

Behavior of *Salmonella* and *Shigella* species in Mediterranean vegetable salads at different storage temperatures

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Salads form an indispensable healthy part of the Mediterranean diet. Recently, salads have been involved as a transmission mode for pathogens such as *Salmonella* and *Shigella*. The current study aimed to investigate the growth behavior of *Salmonella* and *Shigella* in different types of salads namely; tomato-cucumber (TC) salad without additives, TC with additives (1.0% lemon juice and 0.5% salt), TC with tahini (10% w/w), coleslaw, and toum sauce. Each type of salad was inoculated with a *ca.* $5-6 \log_{10}$ CFU/g of either a cocktail of 5 serotypes of *Salmonella* or 2 *Shigella* spp. (*Sh. sonnei* and *Sh. flexneri*). The salads were stored at 4°C, 10°C or room temperature (24°C) for 5d. The pathogens and the mesophilic aerobic bacteria (MAB) were enumerated. The pathogens were able to grow or survive in the different salad types except for coleslaw and toum sauce, where the numbers in these salads declined sharply at 24 but slowly at 4 and 10°C. TC with tahini underpinned the growth of the pathogens and their numbers reached to $>8.0 \log_{10}$ CFU/g. *Shigella* spp. survived better in the different salads at low temperatures (4 and 10°C) compared to *Salmonella* spp. and exhibited greater resistance in low pH salads (CT with additives, coleslaw and toum sauce). This study proves that *Salmonella* and *Shigella* spp. are able to grow or survive in different types of salads and therefore proper control of storage temperature, strict hygienic practices and application of decontamination washing steps prior to preparation are crucial measures to preclude the presence of such pathogens in salads.

Biography: Amin N Eleimat (Olaimat) is an Assistant Professor of Food Safety and Hygiene at the department of Clinical Nutrition and Dietetics, Faculty of Allied Health Sciences in the Hashemite University, Jordan. He has completed his PhD in Food Science from University of Manitoba, Canada and obtained his BSc and Msc degrees from the Jordan University of Science and Technology, Jordan. He has published 40 peer-reviewed papers in reputed international journals and 20 conferences besides 1 book chapter. His publications have been cited over 900 times with H-index of 13. His current research areas include study and analysis the microbial quality and safety of traditional foods, the antimicrobial activity of functional ingredients from natural sources against foodborne pathogens in different food products, development of active packaging materials to improve the quality and safety of foods, development of functional products and study the sensory characteristics.

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