



## Global patterns of Porcine Proliferative Enteropathy (PPE)

### “Take home” messages

- PPE, like enzootic pneumonia, is always around and causes constant economic loss based on:
  - Increased feed consumption.
  - Slower weight gains.
  - Inefficiencies in usage of buildings....but is not always visible.
- PPE is present globally on a high % of farms (57% - 97%) but many pigs develop only mild clinical signs or sub-clinical forms of the disease.
- PHE, the severe haemorrhagic form of PPE, occurs in naïve pigs older than 12 weeks whereas the chronic form of the disease (ileitis) occurs in pigs less than 12 weeks of age.
- White breed hybrids show higher susceptibility to PPE than Duroc-cross breeds.
- There are two main patterns of infection:
  1. early, at 4 - 7 weeks of age, on farrow to finish operations.
  2. delayed, at 14 - 18 weeks of age, on farms with age separation at weaning in an “all in-all out” manner on multiple site operations.
- Successful control strategies for *Lawsonia intracellularis* (*L.i*) infection will continue to involve the use of antimicrobials. **The pleuromutilins are particularly active against *Lawsonia* and concentrate inside the cells where *Lawsonia* lives.**
- They can be used for:

**Control (in feed)** ‘Tiamutin’ premix, 40 ppm tiamulin thf.

**Therapy (in water)** (in severe cases of PHE where feed intake is often greatly reduced) “Tiamutin” Water Soluble Powder or Solution – 60 mg tiamulin h.f. for 5 consecutive days.



In the Pig Journal (UK) (2003) 51. 26 - 35 a useful paper by Dr. S. McOrist and co-workers D. Barcellos and R.J. Wilson, on global patterns of porcine proliferative enteropathy (PPE) was published. Inter alia it suggests that a real similarity exists between PPE and enzootic pneumonia (due to *M. hyopneumoniae* and complicating bacteria). The disease is endemic and causes constant economic losses – increased feed consumption, slower weight gains and increased costs arising from less efficient use of buildings – but is not always visible.

During the late 1960's in Europe and the Americas pig production practices moved towards intensification. Such practices included housing of specific age groups separately as breeders, nursery pigs or finishing pigs. Later multiple site farms for different ages were advocated, complex age specific rations were introduced, more pigs were housed per square metre, pigs were moved in batches and disinfection procedures were improved. Antibiotics both for production improvement and disease control were also widely adopted.

One of the consequences of the intensification was an alteration in disease patterns due to the creation of sub-populations of variable immune status. The limited contact between sows and their litters for example lead to reduced early transmission of certain microbes with consequential increased susceptibility if such microbes were introduced at a later stage.

The acute haemorrhagic form of proliferative enteropathy, proliferative haemorrhagic enteropathy (PHE) generally occurs if naïve pigs older than 12 weeks are exposed to a significant oral dose of *Lawsonia intracellularis* (*L.i*).

The chronic or sub-clinical form of PE, by contrast, occurs in pigs less than 12 weeks of age.

Serologic prevalence data for *L.i* were collected by the authors from 25 countries. From the data it is evident that PPE is an endemic disease present globally in post-weaned pigs on a high % of farms (57% - 97%), but many pigs develop only mild clinical or sub-clinical signs.

The infective potential of *L.i* is greater in white breed hybrid stock than in Duroc-cross pigs.



There are two patterns of *L.i* infection, which depend largely upon whether age separation occurs on infected farms and whether infection occurs in breeding sows.

One pattern, characterized by early infection at approx 4 - 7 weeks of age in the grower-finisher stages of pig growth is seen on so called 'farrow to finish' operations.

The second pattern is characterized by delayed infection at approx 14 - 18 weeks of age, which is typically seen on farms with age separation or weaning in an "all in - all out" manner on multiple site operations.

The authors note that successful control strategies for *L.i* infections will rely on a combination of targeted antimicrobial medications and vaccines.

Among the most effective antimicrobial medications are:

"**Tiamutin**" (tiamulin) premix at 40ppm for control and also

"**Tiamutin**" (tiamulin) water solubles for treatment of the severe haemorrhagic form, where feed intake is often severely restricted, at 60mg tiamulin h.f. for 5 consecutive days.

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**Further information on the Tiamutin® (tiamulin) range of products is available from the Pig Products Manager at Novartis Animal Health operations in over 50 countries worldwide.**