

# Assessment of the risk of pathogen spill-over from free-ranging wild boar to outdoor pigs in Switzerland

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## Key words

*Brucella suis*, Hausschwein, Interaktionen, Prävalenz, PRRS Virus, Risikofaktoren, Wildschwein

## Aim of the study

Estimation of the risk of pathogen transmission from wild boar (WB) to domestic pigs kept outdoor (DP) and identification of risk factors.

## Material and methods

1) Prevalence estimation of *Brucella* spp. and of the Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) in WB (serology, culture, PCR). (2) Estimation of the risk of WB/DP interactions (hunting statistics, traffic accidents, surveillance of wildlife passages). (3) Questionnaire survey on WB/DP contacts and risk factor analysis. (4) Testing of exposed domestic pigs for *Brucella* spp. infection (serology, PCR).

## Results and significance

Seroprevalence for *Brucella* spp. in WB has significantly increased (35.8%, CI 30.0-42.0) and pathogen prevalence (*B. suis* Biovar 2, 28.8%, 23.0-34.0) is also high. In contrast, infections with PRRSV (seroprevalence 0.4%, 0.01-2.4, PCR negative) are rare. A risk of interactions WB/DP exists especially in the adjacent region Mittelland/Jura, and it could increase in the future because the WS population dramatically increases and barriers such as highways do not represent an obstacle to WB expansion. WB/DP contacts incl. mating are not seldom. Identified risk factors for contacts were pig husbandry with pasture and pasture/concrete runout, access to the runout all day, low fences, short distance to the forest, and pig breed (Mangalitzta). A brucellosis outbreak was identified in a piggery at risk but its origin could not be determined. Overall, the results indicate a risk of a transmission of *B. suis* from WB to DP that should be taken seriously, and the risk factor analysis provides valuable information for the implementation of protection measures.

## Publications, posters and presentations

- Wu, N. 2011. Assessment of the risk of pathogen spill-over from free-ranging wild boar to outdoor pigs in Switzerland. Dissertation, Vetsuisse Faculty, University of Bern.
- Abril C., Thomann A., Brodard I., Wu N., Ryser-Degiorgis M.-P., Frey J., Overesch G. 2011. A novel isolation method of *Brucella* species and molecular tracking of *Brucella suis* biovar 2 in domestic and wild animals. *Vet. Microbiol.* In press. doi:10.1016/j.vetmic.2011.02.056.
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- Wu, N., Abril C., Hinić V., Brodard I., Thomann A., Overesch G., Grosclaude E., Boujon P., Ryser-Degiorgis M.-P. 2009. Verlust der Seuchenfreiheit bezüglich Schweinebrucellose: Wildschweine im Visier. Abstract book der Jahreskonferenz BVET Monitoring und VPHI, Tierspital Bern, 26. November 2009 (Vortrag).
- Dazu 13 weitere Vorträge (BEA Expo, Tag der offenen Tür des Tierspitals Bern, Informationsveranstaltungen für Jäger, Wildhüter-Kurs, Seminare für Tierärzte, und Beiträge an wiss. Konferenzen ohne Proceedings).

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