ECO Animal Health

Vertical transmission of Mycoplasma hyopneumoniae

Respiratory disease is one of the biggest threats to the health of growing pigs, accounting for more than half of all treatments administered to them. Mycoplasma hyopneumoniae (M. hyo) is a primary contributor to the Porcine Respiratory Disease Complex (PRDC), yet despite antimicrobial treatment and vaccinations being shown to reduce infections with M. hyo, clinical outbreaks of respiratory disease due to M. hyo infections are still occurring. Historical data shows the percentage of pneumonia detected in slaughter pigs in Europe has barely changed in the last 20-30 years.

M. hyo has a very particular set of characteristics which must be taken into consideration when defining the optimum disease control strategy.

- Extremely low rate of horizontal transmission.
- Extended shedding time by infected sows (in excess of 200 days).
- Vertical transmission from sow to piglets, which plays a paramount role in the case of gilt litters.
- Clinical signs are very closely associated with the infectious pressure of each given pig.

Research by Dr Eduardo Fano et al. in 2005, demonstrated a significant relationship between the prevalence of M. hyo at weaning and the severity of lung lesions found at slaughter and the pivotal role of vertical transmission in the clinical presentation of the disease.

Control strategies for mycoplasmal pneumonia have not paid enough attention to the role of vertical transmission in order to reduce the percentage of infected piglets at weaning. And little attention has been paid to the possibility of intervention with antibiotic treatments to reduce the prevalence in the early stages of the life of the finishing pig.

Reducing M. hyo infection levels pre-farrowing

Spindler et al. in 2017, carried out a study measuring the impact of treating sows with an oral macrolide pre-farrowing on the prevalence of M. hyo, as detected by PCR on tonsillar swabs taken from litters of gilts at weaning, versus an untreated control.

This research confirmed the potential to control and reduce the prevalence in the early stages of the life of the pig, therefore influencing and reducing the severity of clinical mycoplasmal pneumonia through the finishing pig's life.

Reducing M. hyo infection levels before weaning

The opportunity to reduce transmission of M. hyo could likewise be used in piglets in the nursery phase before weaning or at the start of the finishing phase of production, when other interventions take action, for example for the control and treatment of ileitis. It may be possible that the perceived superiority of some later generation macrolides on the treatment of ileitis as measured by the performance in the finishing barn is not due to superior ileitis control but to the early control that these antimicrobials provide on M. hyo.

What can we conclude from early treatment interventions?

Such medication strategies open up the possibility of using early and short targeted responsible treatments with highly efficacious antimicrobials like Aivlosin® for M. hyo to modify the percentage of infected pigs in the early stages of production. Such interventions may be economically more beneficial and require less mgs of antimicrobials than treating with antibiotics during the clinical stage of the disease at late finishing.

First published in International Pig Topics volume 32.8