

INCIDENCE OF PCV2 IN SEMEN COLLECTED AT SWEDISH BOAR STATIONS

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Introduction

PCV2 is ubiquitous in all pig producing countries including Norway and Sweden. However, Norway is free from the PCV2-associated disease PMWS, while this disease is endemic in Sweden. As PCV2 may be demonstrated in semen of PCV2-infected boars (3) the difference in status between the countries have lead to complications in the genetic cooperation employed. For this reason, a PCR-method able to test semen exported from Sweden to Norway for presence of PCV2 was developed, and logistics were adapted to make use of fresh semen possible (1).

Materials and methods

Semen was tested for presence of PCV2 using a PCR especially validated for this purpose, with a detection limit of 10-50 virions (1).

Raw (undiluted) semen from each individual boar was tested for presence of PCV2 at export to Norway. The semen was not to be used in Norway, nor in Sweden before a negative PCR-test was at hand.

In 2007, a nucleus Hampshire herd was suspected for PMWS due to individual pigs with signs of PMWS at necropsy and by increased losses during the post weaning period. Due to the limited recruitment base of boars the boar stations concluded that they would need to accept boars from this herd, provided PCV2 not was spread via semen. Consequently, semen was tested for presence of PCV2 before the boars from this herd could be used as sperm donors.

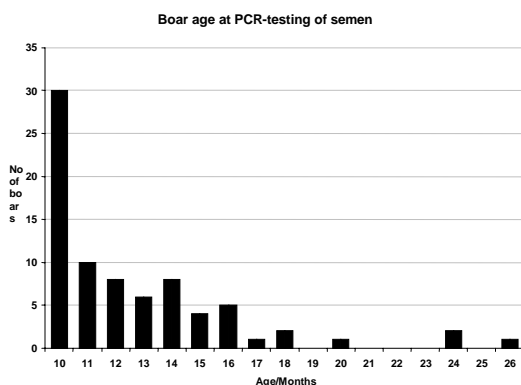


Figure 1. Individual ages of 78 Swedish boars tested negative for presence of PCV2 in semen by PCR.

Results

The individual age of each tested boar is shown in Figure 1, and the test results are shown in Table 1. So far 51 boars have been tested due to export, and another 27 for coming from a PMWS-suspected herd. PCV2 have not been demonstrated in semen from any of these boars.

Table 1. Testing for presence of PCV2 in semen of Swedish boars

<i>(Reason)</i>	<u>Number tested</u>		<u>Age of boars, months</u>	
	Negative	Positive	Mean	Range
<u>For export</u>				
Yorkshire	37	0	13 ± 2.3	10-20
Hampshire	14	0	17 ± 4.5	12-26
<u>From suspected herd</u>				
Hampshire	27	0	10 ± 0.2	10-11
Total	78	0	13 ± 3.4	10-26

Discussion

The PCR used in this report was initially validated for testing raw and diluted semen for presence of PCV2 to render it possible to export semen. Semen, spiked with different amounts of cultivated PCV2 was tested, and the limit of detection (LOD) was estimated to 10-50 virions per sample analysed (1). As demonstration of PCV2 in semen from a boar surely would lead to slaughter, both in Sweden and in Norway, semen collected from 20 Norwegian boars and 21 Swedish boars aged 8-26 months were tested in a blinded process before the method was applied in practise. PCV2 was not demonstrated in any of them (1).

A low incidence (3%) of PCV2 in semen collected at boar stations has been demonstrated in Canada (3). In contrast, PCV2 was often found in semen collected from boars aged 10 months in South Korea. (2). However, the South Korean boars were probably exposed to a higher PCV2-load as they were located in production herds with a high density of pigs and of all ages.

The results obtained, not least in boars from the PMWS-suspected herd, suggest that healthy boars selected for breeding probably have experienced a PCV2-infection without developing PMWS. If quarantined for weeks and thereafter located in low-density facilities with only mature pigs, PCV2 is unlikely to be detected in their semen.

References

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3. Laroche et al. 2000. J Clin Microbiol. 38:4629-32.
4. Macintosh et al., 2006. J Diagn Invest. 18:384-384.