Surface water clarification using M. oleifera seeds.

ABSTRACT

Turbid surface water was treated using a pilot scale water treatment plant comprising coagulation, flocculation, sedimentation and rapid gravity filtration, using Moringa oleifera seeds/alum as coagulants. Turbidity removal of M. oleifera, alum, and the mixture of both M. oleifera/alum were compared, and results obtained were 7.2, 4.2 and 3.2 NTU, respectively. The turbidity achieved using M. oleifera/alum mixture and alum were less than the required standard of 5 NTU, while M. oleifera/alum mixture recorded the least turbidity value (3.2 NTU) with removal efficiency of 99%. The natural alkalinity of the water did not vary during the treatment processes. Therefore M. oleifera/alum mixture could be considered as a suitable alternative for partial replacement of alum as coagulant in surface water treatment, which is an added advantage since M. oleifera is a natural product with less or no side effects as compared to alum as a chemical agent.

Keyword: Moringa oleifera; Process; Surface water; Treatment; Turbidity.