Effect of storage conditions on *Jatropha curcas* performance as biocoagulant for treating palm oil mill effluent

ABSTRACT

Background and Objective: *Jatropha curcas* has been shown to be an effective bio-coagulant in turbidity removal for water and wastewater. In this work, the effect of storage time and conditions of the *Jatropha curcas* coagulant agent had been investigated and Palm Oil Mill Effluent was used as the sample wastewater. Materials and Methods: *Jatropha* seed and presscake was stored at room temperature and the coagulant was extracted at 1st, 3rd and 5th month for performance evaluation in coagulation. Next, the coagulant was extracted and stored in different conditions. The effect on the coagulation process was evaluated and the bio-coagulant quality was analysed using FTIR and Bradford method. Results: Results showed that the turbidity removal reduced from 99-92% as storage time increased. Storing at lower temperature resulted to reduce significant degradation of biocoagulant quality and able to maintain the coagulation performance. Conclusion: These findings were supported by the FTIR and protein content analysis. These findings suggested that storage conditions greatly affect the performance of *Jatropha curcas* as a coagulant.

Keyword: Jatropha curcas; Storage time; Protein; Coagulant agent; Palm oil mill effluent; Wastewater; Coagulation performance; Jatropha seed and presscake