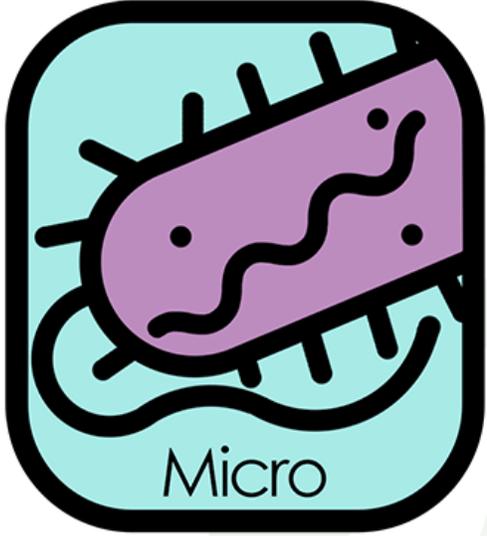


MY FOOD SAFETY MICROORGANISM PROFILE

Enterobacteriaceae

	<p>Characteristics: Family Enterobacteriaceae (Enteros), gram negative, flagella- motile, can be pathogenic, opportunistic pathogenic or spoilage organisms</p>
	<p>Minimum heat treatment: 80°C core temperature (equivalent to 70°C for a minimum of 2 minutes).</p>
	<p>Sources: Ubiquitous in nature, often found in the soil and as such on fresh produce and meat.</p>
	<p>Growth temperature: Typically mesophilic, chilled temperatures of <8°C and certainly <5°C will stop growth.</p>
	<p>Water activity (aw): Generally require a relatively high aW for growth of >0.92, but this can vary somewhat.</p>
	<p>pH: Generally prefer neutral conditions for growth, but can grow as low as 4.0</p>
<p>Salt tolerance (NaCl): a wide range of 0-5%</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div>	
<p>Foods most often implicated: Although ubiquitous, Enteros are generally only tested in ready to eat food (RTE), and can be an excellent indicator organism. Tested extensively in ready meals, sandwiches, desserts, pies and dairy products. Fresh produce will often contain various levels of Enteros, which decontamination processes e.g. washing will reduce populations (usually by 1 log) but not eliminate. As such produce containing salads and sandwiches are generally not tested for Enteros, normally E coli instead (which of course is part of the Enterobacteriaceae family.)</p>	
<p>Pathogenicity factor*: As this is a test of a large group of organisms, from spoilage bacteria to E coli 0157, the pathogenicity factor is 1-4*</p>	<p>Illness on-set (gestation period): See Salmonella and E coli 0157</p>
<p>Important factors: Enteros includes a large range of bacteria, eg Coliforms and pathogens such as E coli, Salmonella species and Yersinia. An important post hygiene indicator and normally included in many environmental swabbing programmes. Listeria monocytogenes is not part of the Enteros family.</p>	
<p>Additional control information: Hygienic high care or high risk conditions, clean equipment with no trap points. Ents is an excellent indicator group of organisms for an unclean factory environment, temperature abuse or process (including CCP) failure and as such is tested widely in raw materials, WIP, finished product and swabbing regimes.</p>	
<p>Guidelines and limits In RTE products <10 is generally the target in a sample of 25g. 10-100 could be considered a monitor or warning and >100 would be considered out of specification.</p>	

