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## Plantago Ovata Efficiency in Elimination of Water Turbidity

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### ABSTRACT

Coagulation and flocculation are the most important processes in water treatment plants. Nowadays, in Iran, coagulants which have the most usage in water treatment are Aluminum Sulphate (Alum) and Ferric Chloride. Using synthetic coagulants are not economical and useful for health in developing countries. The aim of this research is to survey and compare the Ferric Chloride coagulant function and this coagulant accompany with Plantago ovata coagulant aid under variable pH for eliminating of water turbidity. This study was performed in lab scale for water containing artificial turbidity of clay. The experiments were done in three turbidity ranges 100, 50, 20 NTU and two ranges of pH 7 and 8. The amount of Ferric Chloride in all experiments were 10 ppm and P.ovata extract in optimum concentration for turbidity of 100, 50, 20 NTU was 0.2 ppm, 0.1 ppm and 0.04 ppm respectively. The optimum pH was 7. Using P.ovata co-agulant aid in turbidity 100, 50, 20 NTU can eliminate 94.1, 94.5, 88.15 percent of above turbidities, while using Ferric Chloride coagulant alone in optimum pH can eliminate 90.3, 85.16, 80.2 percent of the turbidities mentioned above. Results show that P.ovata extract is less efficient in high turbidities when used as a coagulant aid. Plantago ovata, as a coagulant aid, showed positive influence on turbidity removal from water. In addition, optimized pH showed important role in reducing turbidity.

### KEYWORDS

Water Treatment, Coagulation and Flocculation, Jar Test, Turbidity, Plantago Ovata, Ferric Chloride

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