

Title Microbiological study of fresh herbs from retail premises uncovers an international outbreak of salmonellosis

Author N.C. Elviss, C.L. Little, L. Hucklesby, S. Sagoo, S. Surman-Lee, E. de Pinna, E.J. Threlfall and on behalf of the Food, Water and Environmental Surveillance Network

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Abstract

This Local Authorities Co-ordinators of Regulatory Services/Health Protection Agency study was prompted by the increasing concern regarding the microbiological safety of ready-to-eat salad vegetable products, particularly fresh herbs. During May to October 2007, 3760 ready-to-eat fresh herbs, of different varieties, were sampled across the UK to assess their microbiological safety in relation to salmonella contamination and levels of *Escherichia coli*. Sixty (1.6%) herb samples were found to be of unsatisfactory quality according to Regulation (EC) No. 2073/2005 on the microbiological criteria of foodstuffs, i.e. contaminated with *Salmonella* spp. and/or containing *E. coli* at $> 10^3$ cfu/g. When criteria in the PHLS Microbiological Guidelines for some ready-to-eat foods (2000) were used, 117 (3.9%) of herb samples were of unsatisfactory quality due to the presence of salmonella and/or *E. coli* at $\geq 10^2$ cfu/g. Eighteen (0.5%) samples of six different herb types were contaminated with *Salmonella* spp.: identified as serotypes Senftenberg (8), Agona (2), Anatum (1), Durban (1), Javiana (1), Mgulani (1), Montevideo (1), Unnamed (I 16:g, t: z42) (1), Virchow (1) and mixed Newport & Virchow (1). In each case the retailer and the UK Food Standards Agency were immediately informed and remedial action taken. Samples contaminated with *S. Senftenberg* were specifically associated with basil grown in Israel. Thirty-two human cases of *S. Senftenberg* infection were subsequently identified throughout England and Wales and a further 19 in Scotland, Denmark, The Netherlands and the USA. The strain of *S. Senftenberg* identified from the basil and that from cases had an indistinguishable molecular profile, suggesting a likely connection between consumption of basil and human infection. The presence of *Salmonella* spp. is unacceptable in ready-to-foods such as fresh herbs. This study highlights the necessity of applying good agricultural and hygiene practices pre-, during and post-harvest, at processing, retail and use. These practices help to prevent cross-contamination and/or bacterial growth occurring in these products. Best practice is to store and display such products at, or below, 8 °C as this inhibits bacterial growth.