

Review

Bacterial diversity and potential risk factors associated with Salmonella contamination of seafood products sold in retail markets in Bangkok, Thailand

Abstract:

Line 19: Change the past tense in the first sentence according to the overall abstract

Line 20: explain which seafood commodities or change 'these' by 'the' as it is the first sentence

Introduction:

Line 40: explain if the value 170.9 is worldwide or not? How much is the part of exported seafood? The same question links with line 78 as it is mentioned that Thailand is one of major exporter

Line 61, there are any foodborne outbreaks data in Europe investigated and reported especially in EFSA and ECDC

Line 77: I don't agree this sentence, sampling at human consumption point don't reduce directly the seafood-borne contamination but sampling at this stage allows to investigate the human exposure of microbial contaminants and therefore mitigation measures. So, rephrase the sentence.

Material and methods

Line 99: is there only one single lab performing all the analysis?

Line 147: Could you correct the name of "Pasteur Institute"

Results

Table 1: the part of the table regarding number of samples in different regional source of seafood is not in agreement with the total of samples for Oyster (total regional samples 66 instead 82 oyster samples, the same for block cockle (100 vs 84), for Asian seabass (77 vs 84) and the total for the line "Central" (250 vs 257), this table needs to be revised.

Line 198: the authors mentioned the Central Region is divided in two parts but when you add the percentages of the two parts, you don't have 100%, how to interpret these values ? maybe, the value for Bangkok is missing ? Regarding the Regional sources, we don't have any information if the production is coming from aquaculture or from fisheries, (should be placed in Material and Methods)

Line 220: Beside the figure 1 with the percentages, it could be interested to present the total number of positive sample for each pathogen species detected (Vibrio species and Salmonella), we don't see easily if some samples were contaminated both with several pathogens and in which categories of seafood.

Line 233: Some serovars detected in this study are very uncommon, especially Matopeni which is used sometimes as standard for the detection of Salmonella, I'm wondering if Matopeni and other uncommon serovars have been confirmed by a Reference laboratory for Salmonella serotyping? How can you explain the so high level of Matopeni in Asian seabass? Is it in relation with the mode of production of such fishes.

General comments regarding the occurrence of Vibrio and Salmonella in seafood: the authors mentioned the sampling was done on several months but we don't have any data regarding the variation of positive samples. Should be interesting to analyze when you have so much positive

samples (line 221-232) and especial for instance for Salmonella and Vibrio cholera contaminations in Asian seabass

Table 4 and lines 239-247: could you explain why you choose shrimp as reference for statistical analysis. To my knowledge, Odds ratio is better significant when the percentages are low under 10%, it is not the case in this study. Is there any confounding variables when you apply such statistical analysis looking for the presence of pathogen species with the type of seafood and other risk factors?
Line 249-261: The authors must be carefull in interpreting the statistical results

Discussion

Line 270-282: Taking into account the standards of BQSF, are there any mitigation measures put in place for the samples which are not in accordance with the rules, withdrawal or recall? Is there any official microbial control programs for such products?

Do you investigate the nature and sources of Salmonella natural contamination or through wastewater discharge in the frame of this study when you have the knowledge of sampling location? Do you have any more current data which confirms or not such high level of pathogens in seafood?

Line 303: Comment: Taking into so high level of pathogenic contamination, it is not surprising that the ice was a vehicle of cross-contamination as you mentioned. As the study was done at the retail, maybe the contamination at the sampling point could lower, do you have any data? That means that you cannot analyze the Regional sampling location as risk factor if the contamination occurs thereafter.

Comments regarding Salmonella serovars: As there is a very high diversity of Salmonella serovars in this study, did you explore the diversity of Salmonella serovars in human in Thailand based on available data and more generally in other sources? There are two lineages of serovar Paratyphi B according to the D-tartrate reaction, one lineage is linked to the paratyphoid salmonellosis disease and the other one more allocated to animal sources, did you explore that? In addition, did you observe several different serovars in the same seafood sample?

As you investigate the presence of Vibrio and Salmonella at retail and the high level of presence in seafood, do you know the incidence of human salmonellosis or outbreak linked to Salmonella and/or Vibrio and the consumption of seafood in Thailand?

I agree with you regarding the interpretation of coliforms or E.coli as indicator for Salmonella or Vibrio contamination as the results are not always reliable.

The discussion is based mainly on the statistical results, nevertheless, it could be nice to develop a small paragraph to discuss the limitations of the statistical analysis used in this study.

Conclusion

Line 402: put Salmonella in italic character