

Steve Pepper Training Associates

Factsheet: Ecoli O157 H7 Pt8

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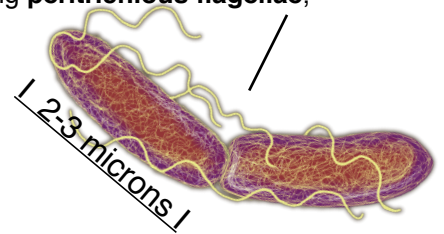


Esherichia coli O157 H7 Pt8: is a virulent, low-dose (only small numbers needed to cause illness), pathogenic (harmful) bacteria that can cause serious illness. the O157 and H7 refer to the particular serotype or strain and the PT8 refers to the further sub classification of "Phage typing" using viruses (bacteriophages) to further identify an individual species of the organism. It has been in and out of the news since a Scottish butchers shop was linked to the deaths of 21 people in 1996 by cross contaminating cooked meat from raw meat. The rest as they say is history. Since this first publicised incident there have been outbreaks associated with Petting Farms & Welsh school meals. More recently an outbreak was linked to Leeks and Potatoes where 200+ people were thought to be affected resulting in 1 death and some being hospitalised. Professor Hugh Pennington was called in to investigate both the 1996 outbreak in Scotland and following the Welsh Schools Outbreak. His findings have resulted in a change to how local councils inspect food businesses

Locally our council is going to be reviewing their policies on "light touch" inspection/interventions, check HACCP based systems (SFBB) are being used and managed correctly, check training has been undertaken and whether it is effective. They will observe and question shop floor staff on issues such as washing their hands and how they undertake cleaning and disinfection. How they deal with: cooked/raw food, temperature control and how they clean complex equipment such as vacuum packing machinery, meat slicers etc. In particular they will be checking: Cleaning on work surfaces, utensils, food equipment, temperature checks and questioning staff on how they actually handle food,

The organism's characteristics: Ecoli O157 H7, is particularly dangerous because it is an extremely low-dose pathogenic organism (i.e. as few as 10 maybe even as few as a single bacterium can lead to an infection). Laboratories test using "grams staining" to see what type of bacteria are present. They can be tested as either gram negative or gram positive with gram negative being typically more dangerous compared to gram positive bacteria. It looks no different to other "coliforms" under the microscope. Coliforms are used to identify the prescence of faecal and sewage contamination. Usually by taking samples of the food and swabbing of the food contact surfaces to detect the prescence of harmful organisms such as Ecoli. Like other bacteria it is very small and are typically **2-3 microns** in length, (1 micron = 0.001 mm). To see them in detail you need an electron scanning microscope. It is basically rod shaped and is typified by having **peritrichous flagellae**,

these are hair like structures on their bodies to help with movement. It has two serotypes O157 (antigens on the cell surface) and H7 (antigens on the flagellae). it is also further classified as phage type 8 (PT8). It doesn't produce spores, which help some bacteria survive, so it is easily killed by **heat or cleaning and disinfection.**



In humans

It produces a verocytotoxin, which can affect the kidneys especially in high risk groups of people such as children and the elderly. This toxin is responsible for Haemolytic Uraemic Syndrome (HUS) and Thrombotic Thrombocytopenic Purpura (TTP). One of the signs of this infection is blood in the stool, however, some people can have the infection and show no signs (asymptomatic). It can cause death in 5%-30% of people affected and can cause long term renal (kidney) problems in a significant number of cases.

What could happen if you are caught cross contaminating food?: If inspectors see evidence of cross contamination from raw food to cooked (i.e. raw beef/lamb, soiled root vegetables/potatoes) where Ecoli O157 H7 and other specific bacteria may be present then even if everything else is OK they will have to take action. This could result in a much lower food hygiene rating being issued! With mandatory display just round the corner what effect would this have on a food business if the poster had to be displayed in a prominent position in the business for a minimum of 3 months? This could easily happen if someone didn't wash their hands properly, or if the inspector observed someone putting contaminated hands on a fridge door and then another person handling high-risk cooked food, opening the fridge door and then preparing the food without washing their hands.

Summary: Ecoli O157 H7 is easy to kill, **good handwashing techniques** and training, awareness of **effective cleaning and disinfection** of equipment, hand contact surfaces, fridge doors, sinks etc is essential so please ensure everyone in a food business is aware of the importance. You wouldn't want to have a low score, let alone be someone who was in the local paper being blamed as source of an Ecoli O157 outbreak

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