Title	Immunoconcentration of Shiga toxin-producing *Escherichia coli* O157 from animal faeces and raw meats by using Dynabeads anti-*E. coli* O157 and the VIDAS system
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Abstract

To identify the reservoirs and routes of transmission of Shiga toxin-producing *Escherichia coli* (STEC) O157, sensitive detection and isolation methods are necessary. The sensitivity of traditional culture methods can be improved significantly by the inclusion of an immunoconcentration step, resulting in less false-negatives. In this report, we evaluated the results of two commercially available test systems: Dynabeads anti-*E. coli* O157 and the Vitek Immunodiagnostic Assay System (VIDAS) Immuno-Concentration *E. coli* O157 (ICE) kit. Additionally, we compared two selective isolation media for STEC O157. Statistical analysis of the results obtained for animal faecal samples (n = 637) examined by both immunoconcentration methods showed that by the manual Dynabeads anti-*E. coli* O157 procedure systematically more samples were identified as positive than by the VIDAS ICE. In case of meat samples (n = 360), no difference between the results of the two methods was found. In addition to being accurate, the Dynabeads anti-*E. coli* O157 method is a less expensive method than the VIDAS ICE. But, the Dynabeads method is laborious and there is a risk of cross-contamination. The VIDAS ICE procedure on the other hand is fully automated with a standardised performance; fast and safe for the user. Irrespective of the type of sample (faeces or meat) and the immunoconcentration technique applied (Dynabeads anti-*E. coli* O157 or VIDAS ICE) more samples were found positive after plating onto CHROMagar O157 with cefixime (0.025 mg l^{-1}) and tellurite (1.25 mg l^{-1}) than after plating onto sorbitol–MacConkey agar with cefixime (0.05 mg l^{-1}) and tellurite (2.5 mg l^{-1}). However, only in case of meat samples examined by the VIDAS ICE the difference between the isolation media was not statistically significant.