

Recent advancements in molecular detection of Vibrio species in aquatic animals: a review

ABSTRACT

Vibriosis is one of a major problem in aquaculture sector causes by Vibrio species and gives bad impact on economy and social development. In addition, number of the infected people with vibriosis is increasing every year through consuming of contaminated fishes and other aquatic animals. To overcome this problem, researchers continuously develop new methods for identification and detection of Vibrio species. Those methods can be categorized based on the principle applied; conventional culture method, antigen-antibody based assay, nucleic acid amplification technology and lateral flow dipstick. The conventional culture method is a basis in identification of Vibrio but it is time consuming and requires skilled personnel. The nucleic acid amplification technology such as isothermal amplification assay in a combination of lateral flow dipstick is widely used since these assays offer rapid, easy to handle and high sensitivity and specificity detection methods. This paper also reviews and describes the available application and limitations of the studies involving Vibrio detection methods of aquaculture field. As a conclusion, the development of new technologies is very important to improve the detection of Vibrio species as well as increasing the number of food production to meet human demands.

Keyword: Isothermal amplification; Lamp; Lateral flow dipstick; Nucleic acid amplification; PCR; Vibrio