

Full details

All details held on the selected case study are shown below.

Went live on	Title	Reference
16 Feb 2011	Combating environmental and food chain viruses	SID0282
<p>Synopsis Specialists from different disciplines have formed the UK Network for Food and Environmental Virology to tackle environmental and food chain transmission of pathogenic viruses, and to provide an integrated response to address emerging problems.</p>		
<p>Description Environmental and food virology is the study of viruses that can be transmitted through water, sewage, waste, soil, air or food. Such viruses include human and animal pathogens, which may contaminate food or enter the environment through sewage pollution. This can result in reinfection - continuing the cycle of disease.</p> <p>The UK Network for Food and Environmental Virology established during a NERC-funded project combines expertise in environmental and engineering science with public health research. It is made up of environmental, veterinary and molecular virologists as well as water, waste and sewage engineers. Several participants are collaborating on individual projects, and on development of official opinions and international guidelines.</p> <p>Feedback from a network workshop was incorporated into the project's report to Defra and the Health Protection Agency. The report describes current and emerging UK issues, and details current knowledge gaps and recommendations for future study. For example, the report recommended further study into the influence of wastewater treatment works on the presence of key human viruses. The Water Research Centre (WRC) is contributing to this further study.</p> <p>"Research is being conducted by WRC for Defra which is looking at the removal of noroviruses through wastewater treatment works. This is in response to concerns that their discharges may be affecting the quality of waters used for producing shellfish. It's important that methods for detecting these viruses are reliable in order that measurements of their numbers are accurate and the risks to public health can be assessed properly," says Robert Pitchers, Senior Microbiologist at WRC plc. "We have to ensure all is being done to make certain public health is not being put at unnecessary risk."</p> <p>This research by WRC has helped to fill knowledge gaps identified by the network, such as finding that bacteriophage populations can be used to determine the effect of sewage treatment on noroviruses. It also links with work being carried out by another Network partner, CEFAS, on the persistence of norovirus in seawater after sewage discharge. The WRC research found that membrane bio-reactor treatments were the most efficient at removing the virus. The results of this research will contribute to the evidence being collated by Defra and the Food Standards Agency to support policy development on norovirus in shellfish.</p> <p>Two recommendations made by the UK network have been taken up by VITAL, a £3.87M EU-supported project to assist with foodborne virus monitoring, risk modelling and control. One recommendation was a review of current irrigation practices for ready to eat crops, as using poor quality irrigation water may risk virus contamination. Such a review was carried out by VITAL, suggesting that irrigation may be a key risk for virus contamination.</p> <p>Another recommendation was for more surveillance information on the presence of viruses in fresh produce. In particular, the network suggested a survey on norovirus in ready-to-eat fruit and vegetables, and hepatitis E in raw pork. UK Network members, the Animal Health Veterinary Laboratories, have carried out the review of pork products, with results soon to be published.</p> <p>"Further collaboration among UK network members is being considered in response to current research calls, such as the study of contamination routes of foodstuffs with norovirus," says Dr Nigel Cook, Food and Environment Research Agency, Food Science Group. "The challenge to public health posed by viruses that can be transmitted through the environment and food will be ongoing, but the achievements of the network will assist in meeting them."</p> <p>The research is supported by NERC's Environment and Human Health programme.</p>		
<p>References and links</p>		
<p>Hyperlinks</p> <ol style="list-style-type: none"> 1. Cost 929 - ENVIRONET - A European Network for Environmental and Food Virology 2. Defra - The Impact of Noroviruses on Shellfish - The Effectiveness of Waste Water Treatment Processes on Reducing Norovirus Levels 3. Department for Environment and Rural Affairs - Home 4. Drinking Water Inspectorate - Home 5. Food and Environment Research Agency - Checking for VITAL signs 		

6. [Health Protection Agency - Home](#)
7. [WRc plc - Home](#)

Impacts

Actual impacts Policy, Industry, Practice

Key outputs Social impact

Research and funding

Funding type Research Programme

Date of research April 2007 - March 2008

Researchers at Universities

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Investigator Dr N Cook Food & Environment Research Agency -FERA, Food Sciences Group

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Keywords Environment, Groundwater, Health, Water quality