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## **Potential Wildlife Reservoir for Parachlamydia in Red Deer (*Cervus elaphus*) and Roe Deer (*Capreolus c. capreolus*)**

Regenscheit, Nadine

**Abstract:** Wildlife populations represent an important reservoir for emerging pathogens and transboundary livestock diseases. However, exact knowledge on common domestic pathogens such as Chlamydiales in these populations is lacking. During the hunting season of 2008, 863 samples, including blood, eye swabs, organs and fecal samples, from 99 red deer and 64 roe deer were collected in the eastern Swiss Alps, and samples were tested by ELISA, PCR and immunohistochemistry for Chlamydiaceae and Parachlamydia. Parachlamydia was detected in eye swabs, fecal samples and organs of free-living deer (2.4% positives and 29.5% questionable positives). The very low occurrence of Chlamydiaceae (2.5%) was in agreement with the few positive serological results (0.7% seroprevalence for *C. abortus*). Further investigations on Parachlamydia are needed to elucidate the zoonotic potential, the pathogenicity, and distribution in wild ruminants.

Other titles: Deer as a potential wildlife reservoir for Parachlamydia species

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### **Potential Wildlife Reservoir for *Parachlamydia* in Red Deer (*Cervus elaphus*) and Roe Deer (*Capreolus c. capreolus*)**

Wildlife populations represent an important reservoir for emerging pathogens and trans-boundary livestock diseases. However, exact knowledge on common domestic pathogens such as *Chlamydiales* in these populations is lacking. During the hunting season of 2008, 863 samples, including blood, eye swabs, organs and fecal samples, from 99 red deer and 64 roe deer were collected in the eastern Swiss Alps, and samples were tested by ELISA, PCR and immunohistochemistry for *Chlamydiaceae* and *Parachlamydia*. *Parachlamydia* was detected in eye swabs, fecal samples and organs of free-living deer (2.4% positives and 29.5% questionable positives). The very low occurrence of *Chlamydiaceae* (2.5%) was in agreement with the few positive serological results (0.7% seroprevalence for *C. abortus*). Further investigations on *Parachlamydia* are needed to elucidate the zoonotic potential, the pathogenicity, and distribution in wild ruminants.

*Keywords: Chlamydiaceae; Parachlamydia; Red deer; Roe deer; Zoonotic Potential*

### **Rothirsch (*Cervus elaphus*) und Reh (*Capreolus c. Capreolus*) als potentielles Reservoir für *Parachlamydia***

Die Wildbestände sind ein wichtiges Reservoir für neue Pathogene und Tierseuchen unserer Haustiere. Es fehlt detailliertes Wissen von bereits bekannten Pathogenen, wie z.B. *Chlamydiales* in der Wildtierpopulation. Während der Jagdsaison 2008 wurden 863 Proben (einschliesslich Blut, Augentupfer, Organe und Kotproben) von 99 freilebenden Rothirschen und 64 Reh in den östlichen Schweizer Alpen gesammelt und mittels ELISA, PCR und Immunohistochemie für *Chlamydiaceae* und *Parachlamydia* untersucht. *Parachlamydia* wurde in Augentupfern, Kotproben und Organen beider untersuchten Hirscharten (2.4% positive und 29.5% fraglich positive) nachgewiesen. Das geringe Vorkommen von *Chlamydiaceae* (2.5%) stimmte überein mit dem serologischen Resultat (0.7% Seroprävalenz für *C. abortus*). Weitere Untersuchungen sind erforderlich, um das zoonotische Potential, die Pathogenität und die Verteilung von *Parachlamydia* in Wildwiederkäuern aufzuklären.

*Schlüsselwörter: Chlamydiaceae; Parachlamydia; Rothirsch; Reh; Zoonotisches Potential*