

SIIC090

THE EFFECT OF VARIOUS NATURAL COAGULANTS ON POLLUTANT REMOVAL OF WASTEWATER

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Abstract:

Natural coagulants have been increasingly popular past few years due to its benefits and the fact that it resolves most of associated problems when using synthetic coagulants. In this review paper the removal of pollutant on wastewater by using different natural coagulants will be investigated. The efficiency of natural coagulants in the removal of pollutant in wastewater was reviewed. The objectives were to review the effect of various natural coagulants and determine the effective natural coagulant on pollutant removal of wastewater. The method used in this review paper is Microsoft Excel and Multi Criteria Decision Making (MCDM). Advantages and disadvantages of natural coagulants were identified. The efficiency of natural coagulants performances such as Moringa oleifera, roselle seeds, banana piths were investigated. The parameter results of natural coagulants such as turbidity, suspended solids, pH and conductivity were shown in the finding. The optimum pH of the natural coagulants mostly between 7-7.5 because the colloidal or particle occurred at neutral condition. Thus, natural coagulants possessed high potential ability in removing turbidity.

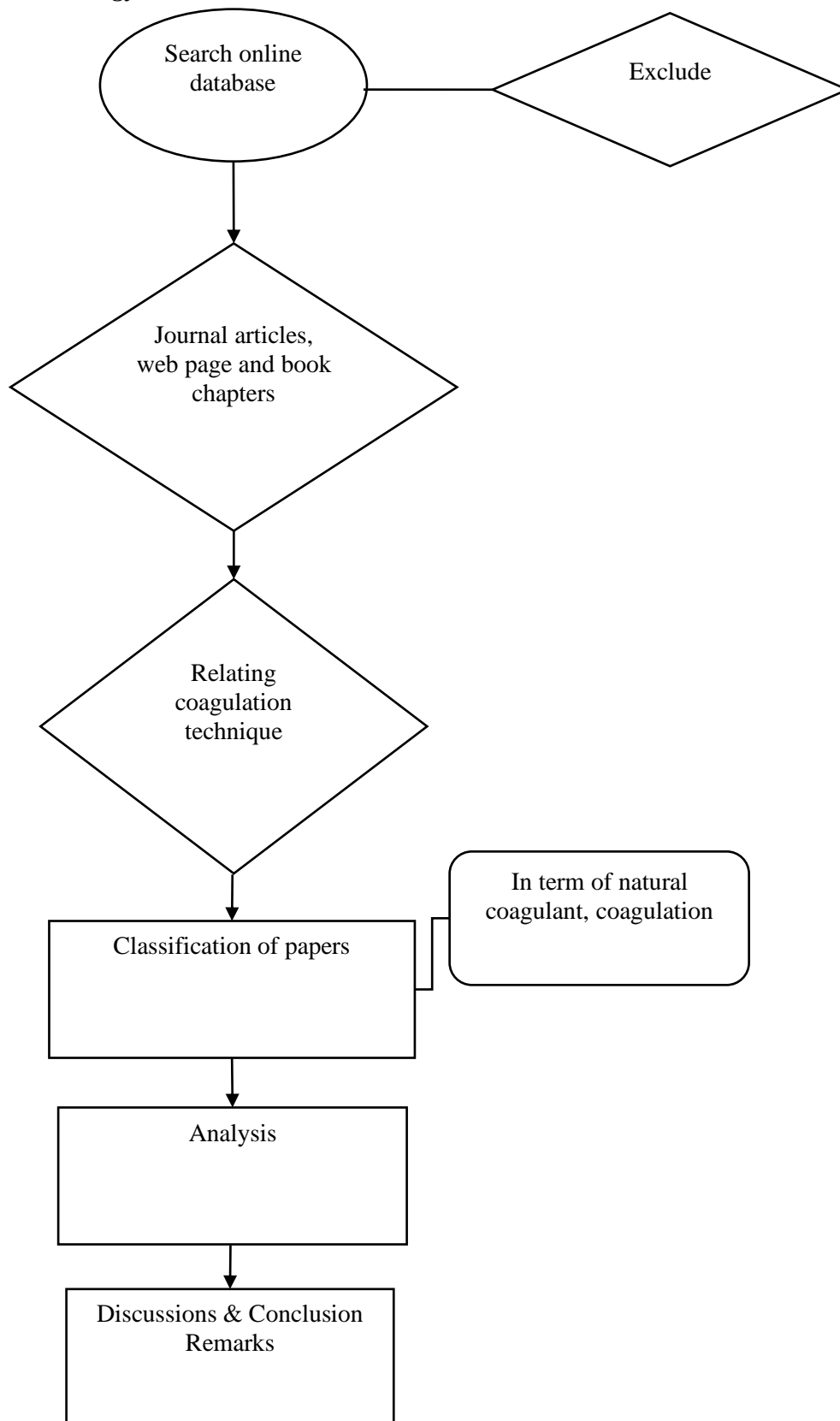
Keywords:

Natural coagulant, synthetic coagulant, wastewater, pH, turbidity

Objectives:

- To review the effect of various natural coagulants on pollutant removal of wastewater.
- To determine the effective natural coagulant on pollutant removal of wastewater.

Methodology:



Results:

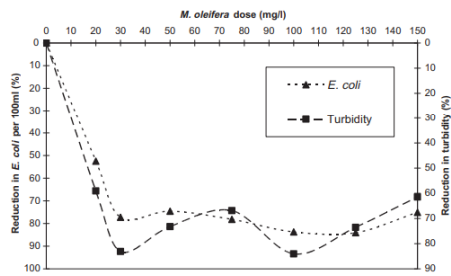


Figure 3: Turbidity and *E. coli* reduction Roselle seeds extract

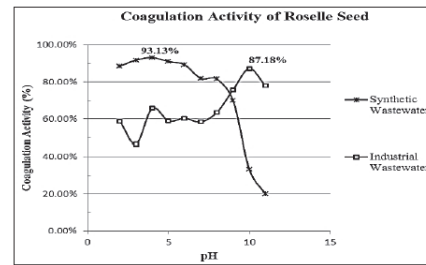


Figure 4: Effect of pH on coagulation activity of Roselle seeds extract

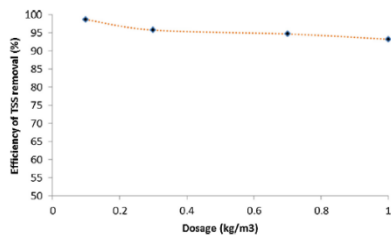


Figure 5: Effects of banana pith dosage on performance in river water

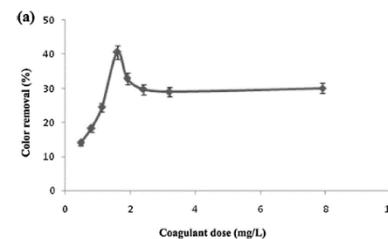


Figure 6: Effect of coagulant dose on (a) color removal

Conclusion:

In conclusion, natural coagulants possessed high potential ability in removing common parameter such as turbidity. The use of natural coagulant in water showed an important development for better ecosystem especially for less urbanized area. Composite polymerization and impregnation method as new technique of processing coagulant can be used to produce coagulants with enhanced capability.