

Water quality index of selected station at Rasau River, Ayer Hitam Forest Reserve, Puchong, Selangor

ABSTRACT

The effect of soil acidity, human activities and other development are often related with the changes of aquatic ecosystem water quality. Rasau River in the forest was acidic though no hazard activities were existed there. A study was carried out at Rasau River catchment, Ayer Hitam Forest Reserve to determine its water quality status and the relationship between soil pH and water pH of the river. Eight sampling stations had been chosen along the Rasau River. Sampling was done using grab sampling on a weekly basis for duration of seven weeks. BOD, COD, pH, Ammonical Nitrogen, TSS and DO were chosen as indicators for the water quality status based on Department of Environment-Water Quality Index (2009). Four samples of soil were also collected on a weekly basis for duration of seven weeks. The soils were sampled at depth of 20cm from the soil surface by using an auger located 5m from the river to avoid additional sediment from river reserve. The results indicated that, the water quality index of Rasau River ranged between 74.72 to 79.36, falls under Class II and class III. For class II, the water is suitable for recreational activity but need water treatment for water supply and for the class III, extensive treatment is required for water supply but it is still suitable for livestock drinking. Results from regression analysis shows that soil pH relates with the acidity level of the river in the form of power function with the equation $(\ln(\text{Water pH}) = 1.084 (\text{Soil pH}), R^2 = 0.995$. The results also indicated that there was a decreased in water quality index when the river approached recreational area.

Keyword: Water quality index; Water pH; DO; BOD; COD; Soil pH