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## Relationship between clinical signs and PRRS viremia under field farm conditions

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### Case Presentation

A nursery with an acute outbreak of PRRS was studied with an overall prevalence (TCID greater than 1) of 47.5% in the 120 pigs. We defined 4 categories of clinical and pathological manifestations that can be usually observed in a PRRS outbreak. We then sampled 10 pigs in each category. Additionally, samples of pigs of 3 different ages (2 weeks, 4 ½ weeks, and 6 weeks after weaning) were obtained. These four categories were characterized by the following clinical manifestations;

Healthy (Category 1): Pigs with a healthy clinical aspect, without apparent loss of weight and without inflammation of the inguinal lymph nodes.

Healthy with lymphadenopathy (Category 2): Pigs with a healthy clinical aspect, no weight loss but with apparent inflammation of inguinal lymph nodes.

Sick (Category 3) Pigs with a clinical aspect characterized by long hair, pale color, inflammation of the ocular epithelium, with high respiratory frequency and without lymphadenopathy.

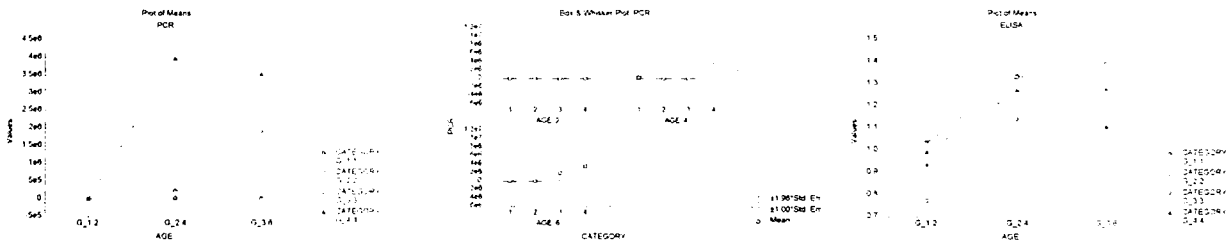
Sick with Lymphadenopathy (Category 4): Pigs with a clinical aspect similar to category 3 and lymphadenopathy.

The other variables that were measured for each individual pig were temperature, sex, size of inguinal lymph nodes, and respiratory frequency.

Ten pigs from each category and each age group were bled, and the serum was tested for the presence of PRRS virus using a quantitative fluorescent PCR and for antibodies using ELISA.

### Results

- The results showed that at 2 weeks after entry most pigs, 39/40, were negative to the PRRS PCR. Pigs had high maternal antibodies, as shown by an ELISA for with an average ratio > 0,93.
- At 4 ½ weeks after entry, most pigs became positive to the PRRS PCR test, this time the probability of finding viremic pigs was high (87,5% were viremic across all categories). Antibodies also highly increased at this time, which suggests that infection had taken place around two weeks before.
- At 6 weeks of age, the probability of finding viremic pigs was smaller compared to age 4 ½. However, viremic pigs had a higher virus titer. ELISA titers started to decrease at this time.
- In this study, an interaction between “age” and “category” was found. Thus, category 4 together with age 6 had significantly higher viral titers. The odds of becoming viremic were 4 times higher for pigs in category 4 age 6, compared with those in category 1 age 6. Furthermore, inside of the same age 6, category 4 has 16 times higher odds of becoming viremic than category 2 and 4 times higher than category 3.



### Overall Conclusions

- Two weeks after entering most pigs were negative regardless of clinical symptoms
- At four weeks all categories had positive animals for PCR.

	C1	C2	C3	C4
Age 4.5	100%	80%	80%	90%
Age 6	50%	30%	50%	100%

- However at 4 weeks, category 4 has significant higher viral titers than all other categories.
- At six weeks there were less positive animals except in category 4.
- At this time, virus level was very high in category 3 and 4 and low in 1 and 2.
- The odds of finding animals with 10<sup>4</sup> viral titer or more was as follows:

	C1	C2	C3	C4
Age 1	0%	0%	0%	10%
Age 2	30%	40%	30%	50%
Age 3	20%	0%	20%	60%