

times a day (09:00, 13:00, 19:00). Blood samples were taken once a week each Wednesday. White blood cells count (WBCC) was measured and, after that, blood was centrifuged and the plasma fraction storage at -80°C until subsequent analysis. IgG, IgM and complement system activity (Classical plus alternative and alternative pathway alone) were evaluated. A Proc Mixed procedure was performed by SAS statistic package. Mean blood plasma IgG was 26.7, 17.8, 9.8, 11.7 and 14.8 mg/ml at week 1, 2, 3, 4 and 5 respectively. Blood plasma IgG was significantly higher at week 1 than other periods studied and the level of IgG was reduced as milking frequency was high. Blood plasma IgM was 0.8, 0.9, 1.0, 1.1 and 1.3 mg/ml at week 1, 2, 3, 4 and 5 respectively. The highest blood plasma IgM was observed at week 5, showing an increase trend during the experimental time. WBCC was 14.0, 14.0, 15.0, 13.9 and 13.5x10³ cells/ml at week 1, 2, 3, 4 and 5 respectively. WBCC at week 3 was significantly higher than at week 5, although a trend was observed while milking frequency increased the WBCC concomitant increased. Complement system activity measured as Classical plus alternative pathways activation was 44.7, 47.0, 55.2, 71.7 and 71.7 % at week 1, 2, 3, 4 and 5 respectively. Complement activity measured as alternative pathway alone was 28.8, 31.8, 39.2, 42.0 and 40.9 % at week 1, 2, 3, 4 and 5 respectively. Complement activity measured as classical plus alternative pathways and alternative pathway alone were affected (increasing) by milking frequency during the first three weeks, and after that the complement activity still increased. As a preliminary conclusion, milking frequency affect in a different way the innate and acquired immune status of dairy goats. Nevertheless, further studies are necessary.

Effects of selfsuckling behavior on immune milk status, milk quality and milk technological parameters

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Abstract / Resumo:

The aim of this study was to evaluate the effect of selfsuckling on immune milk status, milk quality and milk technological parameters on cisternal and alveolar fractions. Eleven Majorera breed dairy goats were observed to display a unilateral selfsuckling behavior. Goats were milked daily by machine milking and milk samples were obtained weekly. During 6 weeks the cisternal milk yield was evaluated from each suckled (SU) and non suckled gland (NSU) after the administration of an intravenous injection of an inhibitor of oxytocin (Atosiban®). After cisternal milk removal, goats were intravenously injected with 2 IU of Oxytocin in order to collect and record the alveolar milk. In cisternal and alveolar fractions were measured immune parameters (IgG, IgM, Chitotriosidase and Somatic cell count), milk quality parameters (Fat, Protein and Lactose percentages) and technological parameters (pH, Density, Titratable acidity, Rennet clotting time, Ethanol stability). Data from six weeks were pooled and an ANOVA was performed using a SAS statistic package. No effects of selfsuckling behavior were observed for cisternal or alveolar milk yields. In reference to immune parameters the cisternal milk IgG concentration was affected by selfsuckling being higher on SU glands (30%). In the same way, somatic cell count was significantly higher on SU glands (225%). No effects on alveolar milk immune parameters were observed. Milk quality parameters were not affected by selfsuckling neither in cisternal nor alveolar fractions. Technological parameters were affected by selfsuckling behavior, with

special reference to pH and titratable acidity. pH was significantly higher on SU than NSU cisternal milk but that differences did not reach significance on alveolar fraction ($P=0.08$). Titratable acidity was significantly lower on SU than NSU cisternal milk however no differences were observed in alveolar milk. In sum, selfsuckling behavior observed in intensive management affect the immune milk status and technological parameters overall in cisternal milk. These effects must be investigated in relation to mastitis susceptibility and cheese quality.

Effect of different treatments on colostrum antimicrobial activity

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Abstract / Resumo:

The aim of the present study was to evaluate the effect of different pasteurization methods and different technological treatments as skim or rennet on the antimicrobial activity in goat colostrum against *Escherichia coli*. The first postpartum colostrum from ten dairy Majorera goats was collected by a milker bucket. The obtained colostrum was divided in six aliquots (50ml) and storage at -80°C until analysis were performed later on. Colostrum samples were defrosted and heated at 37°C in a water bath and, after that, the different treatments were applied, except on control samples. The pasteurization was performed using three different methods, at 56°C during 1 hour, 63°C during 30 minutes and 72°C during 15 seconds. Another colostrum aliquot (50ml) was skimmed by using a commercial skimmer. The final aliquot was clotted by using commercial rennet and colostrum whey obtained was recovered after centrifugation. Ten microlitres of each sample were imbibed in a sterile antibiogram disk and let to dry. Sterile saline serum and Enrofloxacin (250 microgram) were used as negative and positive control, respectively. Two hundred microliters of *E. coli* (ABS 600 nm = 3) were plating into Petri dishes with violet red bile agar medium. In each Petri dish, 4 antibiogram disks (positive and negative controls and two samples to test) were located and incubated at 37°C for 24 hours. After that, halos were measured using a digital scanner. A Proc Mixed procedure was performed by SAS statistic package. Assuming positive control as 100% of antimicrobial activity and negative control as 0% of antimicrobial activity, the percentages of the different samples were as follow: control samples (without treatment) 14.78%, pasteurization at 56°C during 1 hour 12.28%, pasteurization at 63°C during 30 minutes 14.48%, pasteurization at 72°C during 15 seconds 9.71%, whey colostrum 6.35% and skimmed colostrum 16.22%. As preliminary conclusion, pasteurization (at 56 and 63°C) and skimmed did not affect significantly the colostrum antimicrobial activity, although pasteurization at 72°C and colostrum whey decreased the antimicrobial activity of goat colostrum.

Effect of milking frequency and genotype on udder morphology and milk quality

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