SUMMARY PROFILE FOR VEROCYTOTOXIN PRODUCING E.COLI (VTEC 0157)

1 Description
*Escherichia coli* (*E. coli*) is a type of bacteria present in the gut of all animals. There are many different strains of the bacteria most of which are harmless. However some strains may cause disease in humans or animals. VTEC 0157 is a strain of *E. coli*, which produces a toxin, verocytotoxin, which can cause a spectrum of human disease from mild diarrhoea to very serious disease, especially in young children or the elderly. VTEC 0157 does not cause illness in livestock but is carried in the gut of a significant percentage of cattle and sheep. The bacteria are present in the faeces of infected animals and transmission to humans from animals occurs by eating or drinking food or water contaminated with infected faeces. Transmission may also occur through person to person spread, contact with infected livestock and exposure to contaminated environments.

2 Rationale for Government Intervention

2.1 Protection of Human Health

Periodic outbreaks of the disease occur in humans each year. Usually small numbers of people are affected but outbreaks can be larger involving hundreds of people.

2.2 Society

The management of outbreaks in humans can be extremely costly particularly when the costs of absence from work and medical treatment are taken into account. The occurrence of human outbreaks is also potentially damaging to consumer confidence in milk and meat products.

2.3 Trade

No impact on international trade. Loss of consumer confidence may affect domestic trade.

2.4 Welfare

No animal welfare problems have been associated with infected animals.

3 Legislative overview
EU and domestic legislation seeks to protect human health by ensuring the hygienic production of meat and dairy products.

4 Geographic Distribution

GB – The infection is widely present in cattle and less so in sheep in GB. The results of an extensive GB wide abattoir and on-farm survey published in 2000 showed that the bacteria were present in between 4.7% and 8% of the cattle tested.

EU and International – The disease in humans has been reported worldwide with well documented accounts from many countries including in Europe, Japan, the USA and Canada.

5 Risk of introduction / spread

MEDIUM – The infection is widely present in British cattle and sheep but how the infection spreads in and between herds is not fully understood. Age, stress and type of fodder may be important. Other animals and birds may be infected but their importance in spread of the organisms is not known. Research is ongoing to investigate how spread of the infection occurs. There is a risk of introducing additional infection to GB in imported animals, particularly ruminants.

6 Human health implications

People may be infected either directly, by handling faeces or indirectly, by eating contaminated food or water. Most people do not become unwell but some may develop severe diarrhoea. Occasionally, especially in children, serious kidney disease may occur, and on occasions there is additional neurological involvement. There is a risk to people handling livestock including farmers, vets, abattoir workers and visitors to farms. The bacteria are isolated from about 800-1000 people each year in GB.

7 GB Disease control strategy

The disease control strategy in GB is based on prevention of human cases by: - The hygienic production of food – Implementing a clean livestock policy for slaughter animals – Public education to highlight the occupational and leisure risks of contacting animals – Educating users of private water supplies on the risks of contaminated water – Veterinary / medical investigation of outbreaks where an animal source is suspected – Continuing research into the disease.

8 Current Surveillance

Outbreak investigation and structured survey based on sampling animals at slaughter.

9 Costs

No direct cost in terms of animal disease. No estimates of consequential costs. Costs for surveillance of outbreak investigations is demand led and difficult to give accurate figures as invariably involves other agencies and departments. Conducting a GB structured survey for surveillance of the organism costs in the region of £500,000. Research to increase knowledge of the organism in animals funded by Defra in recent years has been in excess of £500,000 each year.

10 Stakeholder Impact

Statutory – Farmers are responsible for presenting clean animals for slaughter. Abattoirs are responsible for the hygienic dressing of carcases. Farms with access to public are responsible for providing hand washing facilities and advice to visitors. Other – Visitors to countryside are responsible for exercising care in contacting animals and animal products.

11 Compensation

There is no provision for compensation.

For further information contact vetsurveillance@defra.gsi.gov.uk
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VETERINARY AND EPIDEMIOLOGICAL INFORMATION

Source Data
I - The Pennington Group Report (on the 1996 E-Coli outbreak in Central Scotland)
P - The Department of Health website
R - DEFRA supplied documents and personal communication

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NB Sections 1,2,4,5,6,7,8 and 10 to have Veterinary review.

LEGISLATIVE AND ADMINISTRATIVE INFORMATION

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NB Sections 3,7,9,10 and 11 to have Policy review.

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