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Prevalence of shiga toxin-producing *Escherichia coli* O157, O26 and O111 in milk, meat and faeces of cattle, sheep and pigs slaughtered in Benin

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ABSTRACT

Objectives: The study aimed to search for *E. coli* O157 and non-O157 in milk, meat and faeces of cattle, sheep and pigs slaughtered in Cotonou.

*Methodology and Results***:** One hundred and Seventy-Five (175) samples including 25 meat, 25 faeces per species and 25 milk from cattle were analysed for *E. coli* O157; O26 and O111 and the virulence genes were identified by PCR. The SAS software (1998) and the bilateral Z test were used to calculate and compare the identification frequencies. *E. coli* O157 was identified in 4% of cattle faeces, 4% of sheep faeces, and 20% of beef and, in 20% of milk samples. *E. coli* O26 was identified in 12% of cattle faeces and, in 8% of beef samples. *E. coli* O111 was identified at frequencies of 8%, and 12% in faeces of sheep and pigs, respectively. The *eae* gene was detected in 4% of beef, ovine meat, milk, pig faeces and in sheep faeces. *stx1* was detected in 8% of milk, and in 4% of bovine and sheep faeces. The strains possessing the gene were all of *E. coli* O157 with the exception of one from pig faeces identified as O111.

Conclusions and application of findings: The presence of these serogroups of *E. coli* with virulence genes poses a real food safety problem in Benin. This study finding must be taken into account for risk assessment and management related to the consumption of food of animal origin.

Keywords: Benin, *E. coli* O157, O26, O111, faeces, meat, milk