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Prevalence and antimicrobial susceptibility pattern and methicillin resistant *Staphylococcus aureus* isolated from raw bulk milk samples from smallholder dairy farms in Jimma, Ethiopia

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A cross-sectional study was conducted between October 2012 and May 2013 to estimate the isolation rates of *Staphylococcus aureus* (*S. aureus*) and to determine antimicrobial susceptibility profiling of the isolated strains. A total of 93 bulk milk samples (50 farm, 3 co-operatives, and 40 vendors) were collected and screened for the presence of *S. aureus*. Out of 93 bulk milk samples cultured, 29 (31.2%) of them were found to be *S. aureus* contaminated. The isolation rate of *S. aureus* was higher in milk obtained from co-operatives (66.7%), and vendors (32.5%), than it was from farms (28.0%). However, there was no statistically significant ($p>0.05$) differences observed among the three critical control points in isolation rate of *S. aureus* in bulk milk. The results of antimicrobial susceptibility test using disk diffusion assay revealed that Staph. aureus strains were highly susceptible to Trimethoprim-sulfamethoxazole (93.1%), Tylosin (89.7%), Streptomycin (65.5%) and Tetracycline (55.2%). In contrast, isolates were highly resistant to oxacillin (methicillin) (86.2%), ampicillin (72.4%), and amoxicillin (65.5%). Various isolates also exhibited intermediate resistance to streptomycin (24.1%), tetracycline & tylosin (6.9%) each and trimethoprim-sulfamethoxazole (3.5%). A large proportion of the isolates obtained were resistant to two or more antibiotics. In conclusion, the *S. aureus* present in the cow's milk may have resulted from human handler, cows and milking environment. Resistance of the isolated strains to majority of antimicrobials might be due to improper (incrimination) use of antimicrobials at study area. Hence, hygienic methods of milk collection and handling at all level should be adopted to ensure contamination free milk for good health of consumers and antimicrobial treatment should also be employed with care and consideration.

Biography

Tadele Tolosa has started his PhD at the age of 41 years at University Ghent, Faculty of Veterinary Medicine. He is leader of Microbiology and Veterinary Public health course team, head of ambulatory clinic and mastitis and milk quality laboratory in School of Veterinary Medicine. He has published more than 47 papers in reputed journals and serving as an editorial board member and reviewer of repute.

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