early resumption of ovarian cyclicity (ROC) after calving has been associated with improved reproductive performance. Remarkably, it is reported that approximately 20 to 40% of Holstein cows remain anovulatory by 50 to 60 DIM. The objective of this study was to evaluate the effect of time to ROC on fertility and survival in a large multi-State Holstein population. A secondary objective was to analyze potential risk factors for delayed cyclicity. A total of 11,733 cows calving in 16 farms located in 4 regions (Northeast [4 herds], Midwest [6 herds], Southeast [1 herd], and the Southwest [5 herds]) were enrolled at parturition and monitored weekly for multiple reproductive events, disease occurrence, and survival. Resumption of OC was assessed via transrectal ultrasonography at 40±3 and 54±3 d postpartum. Pregnancy diagnosis was performed by ultrasonography on d 32±3 d after AI and reconfirmed at d 60±3 of gestation. Diseases included retained fetal membranes, metritis (7±3 DIM; foul-smell, watery, brownish vaginal discharge), subclinical ketosis (7±3 DIM; serum BHBA > 1.0 mmol/L), mastitis (farm records), left displaced abomasum, clinical endometritis (28±3 DIM; from mucopurulent to fetid vaginal discharge) and lameness (35±3 DIM; score >3). Multivariate logistic regression and ANOVA were used for testing potential associations between ROC and multiple explanatory and outcome variables, with farm included as a random effect in all the models. Early ROC was affected by parity (OR [95% CI] = 0.79 [0.72-0.87] for primiparae cows), calf gender (0.89 [0.81-0.97] for other than female singletons), BCS at calving (0.71 [0.64- 0.79] for cows with BCS <2.75), BCS at 40 DIM (0.62 [0.56- 0.68] for cows with BCS <2.75), subclinical ketosis (0.78 [0.70-0.87] for affected cows), lameness (0.65 [0.57-0.75] for lame cows), and clinical endometritis (0.64 [0.58-0.70] for affected cows). On the other hand, early ROC resulted in reduced days open (132 d vs. 150 d; P <0.001) and in higher odds (95% CI) of pregnancy at first (1.92 [1.74-2.12]) and second AI (1.42 [1.26-1.60]). Early ROC was also associated with lower odds of being sold after 55 DIM (0.79 [0.71-0.89]). However, the probability of pregnancy loss at first and second AI and the probability of dying after 55 DIM were not associated with early ovulation.