Quantitative Microbiological Risk Assessment of *Salmonella* in Retail Pork from Australia and Northern Thailand

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Outline

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4. Conclusion

Abstract

Foodborne disease caused by *Salmonella* is one of the most important food safety issues worldwide. Pork burgers could be expected to have an elevated risk of salmonellosis compared to other pork products due to their comminuted nature.

Quinolone-resistant (QR) *Salmonella* may posed a risk to public health in Thailand. The objectives of this study were to carry out microbial monitoring on the prevalence of *Salmonella* in pork from retail to burgers prepared at home and commercial pork, investigate consumption patterns, and conduct a quantitative microbiological risk assessment (QMRA). The results showed that the mean risk of salmonellosis from consumption of 100 g pork burgers was estimated to be1.54×10^{-8} per serving or one illness per 65,000,000 servings consumed in Australia. Under a scenario with conservative assumptions, 0.746 cases of salmonellosis per year from pork burgers in Australia were predicted. For QR *Salmonella*, the probabilistic prevalences from the fresh market and modern trade were 28.4 and 1.9% in Thailand. The probability of illness (P_I) and probability of mortality given illness (P_{MI}) from QR *Salmonella*-contaminated pork at retails were in the range of 2.2×10^{-8}–3.1×10^{-4} and 3.9×10^{-10}–5.4×10^{-6}, respectively, while those from susceptible *Salmonella* contaminated-pork at retails were in the range 1.8×10^{-4}–3.2×10^{-4} and 2.3×10^{-7}–4.2×10^{-7}. These findings showed the the Australian pork industry commissioned this risk assessment to safe, and importance of a structured approach to assessing and potentially implementing effective interventions to reduce the risk associated with QR *Salmonella*.

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