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Abstract Submission Form

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Preferred presentation Poster

Preferred session Session 1: WG Animal Data Exchange – Decision Support Tools of the Future – Promoting Sustainability Farm Management

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Title of your paper Comparing the milking behaviour of primiparous vs. multiparous Holstein and Jersey cows in an automated batch milking system

Insert ABSTRACT text

The onset of lactation and the subsequent period of habituation to the milking routine is a stressful process for dairy cows, where new social groups and novel stimuli converge. This period seems to be particularly challenging for primiparous cows. The objective of this study was to compare the dynamics of milking behaviour during the early lactation of primiparous vs. multiparous Holstein (HO) and Jersey (JE) cows, under an automatic milking system with a semi-voluntary batch milking design. This retrospective observational study included information from milking events in 2,138 cows from May to December 2023 in an organic-certified herd in Texas, USA. Milking behaviour information for the first four weeks of lactation included % of incomplete milkings (INC), % of kick-offs (KO), and % of teat cleaning failure (TCF), collected from DelPro software (DeLaval, Sweden) and used as a proxy for habituation to the milking routine and system. Cows were moved to the milking barn twice per day, where they could select their milking visits among 22 robots (DeLaval, Sweden). Parity [primiparous (PRIM) and multiparous (MULT)] and calving data were extracted from PCDART software (DRMS, NC, USA). Data were analysed by logistic regression to assess the differences in milking behaviour between PRIM and MULT cows within two breed

groups (HO and JE) in weekly intervals following calving (W1; W2; W3; and W4). After edits, 28,165 milking records were analysed in 2,138 cows (27% primiparous; 73% multiparous). The frequencies of undesirable milking behaviours (INC; KO; and TCF) were greatest in PRI cows in both HO and JE during most of the weekly periods. The greatest frequencies of INC per milking event were in PRI cows during W2 (HO = 8.6% and JE = 12.0%). The greatest frequencies of KO were also in PRI during W1 (HO = 10.2%; JE = 17.2%), while the greatest TCF for HO and JE were 8.38% (W1) and 4.98% (W2), respectively. In HO, the odds (95% confidence interval) of INC were greater for PRIM compared with MULT cows during W2 [2.39 (1.72-3.31)], W3 [1.63 (1.21-2.18)] and W4 [1.65 (1.20-2.25.)] Similarly, in JE the odds of INC were greater for PRIM for all the weekly periods: W1 = 77.6 (15.1-1,419), W2 = 7.54 (5.28-10.9), W3 = 3.06 (2.19-4.27), and W4 = 2.75 (1.94-3.87). The odds of KO were greater in PRIM HO during W1 [3.42 (1.74-6.62)], W2 [2.28 (1.66-3.12)], and W3 [1.83 (1.35-2.48)]. In JE, the odds of KO were greater in PRIM during W1 [8.33 (4.53-15.48)], W2 [3.61 (2.76-4.70)], W3 [2.43 (1.90-3.08)], and W4 [1.69 (1.30-2.18)]. Finally, the odds of TCF were greater in PRIM HO during W1 [2.05 (1.02-3.92)] and W2 [1.98 (1.39-2.80)]. In JE, the odds of TCF were greater in PRIM during W1 [4.09 (1.35-11.5)], W2 [5.10 (3.08-8.44], and W3 [2.71 (1.39-5.15)]. These results highlight the differences in milking behaviour during the early lactation of primiparous vs. multiparous cows in both Holstein and Jersey cows. As anticipated, the magnitude of these differences decreased during weeks 3 and 4, which may be associated with the process of habituation to milking during the first lactation. The greater disparity between primiparous and multiparous reported in Jersey compared with Holsten cows may relate to differences in udder conformation, incidence of udder oedema, body size, or temperament.

Enter keywords Primiparous, habituation, automatic milking, behaviour