



Title:

Cheese curd safety – a challenge study using *Listeria monocytogenes*

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Abstract:

Cheddar cheese Curd (CC) is a popular product manufactured by artisans and also mass-produced in mid- to large-cheese plants across Ontario. Based on its pH and moisture content, CC was formerly categorized as a high-risk food that must be stored, transported and retailed at <4 °C through its approximately 14 day shelf life. Current legislation in many jurisdictions permits retail sale of CC at room temperature for up to 24 h after manufacturing. However, there is no data that supports this exception, and further, there is a trend to sell cheese curds at farmers markets, convenient stores and gas stations at room temperature with uncertain temperature history. There have been no studies conducted on CC risk assessment related to storage temperature, pH history, or microbial growth. Therefore, an exposure assessment was conducted on the inoculated curds to determine survival and growth of selected pathogens during storage and distribution with various temperature histories. This study monitored *Listeria monocytogenes* populations on cheese curds stored at 4°C and 25°C for 14 days. CC were inoculated with 2.5-3 log CFU/g *L. monocytogenes*. Samples were enumerated at 24 and 48 h, as well as at the end-point. Preliminary data suggests that *L. monocytogenes* survives the duration of CC shelf-life of two weeks at both 4 and 25°C. With this study, we intend to guide the safe distribution of Cheddar cheese curds.