

Food poisoning bacteria prefer duck to beef on meat factory surfaces

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The food poisoning bacterium *Listeria* could survive on surfaces in meat processing factories if certain other bacteria are present, scientists heard today (Wednesday 10 September 2008) at the Society for General Microbiology's Autumn meeting being held this week at Trinity College, Dublin.

"Factories handling raw and processed meat products can become plagued by persistent harmful *Listeria monocytogenes* bacteria stuck to their work surfaces and machinery from where they can enter food products and potentially cause food poisoning," according to Professor Christine Dodd from the University of Nottingham, UK.

"We have examined which factors affect attachment and have shown that the presence of a common food spoilage bacteria called *Pseudomonas fluorescens* may affect the ability of *Listeria monocytogenes* to stick to surfaces" said Professor Dodd.

The team of Nottingham scientists found that *Listeria* was not as successful at attaching to stainless steel surfaces when in competition with other bacteria. However, when *Pseudomonas fluorescens* was allowed to attach to the surface first, *Listeria* was able to attach to the same surface much more effectively.

According to the scientists, bacteria which form communities on surfaces, known as biofilms are much more highly resistant to cleaning products and even antibiotics, *Listeria's* success in persisting in factories

comes partly from this ability to form resistant biofilms, and partly from its extraordinary tolerance to drying out, thereby allowing it to survive on what should be clean surfaces.

"We also looked at the influence of different cooked meat juices including beef, pork, lamb, chicken and duck," said Professor Dodd.

"We found significant differences between the ability of *Listeria* to stick to stainless steel surfaces at different temperatures, depending upon which meat was used. Cooked duck juices at 25oC allowed the highest levels of *Listeria* attachment." The different meat residues may affect the ability of *Listeria* monocytogenes to attach by causing changes in the surface of the bacterial cells.

This means that meat factories may need to modify their cleaning and disinfecting procedures according to the type of meat product being processed, if food poisoning outbreaks are to be avoided.

Source: Society for General Microbiology

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