Title	Prevalence of Shiga Toxin-producing *Escherichia coli* in Dairy Cattle
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Citation	Program and Abstract Book, IAFP 2005 (International Association for Food Protection) - 92nd Annul Meeting, 14-17 August 2005, Baltimore, Maryland, USA. 256 pages.
Keyword	Escherichia coli; Shiga toxin

Abstract

The safety concern with foods of bovine origin emerged two decades ago and increased in recent years because of the growing number of human infections with Shiga toxin-producing *Escherichia coli* (STEC). These infections result in illnesses such as diarrhea, hemorrhagic colitis, and hemolytic uremic syndrome. Dairy cattle are considered reservoirs of 0157 and non-0157 STEC. Because contamination of raw milk, cheese, and ground beef from dairy cattle poses a significant risk to humans, this study was designed to determine effects of season and animal factors on STEC prevalence in dairy cattle. In four large dairy farms (averaging 713 cows and heifers) in California, 614 fecal samples were collected from Holstein cows (n = 465) and heifers (n = 149) in the summer and fall of 2004. The prevalence rates of STEC ranged from 0.7 to 2.7%. No effects on prevalence rates of STEC were found for the season, age (cows vs. heifers), or days in milk (1 to 60, 61 to 150, or $\geq$ 151 days). However, an increase in prevalence rate of STEC was detected for the second lactation vs. other lactations (4.6 vs. 0.8%). The STEC isolates belonged to 12 STEC serotypes (01:H2, 0125:HUT, 0136:HUT, 0146:H51, 0158:HUT, 0166:H6, 0166:H28, OUT:H5, OUT:H19, OUT:H28, OUT:H41, and OUT:HUT). Of these, 3 (*E. coli* 01:H2, 0166:H28, and OUT:H19) are known to cause human illnesses and 6 (*E. coli* 0136:HUT, 0146:H51, 0158:HUT, 0166:H6, OUT:H5, and OUT:H41) have not been reported previously in dairy cattle. Interestingly, *E. coli* 0157 isolates were not found in the cattle tested.