

LETTER TO THE EDITOR

Enterohaemorrhagic *Escherichia coli* O157: a survey of dairy cattle in Tripoli, Libya

The zoonotic potential of enterohaemorrhagic *Escherichia coli* (EHEC) subtype O157 represents a serious food-borne threat to human health (1–3). A common animal vector of this pathogen is cattle, and human cases of infection are frequently caused by ingesting food products contaminated with bacteria shed in the faecal matter or intestinal contents (2–4). The various manifestations of EHEC O157 infection in humans (ranging from thrombotic thrombocytopenic purpura to haemolytic uraemic syndrome and haemorrhagic colitis) are associated with high mortality rates, especially in children and the elderly (1, 5, 6). Outbreaks of human EHEC may also manifest as diarrheagenic conditions (7), which carry a higher risk of mortality in developing nations. Surveys of diarrheal stools from children in African nations, including Libya, have detected EHEC O157 in 8–15% of the samples (5, 8), suggesting a potential unrecognised prevalence of this pathogen from unknown, but common, sources.

Epidemiological studies of EHEC O157 have shown largely divergent incidence patterns between countries and even between different regions within the same country. Surveys of cattle (by faecal sampling) have recapitulated these findings, with prevalences varying among herd types (dairy population) and ages (veal population) (4). It has been estimated that up to 30% of the general cattle population shed EHEC O157, accounting for a remarkable amount of zoonotic *E. coli* diarrheagenic outbreaks in human populations (9).

In this first attempt to estimate the prevalence of *E. coli* O157 among food-source cattle of Libya, 97 faecal samples were collected intrarectally from outwardly healthy dairy herds in suburban regions of Tripoli. Twenty grams of each sample were mixed with 20 ml of brain–heart infusion broth, cultured (37°C, 24 h), and streaked onto Sorbitol–MacConkey agar (SMAC) for selective growth (37°C, 24 h). Resultant colonies were visually assessed for characteristic features (non-fermenting, colourless) and selected for confirmatory testing using the API20E bacterial identification system and latex agglutination test. Six (6.2%) of the 97 samples had *E. coli* O157.

This study showed, for the first time, that EHEC O157 is present in, and shed in the faeces of, outwardly healthy Libyan dairy cattle. While variations in study populations and sampling and testing methods preclude comparisons with reported data from other countries, it is certain that

EHEC O157 shed from dairy cattle represents a similar risk of contamination to both the food chain and the environment. Diarrheagenic *E. coli* serotypes have been reported previously in Libyan children (8), but the precise source of these infections remain uninvestigated. The need for suitable control measures for pathogens with animal vectors, zoonotic potential, and high morbidity/mortality rates cannot be underestimated, and preventive strategies are needed that will eliminate or reduce the risk of food chain and/or environmental contamination at the farm level (9).

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The authors declare no relationship (commercial or otherwise) that may constitute a dual or conflicting interest.

Mohamed O. Ahmed

Department of Microbiology and Parasitology
Faculty of Veterinary Medicine
Tripoli University, Tripoli, Libya
Email: a.mo@live.com

Yousef M. Abouzeed

Department of Microbiology and Parasitology
Faculty of Veterinary Medicine
Tripoli University, Tripoli, Libya

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