Fate and survival of Campylobacter coli in swine manure at various temperatures

Campylobacter coli is the most common Campylobacter species found in pig (95%), but the ability of this bacterium to survive in swine manure as well as the potential for causing human illness are poorly understood. We present here laboratory-scale experiments to investigate the effect of temperature on the survival of C. coli in spiked swine manure samples at temperatures from 4 to 52°C. The survival of C. coli during storage for 30 days was studied by three different methods: bacterial culture (plate counting), DNA qPCR, and mRNA RT-qPCR. The results indicate that C. coli could survive in swine manure up to 24 days at 4°C. At higher temperatures, this bacterium survived only 7 days (15°C) or 6 days (22°C) of storage. The survival of C. coli was extremely short (few hours) in samples incubated at 42 and 52°C. The results from the RT-qPCR method were consistent with the data from the bacterial culture method, indicating that it detected only viable C. coli cells, thus eliminating false-positive results from DNA from dead C. coli cells.

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