

Effects of storage duration and temperature of *Moringa oleifera* stock solution on its performance in coagulation

ABSTRACT

This study presents the effects of storage duration and temperature of *Moringa oleifera* stock solution on its coagulation efficiency. *Moringa oleifera* stock solutions, which were kept at room temperature (28°C), were able to remove turbidity from medium, high and very high turbidity water samples and no coagulation activity was observed for low turbidity water and surface water tested. The highest turbidity removals were observed for stock solutions, which were kept for one day. For *Moringa oleifera* stock solutions, which were stored longer up to 3 days, the turbidity removal efficiencies decreased to 73.6%, 86.8% and 92.3 % for medium, high and very high turbidity water samples respectively. In the case of medium and high turbidity water samples, *Moringa oleifera* stock solutions, which were kept for more than 3 days did not perform any coagulation process, while for very high turbidity water sample, it was found to coagulate slightly about 14.9 % and 3.9 % for those which were stored for 5 and 7 days, respectively. For those *Moringa oleifera* stock solutions, which were stored at 3°C up to 5 days, no significant differences were found between their turbidity removal efficiency on medium, high and very high turbidity, while those that were stored for more than 5 day did not perform coagulation. For surface water and low turbidity water samples significant differences were observed between turbidity removal efficiency of *Moringa oleifera* stored for different durations. Highest turbidity removal for surface water and low turbidity water were obtained using *Moringa oleifera* which were kept for 3 days or less and it decreased when using *Moringa oleifera* stock solution, which were stored longer.

Keyword: *Moringa oleifera*; Natural coagulant; Storage duration; Storage temperature; Turbidity removal