Responses of PRRSv vaccination in piglets born from PRRSv vaccinated, ELISA responding and non-responding sows

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Introduction

- **Sow and/or piglet vaccination against the PRRS-virus is widely used to control production losses**
- **A previous field study identified the presence of routinely PRRSv vaccinated, but ELISA seronegative sows (ELISA non-responders)**
- **Possible consequences of the ELISA non-responding sows for the progeny were not yet investigated**

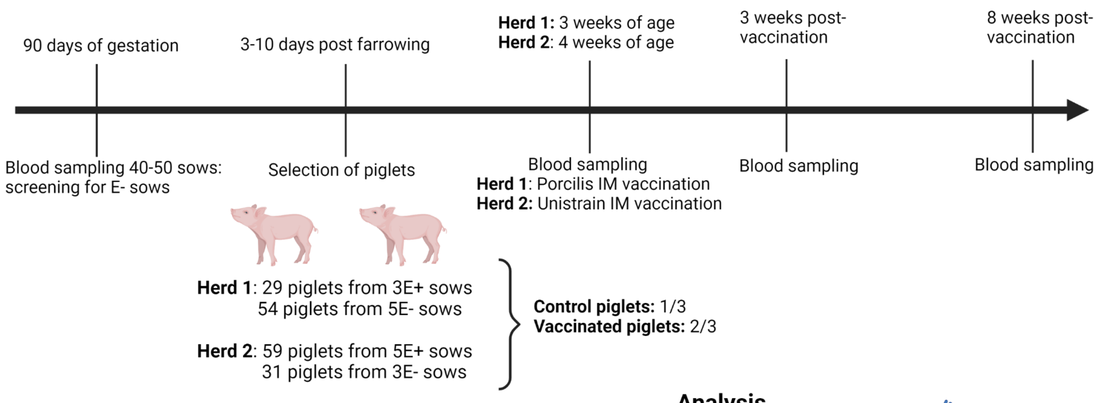
Objectives

- To analyse the presence of maternally derived antibodies (MDAs) in piglets born from ELISA responding (E+) and non-responding (E-) sows
- To analyse the PRRSv vaccination response in piglets born from E+ and E- sows

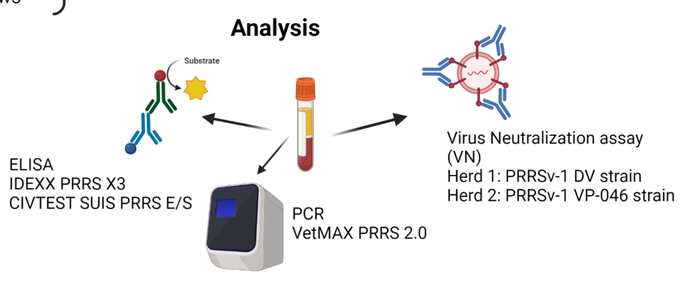
Material & methods

HERD 1: Routine Porcilis PRRS vaccination of sows

HERD 2: Routine Unistrain PRRS vaccination of sows

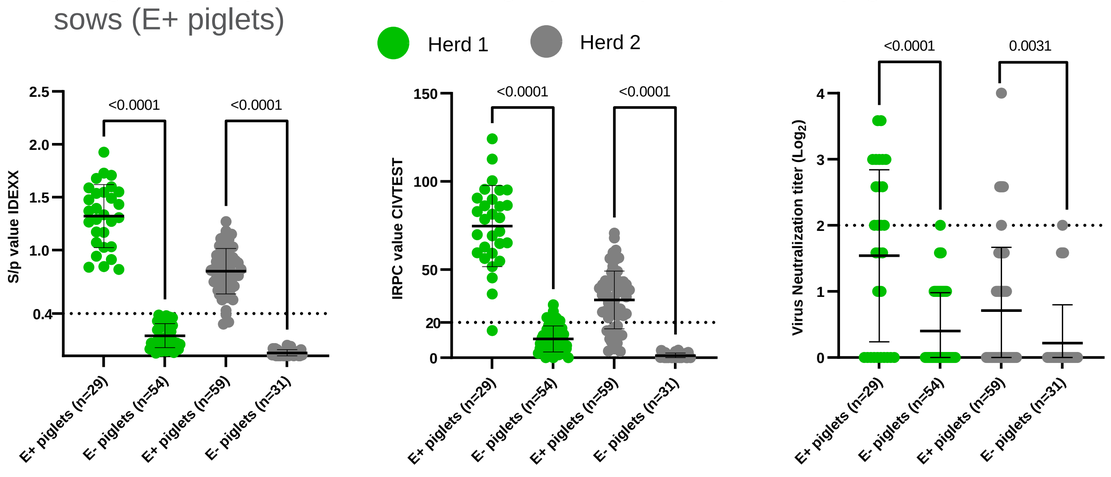


Notes:
- Piglets were not cross-fostered
- Absence of wild PRRSv circulation in nursery was confirmed by PCR
- Time of vaccination was based on the vaccine leaflet
- Control and vaccinated piglets were housed in separate pens



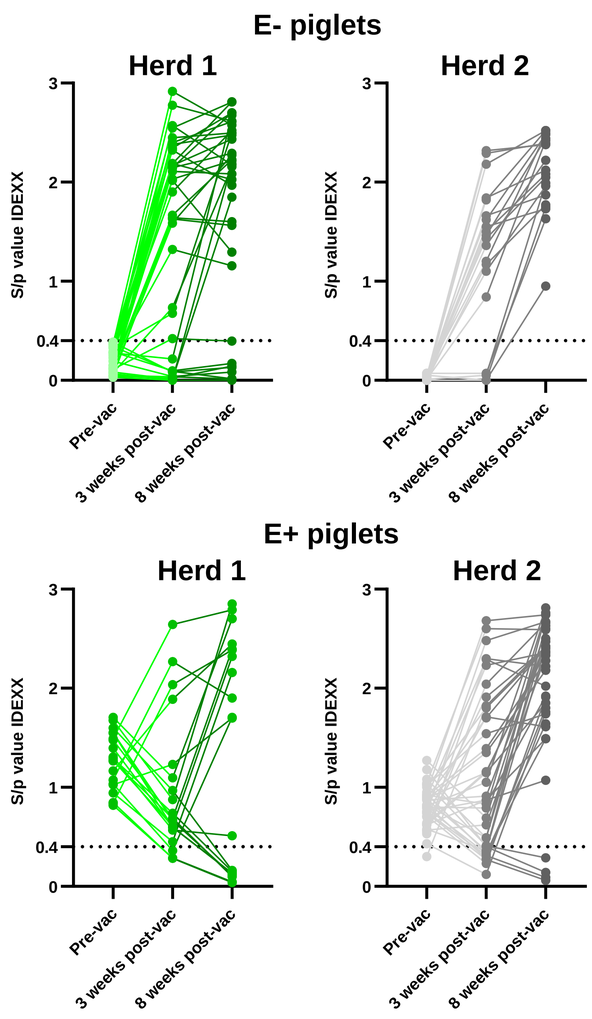
Results

- Piglets born from E- sows (E- piglets) have significantly less MDAs at 3 weeks of age (herd 1) and 4 weeks of age (herd 2) compared to piglets born from E+ sows (E+ piglets)



Results are shown as individual S/p value (IDEXX), IRPC value (CIVTEST) and VN titer, with mean and standard deviation as error bars. Dotted line shows the cut-off for seropositivity in each test.
Differences in mean values between E+ piglets and E- piglets in each herd were calculated using Welch's t-test, p-values are shown above each comparison.

- PRRSv vaccination of E- piglets resulted in an earlier vaccine immune response and vaccine viremia compared to PRRSv vaccination of E+ piglets



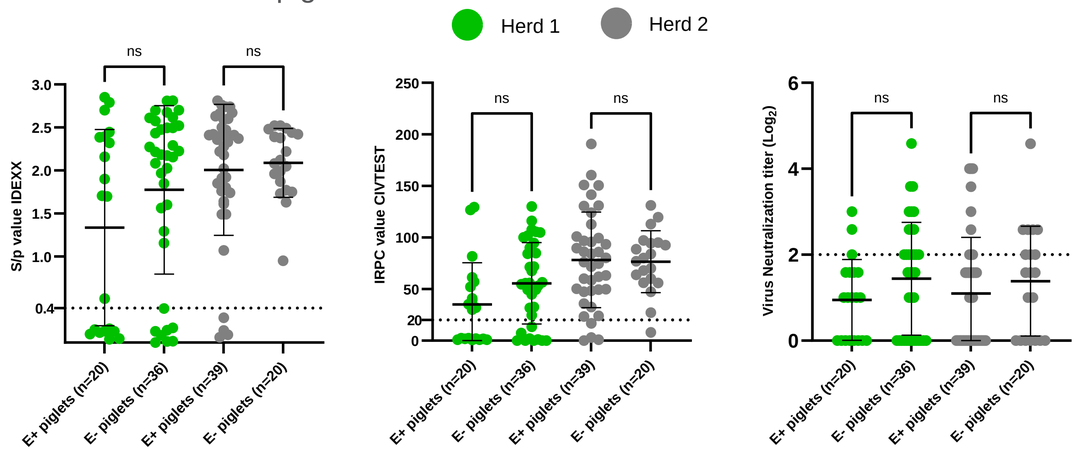
Proportion of piglets with increased S/p value (IDEXX) at 3 weeks post-vaccination		
	E+ piglets	E- piglets
Herd 1	5/20 (25%)	26/36 (72%)
Herd 2	21/39 (54%)	16/20 (80%)

Proportion of piglets with increased S/p value (IDEXX) at 8 weeks post-vaccination		
	E+ piglets	E- piglets
Herd 1	11/20 (55%)	28/36 (78%)
Herd 2	35/39 (90%)	20/20 (100%)

Proportion of PRRSv-1 PCR positive piglets at 3 weeks post-vaccination		
	E+ piglets	E- piglets
Herd 1	6/20 (30%)	27/36 (75%)
Herd 2	12/39 (31%)	13/20 (65%)

Proportion of PRRSv-1 PCR positive piglets at 8 weeks post-vaccination		
	E+ piglets	E- piglets
Herd 1	5/20 (25%)	17/36 (47%)
Herd 2	36/39 (92%)	17/20 (85%)

- At 8 weeks post-vaccination, no significant differences in antibody levels between E+ and E- piglets were seen



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Conclusions

- **E- piglets lack MDAs and PRRSv vaccination resulted in early vaccine viremia and seroconversion**
- **The presence of MDAs in E+ piglets inhibited early vaccine viremia and vaccination response**
- **Delayed vaccine viremia and vaccination response in E+ piglets might be facilitated by secondary vaccine exposure through direct contact with PCR positive E- piglets**
- **No differences in antibody levels between E- and E+ piglets were found at 8 weeks post-vaccination, suggesting that ELISA non-responsiveness is a non-heritable trait**

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