

Longitudinal study of Vero Cytotoxigenic *Escherichia coli* O157 excretion by cattle.

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Vero cytotoxigenic *E.coli* O157 (VTEC O157) is a bacterium that is responsible for severe disease in people. Cattle are the animal reservoir for this organism and the organism was found in 38.7% (95% CI 28.1-50.4) of cattle herds in England and Wales. That cross-sectional study also showed that 4.2% (95% CI 2.0-6.4) of animals excreted VTEC O157 (Paiba *et al*, in press). A year-long longitudinal study on some of the VTEC O157 positive farms from the cross-sectional study were investigated in a study designed to investigate the excretion of VTEC O157 by cattle and the risk factors associated with this. This paper presents a descriptive analysis of the recovery of VTEC O157 from animals in this study cohort.

Enrolment began in March 2000 and 12 farms participated and were visited monthly until the beginning of the 2001 outbreak of foot-and-mouth in England and Wales. At the first visit a randomly selected cohort of cattle aged under 24 months was sampled by rectal retrieval of faeces. These animals were then re-sampled at approximately monthly intervals.

Samples were tested using enrichment, immunomagnetic bead separation (IMS) and culture on CT-SMAC. The serotype of suspect colonies was confirmed by testing with specific antiserum and vero cytotoxin production was also demonstrated. VTEC O157 isolates were then phage typed and PFGE profiled.

A total of 113 farm visits were carried out; farms were visited between 6 and 11 times. 729 individual animal faecal samples and 1352 environmental samples (water trough and pooled yard faecal pats) were collected. 481 (6.6%) animal samples were positive for VTEC O157 from ten of the farms. Positive environmental samples (prevalence 0.0-16.3%) were obtained from 8 of these farms. Three farms accounted for 77.2% of all isolations. No VTEC O157 were found on two of the farms.

A total of 11 phage types (PT) were isolated; PT2 and 4 were most frequently isolated. More than one PT was isolated on 7 farms.

The distribution and profiles of these isolates over time and within individuals and groups of animals on the farms will be presented.

Paiba,GA, Wilesmith,JW, Evans,SJ, Pascoe,SJS, Smith,RP, Kidd,SA *et al*. In press. The prevalence of faecal excretion of verocytotoxigenic *E. coli* O157 (VTEC O157) by cattle in England and Wales. The Veterinary Record.