

ORT_15 - Occurrence of Hepatitis E virus in pigs organs, faeces and serum at the time of slaughter, Spain, 2020-21

Jorge Santamaria Palacios¹; Lorena Casado Martin¹; Maria Hervas Tejedor¹; Rachel Siqueira de Queiroz Simões¹; Carmen Barcena²; Nerea Garcia Benzaquen²; Joaquin Goyache²; David Rodriguez Lazaro¹.

¹University of Burgos;

²Universidad Complutense de Madrid.

Introduction: Hepatitis E is an emerging foodborne disease in Europe. Human cases associated with the foodborne route have increased in the last decade, especially those associated with pork.

Objective: The aim of this study was to investigate the presence of HEV in the serum, feces, and organs of pigs at the time of slaughter, with a national-wide representation. The presence of HEV in wastewater from slaughterhouses was also investigated.

Methodology: Blood, feces, liver, hearth, and kidney samples from 362 pigs were collected at the time of slaughter. Wastewater samples from the slaughterhouses were also collected. A sample process control virus (SPCV), Murine Norovirus-1 (MNV-1), was added to all samples just before testing begins. Different protocols were used for concentration, and the RNA extraction was performed with commercial kits. The presence of HEV RNA was detected and quantified by RT-qPCR. As a positive control, the HEV standard of the Paul Ehrlich Institut (Germany) was used. The SPCV was also evaluated by RT-qPCR.

Results: HEV RNA was detected in 85.7%, 6.2%, 33.7%, 16.9%, 6.7% and 4.7% of wastewater, serum, feces, liver, kidney, and hearth samples, respectively.

Conclusion: Our findings are consistent with those of a previous study carried out by members of our research team, in which a smaller population of pigs was sampled (n = 45); both for serum, and organ samples. However, the percentage of positive samples was higher in the faeces samples (33.7% vs 13.3%). This difference may be due to the fact that the current study has increased the number of samples for a nation-wide representation of the pig production. The fact that almost all wastewater samples are positive indicates the wide prevalence of HEV in pigs. In conclusion, at the moment of slaughter, HEV could be present in pig liver, the virus could be being actively excreted (HEV RNA found in feces), and even in some cases, pigs could display viremia (HEV found in serum).

Keywords: Hepatitis E virus; Food Safety; Pork Meat Production Chain