Hygiene and health parameters of donkey's milk

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Objectives

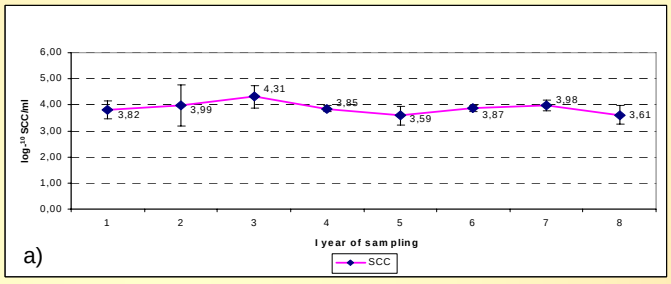
The growing interest toward donkey's milk as food for infants with cow's milk protein allergy implies unexceptionable hygiene and health requirements. A biennal study was carried out on some microbiological parameters of donkey's milk samples from 10 Martina Franca derived dairy jennies machine milked from April to September each year.

Methods

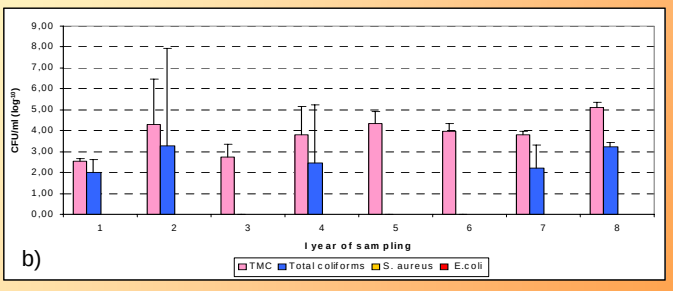
A total of 39 samples of raw bulk milk (per milking) were collected and underwent microbiological evaluation of *Salmonella* spp., *Listeria monocytogenes*, *Listeria* spp. by PCR while *S. aureus* , Total Microbial Count, *E. coli* and total coliform enumeration by plate count. Somatic cells (**SCC**) were enumerated by flow citometry analysis.

Results and Discussion

Pathogens like *Salmonella* spp. and *L. monocytogenes* were not found in all the samples. *S. aureus* has been isolated only once (10 CFU/ml). Among the hygiene indices, total microbial count varied from 2.52 $\log_{10}$ CFU/ml to 5.11 $\log_{10}$ CFU/ml and *E. coli* was observed in 2 samples (10^2 CFU/ml), while total coliform counts varied from <10 CFU/ml to 3.7×10^6 CFU/ml. *Listeria* spp. has been isolated in 20 samples out of 39 (**figures b and d**). SCC were in average low and constant throughout the study (**figures a and c**). Although the results have to be considered as preliminar, they allow a substantially positive judgment on health quality of donkey's milk machine milked showed by both a low SCC and the absence of pathogens like *Salmonella* spp. and L. *monocytogenes.* However, both the occasional isolation of *E. coli* and the ample variability of the coliform contamination suggest that great attention has to be paid in the management of milk since milk hygiene can be compromised as soon as correct procedures of hygiene during milking and collection are disregarded. The presence of *Listeria* spp. in donkey's milk shows an ineffective sanitization of equipments and/or milk facilities.



a)



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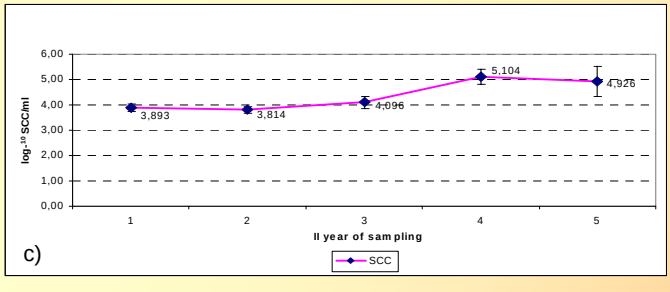
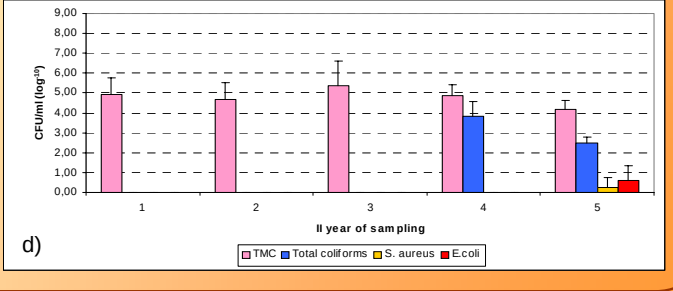


c)



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