Clinical outbreaks of *Klebsiella pneumoniae* subspecies *pneumonia* in the Netherlands

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In the Netherlands, the first *Klebsiella pneumoniae* subspecies *pneumonia* (Kpp) outbreak was confirmed by laboratory diagnosis in March 2015. Kpp outbreaks in 14 farms in the Netherlands have been reported to GD Animal Health from 2015-2018.

**Clinical signs**
- Acute death in well grown piglets from 8-21 days of age
- Mortality variable, generally: 5-10% related to Kpp
  - Ranging from 1-2 piglets to 90% of the piglets in a litter
- Antimicrobial therapy: variable results
- Clinical signs decreased or stopped within a few weeks

**Necropsy findings**
- Variable, non-specific lesions consistent with septicemia, e.g.:
  - Splenomegaly
  - Petechiae on the intestinal wall
  - Fibrine strands in the thoracic and abdominal cavity
  - Purulent arthritis
- Septicemia confirmed by culture of spleen
  - Aerobic culture on blood agar and/or MacConkey agar
  - Definitive identification with MALDI-TOF mass spectrometry

**Epidemiology**
- Indoor farms in the Southern part of the Netherlands
  - Varying in size between 250-1700 sows
- No clear on-farm risk factors have been identified
  - e.g. dry/liquid/fermented feed, bedding material, treatments
- Most cases: March-October
  - Also outbreaks in February and November

**Discussion and conclusion**
The characteristics of Kpp outbreaks in the Netherlands resemble previously reported outbreaks in different countries, although the affected farms in the Netherlands, as opposed to most affected farms in England, are all indoor farms.

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Non-haemolytic grey Kpp colonies on blood agar plate (left)
Mucoid, coral-coloured Kpp colonies on MacConkey’s agar (right)

Necropsy finding: petechiae on the intestinal wall
Necropsy finding: splenomegaly