

Protecting piglets from porcine circovirus type 2 and *M. hyopneumoniae*

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Porcine circovirus type 2 (PCV2) and *Mycoplasma hyopneumoniae* (*M. hyopneumoniae*), two of the most important contributors to respiratory diseases in pigs, are a considerable burden to swine producers.

These ever-present infections negatively impact performance causing severe economic losses, even when present in a sub-clinical form.

Widely prevalent in swine herds around the world, PCV2 infection impacts the immune system and can affect weight gain and overall performance.

PCV2 causes post-weaning multi-systemic wasting syndrome (PMWS), one of the most economically damaging diseases for the pig industry worldwide in the last 15 years. Severe cases of the disease can result in rapid weight loss, diarrhoea and even death.

Often present as subclinical infections that show no outward signs during the growing phase, PCV2 may be a silent threat that manifests as poor growth performance in apparently healthy pigs, which may then intermittently shed the virus while keeping it circulating within the herd.

M. hyopneumoniae damages the airways of the lower respiratory tract and allows for secondary infections to occur, which can

reduce productivity and lead to significant economic losses for producers.

These bacteria infect and damage epithelial cilia and cells on the surface of the trachea, bronchi, and bronchioles, resulting in enzootic pneumonia (EP) lesions in the lung that exacerbate other respiratory problems caused by PCV2.

Synergistic effect

By themselves, PCV2 and *M. hyopneumoniae* cause mild disease, but in concurrent infection, they induce severe respiratory disease and lesions. PCV2 enhances the severity of *M. hyopneumoniae* lesions and *M. hyopneumoniae* enhances the severity of PCV2 viraemia.

Studies show the overall severity of macroscopic lung lesions and PCV2-associated microscopic lesions in lung and lymphoid tissues were found to be significantly higher in dually infected pigs. This indicates that *M. hyopneumoniae* enhances the severity of PCV2-associated lung and lymphoid lesions, and increases the incidence of PMWS in pigs.

A recent study demonstrated that vaccination against *M. hyopneumoniae* alone did not decrease the enhancement of PCV2-induced lesions by *M. hyopneumoniae* in dually infected pigs.

How to protect piglets

Today, PCV2 and *M. hyopneumoniae* vaccines are routinely administered to pigs during the nursery phase to reduce the severity of disease during the finishing period.

Since vaccination against one of the two pathogens alone is not sufficient to protect animals from dual infections, vaccinating against both pathogens at the same time is recommended to protect pigs from this dual infection. This has become common practice in the majority of farms.

Current vaccines in combination with good management practices have been effective in reducing the impact of severe infection among swine herds, as well as the associated economic losses. Recently, a

Safety

- Minimal local or systemic reactions:
 - Transient increase in body temperature (>10% of pigs) of mean = 1°C / max = 2°C return to normal in one to two days.
 - Mild systemic reactions may uncommonly (<1%) be observed
 - Transient local injection site reactions may uncommonly (<1%) occur: <2cm and disappear within one day.
- Uninterrupted growth during the nursery phase.

ready to use combination product, given as a one-dose regimen, was approved for use in Europe.

Single dose vaccine

The first ready-to-use single injection combination vaccine, Porcilis PCV M Hyo, is a convenient new option for veterinarians and producers in Europe that provides the immunity that piglets need during a crucial time in their development – the finishing period.

The vaccine does not require mixing, saving labour and time, and reducing the potential for handling error.

Additional conveniences for producers include reduced packaging and waste, and reduced space needed for refrigeration.

The Porcilis PCV M Hyo vaccine reduces the number of vaccinations given to young piglets by providing protection against both diseases until at least 24 weeks of age (21 weeks after vaccination) with a single injection and with no restrictions to maternally derived antibody levels.

Fewer injections minimise handling stress for these animals and reduces the chance of broken needles.

Combining these two vaccines into a single
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Breakthroughs in developing a ready-to-use formulation

- Completed rigorous regulatory review as the first ready-to-use formulation approved in Europe.
- Ready-to-use formulation has similar indications to monovalents, with strong efficacy and improved safety profile.
- No restrictions for the use in the face of maternally derived antibody levels.

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injection delivers a favourable safety profile while retaining strong efficacy against both pathogens.

Approved indication in Europe

Porcilis PCV M Hyo is indicated for the active immunisation of piglets to:

- Reduce viraemia, virus load in lungs and lymphoid tissues and virus shedding caused by porcine circovirus type 2 infection.
- Reduce the loss of daily weight gain during the finishing period in face of

infections with *M. hyopneumoniae* and/or PCV2 (as observed in field studies).

- Reduce severity of lung lesions caused by *M. hyopneumoniae* infection.
- PCV2:
 - Onset of immunity: two weeks after vaccination.
 - Duration of immunity: 22 weeks after vaccination.
- *M. hyopneumoniae*:
 - Onset of immunity: four weeks after vaccination.
 - Duration of immunity: 21 weeks after vaccination.

Efficacy

- Reduced *M. hyopneumoniae* lung lesion severity at slaughter:
 - 31% lower lung lesions scores.
- Improved average daily weight gain during the finishing period by up to 54g, and by up to 34g during the entire study period.
- Reduced PCV2 viral impact:
 - 87% reduction in PCV2 viraemia.
 - 49% reduction in faecal shedding.
 - 53% reduction in nasal shedding.

Results from field trials

Based on data from 10 recent field trials, Porcilis PCV M Hyo is safe and effective for use in herds with *M. hyopneumoniae* and/or PCV2 infections.

Field trials show that Porcilis PCV M Hyo keeps pigs healthy and growing throughout the critical grow/finish period in the face of *M. hyopneumoniae* and/or PCV2 infections.

As the first ready-to-use single injection combination vaccine, Porcilis PCV M Hyo is a recent breakthrough that provides producers in Europe with a convenient vaccination option for piglets early in life, while saving labour and time, and reducing potential for handling error. ■

References are available from the author on request

Benefits of ready-to-use, one dose vaccine

- Single 2mL intramuscular dose in the neck of pigs starting at three weeks of age.
- Ready-to-use formulation does not require mixing, saving labour and time, and reducing potential for error.
- Only one ready-to-use dose is needed for full vaccination against PCV2 and *M. hyopneumoniae*, with fast acting and long lasting protection:
 - PCV2 duration of immunity is proven up to 22 weeks after vaccination.
 - *M. hyopneumoniae* duration of immunity is proven up to 21 weeks after vaccination.
- Few injections minimise pig handling and stress.
- Low tissue reaction and no growth setbacks.

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