Prevalence of enteropathogenic (EPEC), enterohaemorrhagic (EHEC) and verotoxigenic (VTEC) *Escherichia coli* in the faeces of wild ruminants in Belgium.

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Enterohaemorragic *Escherichia coli* (EHEC) and verotoxigenic *Escherichia coli* (VTEC) strains are responsible for food poisoning in humans in developed countries via consumption of vegetal and animal foodstuffs contaminated by ruminant faeces. The clinical conditions vary from undifferentiated diarrhoea to haemorrhagic colitis with, in 10 % of the cases, renal sequelae (Haemolytic Uraemic Syndrome, HUS) that can lead to death. Domestic ruminants (especially cattle) are considered to be the main reservoir of EHEC and VTEC strains for human infections. Nevertheless, wild ruminants are also considered to represent other potential infection sources for humans and possibly also for domestic ruminants.

The aim of this study is to establish the prevalence of EHEC, VTEC and EPEC (enteropathogenic *Escherichia coli)* strains in wild ruminants in Belgium. Fecal samples were collected during the hunting season (from November to December) from 94 free-ranging cervids (*Capreolus capreolus* and *Cervus elaphus*). The faeces were inoculated onto Gassner agar plates and incubated for 18 hours at 37°C. Subsequently, three colonies per animal were transferred into LB broth and grown for 8 hours at 37°C. The DNA extraction was carried out by boiling to perform (i) a multiplex PCR targeting the *eae*, *slt-I* and *slt-II* genes; and (ii) on the positive isolates, PCRs for the O26, O103, O111, O145, and O157 (gang of five) serogroups and other virulence factors (*bfp, saa, eibG and EHEC-hlyA* genes).

The prevalence rate of EPEC, EHEC and VTEC strains in faecal samples of the wild ruminants in Belgium is 18.1% of the animals (13.8% of VTEC and 4.3% of EPEC). From the 17 wild ruminants carrying positive strains for the multiplex PCR for *eae, slt-I* and *slt-II* genes, four animals carry eae+ strains (EPEC), ten animals carry slt-II+ strains (VTEC), two animals carry slt-I/slt-II+ strains (VTEC) and two animals carry slt-I+ strains (VTEC). Among them, one animal carries both one slt-II+ strain and one slt-I/slt-II+ strain. No pathogenic isolate belongs to O157, O26, O111, O103 and O145 serogroups.

In view of the prevalence obtained, wild ruminants could also be considered as another potential infection source for humans and possibly also for domestic ruminants for VTEC and EPEC strains.