

Thesis Title	Quantitative Microbial Risk Assessment of <i>Salmonella</i> spp. in Thai Frozen Broilers.
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Abstract

The quantitative microbial risk assessment of *Salmonella* spp. in frozen broilers from processing plants in Thailand was analyzed. It was to estimate the public health impact on local people from exposure to *Salmonella* spp. in chicken meat using data available from the Ministry of Health as well as those published in Thailand. We found that all *Salmonella* spp. were the major cause of gastroenteritis in Thailand. The most frequently involved were *S. Enteritidis* and *S. Typhimurium* but *S. Alban* was found in most frozen broilers. Receiving of live birds, slaughtering and evisceration may enable *Salmonella* spp. to disperse and growth. However scalding at 60 °C for 2 min could reduce the numbers of *Salmonella* spp. slightly. After being cooled and packed prior to freezing, *Salmonella* spp. had limited in number due to low temperature that could not support their growth. The estimated averages of *Salmonella* spp. in broilers were in the range of 13-17 CFU per grams. The contamination levels were in the range of 30 - 60% which was higher than reported that live birds (0-20%) reflected the contamination in broiler meat during the processes. Gastroenteritis caused by *Non-typhoidal Salmonella* in Thailand was 2.9% of total population. The doses that cause illness, estimated from illness case numbers, animal model and contamination data, were 10^{10} , 10^{10} and 10 CFU, respectively. The estimated consumer risk of Thai people to become illness due to *Salmonella* spp. at 400 CFU or higher per serving were 3.9%.

Keywords: Quantitative Microbial Risk Assessment/ *Salmonella* spp./ Thai Frozen Broilers