Prevalence of enterotoxin-producing *Staphylococcus aureus* in sushi

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Abstract

Presence of *Staphylococcus aureus* and its ability to produce enterotoxin in sushi purchased from supermarkets and local markets were studied. The results revealed that the aerobic plate count and *Staphylococcus* sp. found in sushi from supermarkets were 3 log CFU/g and 2 log CFU/g less than in sushi from local markets, respectively. Fifty-one colonies typical of *Staphylococcus* sp. on Baird Parker agar were examined for morphological and biochemical characteristics, and only two were identified as coagulase-positive *S. aureus* (M031 and S022). *S. aureus* M031 and S022 were investigated for enterotoxin production in TSB incubated at 35°C for 24 h, and enterotoxin was analyzed by ELISA (TECRA SET VIA). Only *S. aureus* M031 incubated for 24 h was able to produce enterotoxin when the population increased to 8 log CFU/ml. Finally, *S. aureus* M031 (6 log CFU/g) was spiked into sushi and kept at 18 and 30°C. Samples were taken at 0, 12, 18, and 24 h to determine the aerobic plate count and enterotoxin production. *S. aureus* M031 populations increased to 8 log CFU/g in spiked sushi kept at 30°C for 18 h, and analysis for enterotoxin production was positive, and after 24 h of incubation, enterotoxin production tended to increase. However, *S. aureus* counts in sushi kept at 18°C increased to 7 log CFU/g after incubation for 24 h but there was no enterotoxin production.