

## Physico-Chemical and Bacterial Characteristics of Groundwater and Surface Water Quality in the Lagbe Town: Treatment Essays with *Moringa oleifera* Seeds

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### ABSTRACT

The river water and groundwater from Lagbe town in Benin Republic were collected and analyzed for physical, chemical and microbiological parameters. The surface water samples were treated with alum, *Moringa oleifera* seeds powder and the combination of alum and *Moringa oleifera* seeds. The jar-test essays were carried out with two water samples at initial turbidities 7.2 NTU and 14.4 NTU. The water samples analyzed are fairly mineralized (conductivity varies between 166 and 687  $\mu\text{S}/\text{cm}$ ), enough soft and contain the nitrate (104 mg/L for  $W_4$  sample). They are greatly polluted by pathogenic microorganisms such as *Escherichia coli*, *Klebsiella*, *Enterococcus*, *Vibrio*, *Serratia*. The optimal dosages of *Moringa* are 96 mg/L and 80 mg/L respectively. We have observed a reduction of 60% of turbidity and a substantial remove of all pathogenic microorganisms after water treatment with *Moringa oleifera* seeds. For the combination treatment, 93% of initial turbidity and 92% of initial concentration of organic matter in the sample  $E_2$  were eliminated. The pH remained almost constant during the treatment.

### KEYWORDS

Groundwater; Surface Water; *Moringa oleifera*; Water Treatment; Physic; Chemical; Bacterial Characteristics

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