**Title:** Occurrence of *Campylobacter* in Commercially Shelled Liquid Egg in Japan

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**Abstract:**

*Introduction:* *Campylobacter* is a food-borne human pathogen known to contaminate poultry products. While it is well documented on contamination levels and number of the bacteria in poultry meat, there are few reports on contamination of commercially shelled liquid egg by *Campylobacter*.

*Purpose:* We investigated the level of contamination of liquid egg by *Campylobacter*, and also studied if the legal pasteurization condition of liquid egg for *Salmonella* in Japan could be used as that for *Campylobacter*.

*Methods:* From 10 egg shelling facilities in Japan, 140 non-pasteurized and 110 pasteurized liquid egg samples were collected. These liquid egg samples were frozen at the facilities and shipped to our laboratory. The number of *Campylobacter* was determined by selective enrichment and the MPN procedure. Their heat tolerance was observed using the method with heat treatment at different temperatures.

*Results:* Out of the 140 non-pasteurized liquid egg samples, 39 samples were positive for *Campylobacter* (27.9%), while no *Campylobacter* was found in the pasteurized liquid egg samples. The contamination levels of all the contaminated samples determined with MPN procedure were less than 28 microorganisms per 100 ml. It was demonstrated that *Campylobacter* is sensitive to heat, with its D-values of 0.44-1.86 minute and 0.12-0.32 minute at 55 °C and 58 °C, respectively.
Significance: This very weak heat tolerance of the bacteria in liquid egg confirmed that there is no safety concern on commercially shelled pasteurized liquid egg pertaining to Campylobacter contamination.