

# Porcine circovirus associated diseases

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Animal Biosecurity & Welfare

## Introduction

Porcine circovirus associated diseases (PCVAD) are the different diseases attributed to porcine circovirus 2 (PCV2). PCV2 is found in most pig herds, but infected pigs do not necessarily show signs of clinical disease.

Concurrent infections with other pathogens including *Mycoplasma hyopneumoniae*, *Haemophilus parasuis*, *Streptococcus suis* and porcine parvovirus have been shown to trigger progression from an asymptomatic PCV2 infection to PCVAD.

Environmental stressors and management factors can affect the severity of disease. These include running out of feed, recent mixing or sorting of pigs, high stocking density, suboptimal temperatures, and poor ventilation.

## Clinical Signs

In classic PCVAD, pigs affected are typically 8-12 weeks old. Clinical signs are related to the associated pathogens rather than PCV2 alone. The disease syndrome can be highly variable in individual pigs and usually there is no response to antibiotic therapy. An initial outbreak can result in up to 30% mortality.

Common clinical signs include:

- Coughing
- Breathing difficulties
- Diarrhoea
- Poor body condition
- Rapid weight loss
- Skin discolouration
- Death

In PCV2 enteritis, diarrhoea is prevalent and commonly associated with *Lawsonia intracellularis* (ileitis), *Salmonella* Typhimurium, and *Brachyspira pilosicoli*.

## Porcine dermatitis and nephropathy syndrome (PDNS)

PDNS occurs in all types of pig production systems with different health status and management practices.

Grower and finisher aged pigs are typically affected.

PDNS may be seen as a complication with PCV2 infection.

Skin lesions are the most striking feature, but are not always present. Pigs with skin lesions usually die despite treatment.

Renal failure is the cause of death in over 50% of cases.

Fattening pig with skin lesions associated with PDNS: photo courtesy of H. Voets, Boehringer Ingelheim



## Diagnosis

If you suspect PCVAD on your farm, contact your veterinarian. Because of the variability in clinical signs and severity, your veterinarian will need to examine your herd, perform several autopsies and submit good quality samples to a laboratory in order to confirm a diagnosis of PCVAD.

## Diagnostic criteria

PCV2 is common in healthy pigs and the clinical picture of PCVAD may mimic a number of other respiratory and enteric diseases that affect pigs so the following diagnostic criteria are followed to define PCVAD as a diagnosis:

- Typical clinical signs, especially high mortality
- Characteristic microscopic lesions
- Significant quantities of PCV2 in affected tissues

## How do I manage PCVAD?

High health pigs are better able to resist infection and PCVAD outbreaks. Pig owners should review their herd health program in consultation with their veterinarian.

Experiences with PCVAD in Europe and Canada suggest that applying at least sixteen of the Madec practices listed below may significantly reduce mortality rates during a PCVAD outbreak:

### Farrowing house

1. Apply strict all in/all out policy; clean and disinfect between batches
2. Wash sows and treat for parasites before farrowing
3. Cross-foster
  - Limit to what is necessary
  - Within 24 hours of farrowing only

### Post-weaning

4. Use small pens (<13 pigs) with solid partitions
5. Apply strict all in/all out policy; clean and disinfect between batches
6. Lower stocking density (3 pigs/m<sup>2</sup>)
7. Increase feeder space (>7cm/pig)
8. Improve air quality (ammonia < 10 ppm, carbon dioxide < 0.15%)
9. Improve temperature control
10. Do not mix batches

### Grower/finisher

11. Use small pens with solid partitions

12. Apply strict all in/all out; clean and disinfect between batches

13. Do not mix pigs from different pens post-weaning

14. Do not mix finisher pigs from different pens

15. Lower stocking density (>0.75m<sup>2</sup>/pig)

16. Improve air quality (ammonia < 10ppm, carbon dioxide <0.15%)

### Others

17. Use the appropriate vaccination program

18. Ensure sensible flow within buildings (air, pigs)

19. Ensure strict hygiene (tail and teeth clipping, injections)

20. Remove sick pigs in a timely manner (hospital pen or euthanasia)

Important factors to consider in a PCVAD control program include:

- Strict biosecurity
- Effective management control practices
- Strategic medication and vaccination to control concurrent infections
- PCV2 vaccination program

Discuss with your veterinarian what protocol is appropriate for your pigs.

## Vaccines

Ingelvac<sup>®</sup> CircoFLEX is a registered PCV2 vaccine available in Australia and produced by Boehringer Ingelheim. For further information, visit <https://portal.apvma.gov.au/pubcris>

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