

ABSTRACT

The present study aims to identify the optimal conditions for the removal of humic substances from the water of the Nanay River (Loreto-Peru) through the use of the aluminium polychloride coagulant. Therefore, the efficiency in the removal of turbidity and colour generated by the treatment with the coagulants polychloride aluminium and aluminium sulfate was compared. The jar test was used to evaluate the effect of the independent variables: coagulant dose (mg / L), pH of the aqueous medium and agitation speed during coagulant dispersion. The effectiveness of the treatment was defined by the response variables: percentage of turbidity removal and percentage of colour removal. It was found that a dose of 11 mg / L of aluminium polychloride generated a turbidity removal of 92.11% and colour removal of 82.29%. In contrast, a dose of 14 mg / L aluminium sulfate resulted in a reduction in turbidity and colour of 68.6% and 58.28% respectively. Finally, the cost of water treatment of the Nanay River was economically evaluated using both coagulants. It was shown that treatment with aluminium polychloride reports a cost 57.1% lower than the cost recorded for treatment with aluminium sulfate.

Keywords: Coagulation, treatment, removal, aluminium polychloride, aluminium sulfate, turbidity, colour.