International Pig Topics

Pighealth BYTES

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ESPHM 12th EUROPEAN SYMPOSIUM OF PORCINE HEALTH MANAGEMENT

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Vaccinology XV

Mycoplasma hyopneumoniae

After two Pighealth Bytes on viral pathogens, it is time to cover some bacterial pathogens. Mycoplasma hyopneumoniae (Mhyo) is discussed here, followed by Actinobacillus pleuropneumoniae in Pighealth Byte 180. Mhyo vaccines were introduced in the mid 1980s and after some time they were widely adopted by the industry. Several factors were responsible for this acceptance. Upscaling of the number of pigs, overcrowding and, in general, poor hygienic conditions and ventilation, led to more Mhyo related problems and to more intervention strategies, of which vaccination is one. Slaughterhouse checks are still considered the ultimate to see if any of the intervention strategies chosen to reduce the level of Mhyo related lung damage have been successful. But this also has drawbacks. Checking the immunity induced by Mhyo vaccines has always been a matter for discussion.

Why is that?

There is a variety of Mhyo vaccines on the market – single shot vaccines given at an early or a later moment in the life of the pig, and double shot vaccines. Besides this variety in vaccines, there are several test kits with their own peculiarities. Vaccines and test kits are often used in combination but with the large variety in both vaccines and test kits, interpretation is complicated. Next to this, immunity against Mhyo infection is mainly based on local (lung mucosal) antibodies that are not measured when a blood or serum sample is tested. In the pathogenesis of a Mhyo infection, cellular immunity plays a role. In short, too much variation for the ordinary person.

Is there anything that can be done?

We can check if Mhyo intervention (vaccination) strategies, coupled with zootechnical improvements, are giving a favourable result. But for this we need to know specific details, besides serology, of the number of batches of pigs from the same farm kept under the same management system. Normally, we need to know if the right vaccine (single or double shot) is given at the right moment (early or late). In the case of Mhyo, this can not be done by serology alone, as explained above. We have to take other parameters into account. Reduction in antibiotic usage and coughing index, increased ADG etc, are just a few. Slaughterhouse checks, when possible, deliver a major contribution to this set of observations and will complete the picture. When all these factors point out the desired direction, then we have a strong indication that the chosen intervention strategy was successful.

Do we need these investigations?

No. Scientific articles report that serological profiles can be related to the Mhyo damage in the lungs of a batch of pigs. The lower the values found in the serological test, the lower the lung damage. Disease situations on farms are dynamic. Changes do occur, only we do not always know when. When a certain relation between the parameters checked and the chosen serological test is made, any deviation in the next serological test result should be investigated. This will most probably lead to an adaptation of the vaccination scheme used or an increase in the level of zootechnical measures, hygiene, or internal biosecurity on the farm.