

RELATIONSHIP MODELLING BETWEEN WATERBORNE AND FOODBORNE DISEASE WITH DRINKING WATER QUALITY IN NEGERI KEDAH

ABSTRACT

A study was carried out to observe relationship between waterborne and foodborne disease (cholera, typhoid, hepatitis A and dysentery) and quality of drinking water with two main objectives. First, to obtain the best method in order to study the pattern of waterborne and foodborne disease (WBD), and the content of drinking water (chlorine residue, fecal coliform and combination of chlorine residue and fecal coliform, turbidity) using analysis of univariate time series. Another purpose of the study is to model the WBD and the content of drinking water using analysis of multiple linear regressions. The research findings from univariate time series shows that, the best method to predict new values in the next month are non-seasonal Box-Jenkins method to study WBD. Meanwhile, the three month moving average method and simple exponential smoothing are more appropriate to study chlorine residue, fecal coliform and turbidity and the combination of chlorine residue and fecal coliform, respectively. The findings also show that, all variables of the content of drinking water have linear relationship and significantly affected the WBD.

Keywords: Univariate time series, multiple regression, waterborne and foodborne disease, content of drinking water.