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## Susceptibility of Enterobacteriaceae and Enterococcus bacteria isolated from fresh fruits and vegetables sold in oman to chlorhexidine

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Many outbreaks associated with the consumption of fruits and vegetables are caused by bacteria belonging to Enterobacteriaceae and Enterococcacea which are considered among the most potent and prevalent pathogens that have acquired resistance to most antibiotics. Disinfectants such as chlorhexidine are extensively used in the food industry to achieve safer foods with longer shelf life. The objectives of the study were to identify isolated bacteria from fresh produce, screen them for their susceptibility to chlorhexidine and identify some disinfectant resistance genes in these bacteria. The count of Enterobacteriaceae was performed on Violet Red Bile Glucose (VRBG) agar. E. coli was counted on Tryptone Bile X-glucuronide (TBX). Staphylococcus aureus was counted on Baird-Parker (BP) agar. Enterococcus was counted on Slanetz. Bacteria were identified by Polymerase Chain Reaction targeting bacterial 16S rRNA gene. Susceptibility of isolates to chlorhexidine was investigated by determining the minimum inhibitory concentration (MIC) using broth microdilution method. All Enterobacteriaceae bacteria isolated from fresh produces were susceptible to chlorhexidine. The MIC of chlohexidine ranged from 1 to 64 µg/ml which is below the recommended concentration in food production areas (100-200 µg/ml). Enterobacteriaceae/Enterococcus bacteria isolated from local and imported fresh produce were similar regarding their percent resistance to antibiotics and their Chlorhexidine MICs. The resistance genes of qac EΔ1, qacE and qacG which can confer resistance to various biocides including chlorhexidine were detected in some bacteria as well as the integron integrase IntI 1 gene.

### Biography

Nejib Guizani completed his Ph.D. 1991 University of Florida, USA and is serving at Sultan Qaboos University, Oman for last 5 years in the Food Science & Nutrition Department. His research interest has been mainly in the areas of food quality and safety, food processing and food properties using a multidisciplinary approach combining food chemistry, processing, and microbiology and current work deals with the study of the functional properties of plant foods available in Oman and their impact on health.

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