Antibody

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BIOCHEK, SMART VETERINARY DIAGNOSTICS

Haemophilus parasuis; OppA ELISA has strong correlation to clinical disease

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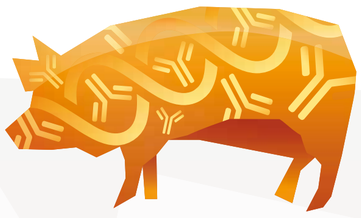

Introduction

Haemophilus parasuis (Hps), with 15 different serovars, is of increasing importance in swine production. Hps normally has a low prevalence, especially in endemic infections. Acute disease with much higher morbidity can be observed in negative populations. Most diagnostic assays are not capable of discriminating healthy carriers from clinically infected or vaccinated individuals. This makes it difficult to evaluate the necessity for and efficacy of an intervention scheme. With an OppA ELISA it is easy to differentiate healthy animals from vaccinated or infected pigs.

Diagnostic tools

Culture of Hps in a laboratory requires special techniques and does not allow for discrimination between healthy carriers and infected animals, as Hps is a normal inhabitant of the upper respiratory tract of pigs. Serological examination can be just as inconclusive, as most commercial ELISA test kits are based on Lipo-Poly-Saccharides (LPS) (figure 1). Antibodies against LPS are strain-specific, and can be formed in both healthy carriers and clinically infected animals.

Diagnostic breakthrough

A recent discovery of specific antibodies that are directed against the OppA (Oligopeptide permease A) protein allow for differentiation between animals that are colonized and animals that are infected or vaccinated. OppA is present in all Hps serotypes.

Differentiation between vaccination and infection

Typical for an Hps infection is the low prevalence, usually no more than 10-15% in endemically infected herds. This means that collecting an appropriate number of samples, preferably 20 or more, is essential. After vaccination the antibody response is much larger, with more animals seroconverting. After a two shot vaccination it can be expected to have as much as 95% of the animals positive. When a low prevalence of positive animals in the OppA ELISA is seen, it is likely to be due to field infection (figure 2a). High prevalence is expected after a successful 2 shot vaccination (figure 2b). If the herd is showing a much lower prevalence after vaccination, it is recommendable to evaluate the vaccination procedure and timing.

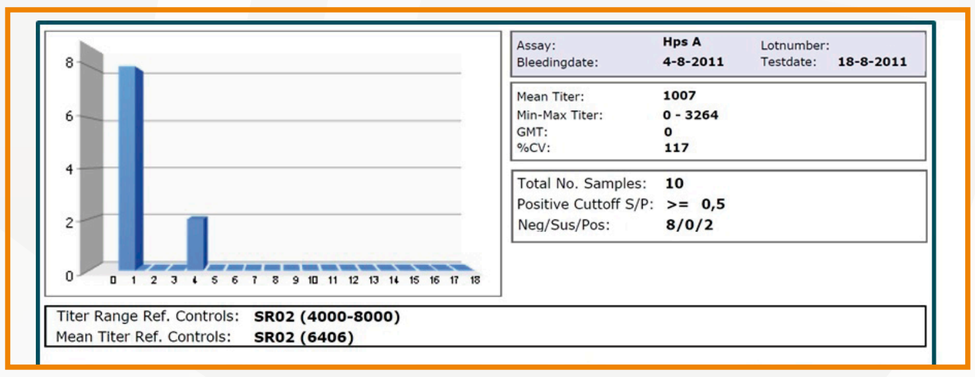

Figure 2a. H. parasuis serological profile of an infected herd.
Only 2 samples above cut-off level. These are the H. parasuis affected pigs.

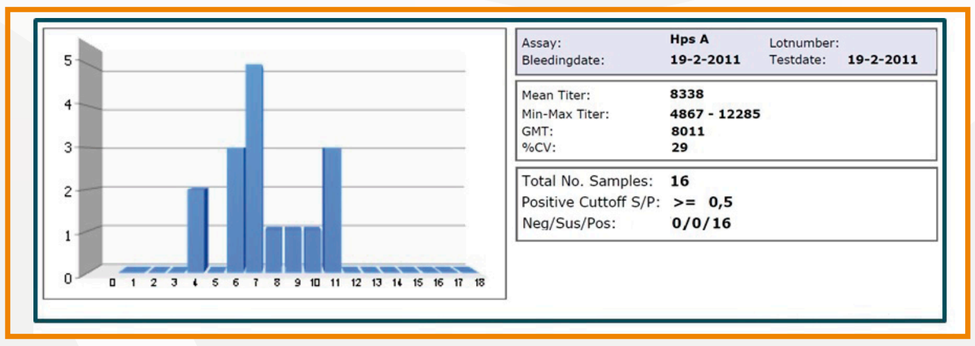

Figure 2b. H. parasuis serological profile of a vaccinated herd.
All samples are positive after a 2 shot vaccination.

Conclusions

The H. parasuis OppA ELISA is a highly specific tool to monitor herds for vaccination response and field infection. By this means a better evaluation of clinical relevance can be made. With the BioChek Hps OppA ELISA diagnostic opportunities are now greater than ever before.

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