



Gold nanoparticles used to treat Listeriosis

Researchers in Spain have investigated the use of vaccines against *Listeria monocytogenes* containing gold glyconanoparticles. The study found that neonates born to vaccinated mothers were free of bacteria and healthy, while non-vaccinated mice presented clear brain affections and other symptoms of neonatal listeriosis when challenged with the organism. It is claimed that the nanoparticle vaccines are effective measures to offer pregnant mothers who may have a high risk of listeriosis.

UK Supermarket first to offer bags for life utilising anti-microbial technology

Marks and Spencer have become the first UK supermarket to offer reusable shopping bags which contain anti-microbial properties. Although reusable shopping bags are good for the environment, there has been concerns raised over the potential for cross contamination of the bags from the packaging of raw foods, so for some time the industry has been looking at ways to reduce this risk. In these particular bags the antimicrobial agent is based on silver ion technology and has three modes of action. When bacteria come into contact with a protected surface, the silver ions prevent them from growing, producing energy or replicating, resulting in the death of the bacteria.

The manufacturers claim that the active component is incredibly durable, long lasting and highly active. It can be added during the manufacturing process, so it is dispersed throughout the entire item and becomes an integral part of the product. Silver is inorganic and non-leaching which means that, unlike organic

antimicrobial agents, it stays within the item to which it is added. The manufacturers state that the controlled release of the active ingredient provides maximum antibacterial protection for the lifetime of the product.

As we have so far looked at the anti-microbial properties of Gold and Silver, and as we are currently enjoying both the Rio Olympic and Paralympic games; I did try to find an article which mentioned Bronze in any way.....but sadly failed!!!

Further 0157 isolates from unpasteurised cheese

A second recall of cheese products manufactured in Scotland due to the presence of *E. coli* 0157 has been made by Food Standards Scotland. Although it has not yet been established that the organism carries any of the shiga toxins the FSS are calling for this product to be immediately recalled from sale and are urging people who may have bought the product not to consume it. The manufacturers of the unpasteurised goat's milk cheese were being monitored following an outbreak which may have been associated with the consumption of unpasteurised blue cheese. Although the FSS recently declared this outbreak to be over, a multiagency report implicated the cheese based on epidemiological information. The outbreak affected 20 people and resulted in 1 fatality.

Earlier last month the Hong Kong Food Centre for Food Safety reported that batches of raw goat milk cheese imported from France were found to have been contaminated with Shiga toxin-producing *E. coli* and the French manufacturer concerned had initiated a recall of the affected products.

A recent Italian study investigated the potential risk of the presence of E coli O157, *Listeria monocytogenes*, and Salmonella in raw ovine milk destined for cheese production obtained from 24 sheep farms in central Italy over a three year period. The study showed that whilst none of the milk and cheese supplied by the farms were positive for Listeria, 3 farms tested positive for E coli O157 and 4 farms tested positive for Salmonella spp. The report's authors claimed that this highlights the need to develop preventative measures to guarantee a high level of consumer safety for this specific product type.

The biodiversity of cow's milk

In a recently published report, the vast bacterial diversity of raw cow's milk was investigated. Researchers at the California University showed that the comparative levels of bacteria such as Staphylococci, Streptococci, Clostridia, Acinetobacter, Lactobacilli and Lactococci, which are all commonly found in cow's milk varied depending on what time of year the milk is collected and even where the milk is stored. The researchers claimed that the microbial composition of the milk was different in milk stored in silos than milk stored in tankers. According to the report, characterisation of these raw milk bacteria should help dairy processors develop new and more effective sanitation procedures and process controls to make sure the milk and resulting dairy foods are safe and of consistently high quality.

New Zealand Campylobacter outbreak

Although we can be forgiven for thinking that the principle source of Campylobacter infections comes from raw poultry it is worth remembering that untreated water supplies can still prove a significant factor. An outbreak of Campylobacter in New Zealand last month was attributed to contaminated drinking water and was estimated to have affected over 4,000 people.

Guidance on Listeriosis for vulnerable groups

The Food Standards Agency has developed guidance for healthcare and social care organisations to help them reduce the risk of vulnerable people within their care contracting listeriosis. This guidance has been developed with input from a wide range of stakeholders and is intended to complement good practice in the food industry.

<https://www.food.gov.uk/sites/default/files/listeria-guidance-june2016.pdf>

Potential Europe wide Salmonella outbreak

Six European countries including Belgium, Denmark, Norway, Sweden and the UK have reported 147 similar Salmonella enteritidis cases since July 2015. The Netherlands has launched an urgent inquiry following an increase of Salmonella enteritidis phage type 8 with an identical Multi-Locus Variable Number Tandem Repeat Analysis (MLVA) pattern.

The European Centre for Disease Prevention and Control stated that it is likely that the outbreak is caused by a common source.

Yersinia enterocolitica outbreak in Norway linked to salad

A report on an outbreak of Yersinia enterocolitica in northern Norway in 2014 has concluded that the most likely source was a salad mix containing imported radicchio rosso.

Yersinia enterocolitica is the 4th most common cause of bacteria enteritis in Norway and transmission is normally due to the consumption of raw or undercooked pork, so the report authors were keen to emphasise that salad ingredients should not be overlooked when investigating outbreaks associated with Yersinia.

One of the symptoms of Yersinia enterocolitis is lower abdominal pain which is very similar to the symptoms of appendicitis, and I understand that on many occasions a healthy appendix has been removed unnecessarily due to Yersinia food poisoning.

Donald Henderson

And finally for this month a short tribute to Donald Henderson who has died aged 87. He was the American epidemiologist in charge of the decade-long campaign to eradicate smallpox worldwide in the 1960's and 70's.

To globally eradicate a disease which only centuries earlier had affected up to a third of the population

was rightly described as the most significant public health initiative of the twentieth century.