Title: Multilocus sequence typing of *Staphylococcus aureus* isolated from dairy factories in the state of Goiás, Brazil.

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Staphylococcal food poisoning is a major cause of foodborne disease worldwide and is caused by eating foods, including dairy products, contaminated with toxins produced by *Staphylococcus aureus.* This study aimed to verify the occurrence of *S. aureus* along processing lines of fresh Minas cheese, besides investigating the clonal relationships and antimicrobial resistance of the isolates. Three artisanal dairy plants located at Goiás state, Brazil, were evaluated and samples consisted of raw material, food contact surfaces, non-food contact surfaces and ready to eat products. Collected samples were seeded in selective media and phenotypic tests were performed. Putative *S. aureus* were confirmed by 16S rRNA gene sequencing and selected isolates were submitted to multi-locus sequence typing (MLST) and to antimicrobial susceptibility test. Thirty-three out of fifty-six samples evaluated were contaminated with *S. aureus* (58.9%). The rate of *S. aureus* isolation among the processing plants was 93.3%, 21% and 68.2 % for dairies A, B and C, respectively. Twenty-seven isolates were typed by MLST and five different ST were found, including the new ST 3816. The clonal complex 1 (CC1) was dominant, followed by CC97 and CC126. CC1 is known to harbor epidemic clones usually associated with disease in humans and animals. This CC has been previously found in several sites at dairy A, including ready to eat product, which may indicate persistence or re-introduction at this factory. Although some resistance to commonly used antibiotics was observed, only one of the strains studied was methicillin-resistant *S. aureus* (MRSA). This MRSA strain, found at brine at dairy B, belonged to the CC126 which is commonly associated to mastitis in ruminants. Zoonotic transfer of pathogenic bacteria through food chain, although is not a frequent event, represents a concern to public health. Therefore, the high level of contamination with *S. aureus* along the processing food lines studied is worrisome and clearly indicates the need for closer inspection and sanitary education at small dairies to avoid harm to consumers' health.

Key words: *S. aureus*, MLST, dairy factories, antimicrobial resistance

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