

P2-16

Tularaemia seroprevalence studies under foxes and raccoon dogs in Germany

A. Kuehn¹, C. Schulze², P. Kutzer², H. Ranisch¹, S. Bestek³, H. Nattermann¹, R. Grunow¹

¹Robert Koch-Institute, Centre for Biological Safety, Berlin, Germany, ²Landeslabor Berlin-Brandenburg, Frankfurt/Oder, Germany, ³Robert Koch-Institute, Berlin, Germany

Aims: The prevalence of *Francisella tularensis* in humans and animals in Germany is not yet well studied. To find out more about the distribution of the pathogen especially in eastern Germany, we investigated the seroprevalence of tularaemia in foxes (*Vulpes vulpes*) and raccoon dogs (*Nyctereutes procyonoides*) in the federal state of Brandenburg (around Berlin).

Methods: Sera of animals (n = 315 and n = 32, respectively) from the years 2007 and 2008 were tested for *F. tularensis* – LPS antibodies in an indirect ELISA and reactive samples were confirmed by Western blot for LPS ladder recognition using Protein G – POD conjugate. Furthermore, we investigated the serum samples by a competitive ELISA using a peroxidase-conjugated anti *F. tularensis* – LPS monoclonal antibody.

Results: From the serum collection, 32 (10.2%) foxes and 2 raccoon dogs (6.3%) were positive for specific *F. tularensis* antibodies. The geographical distribution showed several hot spots in the investigated region west of Berlin.

Conclusions: Our results indicate a higher seroprevalence in wild carnivores for tularaemia in eastern regions of Germany than assumed. Since the occurrence of tularaemia in humans seems to be underestimated for the last decade, the real prevalence of the pathogen is unknown. The high number of tularaemia antibody positive foxes and raccoon dogs indicates that this zoonosis is present in wildlife in eastern Germany. However, the impact of transmission of zoonotic pathogens including *F. tularensis* from wildlife to domestic animals and humans is not yet well studied.