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Assessment of contamination potential of nitrate-N in natural recharging aquifers of Pingtung, Taiwan: Development and prediction of a modified GIS-based DRASTIC model

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Groundwater is one of the most important water resources. Monitoring data of groundwater quality revealed that many aquifers in natural recharging aquifer of Pingtung, Taiwan present serious nitrate-N pollution due to agricultural activities. This study assesses the contamination potential of nitrate-N in the Pingtung using DRASTIC model and GIS. Furthermore, a modified DRASTIC model which adopts discriminant analysis is developed to adjust factor weightings. The modified DRASTIC model can substantially improve the prediction and revise some drawbacks in the original DRASTIC model. The analyzed results provide government administrator with suggestive strategies against nitrate-N pollution in agricultural regions