








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.



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.



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.

For M hyo:

Diagnosis is done via

- Clinical signs
- Lung lesion scoring

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

In acute outbreaks or endemic herds for M. hyo (EP) consider the following factors:

- Strategically medicate pigs at critical periods of high risk.
- Inject severely affected pigs with antibiotics.

Preventive measures:

- Vaccination of piglets is widespread and common.
- Thorough hygiene before farrowing.
- Ensure the adequate and early intake of colostrum.