



P1-44: Quantitative Risk Assessment of Human Salmonellosis Attributable to the Consumption of Meat-Based Meals in Kigali City, Rwanda

Wednesday, 25 April 2018

10:30 - 16:00

📍 The Brewery Conference Centre - Masshallen

Introduction: Human salmonellosis is one of the most noticeable foodborne diseases worldwide and meat constitutes one of the major vehicles for human *Salmonella* infection.

Purpose: The objective of this study was to assess the risk of developing *Salmonella* illness associated with the consumption of meat-based meals in Kigali, Rwanda inhabitants through a quantitative microbial risk assessment (QMRA) model and to determine through the model the efficacy of different interventions aimed at reducing the risk of *Salmonella* along the Rwandan meat production chain.

Methods: In the present study, the risk of *Salmonella* illness attributable to the consumption of meat-based meals was assessed through a QMRA model by using the Codex Alimentarius approach, and three main risk exposure pathways (namely beef consumption within the household, as well as beef and goat meat consumption outside the household) were considered.

Results: The number of human salmonellosis cases associated with the consumption of meat-based meals in Kigali was found to vary between 17,447 and 33,986 inhabitants per year, depending on the risk exposure pathway; females, as well as young adult consumers, appeared to be less exposed to the risk. The analysis of intervention scenarios aimed at reducing the risk of human salmonellosis within slaughterhouses, meat retail establishments, and the kitchens of households and collective catering establishments in Kigali showed a relative risk reduction ranging from 22.7 to 83.1%, and the risk reduction yield was significantly higher when different interventions were simultaneously applied at various stages of the meat chain.

Significance: Data gathered through this study would be helpful in monitoring the risk of *Salmonella* illness attributable to the consumption of meat-based meals in Rwanda and in other countries with comparable meat production chains.

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