

Runoff quality index for area under maize cultivation

ABSTRACT

Land development activities contribute to water quality impairment. The resulting runoff from rainfall from different land use areas carries a wide range of pollutants that find their ways to the surface and ground waters. The use of models plays an important role in the assessment of diffuse pollution sources and their delivery to the receiving water bodies. The current Water Quality Index (WQI) used by the Department of Environmental (DOE) Malaysia has limitations when applied to agricultural areas. The important parameters do not include those pollutants particular to agricultural areas. This research project was carried out on sandy clay loam soil grown with maize (*Zea Mays*). The experimental plot was isolated from the surrounding areas with perimeter bunds to protect from runoff from adjacent areas. Thirty seven rainfall events in three seasons were monitored to evaluate the parameters that contributed most to the Non-point Source (NPS) pollution. A Runoff Quality Index (RQI) was proposed to assess runoff quality. The quality parameters include Total Kjeldhal Nitrogen (TKN) and Total Phosphorous (TP). It must be mentioned that the results of this experimental study is limited specifically to an agricultural area that was cultivated in maize only.

Keyword: Agricultural pollution; Diffuse pollution; Runoff quality index (RQI)