

ORP values show high oxidizing capacity and stability over time. Cl concentrations of EF and SG initially were 2200–2300 and 3000–3100 ppm, respectively. Cl concentrations remained higher in SG v. EF over the time period. Cl concentration decreased over the 90-d period but were still 1000 and 1200 ppm, well above 200 ppm disinfectant strength. Overall, the 2 chlorine disinfectant solutions showed very high ORP levels and decreased but still very effective chlorine concentrations over time.

Key Words: chlorine, disinfectant, ORP

T20 Associations of dry-off management and somatic cell count in robotic milking systems. F. H. Padua, M. T. M. King*, and T. J. DeVries, *Dept. of Animal Biosciences, University of Guelph, Guelph, ON, Canada.*

The objective of this study was to evaluate associations of dry-off management factors and production data with SCC before dry off and in the subsequent lactation of cows milked in robotic systems. Milk data were collected for a 2-yr period for 342 multiparous (2.9 ± 1.1 lactations) dairy cows from 5 farms in Ontario, Canada. Parity, DIM at dry off, dry period length, and daily milk yield were recorded for each cow. Producers were surveyed about dry off management protocols including products and gradual milking cessation (tapering) methods used. Two years of SCC data were collected from DHI tests for each farm, for 2 tests before dry off and 2 tests post-calving. On average, cows were dried off at 350 ± 67 (mean \pm SD) DIM and were dry for 64 ± 50 d. Before dry off (mean of 2 d before), cows were producing 15.8 ± 0.4 (mean \pm SE) kg/d, however before any tapering occurred, cows were producing 18.3 ± 0.4 kg/d. The median pre-dry off SCC was 66,500 and 93,000 cells/mL at the 2nd and 1st test before dry off. In the subsequent lactation, median SCC was 52,500 and 46,000 cells/mL at the 1st and 2nd test post-calving. In logistic regression models, milk yield before dry off was positively associated with the risk of being tapered; each 1 kg/d increase in milk yield was associated with a greater risk (OR = 1.14; 95% CI = 1.09–1.20) of being tapered ($P < 0.001$). In mixed linear regression models, 1st test post-calving SCC was associated with SCC at the test before dry off ($P = 0.02$). Post-calving SCC at the 2nd test was associated with whether cows were tapered before dry off ($P = 0.05$), and SCC at the test before dry off tended ($P = 0.09$) to be associated with tapering. Milk production before tapering was also associated with SCC at the test before dry off ($P = 0.02$), such that cows producing ≥ 20 kg/d before tapering also had lower SCC before dry off. There were no associations of post-calving SCC with parity, antibiotic use, sealant use, dry period length, or DIM at dry off. These results show that producers with robotic milking systems are using some form of gradual milking cessation when drying off their higher producing cows, and that the resultant reduction in milk and pre-dry off SCC are associated with SCC in the subsequent lactation.

Key Words: robotic milking, dry off management, somatic cell count

T21 Effect of minerals and vitamins supplementation during the non-lactating period on incidence of metritis in lactating dairy cows. G. A. Mattioli¹, C. G. Sarramone², E. Turic², M. Sain-Martin², and A. E. Relling^{*3}, ¹*Fc. Cs. Veterinarias, UNLP, La Plata, Buenos Aires, Argentina*, ²*Biogenesis Bago, Garin, Buenos Aires, Argentina*, ³*Department of Animal Sciences, The Ohio State University, Wooster, OH.*

Trace minerals and vitamins associated with antioxidant defense improve the immune response in dairy cattle during critical periods such as peri-

partum. Metritis represents a severe consequence of immune failure. The objective of the current study was to evaluate the effect of prepartum trace mineral and vitamin supplementation on the incidence of metritis in early lactation dairy cows. The trial was realized in a commercial dairy herd in Buenos Aires, Argentina. The herd was comprised of 574 primiparous and multiparous Holstein cows that were randomly divided in 2 groups: supplemented ($n = 301$) and non-supplemented ($n = 273$). Supplementation consisted of 3 parenteral applications of trace minerals and vitamins (Cu: 50 mg, Zn: 200 mg, Mn: 50 mg, Se: 25 mg, Vit. A: 315000 IU, and Vit. E: 250 IU - Adaptador, Biogénesis Bagó SA). Treatment was applied at drying off (60 d before calving), 21 d before calving, and at calving. The effect of treatment on the incidence of metritis was assessed by logistic regression analysis. The model included the fixed effects of mineral and vitamin supplementation (supplemented vs. non-supplemented), parity (1 vs. 2+) and their interaction. For the main and interaction effects, the α level of significance was set at $P < 0.05$ and $P < 0.1$, respectively. The incidence for metritis shows a treatment by parity interaction ($P = 0.09$). The risk of metritis decreased in supplemented multiparous cows, but not in primiparous cows compared with non-supplemented. Supplemented multiparous cows had a lower prevalence of metritis than non-supplemented (14 vs 26%, respectively). Conversely, the percentage of affected primiparous cows was similar for those receiving or not receiving the supplementation (32 vs. 30%, respectively). In conclusion, supplementation with a mix of antioxidant trace minerals and vitamins reduces the odds for metritis in multiparous cows.

Key Words: antioxidant, mineral, vitamin

T22 Effect of somatic cell count around service on the fertility of grazing dairy cows. N. Lorenti¹, R. Rearte^{2,5}, M. Giuliodori³, and R. de la Sota^{*4,5}, ¹*Práctica Privada, Brandsen, Buenos Aires, Argentina*, ²*Cátedra de Higiene, Epidemiología y Salud Pública, Facultad de Ciencias Veterinarias- Universidad Nacional de La Plata (FCV-UNLP), La Plata, Argentina*, ³*Cátedra de Fisiología, FCV-UNLP, La Plata, Argentina*, ⁴*Cátedra y Servicio de Reproducción Animal, FCV-UNLP, La Plata, Argentina*, ⁵*Nacional de Investigaciones Científicas y Técnicas (CONICET), Buenos Aires, Argentina.*

The objective of this study was to assess the effect of high somatic cell counts (SCC) in early lactation on the probability of cows to conceive at first artificial insemination (FAI). A total of 6642 lactations started from 2003 to 2015 from 5 dairy herds having SCC records 21 d before and 21 d after the first artificial insemination (FAI) were included in the study. Lactations were classified as: healthy (HEA) when both SCC were $<150,000$ cells/mL ($<150K$); as cured (CUR) when they had SCC $>150K$ before and $<150K$ after their FAI; as new cases (NEW) when they had SCC $<150K$ before and $>150K$ after their FAI; and as chronic (CHR) cases when they had SCC $>150K$ before and after FAI. Logistic regression models were run to test the effect of SCC (healthy, cured, new, chronic) on the odds of conception at FAI (model 1); and to assess the effect of severity of chronic cases, classified according to their SCC after FAI as light ($\geq 150K$ and $<400K$), mild ($\geq 400K$ and $<1000K$) or severe ($\geq 1000K$) on the odds of conception (model 2). Both models also accounted for the effect of year (2003–2015), herd (1–5), parity (1 vs. 2 vs. 3+) and accumulated milk yield up to 150 DIM. In model 1, the odd of conception at FAI was 14.6% lower in chronic cases compared with healthy cows ($P < 0.05$, Table 1). In model 2, the odd of conception at FAI was 33% lower in severe chronic cases compared with healthy cows ($P < 0.05$, Table 1). In both models, the remaining groups had numerically lower non-significant odds of conception (Table 1). In conclusion,