

High prevalence of porcine circovirus 3 in Hungarian pig herds: results of a systematic sampling protocol

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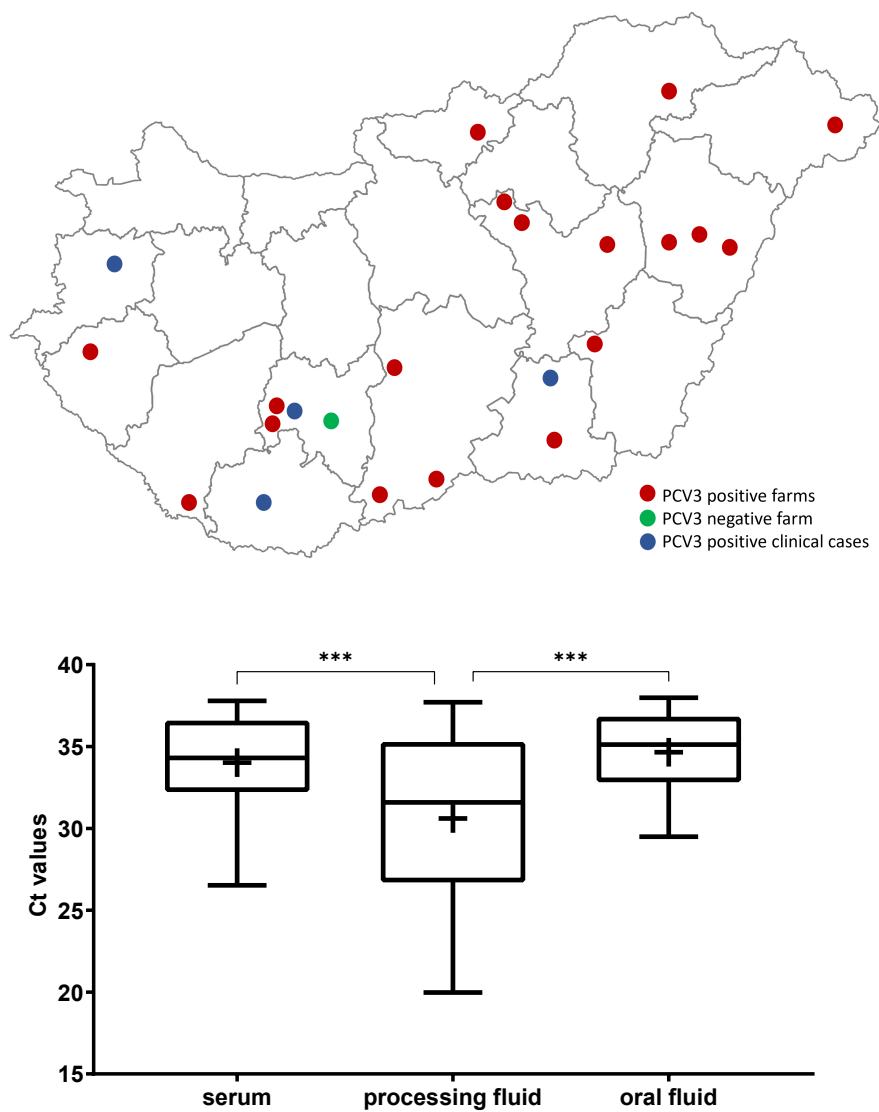
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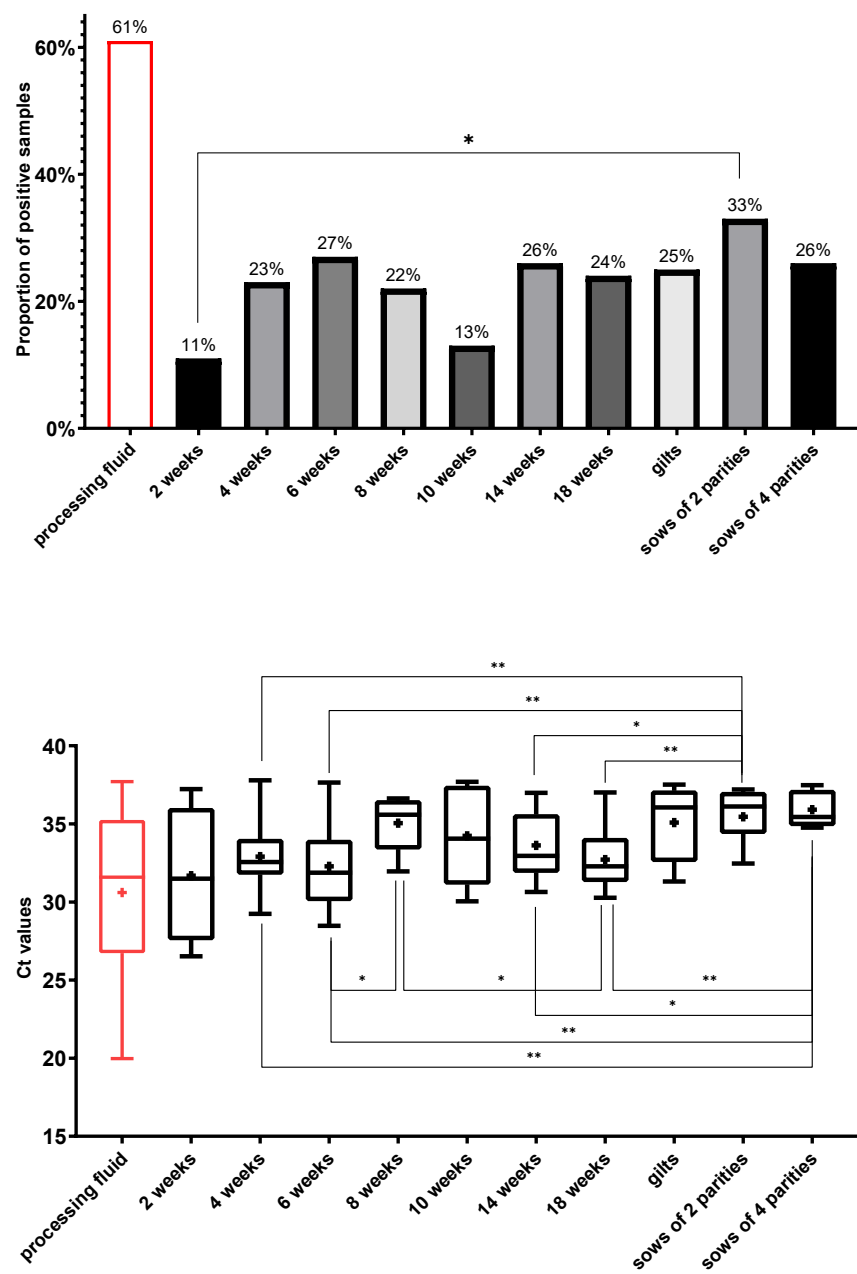
Abstract

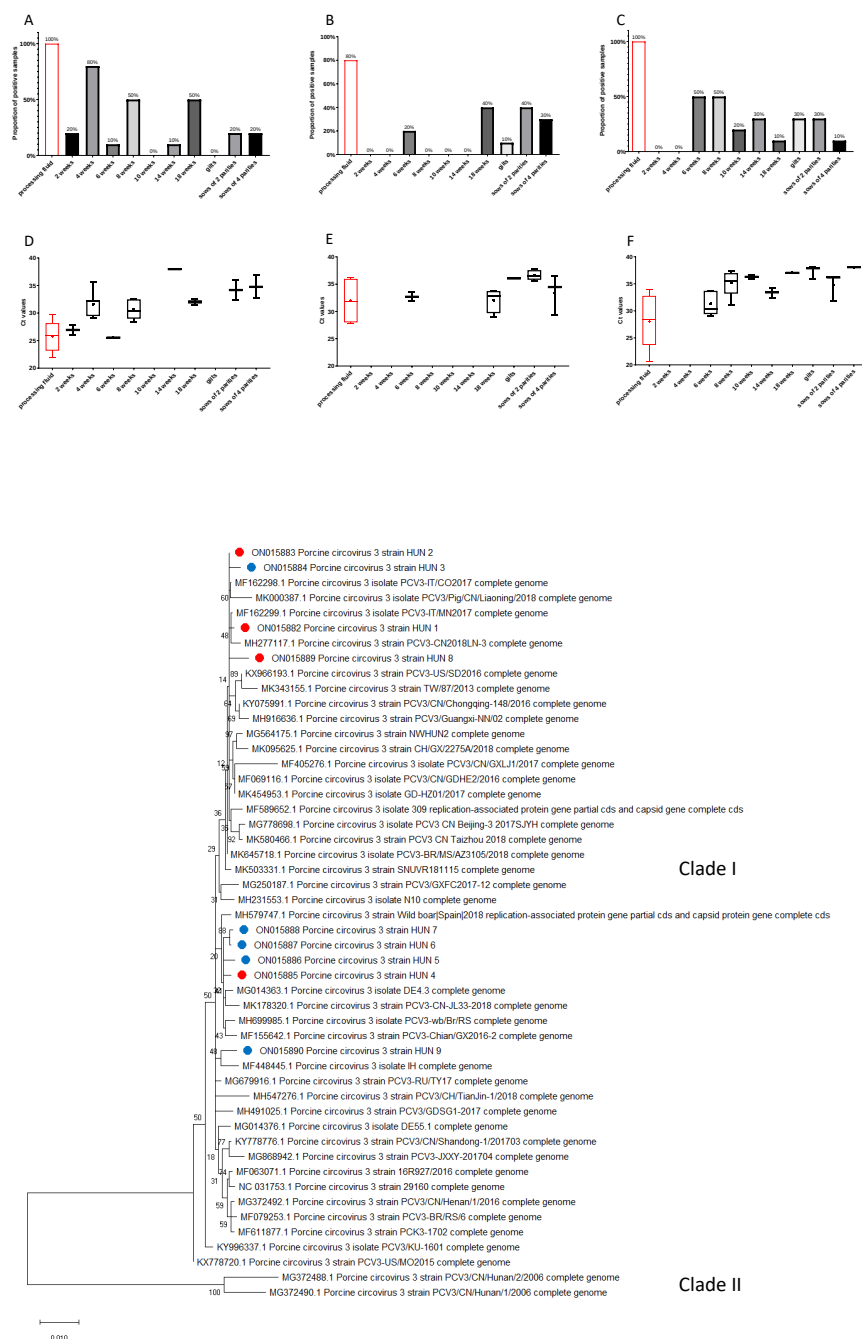
Porcine circovirus type 3 (PCV3) is an emerging pathogen, that has been reported worldwide in all ages of healthy and clinically ill pigs. The presence of this virus in Hungary has been confirmed in a commercial farm experiencing reproductive failures, but there were no data on the circulation of PCV3 in the country. Here we report the prevalence and the genetic diversity of PCV3 in Hungarian herds. For the estimation of the prevalence altogether 1855 serum samples, 176 oral fluid and 97 processing fluid samples were collected in a systematic, cross-sectional method from 20 large scale swine herds, and tested by real-time qPCR. PCV3 was present in at least one type of diagnostic matrix in 19 out of the 20 (95%) pig farms. The highest detection rates were observed in the processing fluid samples (61%), but 41% of the oral fluid and 23% of the serum samples were also positive. The virus was found in all age groups and slightly more adult animals were infected than growing pigs, but the viral burden was lower amongst them. Phylogenetic analysis of nine full genomes, obtained from either the sampled herds or organ samples of PCV3 positive carcasses showed high nucleotide identity between the detected sequences, which all belonged to PCV3a genotype. Our results indicate that PCV3 is widespread in Hungary but in most cases the virus seems to circulate subclinically, infecting all age groups and production phases without the presence of apparent clinical disease.

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