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ABSTRACT

Fresh produce purchased from different local supermarkets in Tsukuba City were analyzed microbiologically. *Enterococci, Escherichia coli, Pseudomonas,* and *Staphylococcus aureus,* but not *E. coli* O157:H7 and *Salmonella,* were detected and isolated. Confirmatory and biochemical tests generated 40 *E. coli* isolates which exhibited different patterns in RAPD-PCR analysis except for isolate numbers 9, 15 and 16. Serological tests confirmed that these *E. coli* isolates were non-pathogenic. Antimicrobial susceptibility tests showed that these isolates were inhibited by Polymyxin B, Aztreonam, Cefuroxime, Imipenem, Fosfomycin, Latamoxef, Ciprofloxacin, Gentamycin, and Tazobactam piperacillin but were resistant to Oxacillin, Lincomycin, Erythromycin, Bacitromycin, Teicoplanin, and Vancomycin, including the controls, *E. coli* JCM 1649 and *E. coli* O157:H7 CR3. Only three isolates (5, 30 and 35) were resistant to Cefaclor and Cefazolin, the controls were inhibited as well. In-vitro assay showed that the viable cell counts of each of the *E. coli* strains and controls tested exhibited a reduction of about 4.3 ± 0.9 log CFU/mL and 7.8 ± 1.7 log CFU/mL after 5 minutes exposure at 25ºC to 100ppm Sodium Hypochlorite (NaClO) and 20ppm Acidified Sodium Chlorite (ASC, pH 4.6), respectively, when compared with the viable counts obtained from PBS, except for the floc-forming strain which showed only a 1 log CFU/mL reduction for both disinfectants. However, in-vivo assay demonstrated no significant difference in the disinfection efficacy of both disinfectants. Only 1.8 ± 0.3 log CFU/g and 2.1 ± 0.3 log CFU/g reduction was observed in lettuce after 3 minutes washing with NaClO and ASC, respectively, when compared to the inoculated and unwashed fresh-cut vegetables, while a reduction of only 1.6 ± 0.2 log CFU/g and 1.8 ± 0.3 log CFU/g, respectively, for spinach. No reduction in the population was observed in washing the inoculated fresh-cut vegetables with distilled water only.