

Supplementary Information

Microbiological characterisation and impact of suspended solids on pathogen removal from wastewaters in dairy processing factories

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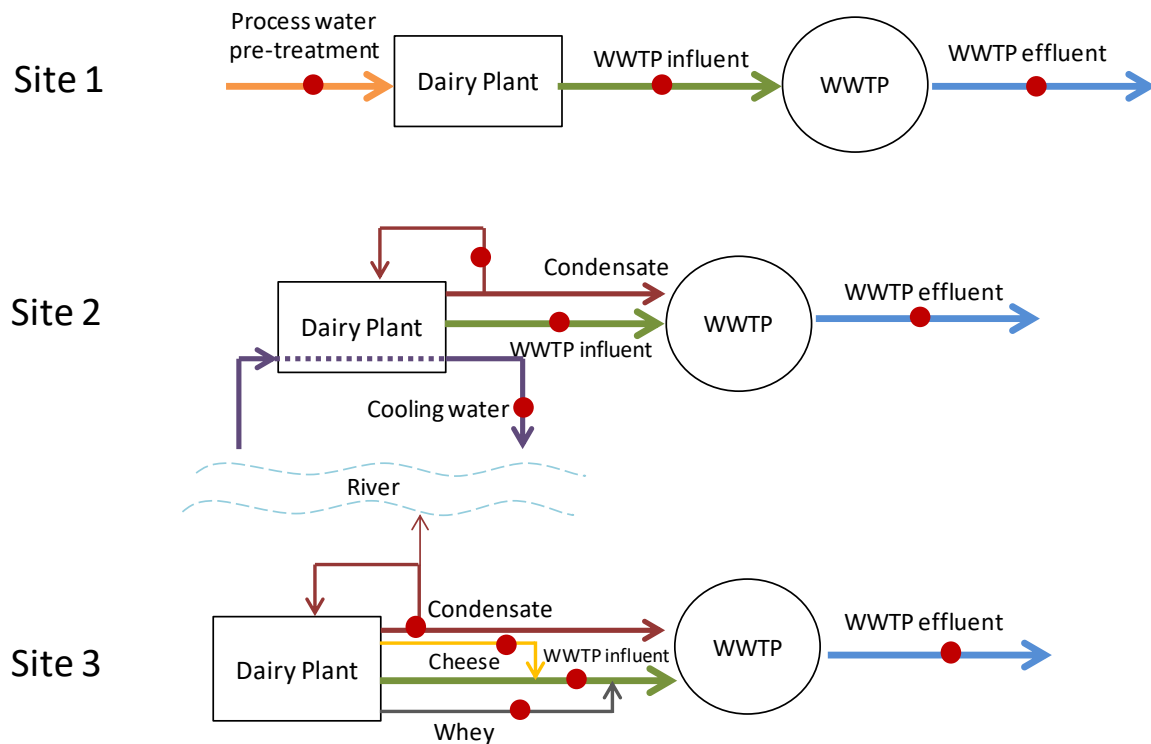


Figure 1. Sampling points (red circles) at the three dairy plant sites.

Figure 2 outlines the microbial analysis applied to each sample. One to two litre grab samples were collected at each sampling point (Figure 1) and subjected to a series of standard methods testing (within 8 hours) at the Environmental lab, NUI Galway and an external accredited laboratory, Complete Lab Solutions (CLS), Rossmore, Galway. The following two tests were carried out at NUI Galway;

- **Heterotrophic plate counts - 37°C and 22°C** as per; *The Microbiology of Drinking Water (2012) - Part 7 - Methods for the enumeration of heterotrophic bacteria by pour plate technique.*
- **Total coliform and *E.coli* analysis** as per; *The Microbiology of Drinking Water (2009) - Part 4 - Methods for the isolation and enumeration of coliform bacteria and Escherichia coli - IDEXX Quanti-tray/2000 colilert 18 test - MPN standard method*

The same samples (100mL) were also sent for specific pathogen analysis at CLS as per standard methods. Each site was surveyed twice with the exception of site 1 which was surveyed three times due to inconclusive results.

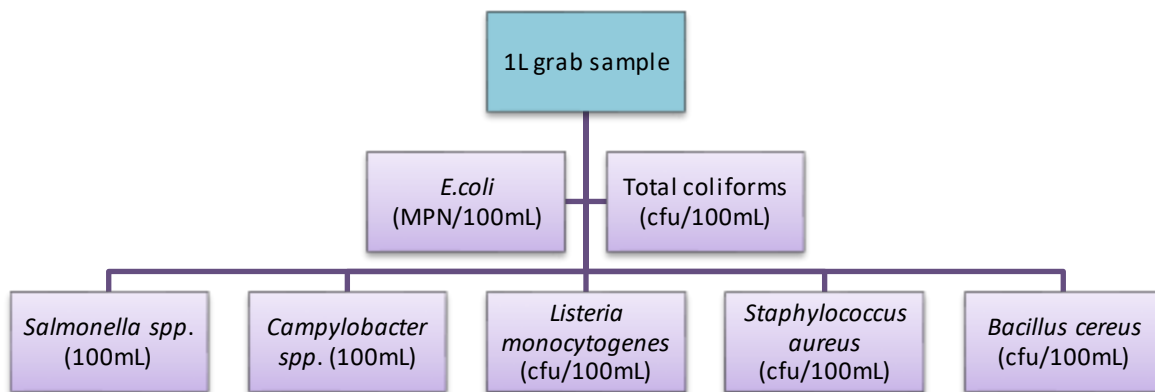


Figure 2. Method outline of dairy water sample analysis

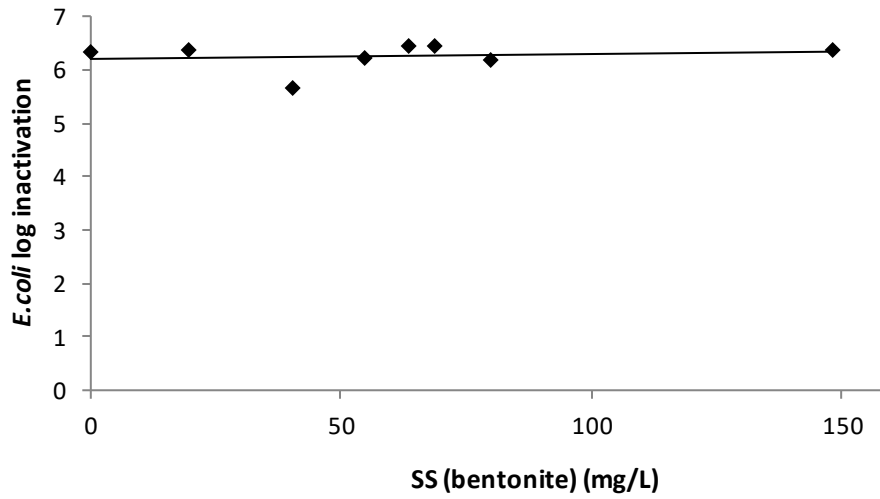


Figure 3. Impact of SS on the log inactivation of *E.coli* at various SS (bentonite) concentrations; LPUV dose output of 11.5mJ/cm².

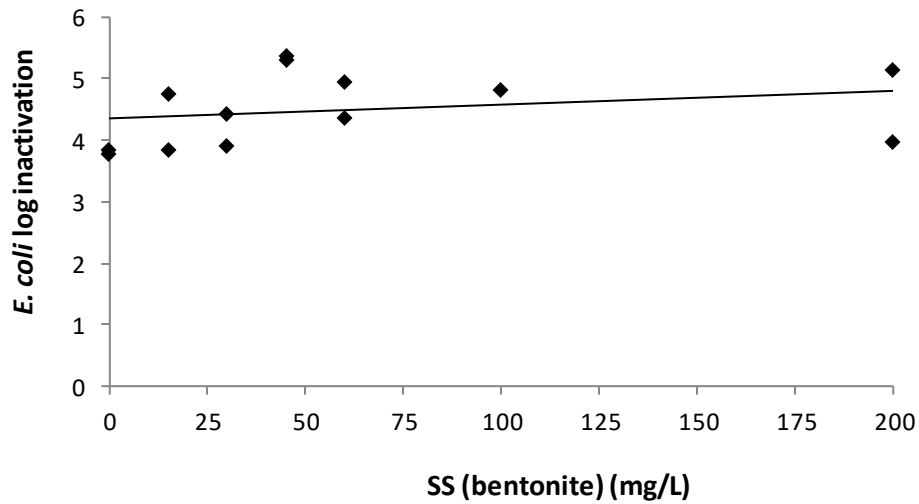


Figure 4. Impact of SS on the log inactivation of *E.coli* at various SS (bentonite) concentrations; PUV dose output of 1946mJ/cm².