The Physicochemical Properties of Two Rivers in Eastern Cape South Africa as Relates to Vibrio Spp Density

Authors : Oluwatayo Abioye, Anthony Okoh

Abstract : In the past view decades; human has experienced outbreaks of infections caused by pathogenic Vibrio spp which are commonly found in aquatic milieu. Asides the well-known Vibrio cholerae, discovery of other pathogens in this genus has been on the increase. While the dynamics of occurrence and distribution of Vibrio spp have been linked to some physicochemical parameters in salt water, data in relation to fresh water is limited. Hence, two rivers of importance in the Eastern Cape, South Africa were selected for this study. In all, eleven sampling sites were systematically identified and relevant physicochemical parameters, as well as Vibrio spp density, were determined for the period of six months using standard instruments and methods. Results were statistically analysed to determined key physicochemical parameters that determine the density of Vibrio spp in the selected rivers. Results: The density of Vibrio spp in all the sampling points ranges between < 1 CFU/mL to 174 x 10-2 CFU/mL. The physicochemical parameters of some of the sampling points were above the recommended standards. The regression analysis showed that Vibrio density in the selected rivers depends on a complex relationship between various physicochemical parameters. Conclusion: This study suggests that Vibrio spp density in fresh water does not depend on only temperature and salinity as suggested by earlier studies on salt water but rather on a complex relationship between several physicochemical parameters.

Keywords : vibrio density, physicochemical properties, pathogen, aquatic milieu

Conference Title : ICAB 2017 : International Conference on Agriculture and Biotechnology

Conference Location : Cape Town, South Africa

Conference Dates : November 02-03, 2017

1