

Investigation of PCV2 antibody prevalence in sows in Austria



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INTRODUCTION

Prevalence of PCV2 specific antibodies (Ab) in sows has been rarely described and most reports describe data from the time before piglet vaccination has been introduced, when it was assumed that the sow immune system gets constantly re-stimulated by natural challenge^{1,3}. PCV-RD has typically, but not solely, been reported from herds with seronegative subpopulations². After several years of piglet vaccination and a concomitant reduction of viral loads⁴, we hypothesised that natural booster of sows might have become unreliable. Therefore, we aimed to investigate PCV2 Ab prevalence in sows.

MATERIALS AND METHODS

The study was conducted in the three main pig producing regions of Austria (A, B, C). Samples were collected from 12 farms representing different sizes and farm set-ups typical for Austria (table 1).

Table 1: Farms and samples included in the study

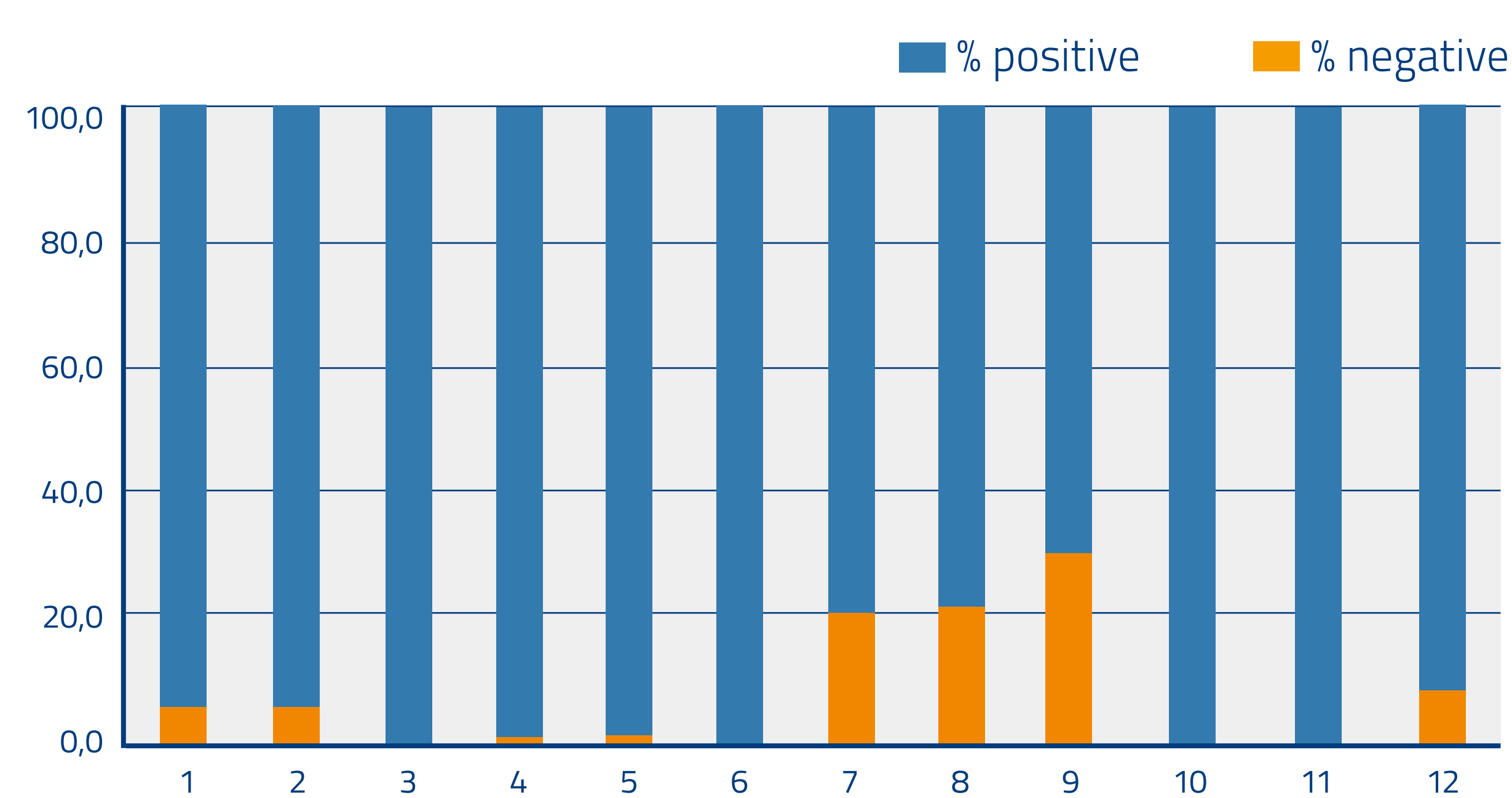
Region	A	B	C
Number of sows / farm type	Farm number – number of sows – number of samples		
> 150 / farrow-to-finish	1 – 180 – 43	2 – 1000 – 58	3 – 175 – 43
> 150 / farrow-to-30 kg	4 – 200 – 44	5 – 200 – 44	6 – 600 – 52
< 150 / farrow-to-finish	7 – 140 – 41	8 – 109 – 35	9 – 89 – 35
< 150 / farrow-to-30kg	10 – 68 – 30	11 – 70 – 32	12 – 70 – 32

On all farms piglets have been vaccinated against PCV2 around weaning for at least 3 years. The sows that were used for sample collection were healthy, in early- or mid-gestation and have not been re-vaccinated against PCV2 (only as piglets). Parity was not reported for farm 7, but no gilts were included. In a cross-sectional investigation blood samples were collected once per farm. The minimum number of samples was calculated based on an expected prevalence of $\geq 70\%$, an accuracy of $\pm 10\%$ and a confidence level of 90% (farm 8 – 3 samples less). Samples were analysed for anti-PCV2 antibodies using the INGEZIM CIRCO IgG ELISA by Ingenasa.

RESULTS

Forty out of a total of 489 sows were PCV2 Ab negative (8.2%), including sows from parities 1 to 5. The majority of negative sows were parity 1 (15 / 40). All sows of parity 6 and higher were PCV2 Ab positive. Prevalence was above 90% in 9 / 12 farms. Three farms had a proportion of Ab negative sows of 22.0 – 31.4% (figure 1).

Figure 1: Percent of seronegative and -positive sows per farm



Parity reached from 1 to 15 and distribution was highly variable between farms. However, the majority of the sows were parity 2 – 5, except on farm 4 and 10, where a higher or equal number of sows had 6 or more parities.

DISCUSSION AND CONCLUSION

Ab prevalence was above 90% in 9/12 farms investigated in this project and was therefore comparable to numbers reported before implementation of piglet vaccination¹. However, 3 / 12 farms had more than 20% of sows negative for PCV2 Abs, which may put those herds at risk for PCV-RD or increased in-utero infection of piglets². In a follow-up project the impact of sow vaccination will be investigated in one of these farms.

REFERENCES

1. Lopez-Soria et al. 2010
2. Madson and Opriessnig, 2011
3. Opriessnig et al. 2007
4. Segales 2015

