

Pre-assessment of microbiology quality and antibiotic resistance of vibrio parahaemolyticus from cockle (*Anadaragrana*) in Malaysia.

ABSTRACT

Introduction *Vibrio* species has shown one of the most important bacterial diseases in marine cultured organisms, affecting a large number of species of fish and shellfish. Among well known species is *Vibrio parahaemolyticus* which associated with cockle and reported as one of the important foodborne diseases in developing countries. Objectives The study was conducted to determine the microbiology quality of *Vibrio parahaemolyticus* in cockles (*Anadaragrana*) in Selangor, Perak, Melaka and Negeri Sembilan. Methods A total of 12 cockle samples were purchased from wet market throughout 3 weeks in September 2009. Out of the 12 cockle samples, 120 isolates were randomly produced and tested for microbiology quality of *V. parahaemolyticus* by growing onto Thiosulphate Bile-Salt Sucrose (TCBS) agar. Tentative colonies of *V. parahaemolyticus* were then examined for biochemical test and antibiotic resistance patterns towards bacitracin, vancomycin, penicillin, chloramphenicol, amikacin, enrofloxacin and ciprofloxacin. Results The highest mean colony counting value for *Vibrio* grown onto TCBS agar was from Melaka with 4.19×10^5 cfu per gm, followed by Perak (4.15×10^5 cfu per gm), Negeri Sembilan (3.72×10^5 cfu per gm) and Selangor with 1.58×10^5 cfu per gm. Biochemical tests showed 75 isolates were positive for *V. parahaemolyticus* with 29.3% (22/30) isolates were from Perak, 26.3% (20/30) isolates were from Selangor, 22.6% (17/30) isolates were from Melaka and 21.2% (16/30) isolates were from Negeri Sembilan. As for antibiotic resistance pattern, all *V. parahaemolyticus* isolates were resistant toward one or more antibiotic tested with 100% (75/75) isolates resistant toward bacitracin, 99% (74/75) toward vancomycin and 92% (69/75) toward penicillin. In spite of this, none of the *V. parahaemolyticus* isolates were resistant toward chloramphenicol, amikacin, enrofloxacin and ciprofloxacin. Conclusion The presence of *V. parahaemolyticus* in all cockle samples with their antibiotic resistance properties was alarming. More samples should be studied in obtaining an accurate view of microbiology quality and antibiotic resistance of *V. parahaemolyticus* in cockle samples in Malaysia.

Keyword: *Vibrio parahaemolyticus*; Microbiology quality; Antibiotic resistance; *Vibrio parahaemolyticus*;