

MY FOOD SAFETY MICROORGANISM PROFILE

Salmonella enteritidis

	<p><u>Characteristics:</u> Gram-negative, flagellate, non-spore forming, facultative aerobic, rod shaped.</p>
	<p><u>Minimum heat treatment:</u> 80°C core temperature (equivalent to 70°C for a minimum of 2 minutes).</p>
	<p><u>Sources:</u> The intestinal tract of farm animals, birds, also common in feed and faecal matter.</p>
	<p><u>Growth temperature:</u> Above 6°C, to around 48°C, optimum is 37°C.</p>
	<p><u>Water activity (aw):</u> Minimum 0.94 for growth</p>
	<p><u>pH:</u> Acidic conditions down to a pH of 4 and up to 9.5</p>
	<p><u>Salt tolerance (NaCl):</u> up to 6%</p>
<p>Foods most often implicated: The main reservoir for infection of Salmonella is ingestion of poultry, including eggs (C2) and raw, red meat (C1.) Salmonella is also becoming important in ambient high care products such as chocolate production from cocoa.</p>	
<p><u>Pathogenicity factor:</u> 4*</p>	<p><u>Illness on-set (gestation period):</u> Quick onset of 12 to 48 hours of millions of live cells to be ingested.</p>
<p><u>Important factors:</u></p> <p>The duration of the illness can be anything from 1 to 21 days, depending on the seriousness. Symptoms include vomiting, diarrhea, bloody stools, headaches and muscle aches. The 2006 Cadbury's contamination incident was from contaminated water, however the chocolate product could provide an environment for Salmonella to survive and grow (where other vegetative pathogens would not) because of pockets of fat globules with enough aw, pH and temperature conditions suitable for growth.</p>	
<p><u>Additional control information:</u></p> <p>In chilled food – RTC (full cooking instructions on BOP) or RTE/RTRH – a 70°C for 2 minutes is sufficient. Listeria is an organism of greater concern in chilled high care/ high risk environments due to its robust features and ability to grow at chilled temperatures.</p> <p>In Ambient High Care – product is normally heat treated to remove the presence of salmonella and then it is handled using high care procedures due to the risk of recontamination where the bacteria would survive in the environment of the food product. Any heat treatment to remove salmonella is normally regarded as a CCP.</p>	
<p><u>Guidelines and limits</u></p> <p>Zero tolerance in RTE, the normal specification in food is usually absence in 25g. Infectious dose is known to be 1x10⁶ (6) however, this can be as low as 1x10³ (3) in the elderly with gastric issues.</p>	

