



# INCREASING DETECTION OF *PORCINE PARVOVIRUS* AS CAUSE OF REPRODUCTIVE FAILURE

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## Introduction

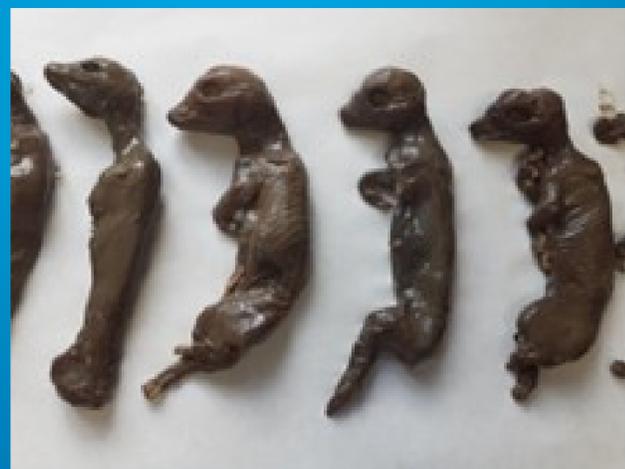
The porcine parvovirus (PPV), more correctly named Ungulate protoparvovirus 1, is a single-stranded DNA virus potentially causing great losses due to reproductive failure characterised by: stillbirths, mummification, embryonic death, and infertility (SMEDI). PPV viruses are prone to constant mutations and are classified into several strains of variable pathogenicity, some of them with very high virulence. As needs are to achieve clinical protection against all relevant field strains, this poses a challenge on the protective capacity of PPV vaccines. In several countries, an increase of PPV induced reproductive failure has been reported within recent years. Also in France, a tremendous increase of PPV detection frequency has been noticed in 2021 compared to 2009-2017 period (1). Here we report several recent clinical cases of PPV-induced SMEDI in properly vaccinated animals.

## Materials and Methods

As a part of our routine investigational service to farms experiencing reproductive failure, four SMEDI cases have been collected in which suspicion of PPV vaccine misused could be rejected following thorough investigation. These cases occurred in France in 2021 and in early 2022 in farms free of ADV/PRV, CSFV, and ASFV. All the four farrow-to-finish farms counting from 250 to 800 sows reported a severe increase in mummified fetuses. For example, in one farm, all the 1st parity sows (n=16) belonging to two consecutive batches gave birth to only mummified piglets and two 2nd parity sows gave birth to 5 mummified piglets each. For repro-prophylaxis in these farms, the gilts were vaccinated twice pre-mating and boosted every three to six months either by a commercial PPV-NADL2 plus *Erysipelas rhusiopathiae* (Ery) combo-vaccine or by a commercial NADL2-like PPV plus Ery plus hexavalent *Leptospira* spp. combo-vaccine. In all farms, mummies from several selected gilts and/or sows, were submitted for laboratory investigations.

## Results

All farms demonstrated strongly and only PPV-PCR positive findings in the submitted foetal material. No PCV2 was detected by PCR when investigated in the same foetal material.



Picture 1. Mummified fetuses from one of the farms (14.5 to 17.5 cm long) – photo credit: Laboceva

## Discussion and Conclusion

Vaccination against PPV and Ery is one of the most basic protocols for breeding stock worldwide. As mentioned previously, PPV strains can have different levels of pathogenicity, genetic clustering, and variable antigenicity. When vaccinating against PPV there are indications that the PPV-Kresse-like strain K22 as an antigen confers a wider and more efficient clinical PPV protection compared to other PPV vaccine strains, particularly against more virulent strains. This has been demonstrated in controlled challenge studies (2), as well as in field investigations of farms with a reliable vaccination procedure in accordance with recommendations in other countries (3,4). In conclusion, all these data confirm that a vaccine based on the PPV-K22 is a more reliable alternative in preventing PPV clinical signs and losses against all relevant field strains including the most recent ones.

## References

1. Abed and al. 2022. ESPHM VVD-PP-34
2. Kiss and al. 2020. Veterinary Medicine: Research and Reports 2020:11 17-24
3. Pedersen et al., 2021 ESPHM REP-PP-05
4. Cvjetković et al., 2021 ESPHM IM-PP-30