

# **Epidemiology of Hepatitis E Virus in UK pig farms**

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## **Background**

Human infection with Hepatitis E virus (HEV) is a public health concern across Europe. The virus is carried asymptotically by pigs, and can be potentially passed to humans via pork products if pigs are slaughtered while actively infected. As shown in other countries who have studied HEV recently, the virus in the UK is believed to be widespread in pig herds, but little is known about the transmission within pig farms or the ability of the virus to persist in the environment. The prevalence in UK slaughtered pigs is thought to be low. However, there is interest Worldwide in understanding how to control HEV on farm. The high prevalence means that trying to prevent infection in pigs is difficult to apply at the moment. Another option may be at first to employ herd management strategies that reduce the spread of HEV or limit infection being present at slaughter age. However, in order to advise on what these management strategies should entail, a better understanding of HEV epidemiology within typical pig production systems is first needed.

## **Methods**

Four longitudinal trials were completed, where each trial followed a single batch of pigs (the "study batch") over time, in order to identify when the pigs first become infected with HEV and to determine how the prevalence of infection changes during production. We also investigated the presence of HEV within the farm environment, with a view to identifying potential environmental reservoirs of HEV.

Different farm types were selected in order to study different farm management practices (e.g. single/multi-stage farms, differences in pig mixing and housing). Faecal samples were collected on all four of the visits, as well as environmental samples (including dust, bird/rat/mouse faeces, and pooled water). On one occasion, blood samples were also taken from sows, to clarify their status. Participating farms were also asked to complete a short questionnaire which included questions about farm management practices.

## **Results and conclusion**

Sample results are currently being analysed. Preliminary results indicate that sows were negative for live virus detection but seropositive, whereas generally the peak of HEV detection occurred at the weaner stage and followed a reducing trend over time towards the finisher stage. However, differences occurred in the spread of HEV detection between pens, and the timing of the peak of HEV detection between farms. This may have been due to differences in management and biosecurity. The results of this study will help explore HEV epidemiology and will highlight potential areas for control which could be of interest for improving biosecurity and HEV control. Results from the four trials will be presented at the conference.