

## Isolation and antibiotic susceptibility profile of *Vibrio cholerae* isolated from catfish (*Pangasius hypophthalmus*)

### ABSTRACT

To date, cholera has cycle the world seven times through the seven pandemic cycles that has affected tens of millions of people. The objective of this study was to determine the presence and density as well as the antibiotic resistance profile of *Vibrio cholerae* isolated from catfish (*Pangasius hypophthalmus*). From the combination of the Most Probable Number-Polymerase Chain Reaction-planting on TCBS agar methods, *V. cholerae* was detected in 32 samples and *V. cholerae* O139 was detected in 7 samples, with a density ranging between <3.0 to 75.0 MPN/g and <3.0 to 9.3 MPN/g respectively. The results obtained in this study indicate that *V. cholerae* will continue to be a major healthcare burden, as the pathogen can be transferred from the aquatic environment to the catfish and the consumption of catfish by humans will present a route of exposure to *V. cholerae*. Proliferation of antibiotic and multiantibiotic resistant bacteria is a public health threat worldwide. Results of antimicrobial susceptibility investigation of *V. cholerae* isolates collected from catfish reported in this study will establish an important baseline data. All the *V. cholerae* isolates were multiantibiotic resistant towards the ten antibiotics tested, including 6 isolates that were resistant to all ten antibiotics and 38 antibiotic resistance patterns. The MAR index values of 0.2 to 1.0 indicate that the isolates were exposed to high risk sources in the environment. Taken together, the information on the prevalence and antibiotic resistance of *V. cholerae* indicate that catfish consumption presents a potential risk to human health and highlight the need for ongoing epidemiological and antimicrobial resistance surveillance.

**Keyword:** *Vibrio cholerae*; Catfish; Antibiotic resistance