Journal of Wildlife Diseases, 48(1), 2012, pp. 87–94

PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME VIRUS AND PORCINE CIRCOVIRUS TYPE 2 INFECTIONS IN WILD BOAR (*SUS SCROFA*) IN SOUTHWESTERN GERMANY

Ralf Hammer,[1] Mathias Ritzmann,[2] Andreas Palzer,[3] Christiane Lang,[2] Birgit Hammer,[1] Stefan Pesch,[4] and Andrea Ladinig[2,5]

[1] Tierarztpraxis im alten Forstamt, Jahnstrasse 4, 72108 Rottenburg am Neckar, Germany
[2] Clinic for Swine, Department for Farm Animals and Veterinary Public Health, University of Veterinary Medicine Vienna, Veterinaerplatz 1, 1210 Vienna, Austria
[3] Tierarztpraxis Scheidegg, Bahnhofstrasse 30, 88175 Scheidegg, Germany
[4] bioScreen European Veterinary Disease Management Center GmbH, Mendelstraße 11, 48149 Muenster, Germany
[5] Corresponding author (email: andrea.ladinig@vetmeduni.ac.at)

ABSTRACT: Samples were collected from 203 wild boars (*Sus scrofa*) hunted in Baden-Wurtemburg, Germany from November–January 2008 and 2009. Samples from the lung and tonsil were analyzed by quantitative polymerase chain reaction (qPCR) for porcine reproductive and respiratory syndrome virus (PRRSV) type 1 (European type) and type 2 (American type). A qPCR to detect porcine circovirus type 2 (PCV2)-specific genome was performed on tissue homogenates including lung, tonsils, and inguinal lymph nodes. Serum samples were tested for antibodies against PRRSV and PCV2 by enzyme-linked immunosorbent assay (ELISA). No PRRSV was detected in any of the 203 samples and one sample had detectable antibodies against PRRSV. We detected PCV2 in organ materials from 103 wild boars with a prevalence of 50.7%. The number of wild boars positive for PCV2 by PCR varied according to the population density of wild boars among woodlands. More positive samples were detected in woodlands with a high density of wild boars. We found no correlation between the number of PCV2-positive wild boars and the density of domestic pigs in the surrounding area. The number of wild boars positive for antibodies against PCV2 by the INGEZIM Circovirus IgG/IgM test kit was low (53 sera positive for IgG- and three sera positive for IgM-antibodies) in comparison to the higher positive results from the INGEZIM CIRCO IgG test kit (102 positive and 12 inconclusive results).

Key words: Antibody prevalence, PCV2, PRRSV, quantitative PCR, wild boar.

INTRODUCTION

Porcine reproductive and respiratory syndrome virus (PRRSV) and porcine circovirus type 2 (PCV2) are two of the most economically important viruses in the swine industry worldwide (Segales et al., 2005a; Cho and Dee, 2006). The PRRSV is an enveloped, single-stranded, positive-sense RNA virus of the family *Arteriviridae* (Benfield et al., 1992). Infected pigs shed virus via all secretions, and excretions and are the greatest source of infection, but the virus can also be transmitted by vectors or aerosols (Cho and Dee, 2006). The risk of PRRSV transmission increases in areas with high herd and population densities (Mortensen et al., 2002). An infection with PRRSV results in respiratory symptoms and increased mortality in suckling piglets. Infections in sows cause reproductive failure such as late-term abortions, increased rate of return to estrus, and increased number of stillborn or weak piglets (Zimmerman et al., 2006). Although infections with PRRSV in wild boars have been reported, clinical symptoms are still unknown (Ruiz-Fons et al., 2008).

Porcine circovirus type 2 (PCV2) is a small virus of the family *Circoviridae* with a single-stranded, circular DNA genome. Presently, PCV2 is considered as the etiologic agent of the postweaning multisystemic wasting syndrome (PMWS), a disease that mainly affects nursery or fattening pigs and is characterized by wasting, respiratory distress, pallor of the skin, and occasionally jaundice (Segales and Domingo, 2002). In domestic pigs, PCV2 has also been linked to other diseases or conditions such as the dermatitis and nephropathy syndrome (Rosell