

Application of Moringa Oleifer Seed in Removing Colloids from Turbid Wastewater

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Abstract : Dried crushed seeds of *Moringa oleifera* contain an effective soluble protein; a natural cationic polyelectrolyte which causes coagulation. The present study aims to investigate the performance of *Moringa oleifera* seed extract as natural coagulant in clarification of secondary wastewater treatment highly charged in colloidal. A series of Jar tests was undertaken using raw wastewater providing from secondary decanter of Reghaia municipal wastewater treatment plant (MWWTP) located in East of Algiers, Algeria. Coagulation flocculation performance of *Moringa oleifera* was evaluated through supernatant residual turbidity. Various influence parameters namely *Moringa oleifera* dosage and pH have been considered. Tests on Reghaia wastewater, having 129 NTU of initial turbidity, showed a removal of 69.45% of residual turbidity with only 1.5 mg/l of *Moringa oleifera*. This sufficient removal capability encourages the use of this bioflocculant for treatment of turbid waters. Based on this result, the coagulant seed extract of *Moringa oleifera* is better suited to clarify municipal wastewater by removing turbidity. Indeed, *Moringa oleifera* which is a natural resource available locally (South of Algeria) coupled to the non-toxicity, biocompatibility and biodegradability, may be a very interesting alternative to the conventional coagulants used so far.

Keywords : coagulation flocculation, colloids, moringa oleifera, secondary wastewater

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