

Circovirus and Mycoplasma (PCV2 and M. hyo)

Porcine circovirus type 2 (PCV2) and *Mycoplasma hyopneumoniae* (M. hyo) are infectious agents causing two of the top 5 diseases impacting swine production worldwide.

M. hyo: chronic respiratory disease called enzootic pneumonia (EP), which can be associated to:



Dry and non-productive cough



High morbidity



Low mortality



Strong effect on ADWG and FCR (pigs take longer to be marketed)



It usually amplifies the severity of other infections, including Influenza, PRRS and PCV2

PCV2 (causing PCVD): it deteriorates animals from the weaning to the finishing period.

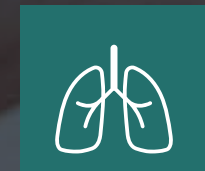


High mortality rate: ranging from 4 to 20%



Ubiquitous

PCVD can also manifest as:



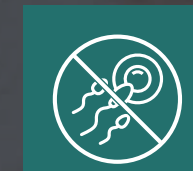
Part of the respiratory disease complex (PRDC)



An enteric disease



Porcine dermatitis and nephropathy syndrome (PDNS)



Reproductive problems.

Concurrent infection with PCV2 and M. hyo causes severe respiratory disease and lesions consistent with PRDC.



Together, they are stronger.



Economic impact

EP: The economic impact in the US has been estimated at \$375 to \$400 million every year.

Pigs positive to M. hyo may represent about **\$2.5** increased cost of production and up to **\$0.90** additional costs of medication.



\$2.5
increased cost of production



\$0.9
additional costs of medication

PCVD: It has an enormous impact on productivity.

Before implementation of preventive measures, the cost of the disease for the EU was estimated to be between **€562** and **€900** million per year.



Between €562 & €900
million per year



Prevalence

In most European countries, prevalence between **24 and 70% of lung lesions compatible** with EP at the slaughterhouse have been reported.

A mean *M. hyopneumoniae* herd prevalence of **66%** in finishing pigs has been estimated by PCR testing.

PCVD reaches a morbidity as high as **50-60%**



Diagnosis

Clinical signs of **PCVD and EP are not specific.**

It is often necessary to perform post-mortem examinations in several pigs (including lung lesions scoring at the slaughterhouse).

The diagnosis is based on:

- Poor body condition and general illness.
- Pathognomonic macroscopic lesions.
- Presence of PCV-2 antigen or DNA in microscopic lesions (not sufficient).
- Lymph depletion.

Lab diagnostic:

- **Histology of the lesions and tests** (ELISA, serological tests, microscopical examination of lung-stained touch preparations, immunofluorescence tests, PCR and culture and identification).



Treatment and prevention

Treatment and prevention

Disease control for PCV2 and *Mycoplasma hyopneumoniae* in piglets involves several strategies:

Control measures for PCV2 in piglets include:

- **Vaccination:** The use of PCV2 vaccines has been shown to be effective in controlling PCV2-related diseases in piglets. Vaccination is proven to reduce the severity of clinical signs and improve overall health and performance.
- **Biosecurity:** Implementing strict biosecurity measures, such as controlling pig movements, applying controlled movement of people and tools, proper cleaning and disinfection of facilities, can help prevent the introduction and spread of PCV2 within pig populations.
- **Management practices:** Good management practices, such as proper nutrition, minimizing stress, and maintaining optimal environmental conditions, performing All-in/All-out stocking, can help reduce the impact of PCV2-related diseases in piglets.
- **Monitoring:** Regular monitoring of pig populations for PCV2 infection and related diseases is important for early detection and intervention.

Control measures for *Mycoplasma hyopneumoniae* in piglets include:

- **Vaccination:** Vaccination against *Mycoplasma hyopneumoniae* can help reduce the severity of respiratory disease.
- **Biosecurity:** Similar to PCV2 control, strict biosecurity measures are essential for preventing the introduction and spread of *Mycoplasma hyopneumoniae* within pig herds.
- **All-in/all-out management:** Implementing an all-in/all-out production system can help reduce the transmission of *Mycoplasma hyopneumoniae* between different groups of pigs and minimize the risk of disease spread.
- **Antibiotic use:** In some cases, antibiotics may be used strategically to control *Mycoplasma hyopneumoniae* in piglets. However, prudent use of antibiotics is important to avoid resistance and ensure the effectiveness of treatment.