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Book of Abstracts

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hydrolysate (CH) is an intramammary treatment reported to induce mammary involution. Objectives were to study cessation of milk production after CH infusion of one mastitic quarter for the rest of lactation, subsequent 3-quartered cow milk production and SCC. After the next calving, both total-cow and previously treated quarters' milk production, SCC and bacterial cure were studied. Criteria for enrolment: target quarter SCC > 10^6/mL, SCC ≤400,000/mL in the 3 non-mastitic quarters, target quarter producing >20% (front) or >25% (rear) of total-cow milk, cow producing ≥22.7 kg milk/day, 75–190 days until next due date, and mycoplasma-negative. Cows were blocked based on lactation number (1st or 2nd-plus) and culture status (at least one pathogen isolated or no growth), and 3 treatments were randomised in a 2:2:1 ratio: CH, non–hydrolyzed casein (NHC), and ceasing milking only (negative; N). Target mastitic quarters were milked once per day and treated for 3 days, then not milked until next calving. Total-cow (3 lactating quarters) milk and SCC were measured 7–14 days later. Post-calving, total-cow and previously treated quarters' SCC and production were measured once, 10–21 DIM. Bacterial cure defined: all 3 weekly cultures during the first 21 DIM negative for a pathogen isolated pre-treatment. Of 40 cows enrolled, 12 were culled and 28 calved again (14 CH, 9 NHC, 5 N). Pre-treatment measures were the same among treatment groups. Decreases in cow SCC (−966,000/mL) and cow production (−14%) for the rest of lactation after treatment of the target quarter were significant (p <.02, ANOVA), but not different among treatments. After calving, total-cow production (33.2 kg), previously treated quarter SCC (1.41×10^6/mL) and quarter production (25% of cow) were not different among treatments. The CH and N treated cows had significant decreases in target quarter SCC after next calving (-2.76×10^6/mL and -5.32×10^6/mL; p < 0002). Bacterial cure proportion (14/16, 88%) was not different among treatments, chi-square. Casein hydrolysate infusion was associated with involution of mastitic quarters, reduced SCC for the remainder of lactation, and all quarters returned to milk production with reduced SCC following calving.

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Production, oxidation traits and health of dairy ewes fed diets supplemented with fungus myceliated grains

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Mushrooms contain many bioactive compounds beneficial for human health. Polysaccharides from mushrooms exhibited immunomodulatory, antibacterial, antiviral and antifungal properties, as well as antitumor activity. Some mushrooms showed antioxidant properties due to phenolic acids, flavonoids, polysaccharides, carotenoids, ascorbic acid and tocopherols contents. These properties indicate the potential use of mushrooms as performance-enhancing feed additives for livestock. The effects of mushrooms-based diets have largely been investigated in the poultry species, whereas few studies have involved the ruminants. This study was undertaken to evaluate the effects of fungus myceliated grains (FMG) in diets fed to dairy ewes on intestinal parasite control, milk production, milk fatty acid (FA) profile, and cheese oxidative stability. For 8 weeks, 21 Valle del Belice ewes were divided into 3 homogeneous groups fed hay *ad libitum* and 1.3 kg/day of a concentrate containing faba bean (50%), barley (30%) and sorghum (20%), this latter as myceliated or non-myceliated grains; accordingly, the concentrate included FMG at levels of 20% (FMG20), 10% (FMG10), or 0% (FMG0). To prepare FMG, sterile grains were incubated with mycelia of selected mushrooms at 25 °C for 8 weeks, dried at 60 °C for 24 h and stored at 4 °C until used. During the trial, the FMG20 ewes showed comparable dry matter and nutrients intake, a reduction in intestinal parasite infection, a tendency to increase milk yield, and a higher (p<.05) milk casein (4.8% vs. 4.3% in both FMG10 and FMG0 ewes). In cheeses manufactured 3 times in the last week, the FMG diets induced higher lightness and redness, and less intense yellow colour. Cheeses from FMG20 milk showed a lower secondary lipid oxidation, indicated by TBARs values, and a higher antioxidant capacity, detected by the TEAC assay, suggesting a major oxidative stability of cheese fat due to antioxidant compounds transferred by FMG. The FMG diets did not affect the content of health-promoting polyunsaturated FA in milk, except for n-3 eicosapentaenoic acid, found only in FMG milk. Based on these results, the antiparasitic and antioxidant effects of FMG showed to enhance the health of ewes, milk yield, and the health properties and oxidative stability of dairy products. These encouraging results require to be confirmed by further investigations into the use of mushrooms or FMG as natural feed additives for enhancing health and production of livestock ruminants.