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Progressive Changes in Physico-Chemical Constituent of Rainwater: A Case Study at Oyoko, a Rural Community in Ghana

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Abstract : The chemical and physical characteristics of rainwater harvested from a typical rooftop were progressively studied. The samples of rainwater collected were analyzed for pH, major ion concentrations, TDS, turbidity, conductivity. All the physicochemical constituents fell within the WHO guideline limits at some points as rainfall progresses except the pH. All the components of rainwater quality measured during the study showed higher concentrations during the early stages of rainfall and reduce as time progresses. There was a downward trend in terms of pH as rain progressed, with 18% of the samples recording pH below the WHO limit of 6.5-8.0. It was observed that iron concentration was above the WHO threshold value of 0.3 mg/l on occasions of heavy rains. The results revealed that most of physicochemical characteristics of rainwater samples were generally below the WHO threshold, as such, the rainwater characteristics showed satisfactory conditions in terms of physicochemical constituents.

Keywords : conductivity, pH, physicochemical, rainwater quality, TDS
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