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Survival of *Staphylococcus aureus* in herbs

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Herbs are of specific relevance in context of food safety. Natural condiments can be contaminated with microorganisms, among them pathogenic species like *Salmonella*, *Bacillus cereus*, but also *Staphylococcus aureus*. Herbs are added to various foods including ready-to-eat products. Thus, consumers can be directly exposed to contaminated herbs. *Staphylococcus* spp. is gram-positive non-spore formers which possess strain variability in the resistance to desiccation. The survival of an enterotoxin A producing food borne incident *S. aureus* strain (BfR-ST345) was investigated in dried and grounded culinary herbs (*Ocimumbasilicum*, *Petroselinum crispum*, *Origanumvulgare*) in three repetitions. The inoculum was prepared by adding a fluid bacteria culture on 0.5 g sand as carrier followed by air drying (18 ± 2 hour), homogenization and addition to 4.5 g of herb matrix or sand (positive control) in triplicates (108 cfu/g final matrix). Plate count according to ISO 6888-1 was conducted weekly over a period of 10 weeks including the day of spiking. The detection limit was 1 log₁₀ cfu/g. Statistics was conducted using IBM SPSS Statistics 21. In this study *S. aureus* was reduced for 0.67 ± 0.15 log₁₀/week in average. Herbs have shown that they can have an impact on the survival of bacteria. Nevertheless, these differences could not be allocated by statistical analyses over the whole period. In conclusion, contaminations of herbs with *S. aureus* are possible. Nevertheless, survival in dry environments is limited. Due to the long storability of dried herbs, microorganisms with higher survival capacity are of more importance in context of risk oriented food safety issues.

Biography

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