

## **Reduction of Coliforms and Escherichia Coli Using Saluyot (*Corchorus olitorius*) Leaf Extract as Flocculant in Turbid Water of Davao River**

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In this study, it is pointed out that the flocculating ability of Saluyot (*Corchorus olitorius*) can be a significant tool to increase the sustainability of treating turbid river water, particularly the water from Davao River (specifically Bankerohan area) which is particularly known to be high in pathogenic organisms, turbidity and harmful chemicals due to the dense population and industrialization around it. Saluyot (*C.olitorius*) leaf extract was examined to determine its efficacy on water treatment through laboratory analyses of the turbid river water's total suspended solids, turbidity count, presence of *Escherichia coli*, total coliform count and fecal coliform count. The leaves' mucilage was extracted through water extraction method and Polyaluminum Chloride (PAC) was chosen to be the coagulant for primary destabilization of particles in water in partner with the Saluyot leaf extract for the coagulation-flocculation method. The results showed that the percentage removal of total coliforms is at ninety-nine point sixty-nine percent (99.69%), fecal coliforms at ninety-nine point sixty-nine percent (99.69%), *Escherichia coli* at ninety-nine point thirty-one percent (99.31%), Total Suspended Solids at ninety-nine point seventy-five percent (99.75%) and turbidity at ninety-nine point two percent (99.02%). The total coliform count, *E. coli*, and fecal coliform count passed the mandatory and/or recommended limit values of surface water regulation by the Environmental Protection Agency. Total suspended solids and turbidity values also passed the mandatory and/or recommended limit values of surface water regulation. The use of Saluyot (*C. olitorius*) leaf extract as a flocculant in treating turbid water of Davao river was proved significant in this study, particularly in the reduction of coliforms, *Escherichia coli*, turbidity and total suspended solids, thus, opening the potential of the Saluyot leaf extract's efficacy in treating other forms of wastewater from different origins. In recommendation, the use of an organic coagulant in partner with Saluyot leaf extract can be explored and tested.

**Keywords:** Water treatment, Saluyot, Flocculation-Coagulation, Bankerohan river