

Physicochemical properties associated with the presence of *Burkholderia pseudomallei* in small ruminant farm water supplies in Peninsular Malaysia

ABSTRACT

Burkholderia pseudomallei causes melioidosis, a life-threatening infection in both humans and animals. Water is an important reservoir of the bacteria and may serve as a source of environmental contamination leading to infection. *B. pseudomallei* has an unusual ability to survive in water for a long period. This paper investigates physicochemical properties of water associated with the presence of *B. pseudomallei* in water supply in small ruminant farms in Peninsular Malaysia. Physicochemical properties of water samples taken from small ruminant farms that included temperature, pH, dissolved oxygen (DO₂), optical density (OD), and chemical oxygen demand (COD) were measured after which the samples were cultured for *B. pseudomallei*. Multivariable logistic regression model revealed that slightly acidic water pH and higher COD level were significantly associated with the likelihood of the *B. pseudomallei* presence in the water.

Keyword: *Burkholderia pseudomallei*; Physicochemical; Water; Environment; Small ruminants; Malaysia