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Detection of hepatitis E virus (HEV) by real time PCR, in the different phases of pig manure treatment plants

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Hepatitis E virus (HEV), is a non-enveloped virus and the causative agent of the hepatitis E. The main transmission route of HEV is oral-fecal, being responsible for most outbreaks in underdeveloped and developing countries, mainly by drinking contaminated water. However, more and more cases of this disease are appearing in developed countries such as Spain. In this sense, swine plays an important role as a reservoir of the disease and therefore as a potential source of infection for the human population. The geographical area where this study was conducted constitutes an important core swine production and generates a high amount of slurry, becoming a concern for health authorities and farmers. In this regard, it was decided by the authorities, the establishment of slurry treatment plants that would manage the surpluses generated. The aim of this study was to detect the HEV-RNA by real time RT-PCR, at the different stages of slurry treatment plants, and thus confirm that this procedure was effective in eliminating the virus. A total number of 189 samples were analyzed and HEV was detected in all the plants studied, which means that slurries from farms in the area are an important source of spread of HEV. A significant decrease in the detection of HEV was observed after the aerobic treatment phase of slurry, suggesting that the majority of the viral particles are inactivated in this stage. HEV was not detected in any of the samples of the final product (compost), intended to be sold as agricultural fertilizer.

Biography

Mario Garcia Andres has completed his PhD at Cardenal Herrera CEU University at 2013. He is professor in Molecular Genetics and Biotechnology since 2007 at the faculty of Veterinary and member of one of the most important researching groups in hepatitis E virus (HEV), headed by Dra. Pérez Gracia, with a high number of papers published in this issue. At the present time, Dr. García is conducting several studies about the presence of HEV in food and environment.

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