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## Rodent-Borne Diseases

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### Connecting the dots: linking *Yersinia pestis* seroprevalence in rodents and shepherd dogs to flea abundance in western China

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The People's Republic of China still suffers from many outbreaks of plague (caused by *Yersinia pestis*), since plague was firstly recorded around 1353 in the northeastern Hebei province. In order to understand its epidemiological dynamics for controlling reasons, in this study, the distribution and prevalence dynamics of *Yersinia pestis* in Sichuan Province (China) was investigated during the period 1997-2013. Rodents and fleas from captured rodents' fur and their burrows were collected from 2001-2012. Moreover, this information was analyzed combining with the seroprevalence in shepherd dogs screened from 1997 to 2013. 6,101 (43%) of the 14,202 investigated rodents carried infected fleas. However, the % of rodents carrying infected fleas and the flea index varied over the different years. Temperature, air humidity and precipitation can predict the incidence *Yersinia pestis* in Qinghai voles. The average number of fleas in the burrows varied over the years and between the different months of the year. Generally, flea numbers are still low in the period May-June, but peak in August and September. The average number of fleas per burrow and the % of infected dogs were strongly correlated,  $r(7) = 0.89$ ,  $p < 0.01$ . The seroprevalence in shepherd dogs was 9.7% (78/801). The results indicated that the risk for pathogen transmission is likely to be most eminent in the time of year that the average number of fleas per burrow is the largest. The shepherd dogs are the most possible vectors that transfer the pathogen among its owners and rodents.

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# Julius-Kühn-Archiv

Jens Jacob, Jana Eccard (Editors)

6<sup>th</sup> International Conference of Rodent  
Biology and Management  
and  
16<sup>th</sup> Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



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