Animal Reproduction

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EMBRYOLOGY, DEVELOPMENTAL BIOLOGY, AND PHYSIOLOGY OF REPRODUCTION

Prevalence of cytological endometritis and milk yield of postpartum Holstein and Girolando cows housed in compost barn systems

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Compost barn systems are spreading in Brazil very rapidly, for housing Holstein or Girolando herds. Farmers frequently house the prepartum cows in the compost barn, aiming for the care of the transition period. This housing provides comfort and avoids the heat stress effects on the upcoming lactation and calf health. However, with calvings occurring on the composting bed it is still necessary to determine the negative effects of the composting bed on uterine health. The objective was to evaluate the prevalence of cytological endometritis in Girolando and Holstein cows calving in compost barns and its impact on milk yield. Fifteen dairy farms participated in the study. One visit was realized in each farm and all cows between 21 and 42 days postpartum were enrolled. A total of 181 multiparous and primiparous cows (88 Holstein and 93 Girolando) were submitted to endometrial cytology by the cytobrush technique according to Kasimanickan *et al.*, Theriogenology, 62:9-23, 2004. The smears were Panoptic fast (Laborclin, Pinhais, Brazil) stained and at least 300 epithelial and leukocyte cells were counted under optical microscopy (1000X) (Leica, Wetzlar, Germany). Cows with 6% or more polymorphonuclear leukocytes counts were considered as positive for cytological endometritis. Cow milk yield also was recorded. The cows were categorized according to days of postpartum in weeks (week 3 – 21-27 days postpartum, week 4 – 28-34 days postpartum and week 5 – 35-42 days postpartum). The prevalence of cytological endometritis (CE) was analyzed by chi-square test according to breed, postpartum week and parity. Milk production was analyzed by proc GLM considering the effects of CE status, breed, week, parity and breed x CE status. The data was analyzed in SAS v. 9.4. The overall CE prevalence was 26.49% (49/181). The prevalence of CE in Holstein cows (22.73%, 20/88) was lower (p=0.0593) than in Girolando cows (31.18%, 29/93). There was no parity or parity x breed effect on CE (P>0.05). Primiparous cows presented 31.03% (18/58) of CE while 22.09% (19/86) of multiparous cows presented CE. The prevalence of cytological endometritis was higher (P=0.0008) on week 3 (48.48%, 16/33) than on weeks 4 (25.00, 9/36) and 5 (15.56%, 14/90), regardless of the breed. Girolando cows yielded less milk (28.32±1.16 kg/day) than Holstein cows (38.23±1.60 kg/day) (P=0.0018), with no parity effect (P>0.05). Cows with cytological endometritis produced less kg/milk/day than healthy cows (P<0.05; 28.26±2.00 *vs* 34.31±1.21, respectively). As expected the prevalence of CE was higher on cows evaluated on week 3 (48.48%). However the 15.56% of CE cows evaluated on week 5 postpartum demonstrates that uterine inflammation was not completely resolved by this time. Environmental factors, especially composting bed quality can play a major role in uterine inflammation and this association must be cleared. Support: Fapemig APQ-00665-22 and RED-00132-22.