

Abstract

Fresh herbs are often implicated in foodborne illness outbreaks in the US. This study examined the survival of seeded foodborne pathogens (*E. coli* O157:H7 and *Salmonella* spp.) on different fresh herbs at refrigerated temperature (4°C, 96% RH). We purchased fresh herbs (basil, chive, cilantro, oregano, parsley and rosemary) packed in individual clamshells from a commercial farm, and we inoculated them with cocktails of three nalidixic acid-resistant strains of *E. coli* O157:H7 (204P, 505B, 301C) and three *Salmonella* serotypes (*S. typhimurium*, *S. mission*, *S. enteritidis*) at the concentration of approximately 2.0×10^6 cfu/g fresh weight. We checked the microbial populations of the inoculated herbs after 1, 5, 11, 16, 19 and 24 days of storage. For both pathogens, the significant decrease ($p < 0.0001$) in cfu/g occurred between day 1 and day 5 (0.5 log cycle), but thereafter, the decrease was not significant. From our results, it appeared that both pathogens remained the highest in cilantro and lowest in rosemary ($p < 0.0001$). Although we terminated the storage of cilantro, basil, and chive at 19 days due to poor quality, significant numbers of both pathogens survived in the fresh herbs through the 24 days storage. This result re-enforces the concept that once contaminated, the microbes could persist in the fresh herbs. This result also suggested that survival of these two pathogens may be affected by the type of herbs.