

Scientific Interpretive Summary

Quantifying the reduction of *Campylobacter jejuni* on skin-on chicken breast portions frozen and stored for up to 10 weeks at -12°C

Freezing is known to significantly reduce *C. jejuni* contamination of poultry and different freezing regimes have the potential to be used as control measures at different steps in the food chain e.g. after secondary processing, commercial storage and distribution, and domestic storage.

NZFSA commissioned ESR to quantify the reduction of two *Campylobacter jejuni* strains, ST 3609 (formerly ST u48) and ST 474, on skin-on chicken breast portions frozen to an internal temperature of -12°C, followed by frozen storage at -12°C. The counts on the samples were enumerated after 1, 2, 3, 4, 5, 6, 7, 34 and 73 days. Thawing was carried out at 4 and 20°C. Enumeration was carried out on CDA and mCCDA agar.

Variable reductions in *C. jejuni* numbers were observed for both strains. For example, on mCCDA agar, the reduction after 1 day varied from 0.62 log₁₀ to 1.72 log₁₀ cfu per portion. These figures varied for 6 days from 1.31 log₁₀ to > 3.26 log₁₀ (including one result of 4.21 log₁₀), and for 7 days from 1.26 log₁₀ to 2.49 log₁₀ cfu. After 73 days the reduction varied between 3.03 log₁₀ and > 5.29 log₁₀ cfu per portion.

It is clear that freezing can significantly reduce contamination levels of *C. jejuni* on poultry and this can provide a useful option for reprocessing of chicken meat that has unacceptable levels. However, the variability in levels of reduction limits the predictability of this intervention, particularly when applied over a short time of storage at -12°C. It should be noted that the reductions obtained in this work are likely to be the maximum possible given that *C. jejuni* is reported to survive better on muscle than on chicken skin.

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