

## **European bats: Diseases and potential role as reservoir species**

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Bats belong to the group of endangered animals. 25 different species of the suborder Microchiroptera are found in Germany all of them being registered in the Red list. Mostly unrecognised many of these species live in close contact to men. Within recent years the interest for bats increased markedly - not only the general public but also scientists are more and more intrigued by them. Regarding diseases rabies - being an important zoonosis - still receives the most attention in Europe, while other diseases or infectious agents are rarely known.

Large investigations in SARS to identify its possible reservoir species, revealed horseshoe-bats in China to carry a SARS-like virus<sup>(1)</sup>, but also other zoonotically significant infectious agents like Hendravirus<sup>(2)</sup> in Australia, Nipahvirus<sup>(3)</sup> in Malaysia and just recently Ebolavirus<sup>(4)</sup> were detected in bat species. In Europe no investigations other than for lyssavirus are performed so far. Our study aims to reduce this lack of information.



In cooperation with bat researchers and protectionists freshly deceased animals are necropsied at the IZW and bacteriologically and patho-histologically examined.

Bacteriological methods are isolations and cultivation on selective and non-selective media, species identification via commercial and conventional biochemical test systems.

In cooperation with the Robert Koch-Institut, Berlin, investigations regarding potential viruses are performed using PCR for the detection of viruses - Herpesviruses, Flaviviruses, Coronavirus und Hantaviruses (Puumala und Dobrava) - in selected tissue samples (mostly lung).

Furthermore, there is another cooperation with the Friedrich-Löffler-Institut, Wusterhausen, where research in bat rabies is performed since 1997.

So far about 100 native bats from Germany were examined histologically, half of these also bacteriologically and virologically.



In the following a summary of the preliminary results :

- about 50% of the animals revealed inflammatory changes of the lung
- 33% comprised different stages of hepatitis, 10% in combination with pneumonia
- at least 25% died of bacterial infections
- further 25% had a viral infection (different Herpesviruses)
- 25% of all histologically examined animals had no morphological changes

Ongoing investigations should provide further results in these matters.

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Fruit bats as reservoirs of Ebola virus

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