Hepatitis E briefing

18th September 2013

Purpose of this document
This document has been written for pig industry stakeholders to:

- Inform you about recent news on Hepatitis E in pork
- Give you key points to communicate when handling questions about Hepatitis E in pork
- Provide all industry stakeholders with the same information so that we speak with one voice, in a consistent way across the industry
- Ask you to refer media enquiries to BPEX to handle, or your appropriate member organisation. The initial contacts at BPEX are:
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BPEX will send you an update of this briefing if significant new information emerges.

Background context
The Sunday Times, and other national papers, recently reported that ‘10% of pork sausages sold in Britain are infected with Hepatitis E, a potentially deadly new virus that has become endemic in intensively farmed pigs.’ This was as a result of a Defra Zoonosis report (zoonosis refers to diseases that can be passed from animals to humans), which was made available on-line in September 2013, and describes an increase in cases of Hepatitis E infection in humans.

Key messages
1. A recent Defra and Public Health England Zoonosis report made available in September 2013, and based on data from 2011 and 2012, describes an increase in cases of Hepatitis E infection in humans. However, experts still consider this to be a low risk, with 0.001% of the UK population infected per year.
2. There is currently no clear evidence to suggest that the rise in cases in Hepatitis E is linked to pork consumption, and in fact, the source of the rise in cases is not known, and more research needs to be undertaken.
3. The statistic ‘10% of pork sausages sold in Britain are infected with Hepatitis E’ is based on very limited data and showed no statistical significance.
4. The advice to reduce risk is to ensure that sausages and pork are well cooked at 72°C until steaming hot throughout with no pink or red in the centre.

Questions that you could be asked and answers

I’ve heard that there’s an issue with Hepatitis E, what’s going on?
- Defra write a report annually on Zoonosis diseases and make it available on their website. The recent media coverage is based on the data in this year’s report, which refers to an increase in Hepatitis E in humans, and is based on data collected between 2003 and 2012.
- Defra (and the Animal Health and Veterinary Laboratories Agency) are aware of the rise in the number of human cases of Hepatitis E in recent years and are working closely with colleagues in the Food
Standards Agency and Public Health England to try and better understand the possible role of infection in pigs on the changing human disease incidence that has been identified in the UK.

- There is currently no clear evidence to suggest that the rise in cases is linked to pork consumption.
- Sausages produced to Red Tractor standards are only permitted to include muscular cuts of pork and do not include offal (including liver).
- The advice to reduce risk is to ensure that sausages and pork are well cooked at 72°C until steaming hot throughout with no pink or red in the centre.

I heard that 10% of all sausages contain the virus?

- A study published in 2012 found that 10% of 63 sausages sampled were HEV positive (4). Five of the six positive sausages found came from the same cohort of pigs, making widespread conclusions on national prevalence inappropriate.
- This extremely limited study does not provide conclusive evidence that HEV is present in 10% of all sausages and showed no statistical significance.
- A different sample from the same study failed to find the virus in 40 samples of pig muscle collected.

Why are sausages a higher risk for Hepatitis E than other pork cuts?

- Sausages have been linked to a higher prevalence of the virus than other pork products, due to the potential inclusion of liver in countries outside of the UK.
- Transmission of the virus from consumption of undercooked liver has been reported in Japan, the United States and France (5,6,7).
- In a French study, dried, cold smoked sausages containing more than 30% liver were found to cause infection (8).
- Sausages produced to Red Tractor standards are only permitted to include muscular cuts of pork and do not include offal (including liver).
- Look for the Red Tractor logo when you buy pork and pork products such as sausages.

So what should I do to reduce any risk?

- Simple attention to correct cooking greatly reduces the risk of contracting Hepatitis E.
- A study on genotype 1 of Hepatitis E virus (HEV) found the virus to be effectively inactivated at a temperature of 60°C (9).
- However, the Food Standards Agency advises that all pork products, including whole cuts and processed products such as sausages, are cooked until steaming hot all the way through with no pink or red in the centre.
- In addition, the Meat Advisory Panel, a group of independent scientific, medical and nutrition experts, suggest that using a meat thermometer to ensure that the internal temperature when cooking pork and pork products reaches 72⁰ before serving or eating can be a very useful check too.

What is Hepatitis E?

- Hepatitis E is a liver disease caused by the Hepatitis E Virus. It is transmitted faecal-orally from consuming contaminated drinking water in developing countries, and as such is commonly associated with overseas travel.
- It is not a new virus.
- Hepatitis E is endemic in the human population in several developing countries. Infection usually resolves itself within 4-6 weeks following symptoms including jaundice, nausea, abdominal pain and fever.
Occasionally, a more severe form can develop, leading to acute liver failure. This can lead to death; however global mortality rates from Hepatitis E infection are low at 0.5-4% of established cases (WHO).

Can Hepatitis E be passed to humans from eating pork?
- Hepatitis E can be contracted via several routes including drinking sewage-contaminated water, transfusion of infected blood products, transmission from mother to foetus, and foodborne transmission from ingestion of products derived from a number of different types of infected animals, including shellfish and incorrectly cooked pork products.
- Following correct cooking guidelines to prepare pork products greatly reduces the risk of infection. Hepatitis E is not contagious, with direct human to human transmission being very rare.
- The advice to reduce risk is to ensure that sausages and pork are well cooked at 72°C until steaming hot throughout with no pink or red in the centre.

Why have cases of Hepatitis E risen by 40% in a year?
- A recent Defra Zoonosis report (September 2013) describes an increase in cases of Hepatitis E infection in humans up to 659 cases in 2012 from 471 in 2011. This is still considered a low risk disease with 0.001% of the UK population infected per year.
- Further research has taken place in 2013 between Defra, the FSA and industry to establish the current levels of Hepatitis E in pigs since there is currently not sufficient evidence to suggest that the rise in UK human infection is directly linked to infected pork consumption. These results will be available in due course.
- We do not currently have evidence to show that the HEV strain found in the UK pig population is the same as that found in affected humans (indeed recent research on salmonella has found discrepancies between pig strains and those causing illness in humans (3)).
- Hepatitis E genotype 3 can also be found in wild boar and sika deer as well as uncooked raw shellfish.
- A study in 2004 indicated that foodborne transmission was likely to be rare or only causing mild and asymptomatic infection in humans. Surveys in developed countries, indicate high seroprevalence (suggestive of infection) but with no clinical illness seen.

Is it true people are dying? Can it be treated?
- Hepatitis E is a self-limiting virus, meaning that it will run its course (acute illness typically lasts for two weeks and has no lasting effects). There is no treatment that will alter the effect of the virus.
- There are higher risk groups of people in the population, particularly those with existing liver conditions who may develop more serious illness. Pregnant women are at greater risk from miscarriage if they contract the infection.
- Global mortality rates from Hepatitis E infection are low at 0.5-4% of established cases, with the majority of these cases being in developing countries with poor sanitation.

I’ve heard that 85% of pigs have Hepatitis E
- Although 85% of pigs have been shown to have seroconverted to Hepatitis E (i.e. the body has mounted an immune response to fight the virus) this does not necessarily indicate current, active infection, which could be passed on by eating undercooked pork products.
- A study looking at the prevalence of Hepatitis E in pig populations in four countries found that where seroprevalence was high in the pig population, it did not result in a concurrent high level of infection in the human population (1).
Do pigs get ill with Hepatitis as well?

- Pigs do not usually develop clinical signs of Hepatitis E, rather they are capable of being a carrier for the virus (2). There is no vaccine or medication that can be used to prevent pigs carrying Hepatitis E.
- The virus therefore has no impact on pig welfare.
- However, since it is transmitted via the faecal-oral route, attention to hygiene at all stages of the food chain should reduce the spread within and between batches of pigs.

References